

Concept Map Structures and Descriptive Composition among Junior Secondary School Concept Map Structures and Descriptive Composition among Junior Secondary School Two (JSS II) Students in Makurdi, Benue State, Nigeria

T. Terver Udu

Department of Curriculum & Teaching,
Benue State University, Makurdi.
E-Mail: goldudu2013@gmail.com

Abstract

*This article presented a practical guide on how a descriptive essay can be taught using concept map structures among Junior Secondary School Two (JSS II) Students in Benue State, Nigeria. The experimental concept map and lesson plan recommended for use were devised by the researcher based on many years of teaching experience. The concept map in particular was devised using Cmap Tools, software that **allows individual to design, create concept maps** easily and express various ideas graphically. Through it, the language teacher could take JSS II students through the stages of descriptive composition in a novel and interesting way.*

Key words: *Concept Map, Focus Question, Proposition, Linking Words, Composition*

Introduction

Research findings, especially from the field of psychology have considerable influence on the teaching and learning process. In the teaching and learning of English as a second language in particular, much of this influence can be seen. The origin of concept mapping is often traced to the field of psychology, and believed to be based on Ausubel's (1963) theory of assimilation upon which this article is framed. Concept mapping was first used as a tool of research by Joseph Novak for identifying specific changes that take place as students learn science concepts (Novak and Canas, 2006). Novak and Canas (2006) regard concept mapping as both a "learning tool" and an "evaluation tool" Many scholars (Imoko, 2005; Varghese, 2009; Kalhor and Sahkibachi, 2012; Nwagbo and Okonkowo, 2014); in different fields of learning have used concept maps in the teaching of different subjects and the results have been overwhelming. Varghese (2009) who examined the impact of concept maps in assessing Canadian student teachers' understanding of mathematical proof drew the conclusion that concept maps provide the students with a different means of demonstrating understanding, and

the assessor with an additional opportunity to witness how the student connects ideas and groups or organizes information. Kalhor and Sahkibaci (2012) investigated the effect of teaching English reading comprehension to students in Iran using concept mapping. The result indicated that using concept mapping is an effective strategy in helping students to acquire critical skills of comprehension. Kalhor and Sahkibaci (2012) describe concept mapping as a language and cognitive tool that places emphasis on meaning. Concept maps activate prior knowledge and connect this prior knowledge to new learning (Kalhor & Sahkibaci, 2012). To Salehi, Jahnder and Khodabandehlou (2013), concept mapping shifts from teaching and presenting information to learning and creating meaning. The method has a positive impact on students' awareness of the reading process and gives them control over reading comprehension and allows teachers to observe gaps in the students' knowledge in order to facilitate correct conceptions. Washishi, Danjuma and Usman (2013) investigated the effects of two modes of concept mapping on secondary school students' retention level in mathematics and found that both the spider and hierarchy modes of concept mapping instruction strategies are effective in helping students retain knowledge of mathematics. Since not much has been done on the use of concept mapping in writing achievement, this article provides practical ways of using concept maps to help JSS II write descriptive essays effectively. Writing was particularly identified as being a problematic skill to junior secondary school students. Classroom experience has shown that junior secondary school students possess very poor experiential background thereby making the learning of higher language skills such as writing and reading somewhat difficult. This is worrisome because, students must engage in composition writing either as an academic or social requirement or both. But the prevailing teaching methods are the traditional methods, which give students little room for practice. The consequence of this is poor command of English as noticed in both internal and external examinations.

Meaning, Theoretical Assumptions and Usefulness of Concept Mapping

Concept maps have been defined as graphical tools for organizing and representing knowledge (Novak and Canas, 2006). Concept maps have three basic components that define the relationship among terms. These according to Vanides, Yin, Tomita, and Ruiz-Primo (2005) and Novak and Canas (2006) include concepts, linking words, and propositions. Novak and

Canas (2006) define concepts as a perceived regularity in events or objects, or records of events or objects, designated by a label. In concept maps, concepts are usually printed, written or labeled in the middle of circles or boxes of some sort. A line or arrow comes between one concept and another and connects the two concepts. The words on such a connecting line are called linking words or linking phrases. Propositions on the other hand are statements about some object or event in the universe, either naturally occurring or constructed (Novak and Canas; Walsh, 2010).

Concept mapping has its foundations rooted in Ausubel's assimilation theory (Walsh, 2005). Ausubel's theory of assimilation is hinged on the belief that learning occurs through the assimilation of new concepts into existing concept frameworks that the learner already has (Ausubel, 1963, 2000). As such, learning can only be considered meaningful only when the learner connects what he already knows with new ideas and structures. Ausubel thus makes a distinction between rote learning and meaningful learning, stating that meaningful learning requires three conditions (a) the material to be learned must be conceptually clear and presented with language and examples relatable to the learner's prior knowledge (b) the learner himself must possess relevant prior knowledge (c) the learner must choose to learn meaningfully (Novak and Canas, 2006).

