



Integrating Competency Based Learning and Infographics to Develop Official Experimental Secondary School Students' Metalinguistic Awareness skills

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Abstract

The present study aimed at developing metalinguistic awareness skills among first year secondary stage students using a program based on integrating competency-based learning and infographics. No previous studies dealt with the integration between competency-based learning and infographics using Edward Anthony's Scheme in which he identified three levels of conceptualization and organization, which he termed approach, method, and technique, so this is the novelty point of the current study. There were 35 participants for the experimental group and the same number for the control group. A skills list of metalinguistic awareness was designed and juried. Then a pre/post test of metalinguistic awareness was juried and administered to the participants of the two groups. The program was designed and administered in the first term of the academic year 2023 and lasted for the entire term with one session per week for the experimental group. Results of the study revealed that the experimental group's post results exceeded its pre results in the post-administration of the metalinguistic awareness test. Furthermore, it could be determined that the proposed program substantially enhanced the stated dependent variable.

Keywords: Competency-based learning, infographics, metalinguistic awareness.

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1. Introduction

Broadly speaking, when language becomes its own content so, the speaking is going to be about metalanguage. From a linguist's perspective, metalanguage indicates to words which are used to describe words and structures in their functional sense. Hence, metalanguage reflects any verbal reflection about the practical properties of language and any linguistic classification such as the identification of word class. On the contrary, from a psychological perspective, the term "metalinguistic" refers to the

human behaviors, attitudes, abilities, and processes related to metalanguage (Pinto et. al., 1999). Woll (2016) added that awareness in language learning has often been connected to explicit knowledge of grammar, as the first stage of awareness is solely reflected in the conscious detection of a stimulus, at the level of noticing

Metalinguistic awareness is the ability to analyze, think about, or manipulate language as an object separate from its meaning in or out of context (Roth, Speece, Cooper and De La Paz ,1996). Phonological awareness, morphological

awareness and orthographical awareness have usually been noticed as metalinguistic awareness which is considered to have special importance for reading (Zipke, Ehri and Cairns, 2009). Nagy and Anderson (1995:2) clarified that metalinguistic awareness is different from normal language use; people normally pay attention to the message being conveyed rather than to the linguistic elements which convey it. Producing or understanding language in a normal process does not generate answers to metalinguistic questions such as "How many words were in that sentence?" or "How many phonemes were in that word?"

Competency-Based Learning (CBL) is an approach for teaching and learning which fundamentally begins from an academic and professional description of all the knowledge and competences that need to be developed by students seeking a given course of studies. CBL builds on an investigation on the professional requirements which will help to determine and prioritize the crucial competences required for a given professional or specialty area. CBL is based on a teaching-learning system that regularly develops students' autonomy and ability to learn how to learn. CBL gives a great enhancement to learning methodologies, closer controlling and tutoring of students in groups or individually, in addition to a range of techniques for assessing learning. The teaching role of the professor or lecturer is altered, so he/she can focus on organizing, supervising and assessing students' learning (Sanchez and Ruiz, 2008).

O'Sullivan and Burce (2014) explained some attributes of competency-based education in the learning process that are

as follows: it helps understand how learners learn, match principles of learning and teaching, facilitate rather than control learning, model humility, critical thinking, respect, and caring all times. Moreover, support acquisition of knowledge, skills and professional behaviors in all learning domains (cognitive, psychomotor, affective), promote and expect learner accountability for learning. In addition, provide timely specific feedback on learner progress beginning with learner self-assessment, individualize learning experiences according to needs and expect increasing complexity of performance as the learner progresses throughout the program.

Infographics is a format which uses graphic visual pictures to show the information, knowledge or data effectively (Bicen and Beheshti, 2017:99). According to Smiciklas (2012:11), people use four primary learning styles to understand information; they are: (1) visual, people learn by viewing graphic formats such as maps, charts and diagrams instead of words, (2) Auditory, people learn by listening to spoken words, (3) Read/Write, people learn by reading or writing words, (4) Kinesthetic, people learn through experience. Infographics means presenting information, data or knowledge quickly and clearly in a visual form. Infographics can enhance understanding by using graphics to improve the ability of the human visual system in comprehending information more easily and efficiently (Hertavera, 2019:38). Smiciklas (2012:3) assumed that an infographic is a kind of picture that integrates data with design to

help individuals and organizations briefly communicate messages to their audience.

