Effectiveness of Graphic Organiser as a Classroom Practice on the Academic Achievement and the Meta-cognitive Awareness of Students at the Secondary Level

Sᴙᴇᴇᴠʀɪɴᴅᴀ Nᴀɪʀ. N*

Abstract

The imagery mode of information storage is referred to as graphic organisers or non-linguistic representations. A graphic organiser is a visual and graphic display that depicts the relationship between facts, terms or ideas within a learning task. These organisers activate and engage learners in the instructional process and enable them to capture and focus their attention in an exciting way. Objectives of the study were to find out the effectiveness of select meta-cognitive classroom practice, namely graphic organiser in enhancing academic achievement and meta-cognitive awareness of Malayalam language students at the secondary level. 165 secondary school students from four schools belong to three districts of Kerala namely, Pathanamthitta, Alappuzha and Kottayam were selected as experimental and control groups. In the present study, a mixed method of research design, incorporating both quantitative and qualitative data collection and analysis were used. A pre and post-test and non-equivalent non-group design was selected for the study. Considerable discussions about the process of learning and the participatory mode of evaluation energised the learners to become authentic about the most important component of self-directed learning. From this study, we can conclude that graphic organisers are powerful and excellent instructional tools, which help to instill meta-

---

* * Assistant Professor*, NSS Training College, Pandalam, Kerala

cognition among the learners. These pictorial representations allow students to brainstorm ideas and organise them into manageable and comprehensible chunks. These visual tools are relatively easy to implement and a rewarding element in the instructional practitioners' repertoire of skills with regard to curriculum transaction.

INTRODUCTION

Language is a system of communication that offers countless possibilities for representation, expression and construction of meaning and thought. It is constructed of interacting symbols of sounds, meanings, sentence formation and use and also permeates human thought and life (Cox, 2002). Constructivist approaches to learning and teaching have become increasingly influential concepts over the past few decades and attention has increasingly focused on how we learn, as well as what we learn (Downing 2010). Effective learning demands active engagement and making classrooms alive and alert. It needs to focus on creating meaningful learning contexts and deliberately provide many opportunities for the learners to reanalyse and reinterpret what they learned through the discussion of the learning process. Meta cognitive strategies automatically lead to heightened academic achievement as well as foster learner autonomy in a desirable manner (Philip and Hua, 2006; Karia, 2007; Zohar and David, 2008; Kelly and Ho, 2010; Dul, 2011 and Chan, 2012). Meta-cognition mainly includes two major components— knowledge of cognition and regulation of cognition. Knowledge of cognition describes an individual's awareness of cognition at different levels. Regulation of cognition relates to how learners control their learning by inculcating the activities of planning, monitoring and evaluating. Students in today's classroom are diverse than ever and this diversity poses the need for inculcating differentiating instruction in the classroom. A meta-cognitive environment encourages awareness of the process of learning and thereby promotes self regulation and self direction which are the critical ingredients to successful learning. Meta-cognitive strategies are helpful in igniting one's thinking and leading to higher learning and better performance. In the present context, the investigator adopted graphic organiser as a meta-cognitive classroom practice with a view to enhance student's cognitive and meta-cognitive abilities through familiarising the advantages of pictorial formats for processing varied modes of learning in classrooms.

GRAPHIC ORGANISERS

According to the dual coding theory of information storage, knowledge is stored in two forms — linguistic and imagery. The imagery mode of

information storage is referred to as graphic organisers or non-linguistic representations. A graphic organiser is a visual and graphic display that depicts the relationship between facts, terms or ideas within a learning task. These organisers activate and engage learners in the instructional process and enable them to capture and focus their attention in an exciting way. Graphic organisers were developed on the basis of Ausubel's theory (1963) of meaningful verbal learning which states that when students are introduced to material for which they have little background knowledge, their learning will be improved if they have a structured and clear method for organising the information. Research suggests that the implementation of graphic organisers results in increasing the retention and comprehension of students. It also incorporates active learning which also been linked to higher learner motivation, (Machemer and Crawford, 2007) increased confidence, and improved critical thinking (Smith et al 2005). Graphic organisers are meta cognitive tools in a visual form and can be sprinkled throughout a unit of study. They are charts, diagrams and pictorial representations that allow students to sequence the large amount of information into manageable bits. Conceptual and strategic essence of lessons become more evident through these excellent tools which assist the learners in sorting, organising and arranging ideas in a clear pattern.