Features and Principles of Creating Concept Maps

The following are features and requirements for concept maps as contended by Nova and Canas (2006), Walsh (2005) and Canas, Coffey, Carnot, Feltovich,, Hoffman, Feltovich, and Novak, (2003).

- (a) It is presented in a hierarchical order, and read progressing from top to bottom.
- (b) It has cross-links, which specify relationships between concepts in different segments
- (c) Construction of a concept map must be guided by a focus question. A focus question states our purpose; it asks a question or states a problem, which we seek an answer
- (d) It places emphasis on sequencing of learning
- (e) It draws a link between learner's prior knowledge and new learning

- (f) It makes distinction between rote learning and meaningful learning and places heavy emphasis on meaningful learning
- (g) It recognizes that individuals vary in the quality and quantity of the relevant knowledge they possess

Usefulness of Concept Maps to the Teaching Learning Situation

1. Concept maps present concepts and information that are connected in visual form. Birbili (2006) argues that information presented in visual form helps students to remember and recall more easily.
2. It gives a new dimension to learning of English. Students are used to the traditional method where teacher presents a concept and explains while students merely take information without getting involved. Creating concept maps helps students in idea generation and extends students' power of thinking.
3. Drawing as a motor skill enhances writing and composition.
4. Fosters organizing abilities as it places emphasis on logical and sequential presentation of information and ideas. These elements are essential for composition.
5. Encourages students to work in groups
6. As students talk about their drawing, it helps them exercise language skills
7. Its knowledge can be applied in note taking and note making as study skills since it is similar to summarizing information in graphic form.
8. It arouses students' interest in the learning process
9. It is learner-centred and allows for active participation in learning

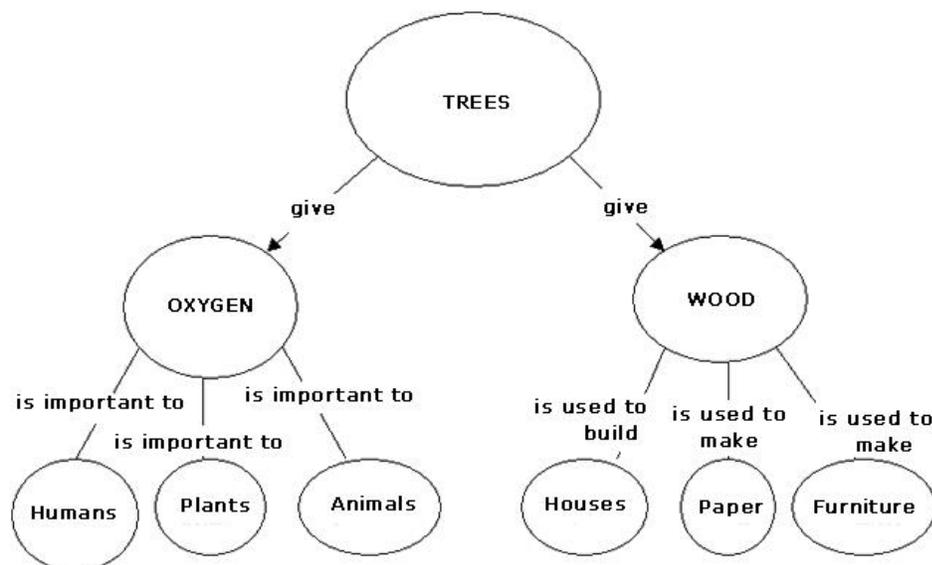


Fig. 1 below presents an example of a concept map as devised by Birbili (2006)

The focus question for the above concept map could be: What is the importance of trees to man?
The entire concept map helps to answer this basic question through the other components namely

Explanation of Parts of the Cmap Above

1. Concepts are printed/labeled in circles or boxes, e.g. trees
2. A line or arrow comes between one concept and connects it with another. \longrightarrow
3. A proposition makes a statement that highlights the relationships between the concepts. The connecting word is usually on the line or arrow \longrightarrow made of \longrightarrow

How to Create Concept Maps

Concept maps are easy to create. They can be created using CmapTools software following the link <http://cmap.ihmc.us>. The CmapTools software suite was designed to support collaboration and sharing among users (Canas, Carvajal, Carff and Hill, 2004). Another important tool for teachers and students can be found on <http://learn.cmappers.net/resource>. This link contains video clips on how Cmaps can be created. The experimental Cmap (Fig. 2) below, was created by the researcher to teach descriptive composition JSS II students on the topic: 'What is a computer?'

