Integration of Metacognition and CLIL in the First Year Engineering Classes – A Study

R. Gomathy and Dr.V. Radhakrishnan

Abstract--- A huge number of research have been made on reading strategies as it is considered as an active process to gather new information from any sort of content. Among the various strategies, metacognition (Flavell, 1985) (thinking about thinking) and its strategies is one of the processes to make reading a self regulatory learning. In this regard, general survey has been made among the first year engineering students to learn about their reading strategies. From the survey made, it is understood that they find difficult to make them comfortable and feel monotonous to do a prolonged reading and it is also understood that they are not aware of the reading strategies as they have not been encouraged to do reading from their childhood. So the researchers propose to make an analysis to find out their awareness about the strategies of Metacognition with the help of the MARSI Questionnaire (Kouider Mokhtari and Carla Reichard, 2002). Such an analysis is made to help the learners to know the metacognitive strategies which would act as Scaffolding (Vygotsky, 1978) to develop their autonomous learning to enhance their proficiency in English. The paper also gives various strategies to integrate Metacognition with CLIL in the reading classes.

Keywords--- Metacognition, Reading Strategies, MARSI Questionnaire, Scaffolding, CLIL].

I. INTRODUCTION

In the conventional method of teaching, reading is done for scoring marks which A huge number of research have been made on reading strategies as it is considered as an active process to gather new information from any sort of content. Among the various strategies, metacognition (Flavell, 1985) (thinking about thinking) and its strategies is one of the processes to make reading a self regulatory learning. In this regard, general survey has been made among the first year engineering students to learn about their reading strategies. From the survey made, it is understood that they find difficult to make them comfortable and feel monotonous to do a prolonged reading and it is also understood that they are not aware of the reading strategies as they have not been encouraged to do reading from their childhood. So the researchers propose to make an analysis to find out their awareness about the strategies of Metacognition with the help of the MARSI Questionnaire (Kouider Mokhtari and Carla Reichard, 2002). Such an analysis is made to help the learners to become aware of the metacognitive strategies which would also act as Scaffolding (Jerome Bruner, 1960) in developing their autonomous practice of reading. The paper also gives various strategies to integrate Metacognition with CLIL in the reading classes.

II. LITERATURE REVIEW

Metacognition is thinking about thinking. It is described as a conscious cognitive or affective experience that accompanies and pertains to any intellectual enterprise (Flavell, 1979). Apart from learning the repertoire of

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strategies that are available to them, readers must also be aware of their own comprehension processes in order to read strategically (Carrell, Gajdusek and Wise, 1998). This metacognitive awareness is regarded as one of the most important components in the reading process (Anderson, 1999; Carrell 1998). Afflerbach et al. (2008) mentioned that a beginning learner who asks him or herself questions to clarify his or her comprehension of course material performs a deliberate metacognitive act of self-questioning that serves the learner's goal of monitoring and building better comprehension. The relationship between metacognitive awareness, the use of strategies and reading comprehension has been analysed by several specialists (Dhieb-Henia 2003; Kusiak 2001; Malcolm 2009; Salatachi and Akyel 2002; Zenotz 2012; Zhang 2001).

To truly realize the added value of CLIL teachers need to embrace a new paradigm of teaching and learning and they need tools and templates that help them plan their lessons and create/adapt materials" (Meyer, 2010). Many researchers and theoreticians agree that the construction of CLIL materials should be based on Coyle's 4Cs Framework (Coyle, Hood & Marsh, 2010). The abbreviation 4Cs stands for content, cognition, communication and culture, and all these components should be integrated in CLIL lessons. In CLIL, the development of cognitive skills is one of the objectives and "core elements of CLIL, i.e. tasks, output, and scaffolding have to be balanced in such a way that various cognitive activities are triggered" (Meyer, 2010).