Context of the Problem

The researcher has identified the problem after reviewing previous researches and related studies; it was found that metalinguistic awareness is still neglected at our schools and classes. Students are quite weak in English in general and in metalinguistic awareness in particular, as a result, they still find difficulties in metalinguistic awareness skills. Previous studies have indicated that students have poor level of metalinguistic awareness skills (Kieffer et. al., 2013; Bian, 2017; Utkarsh & Ahmed, 2020, Varga, 2021). Researchers conducted these studies on different samples in different stages and introduced solutions for the lack that founded in metalinguistic awareness skills.

To document the problem of the study, the researcher conducted a pilot study to investigate the problem of EFL students' weakness in metalinguistic awareness skills. The participants consisted of a random 35 EFL official first year secondary stage students in Omar Alfarouq Official Experimental School in Alzaqaziq city, Alsharqeya governorate during the second term of academic year 2021/2022.

Statement of the problem

The problem of this study lies in the low level of metalinguistic awareness skills among the official experimental first year secondary stage students. Thus, the present study aims at investigating the effectiveness of integrating competency based learning and infographics program to develop metalinguistic awareness skills.

The study attempts to find answers for the following main question:

What is the effect of a program based on integrating competency based learning and infographics on developing official secondary school students' metalinguistic awareness skills?

The main question can be divided into the following two sub-questions:

1. What are the metalinguistic awareness skills (phonological/ morphological/ syntactical) required for first year secondary stage students?
2. To what extent do first year secondary stage students possess metalinguistic awareness skills?

2. Literature Review

2.1. Metalinguistic Awareness

2.1.1 What is Metalinguistic Awareness?

Metalinguistic awareness (MA) can be defined as "*the ability to understand language in more explicit fashion, in a way being able to objectify and manipulate it beyond the levels of pure functional use. Such ability exceeds mere knowledge about language, but it also encompasses both sensitivity and consciousness about the nature of language*" (Donmall,1985).

Moreover Malakoff (1992:18) clarified that Metalinguistic awareness is the ability to think flexibly and abstractly about the language; it refers to an awareness of the formal linguistic features of language and ability to reflect thereupon. Metalinguistic awareness allows the individual to step back of the comprehension or production of an utterance in order to consider the linguistic form and structure underlying the meaning of utterance. To be metalinguistically

aware, then, is to know how to approach and solve certain types of problems which themselves demand certain cognitive and linguistic skills.

Schoonmaker (2015) mentioned that MA is "the ability to deconstruct and analyze a language's intricate systems, and by doing so, better understand how these systems work."(p.3)

Neely (2017) defined it as "*an individual ability to objectify language and dissect it as an arbitrary linguistic code independent of meaning. It is considered as a key component in the cognitive aspects involved in language learning and encompasses phonological, word, syntactic, and pragmatic awareness.*" (p.39)

Metalinguistic awareness is "*a process in which a person is trained to be aware of the target language. It aims to help learners improve their academic performance.*" (Al-Ahdal & Almarshedi, 2021: 2274).

These authors are in general agreement that metalinguistic awareness is concerned with the ability to think about language and control it. Hence, it can be concluded that metalinguistic awareness represents the conscious control over the structural features of the language and manipulation of its components. According to MA learners should think beyond the literal meaning of the written language. They should have the ability to make use of their previous knowledge to different extents.

2.1.2 Importance of Metalinguistic Awareness

Metalinguistic awareness allows students to use language in a creative and unique way, which is unseen without such awareness (Malakoff,1999). Using knowledge and metalanguage is likely to make L2 learners' development of metalinguistic awareness easier; that means an improved self-awareness and vulnerability to the functions and forms of language (Carter, 2003), that leads to language development (Berry,2009). Hu (2002) mentioned that there is reasonable evidence that metalinguistic performance plays a crucial role in learning how to read. Students with deficient or inefficient comprehension or production processes should depend on their metalinguistic abilities to learn certain facets in language.