The Cmap aims to answer the following focus question:

What is a Computer?

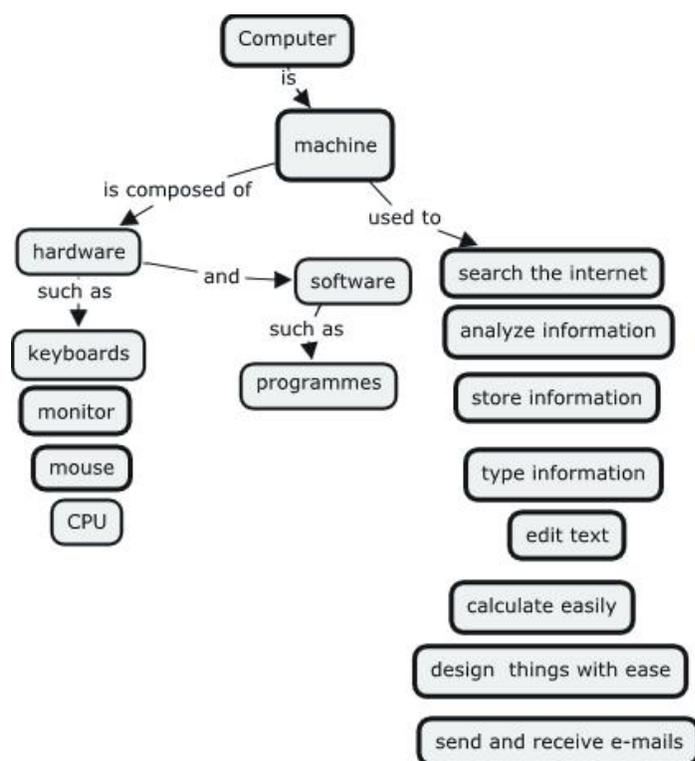


Fig. 2: An Experimental concept map for teaching descriptive composition

The teacher will now explain the Cmap above that:

The key Concept terms are: computer, machine, hardware, software, programmes, etc. these are represented in circles. Linking words or phrases are used to join concepts to show that relationships exist between the concepts. The direction of the arrow shows how the flow or direction of ideas and progression from one idea to another. Things of the same kind are close to each other and always grouped as such, e.g. keyboard, monitor, mouse are all arranged under software. Note also that the functions of a computer are arranged under the same heading.

Anticipated Passage

A computer is a machine. It is composed of two parts: software and hardware. Software refers to things like keyboard, monitor, mouse, and CPU. Software refers to the programmes of a computer. The computer is used to do many things. It is used to search the internet, analyze information, store information, type information, edit text, calculate easily, design things with ease, and send and receive e-mails.

Lesson Plan

Subject: English Language

Topic: Using Concept Maps to Teach Descriptive Composition. E.g. A Computer

Class: JSS Two

Ability: Average

Time: 80 minutes (Double Period)

Instructional Aids: concept maps, picture of a computer, drawing books, pencils

Objectives: At the end of the lesson, students should be able to:

1. Outline the components of a concept map
2. Explain the differences among the component parts
3. Explain the usefulness of concept maps
4. Answer focus questions
5. Create concept maps
6. Describe concept maps
7. Using concept maps generate ideas for descriptive essays
8. compose essays with the aid of concept maps

Previous Knowledge: Students have seen a typewriter. Students are familiar with the uses of a GSM handset

Presentation of lesson	Time required (in minutes)	Teacher Activities	Students' Activities	Prognostic Evaluation
Introduction	5 minutes	<ul style="list-style-type: none"> - activates students' previous knowledge by asking them to describe how a typewriter looks like and explain what it is used for. - introduces the present topic. - explores to find out the ideas students already have (.e.g. features that make the typewriter similar and different from a computer) 	<ul style="list-style-type: none"> - describe how a typewriter looks like - explain what typewriters are used for - students to explain what they have already learnt about computers 	
Step 1	5 Minutes	<ul style="list-style-type: none"> - presents a picture of a computer to students and guides students to name the various parts - writes the names of the major components of a computer and guides students to pronounce them - Explains the purpose of the lesson which is: To use concept maps as an aid to write descriptive essays 	<ul style="list-style-type: none"> - name the components of the teacher if they can - pronounce the names after their teacher - write the names in their note books 	Teacher ensures that each student participates actively in the lesson
Step 2	5minutes	<ul style="list-style-type: none"> - presents a picture of a concept map and explains its features and uses - introduces the concept 'focus question' and explains that it stands for the question that states a writer's purpose; A focus question states a problem in question form, which we seek an answer through the cmap - states the focus question: "What is a computer?" 	<ul style="list-style-type: none"> -learn the meaning of concept maps. -learn the meaning of the term 'focus question' and try to ask focus questions as a preliminary step 	<ul style="list-style-type: none"> - Teacher finds out if students can explain the terms concept map in their own words. - Students needing further explanation can ask questions
Step 3	10minutes	<ul style="list-style-type: none"> - draws concept a map in stages and asks students to observe - places the words listed in Step 	-The students listen, observe the teacher, and practise drawing the	