III. AWARENESS OF METACOGNITION AND CLIL

Metacognition is one of the reading strategies which would help the learners to monitor their notion of thinking about thinking, and are defined as planned, intentional, goal directed and future-oriented mental processing that can be used to accomplish comprehensive skill (Salataki & Akyel, 2002). When a learner uses the metacognitive strategy, he/she will become aware of the problem he/she faces during reading. It would also help the learners to recognize the meaning or the information provided in the text. In other words, metacognitive reading strategies are higher order performance methods that refer to the planning, monitoring and evaluating the success of a learning activity (Pressley & Afflerbach, 1995).

From 1990s, CLIL is considered as one of the effective approaches to achieve high degree of language awareness, to accommodate diverse learning styles, great exposure to L2 learners, to improve communicative competence (European Council, 2005). Content and Language Integrated Learning (CLIL) is used to focus on two aspects such as the learners who adhere to this approach will be able to enhance the language in which the learners learning the content as well as their knowledge of the text that is used. That is, in the teaching and learning process, there is a focus not only on content and but also on language. Each is interwoven, even if the emphasis is greater on one or the other at a given time. Coyle / Hood / Marsh (2010) Achieving this twofold aim calls for the development of a special approach to teaching in that the non -language subject is not taught in a foreign language but with and through a foreign language. Eurydice (2006).

IV. METACOGNITIVE AWARENESS READING STRATEGY INVENTORY (MARSI)

The Meta-cognitive Awareness Reading Strategy Inventory (MARSI; Mokhtari & Reichard, 2002) was developed to assess the type and frequency of reading strategies that students perceive that they use while reading

academic materials in English. The MARSI contains 30 items that measure three factors: Global Reading Strategies (13 items), Problem- Solving Strategies (8 items), and Support Reading Strategies (9 items).

The global factor reflects strategies related to the global analysis of text. The problem- solving factor includes repair strategies that are used when text becomes difficult to read. The support factor reflects practical strategies like taking notes and consulting a dictionary. The MARSI was designed for use with individuals or groups with reading ability ranging from 5th grade to college level. The primary uses of the MARSI include the following: (a) enhancing student awareness, (b) planning instruction, and (c) clinical or classroom research. (Kouider Mokhtari and Carla Reichard © 2002)

A. Purpose of the Study

The purpose of the study is to help the learners to become aware of the reading strategies in order to help them to develop their autonomy of the reading skills.
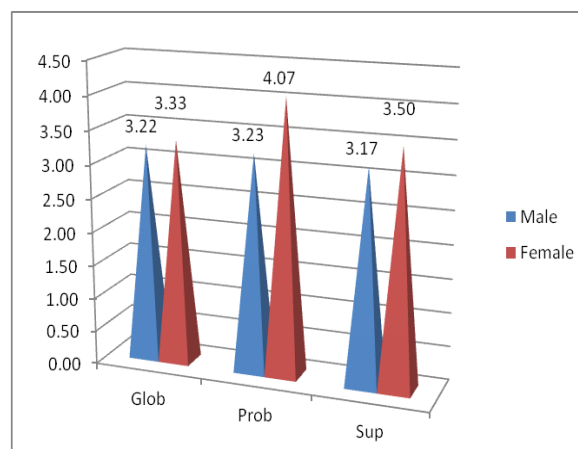
B. Method

The Metacognitive Awareness Reading Strategy Inventory (MARSI) questionnaire is distributed for 228 learners who belong to first year engineering students from various branches like Electronics and Communication Engineering, Chemical Engineering and Mechatronics Engineering Students. Then the analysis have been made to check the awareness of the reading strategies among the learners.
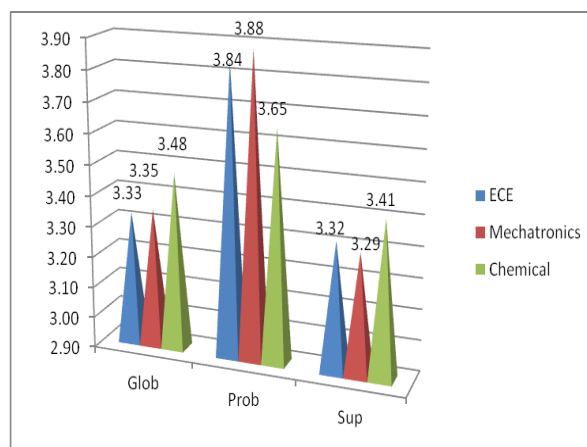
C. Analysis