RATIONALE OF THE STUDY

When learners begin their lessons by generating graphical representations, their minds shift from passive state to active and their brain launches new pathways towards acquiring new possibilities in learning. This type of mental engagement facilitates them to keep the track of learning, stimulates intellectual curiosity, and helps to maintain motivation in the learning task. Instead of being distant observers of questions and answers, students become immediate practitioners through the articulation of graphical representation practices in the classroom set up. I witnessed this in classrooms several times. It motivates me to conduct this type of experimental study and that principle lies under my study.

NEED AND SIGNIFICANCE OF THE STUDY

In order to modify the process of education and create successful human beings, schools need to develop each student as a human being who can cope with and conquer life's challenges, both internal and external. Veering away from the teacher oriented method and putting the onus of learning on the students is the new paradigm in helping to touch and transform their future in an exciting manner. The intellectual dimension of student-learning enters their cognitive readiness through the mode of self-regulated learning which is capable for making them responsible for managing their own learning. It is believed that good

language learners exhibit greater autonomy than weak learners and are quite capable of learning in a self-directive pattern.

Meta-cognitive strategies engage the learners in planning, focusing and evaluating their own learning. Meta-cognition develops the automaticity in learning. It helps us in saving time and energy in the process of effective teaching and gain mastery in learning. An area that has been neglected to some extent in learning of language is an emphasis on meta-cognitive dimensions. The investigator being a teacher educator in Malayalam education happened to interact with the present transaction modalities of Malayalam language curriculum at the secondary level and felt that the prevailing classroom practices are not enough to cultivate a meta-cognitive classroom climate and thereby facilitate the growth of successful learning communities in both the classroom and school wide. For ensuring and retaining the integrity, purity and vibrancy of our mother tongue, pedagogical practices can occupy itself a momentous role. Instructional practices based on meta-cognitive strategies play a significant role in this regard. Hence, the investigator tries to find out the effectiveness of meta-cognitive classroom practices and learners' preferential focus on receiving the information in Malayalam language classroom.

There is a paucity of literature on how meta-cognitive practices can be used for heightening the academic outcome of Malayalam language learners at the secondary level. The objectives of the study are derived from these gaps in literature. No studies have been undertaken with regard to finding the effectiveness of graphic organiser as a metacognitive practice upon the learning of Malayalam language at secondary level. This served as the backdrop for the researcher to conduct this type of experimental study.

Review of Related Studies

Snyder and Solomon (2012) conducted a study, which aims to investigate the effects of graphic organisers, level of text structure complexity and content familiarity on second grade students' comprehension, recall and sensitivity to cause or effect text structure. Suarez (2011) conducted a study that sought to identify which graphic organisers and higher order thinking skills would aid in students' test scores in a district impacted by poverty and a high level of second language learners. Moyo (2004) reported a study which suggests that the use of graphical representations is essential to making meaning and that tools are needed to ensure that developing representations becomes a normative practice in Mathematics classrooms. Samawi (2006) in his research study explored the effect of concept mapping as a meta-

cognitive strategy on the critical thinking skills and dispositions of junior and senior nursing students. The findings reveal that the select strategy triggers critical thinking which guides the students to engage in meaningful learning. Howard (2007) explored the factors that can encourage the use of research based practices (RBP) in classrooms by examining factors that support the implementation and sustainability of graphic organisers as an instructional strategy in inclusive classrooms with students with and without specific learning disabilities. (SLD). A study conducted in Indian context which focuses on using 'story web' graphic organisers in a ninth grade social studies classroom in rural area which examines how well students use the graphic organisers on in-class assignments and analyses student assessment data to determine if graphic organisers improve student achievement. Snyder (2012) also conducted a study which aims to investigate the effects of graphic organisers, level of text structure complexity and content familiarity on second grade students' comprehension, recall and sensitivity to cause or effect text structure.

STATEMENT OF THE PROBLEM

Effectiveness of graphic organiser as a classroom practice on the academic achievement and the meta-cognitive awareness of students at the secondary level.

OBJECTIVES OF THE STUDY

- To find out the effectiveness of select graphic organiser in enhancing academic achievement of Malayalam language students at secondary level.
- To find out the effectiveness of graphic organiser in enhancing meta-cognitive awareness of Malayalam language students at secondary level.

HYPOTHESES OF THE STUDY

1. There exists a significant difference between the prevailing activity oriented modes of curriculum transaction and selected meta-cognitive classroom practice.
2. There exists a significant difference between the prevailing activity oriented modes of curriculum transaction and select meta-cognitive classroom practice.