Metalinguistic awareness has been classified into diverse components such as phonological, morphological, syntactic and pragmatic awareness. These different kinds of metalinguistic awareness abilities play eminent role in different language related skills and competencies. For example phonological awareness has been founded as a vital contributor in learning to read, while syntactic awareness and morphological awareness has been proven their benefit in making students understand the structure of sentences which helps in reading and comprehension (Utkarsh & Ahmad, 2020).

Several studies have indicated that metalinguistic awareness has a positive correlation with upgraded reading ability in young learners (Castles & Coltheart, 2004). Moreover, metalinguistic awareness has been founded to be closely related to reading comprehension (Zipke, 2007, Varga, 2021). Phonological awareness has

been investigated in Aidinis & Nunes (2001) study to see whether syllable and phoneme awareness make independent contributions to reading and spelling in Greek. They concluded that phonological awareness is a multidimensional phenomenon that contributed to reading and writing in Greek. In addition, Bian (2017) explored in his study that morphological awareness was a significant predictor of listening comprehension. Furthermore, classic and current theories of reading comprehension broadly agree that syntactic awareness plays a direct role in reading comprehension (Perfetti & Stafura, 2014).

2.2. Competency Based Learning

2.2.1 Background of Competency Based Learning

Competency-Based Learning (CBL) is an application of the principles of Competency-Based Education (CBE) to language teaching (Richard & Rodgers, 2001). CBE is not a new concept and its origins could be traced back hundreds of years in the time of the medieval ages

(Nodine, 2016). Unlike input based instructional approaches that depend on the hypothesis that effective learning will happen through developing the syllabi and materials which students are going to be exposed to, outcome-based approaches, like CBE assert that educators' concentration should be directed to what learners will be able to do by the end of the instruction. CBE is an approach where stakeholders who are in charge of the development of society and employment are joined by educational institutions in deciding about curricula, syllabi, and their objectives. It is a kind of learning that allows learners to obtain the type of instruction that makes them acquire the generic and specific competences required in the workplace (Boulmaiz, 2019).

Kellogg (2018) viewed that CBE is different from traditional education also known as "seat time" education in several ways. The table below shows a comparison between traditional education that many have experienced and competency based education.

Table (1): Traditional education versus Competency based education

Traditional Education	Competency Based Education
Time-based	Outcome-based
Passive learning	Active learning
Fragmented curriculum	Integrated curriculum
Isolation	collaboration
Textbook-driven	Research-driven
Teacher-centered	Student-centered
Print	multimedia
Facts and memorization	High-order thinking

Adopted from (Kellogg, 2018:4)

2.2.2 Features of Implementing CBE Programs

According to Nunan (2013) "Teaching ESL to competencies requires the instructional focus to be on functional competencies and life-coping skills. It is not what the students know about language but what they do with language" (p.25). Auerbach (1986) pointed out eight features included in the implementation of the CBE programs in ESL classrooms:

1. A focus on successful functioning in society. The aim is to make students autonomous individuals capable of coping with the demands of the world.
2. A focus on life skills. Instead of teaching language in isolation, CBLT teaches language as a function of communication about concrete tasks. Students are taught just those language forms/ skills required by the situations in which they will function. These forms are determined by "empirical assessment of language required".
3. Task or performance centered orientation. What counts is what students can do as a result of instruction. The emphasis is on obvious behaviors rather than on knowledge or the ability to talk about language and skills.
4. Modularized instruction. Language learning is broken down into meaningful chunks. Objectives are broken into narrowly focused sub-objectives so that both teachers and students can get a clear sense of progress.
5. Outcomes are made explicit. Outcomes are public knowledge, known and agreed upon by both learner and teacher. They are specified in terms of behavioral objectives so that students know what behaviors are expected of them.

6. Continuous and ongoing assessment. Students are pre-tested to determine what skills they lack and post-tested after instruction on that skill. If they do not achieve the desired level of mastery, they continue to work on the objective and are retested.
7. Demonstrated mastery of performance objectives. Rather than the traditional paper and pencil tests, assessment is based on the ability to demonstrate pre-specified behaviors.
8. Individualized, student-centered instruction. In content, level, and pace, objectives are defined in terms of individual needs; prior learning and achievement are taken into account in developing curricula. Instruction is not time-based; students progress at their own rates and concentrate on just those areas in which they lack competence (pp. 414-415).