As mentioned earlier the purpose of the study is to create awareness about the reading strategies among the L2 learners MARSI questionnaire is given to the learners. The analysis have been in various aspects like comparing male and female, then made the comparisons between branches and also made comparisons between the medium of instructions.

In the MARSI questionnaire the metacognitive awareness is analyzed in three parameters global reading, problem solving and support reading strategies. In the analysis made between the male learners and female learners, the Graph: 1 clearly indicates that the female learners are better in all the three parameters than the male learners.

Graph 1

In the Graph: 2, the comparisons are made between the branches to study the metacognitive awareness among the learners. The graph clearly indicates that the score of the learners from various branches vary from each branch for each parameter. The learners from Mechatronics branch shows the maximum score in the problem solving strategies whereas the learners from the Chemical Engineering branch shows the maximum in the Global Learning and Support Reading strategies, but Electronics and Communication Engineering learners show the average in all the three parameters.

Graph 2

As far as the analysis is concerned, the distinction is clearly seen in all the three comparisons made between male and female learners, between the various branches and the medium of instructions within all the three parameters global reading, problem solving and support reading strategies. This also clearly indicates that MARSI questionnaire would help the learners to become aware of their reading skills and it would also help them to derive their own strategies to enhance their reading skills.

D. Metacognitive and CLIL Reading Strategies

There are essential strategies which can be followed to develop and regulate the reading skills such as planning, monitoring and evaluation in the minds of the learners (Jacobs & Paris, 1987). Planning is like making predictions before reading, asking questions in other words it is known as forethought. Monitoring is like doing a conscious observation of the thoughts that occur during reading. Evaluation is drawing conclusions or to check whether the aim of the readers has achieved.

Learning in CLIL should be personalized and students should have enough space to construct their own knowledge and understanding of the subject matter (content). In this process they develop not only their lower-order thinking skills (remember, understand, apply) but particularly their higher-order thinking skills (analyse, evaluate, create), as well as their metacognitive skills which help them gain more insight into their own learning (cognition). Therefore, it is important that the new knowledge is not transferred to them, but they are given many opportunities to construct it independently from the teacher. In order to achieve this objective, it is essential that students are scaffolded in understanding the subject matter and the language used in the materials, as well as in verbalizing subject-specific issues using their own interpretation.

E. Integration of Metacognition and CLIL

Metacognitive strategy must be used in the beginning of the class i.e., before the text is given the learners must be informed about the text to create an awareness about the text among the learners, which would help them to become conscious of his/her own thoughts. Then, after the text is given the learners must be helped to understand the content of the text. Simultaneously, the learners must be helped to understand the 4c's i.e. content, communication, cognition and culture as it helps them to develop their higher order thinking skills like analyse, evaluate and create. Hence, if the learners are helped to create awareness about the metacognitive skills and facilitated with CLIL approach, the learners will be able to enhance their knowledge and self confidence.

V. Conclusion

This study tries to support that the generating awareness of metacognitive reading strategies and to integrate CLIL with it as it is a feasible tool to develop the comprehensive skills of the learners. Still, it is bit challenging for the instructors to practice metacognitive strategy in the classroom. Above all, adherence of such strategy will definitely help the learners to self-regulate their reading process and also help to gain confidence to understand the meaning of the given text. The comprehension level of proficient readers will definitely progress which in turn will help them to sustain in the professional world. Good readers think more deeply to recognize and comprehend the texts adequately by integrating metacognitive strategies with CLIL.

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