SAMPLE SELECTED FOR THE STUDY

165 secondary school students from four schools belong to three districts of Kerala namely, Pathanamthitta, Alappuzha and Kottayam were selected as experimental and control groups. Simple random sampling was used in this study. A pre-test post test non-equivalent group design was selected for the study.

TOOLS EMPLOYED FOR THE STUDY

Lesson design based on graphic organiser, meta-cognitive awareness

rubric, test on academic achievement. These are explained in details.

1. Lesson Design on Graphic Organiser

In order to familiarise the students with the processes embedded in the select classroom practice — Graphic Organiser — students were led through the instructional sequence suggested by Chamot and O' Malley (1990) which is portrayed in the Figure 1.
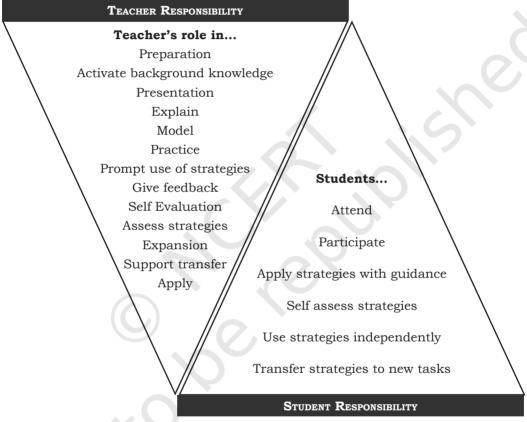

Fig.1: CALLA Instructional Sequence

CALLA Instructional Sequence

The five phases recursive instructional cycle of CALLA is Preparation, Presentation, Practice, Self-evaluation, and Expansion are explained below.

Stage 1— Preparation

The purpose of this phase was to help students to elicit their prior knowledge about the use of learning strategies and identify the strategies they are already using in order to develop

their meta-cognitive awareness. The teacher explains the importance of meta-cognitive strategies and helps the students to set the goals of the learning task and time needed to accomplish the learning task.
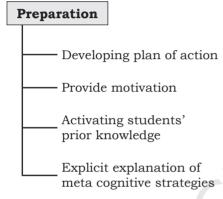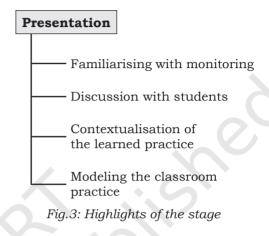
The highlight of this stage is depicted in Figure 2.

Fig. 2: Preparation Stage

Stage 2 — Presentation

The second stage, namely 'presentation' comprises of demonstrations of the particular classroom practice before the learners. Modeling and discussion, application of the practice explicitly through examples are the core features of this stage. The use of graphic organiser in varied learning contexts, ways for monitoring the classroom practice, and evaluation of effectiveness of the meta-cognitive classroom practices were illustrated

through specific examples from the content material. The highlight of the stage is portrayed in Figure 3.

Fig.3: Highlights of the stage

Stage 3 — Practice

During the third phase 'practice', learners are divided into groups and are immersed in the experience with sequenced instruction. There were opportunities to practice new information and skills in a variety of ways by involving the spontaneous contribution of ideas from all members of the group. This stage envisages opportunities for students to practice using the strategy with regular classroom discourses. The highlights of this stage are given in Figure 4.
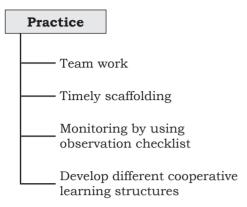
Practice

— Team work

— Timely scaffolding

— Monitoring by using observation checklist

— Develop different cooperative learning structures

Fig. 4: Highlights of Practice Stage

Stage 4. Self-evaluation

This phase stands out as one of the most comprehensive parts of the learning cycle and it captures the relevance of the instructional practice to be followed and its effectiveness in a contextual setting. The main set target of this phase was to provide students with opportunities to evaluate their own success and strengthen their insights through developing their meta-cognitive awareness. Debriefing discussions and sharing of thei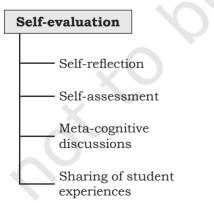r recorded learning experiences enable the learners to develop insights about the appropriateness of the select classroom practice. The major components included in this stage are shown in the Figure 5.

Stage 5. Expansion

This final phase really meant for the transfer of skills learned in a particular learning context to another new situation. Learners are in a position to extend the usefulness of classroom practices by applying it to new contexts and devise their own individual combinations with regard to the pictorial representations of ideas and interpretations of the select meta-cognitive classroom practice. The points inculcated in this stage is given in Figure 6.