2.3. Infographics

2.3.1 Definition of Infographic

Information graphics, often known as infographics, are the processes of artistically portraying data in a visual form by mixing and organizing text and various graphical components to convey a visual story about a certain topic (Moorfield-Lang, 2011; Virag, 2013). Gallicano et al. (2014) proposed that a well-designed infographic should artistically, graphically, and correctly convey a supported perspective by reducing or refining complex facts into a comprehensible, entertaining, and visually appealing form.

2.3.2 Creating Infographics

The components of making infographics are not new; however infographics are relatively new in instructional materials. During the creation of an infographic, several components such as photographs, drawings, figures,

symbols, graphics, and words are utilized to show information, either individually or combined. In this regard, infographics' innovation is suggested by the employment of visual components in information display and content creation (Dick, 2014). However, it is feasible to generate infographics utilizing popular image processing programs (Photoshop, Picasa, etc.), there are also software especially developed to create infographics (SmartDraw etc.).

There are many web sites that make creating infographics an easy and quick task by using ready-made templates and tools (infogr.am, visual.ly, piktochart etc.). Due to these environments, the time spent on visual design is cut down and those who prepare the educational content spend more time to build the information. Information should be organized in a perfect way and it should be easily remembered and can be compared with a genuine flow in order to prepare an effective infographic (Lankow, et al., 2012). In this way, infographics which supply the necessary information with an easy to understand structure can be prepared. Infographics may be utilized to achieve many educational goals. Infographics may be used for a variety of objectives, including demonstrating the link between various concepts, transferring processes and events, presenting course content, and summarizing learned subjects. (Meeusah & Tangkijwiat, 2013).

It is easy to create infographics in different ways. They can be divided as interactive, semi-interactive and non-interactive according to the multimedia components they contain. Non-interactive infographics involve fixed text and visual components (Lankow, Ritchie, Crooks, 2012). In such infographics, the information is limited to the content

presented. As well, such infographics can be used by having print outs. Interactive infographics make it possible to use the information in the same or different media sources in addition to the traits of the non-interactive infographics. For example, a related video, audio or animation relevant to the content can be used in these infographics. Furthermore, certain additional infographics that allow viewers to pick and access information depending on their preferences belong to this category. This feature allows the information to be displayed as a whole, with components being used to suit the requirement for further information. The application of visual design principles may readily ensure the appealing appearance of infographics. Infographics require an effective strategy to conveying information as well as a visual design. As a result, finding, analyzing, and using relevant information is critical when creating infographics. It is also critical to use instructional design models while creating infographics. According to Davis and Quinn (2013), the points that should be considered when attempting to create good infographics are listed as follows:

- Identification of the purpose,
- Decide on the components that can be used in infographics,
- Determination of the type of infographic to be created,
- Presenting the information in a way that allows learners to understand the subject.

3. Method

3.1. Study Design

In this study, a quasi-experimental design was adopted for one experimental group who received treatment through integrating competency based learning and infographics to develop metalinguistic awareness skills. The current study

adopted a quasi-experimental design. The control group obtained its professional development according to the regular method. Then both groups were pre- and post-tested by the study instruments. The main steps of the research process are summarized in figure 1.

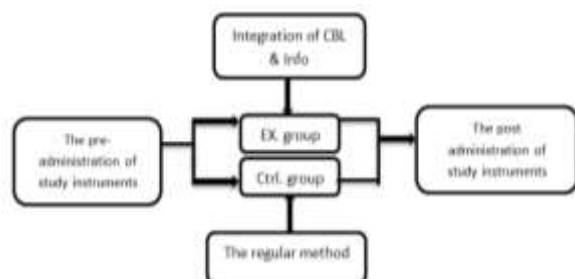


Figure 1. the quasi-experimental design of the study

3.2. Participants

The participants of the present study consisted of official experimental first year secondary stage students (n=35) at Omar Alfarouq Official Secondary School, in Alzaqaziq, Alsharqeya Governorate, during the academic year 2022/2023.