		<p>into the circles</p> <ul style="list-style-type: none"> - connects the concepts with appropriate linkers (propositions) - presents students with a list of propositions that could be used to link concepts 	<p>concept map following the steps used by the teacher</p>	
Step 4	5	<ul style="list-style-type: none"> - Interacts with the students using the following questions: <ul style="list-style-type: none"> ▪ What does our map look like? ▪ Can a concept map take another shape? ▪ Does our concept map answer our focus question? ▪ Can you also draw concept maps following my steps? ▪ What do the arrows in concept maps stand for? - Teacher provides answers to questions that students cannot answer 	<ul style="list-style-type: none"> - answer all the questions asked by the teacher. - request for help if need be 	<p>Teacher ascertains from the responses given to him the degree to which students have learnt concept maps</p>
Step 5	10minutes	<ul style="list-style-type: none"> - monitors students' progress as they practise drawing concept maps - asks students to compare their work and assess one another 	<ul style="list-style-type: none"> - practise drawing the experimental concept map - Ask questions 	
Step 6	10minutes	<ul style="list-style-type: none"> - asks students to use the information provided in the concept map to answer the following questions: <ul style="list-style-type: none"> ▪ What is a computer (in one word)? ▪ How many major parts does a computer have? ▪ In ten full sentences, mention the function of a computer ▪ In what ten ways are computers useful to you? - Teacher tells students that the approved answers should be written down 	<ul style="list-style-type: none"> - answer all questions that may be asked by the teacher - write down all the correct responses from their teacher 	<p>Teacher monitors the students and ensures that they write the correct responses in their exercise books</p>
Step 7	20minutes	<ul style="list-style-type: none"> - puts students in groups of three - asks each group to develop the responses into a full paragraph. - Teacher monitors work done by the various groups 	<ul style="list-style-type: none"> - each group develops their responses into a full paragraph essay. - each group presents their essay 	<p>Teacher ensures that each member of the group is participates fully in the lesson</p>

		<ul style="list-style-type: none"> - Gives help if desired - Gives room for criticism - Gives appreciation to the group with the best write-up, and explains why it is adjudged the best 	<ul style="list-style-type: none"> - Let each group frame a title - 	
Step 8	10minutes	<ul style="list-style-type: none"> - Teacher highlights things that can help the students improve on their passage (e.g. “Is there a topic sentence (main idea) in the passage?” - Teacher highlights the features of good composition (unity, coherence, good punctuation, beginning, middle and end) 	<ul style="list-style-type: none"> - listen to remedy their lapses 	Teacher gives home work on the topic: “My best subject”

Suggested techniques:

1. Ask students simple questions on the cmap and let them give answers in full sentences, e.g. what do you use computers for? How many major parts does a computer have? What are examples of hardware? What is a computer software? (This is idea generation stage).
2. Let students practice giving answers orally before such answers are written down as the final step.
3. Students should sit in groups of three or four members.

Conclusion

Concept mapping is a method that allows students to participate actively in the teaching/ learning process. It promotes collaborative learning and creativity and is a motivator for learning. It also helps students to do self-evaluation of the appropriateness or otherwise of their work. Though concept mapping has been widely in use in advanced countries, little of its application has been seen in Nigeria. We have seen much of its application in the teaching of science but little of its impact has been seen in the field of humanities and languages. We therefore encourage teachers and students in the humanities to examine the prospects of using concept mapping to improve learning in the humanities and languages.

Recommendations

. Considering these vital benefits of concept mapping the following recommendations were made:

1. Teachers of English should aspire to acquaint themselves with the theoretical knowledge of concept mapping and start putting it to use for students to reap the benefits.
2. Teachers should gain more awareness of the efficacy of concept mapping through reading of research reports, internet search, through seminars and academic conferences.
3. Teachers should aim at teaching writing as a process and deemphasize the teaching of writing as a product..
4. The language teacher using this instructional approach should emphasize oral composition before written composition as it removes the trepidation associated with first attempt at writing..
5. The teacher should not merely show students examples of good composition from textbooks but should model writing by engaging in writing himself for his students to follow the steps.

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