Expansion

— Self-motivation

— Transfer of learning

— Awareness abut the strategy use

— Independent use of practices

Fig. 6: Highlights of Expansion Stage

Self-evaluation

— Self-reflection

— Self-assessment

— Meta-cognitive discussions

— Sharing of student experiences

Fig. 5: Highlights of Self-evaluation Stage

2. Meta-cognitive Awareness Rubric

Rubric is a particular format used to assess with a deeper view into a wide range of student performances. In the context of the present study, a meta-cognitve awareness rubric was

developed. The rubric was analytical in nature as it was designed to provide data regarding specific expectations and give specific descriptors that clearly outline what is needed for a higher level of performance. The different stages involved in the construction of the Rubrics are detailed below.

The investigator prepared a checklist that provides a clear vision about the learners having deeper awareness about the components of meta-cognition. Administration of the checklist enabled to list the criteria to be included in the rubric to assess the meta-cognitive awareness. The criteria are demarcated as Planning, Monitoring and Evaluation. Planning includes ability to set goals, schematic modulation of time and resources, prioritisation of objectives, selecting the strategy and the like. Periodical reviews and checking progress in learning, evaluating the effectiveness of the strategy are embedded in 'Monitoring' criteria. Reflection and summarisation, debriefing, meta-cognitive discussions come under the category of 'Evaluation' After determining the criteria to be evaluated, the point scale for the rubric was decided. Accordingly, the scale ranging from 1 to 4 was selected. The strongest performance level was given a score of 4 and the weakest performance lever was given 1. The performance descriptors for the various levels were chosen

as: Exceeds Expectations, (EE) Meet Expectations (ME) Partially Meet Expectations (PME) and Does not Meet Expectations (DME). EE demonstrates detailed explanation regarding the criteria. ME demonstrates good awareness. PME demonstrates some awareness. DME demonstrates limited or poor awareness about the criteria evaluated. The descriptors for each level of quality were developed starting from the highest level of quality to the lowest. 'Yes' response for all elements related to each component could be summed across the total instrument to obtain overall rating on the goals decided earlier.

Evaluating Effectiveness

The draft rubric initially prepared was validated during this phase through pilot test on a sample of 80 students at secondary level selected at random.

Validating the Rubric

In order to ensure the trustworthiness of the rubric, it was given to a select panel of experts from the field of language teaching and the authenticity of the rubric was checked in terms of clarity of components, comprehensiveness of the selected components utility and practicability, relevance of the meta-cognitive strategy instruction.

3. Achievement Test on Language Learning

A test was administered on the selected sample of the students to find out their academic achievement (pre and post test).

Procedure adopted for the study

Phase 1 — Collecting students' self reports on their meta-cognitive awareness. (Meta-cognitive Awareness Rubric)

Phase 2 — Finding out the effectiveness of intervention procedures in heightening the academic achievement and meta-cognitive awareness of students at secondary level.

Phase 3 — Assessing the academic achievement and meta-cognitive awareness of students after the implementation of intervention practices.

The first phase was meant for seeking responses from selected sample of students with regard to their meta-cognitive awareness. This phase was meant for assessing the stylistic strands of meta-cognitive awareness— planning, monitoring and evaluating, through the administration of a rubric. The investigator administered a pre test to all the selected students.

After administering a pre-test, the researcher implemented explicit instruction on classroom practices interlinked with the components of meta-cognition to the students in the intervention group and activity oriented instruction to the control group. At the end of the treatment, a post-test was administered over each group. In the next phase, a post-test on academic achievement and meta-cognitive awareness was administered to the select groups in order to assess the effectiveness of the select meta-cognitive classroom practices on the academic achievement of Malayalam language at secondary level.

ANALYSIS AND INTERPRETATION OF DATA

(a) Descriptive statistics of pretest and post-test achievement scores of total students selected for the study

This section throws light on the effectiveness of the select classroom practice 'Graphic Organiser' on the academic achievement in Malayalam language of the total sample of students selected for the study. The descriptive statistics of pre and post test achievement scores of experimental and control group were found out and described in Table 1.