3.3. Instruments

Considering the study variables, the following instruments were designed and administered by the researcher:

1. A metalinguistic awareness checklist.
2. A metalinguistic awareness test.

3.4. The Study Material

The program of the study was prepared by the researcher. It was designed according to the principles of the competency based learning and infographics using Edward Anthony's Scheme in which he identified three levels of conceptualization and organization, which he termed approach, method, and technique. The program aimed at developing EFL first year official experimental secondary students' metalinguistic awareness skills. The content of the current program is organized

in the form of sessions suitable for first year official experimental secondary school students. It includes 12 sessions. Each session included: objectives, teaching aids, teaching methods, content, procedures, activities and evaluation. The sessions are based on 1st year official experimental secondary school Students' Book "New Hello!"

3.5 The Study Hypotheses

1. There is a statistically significant difference between the mean scores of the experimental group and the control group in the administration of the post metalinguistic awareness test, in favor of the experimental group.
2. The program based on the integration of competency based learning and infographics has a positive effect on the development of the metalinguistic awareness skills for the official experimental first year secondary stage students.

4. Results of the Study

The findings of the present study are presented in the light of the hypotheses of the study. Using the Statistical Package for Social Sciences (SPSS) program version (18), the paired sample t-test was used. The present study contains two main hypotheses.

4.1 Findings of the first hypothesis

It has been hypothesized that " There is a statistically significant difference between the mean scores of experimental group and control group in the administration of the post metalinguistic awareness test, in favor of the experimental group. Sample t-test was used to verify this hypothesis as shown in (table 2).

Table 2: Findings of t-test of the mean scores of the metalinguistic awareness test of the control group and the experimental group.

Skills	Group	N	Mean	Standard deviation	t. value	df
Phonological awareness	Control	35	20.5	2	16.5	68
	Experimental	35	28.2	3.6		
Morphological awareness	Control	35	3.5	1.6	5	68
	Experimental	35	4.7	1.2		
Syntactical awareness	Control	35	5	1	6	68
	Experimental	35	6.5	1.3		
Total	Control	35	30	2	12	68
	Experimental	35	34.3	2.7		

4.2 Findings of the Second hypothesis

It has been hypothesized that "The program based on the integration of competency based learning and infographics has a positive effect on the

development of metalinguistic awareness for the official first year secondary stage students. Cohen's equation was used to verify this hypothesis as shown in (table 3)

Table 3: Findings of t- test results of comparing of the pre- and post-test of metalinguistic awareness test.

Skills	Test	N	Mean	Standard deviation	t. value	df	Effect size
Phonological awareness	Pre	35	18.5	2.2	18.2	34	0.87
	Post	35	28.2	3.6			
Morphological awareness	pre	35	2.9	0.93	6.8	34	0.85
	post	35	4.7	1.2			
Syntactical awareness	pre	35	4.4	1.2	7.5	34	0.86
	post	35	6.5	1.3			
Total	pre	35	25.7	2	13.4	34	0.89
	post	35	34.3	2.7			

5. Discussion and Interpretation of the Findings of the Study

The research questions in the current study were set out to determine whether the use of competency based learning and infographics program would develop the students' metalinguistic awareness skills. Based on the statistical analysis of the results, it is clear that the students' metalinguistic awareness skills have been developed due to the fact of using

competency based learning and infographics program.

To illustrate this, the study revealed that the participants showed progress in their performance in the three main skills of metalinguistic awareness namely; phonological awareness, morphological awareness and syntactical awareness. The researcher attributes this progress to the training process which is based on instructing students explicitly using a

program based on integration between competency-based learning and infographics.

6. Recommendations of the study:

In the light of the results of the present study, the following recommendations could be presented:

- 1- Developers of English language curriculum should make use of the integration between competency based learning and infographics program.
- 2- Teaching EFL higher level reading comprehension skills through competency based learning and infographic should be pointed out.
- 3- Teaching and learning metalinguistic awareness skills through competency based learning and infographics program should be emphasized.
- 4- Sense of involvement in its two types (academic involvement and social involvement) should be focused on by teachers as it is very essential in the whole learning process.

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