Table 1: Pretest and Post-test Achievement Scores of the Students in Experimental and Control Group

variable	group	N	AM	SD	SE	LCL	UCL
Pretest	Control	83	4.33	1.83	0.20	3.93	4.72
	Expt.	82	4.78	2.24	0.25	4.29	5.27
Post-test	Contl	83	9.17	1.83	0.20	8.77	9.57
	Expt.	82	22.30	4.54	0.50	21.31	23.00

From Table 1, it is understood that the pretest achievement scores in the control group have AM 4.33 with SD 1.83. The SE value is 0.20 which is very small indicating that the sample AM is approximately equal to the population mean. Experimental group have AM 4.78 with SD 2.24. The SE value is 0.25 which is very small indicating that the sample AM is approximately equal to the population mean. For the control group, the 95% confidence interval varies from 3.93 to 4.72 and for the experimental group it is from 4.29 to 5.27. The post test achievement scores in the control group have AM 9.17 with SD 1.83. The SE value is 0.20 which is very small indicating that the sample AM is approximately

which is very small indicating that the sample AM is approximately equal to the population mean. For the control group, the 95% confidence interval varies from 8.77 to 9.57 and for the experimental group it is from 21.31 to 23.30.

(b) Comparison of pretest and post-test achievement scores of experimental and control group using ANOVA

ANOVA was carried out to find out whether there is any significant difference between pretest and post-test achievement scores of experimental group who was exposed to the GO practice and the control group who were exposed to the activity-oriented modes of curriculum transaction in Malayalam language learning.

Table 2: ANCOVA of Post-test Achievement Scores by eliminating the Effect of Pretest Achievement Scores

variable	SV	SS	df	MSS	F	P
Pretest	BV	8.55	1	8.55	2.05ns	0.15
	WV	680.27	163	4.17		
	T	688.81	164			
Post test	BV	7117.83	1	7117.83	596.50**	<0.01
	WV	1945.02	163	11.93		
	T	9062.85	164			
ns: not significant (P>0.05), **: significant at 1% level (P<0.01)						

equal to the population mean. Experimental group have AM 22.30 with SD 4.54. The SE value is 0.50

ANOVA shows that the experimental and control groups do not differ significantly in their pre-

test achievement scores. (F=2.05, p=0.15>0.05) The experimental and control group differ significantly in their post-test achievement scores (F=596.50, P<0.01). This indicates that the experimental group performed much better than the control group and the G.O. practice is effective in improving students' academic achievement in Malayalam language.

(c) Genuineness of the difference in performance of the total students in experimental and control group IFI

The analysis of the post-test achievement scores of students in experimental and control groups revealed that the experimental

test achievement scores resulted from the experimental factor or from other intervening variables. So, it become necessary that the scores had to be analysed using the technique of analysis of co-variance (ANCOVA) for much more reliable results.

(d) Determining the effectiveness using ANCOVA

ANCOVA with pre-experimental status in achievement as co variate was employed to investigate the effectiveness of the Meta cognitive classroom practice, G.O in improving academic achievement of secondary school students over present activity oriented modes of curriculum transaction. The details are given in Table 3.

Table 3: Details of ANCOVA from Post-test Scores

variable	SV	SS	df	MSS	F	P
Adj. post test	BV	6920.42	1	6920.42	586.77**	<0.01
	wv	1910.63	162	11.79		
	T	8831.06	163			

**: Significant at 1% level (P<0.01), R squared=0.789(Adjusted R Squared=0.787)

group performed much better than the control group. But it cannot conclusively say that both the groups differ significantly by simply comparing the post-test achievement scores of the two groups. Since, it was highly inconvenient to sort out the students from different classes to form equated groups, the investigator selected intact class groups for experimentation. Hence, it was difficult to ascertain whether the difference between pretest and post-

ANCOVA shows that the experimental and control group differ significantly in the post-test achievement scores after eliminating the effect due to their initial pre test achievement scores (F=586.77, P<0.01). More over using the ANCOVA model 78.7% variation in the post test achievement scores can be explained (R Squared=0.789. (Adjusted R Squared=0.787). It can be inferred from the ANCOVA that the experimental group performed

better than the control group with respect to the academic performance of students at secondary level in their Malayalam language learning.

(e) Comparing the adjusted mean of experimental and control groups

An additional analysis was employed by estimating the Adjusted AM of post-test achievement scores of total students selected for the study after eliminating the effect due to pretest achievement scores. It is given in Table 4.

of pre test, post test and Adj. post test achievement scores of total students selected for the study is shown in Figure 7.
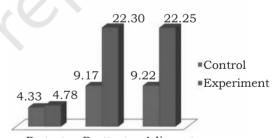
The graph indicates that the students who were exposed to the graphic organiser showed significant improvement in their academic achievement in Malayalam over their counterparts in the control group who were exposed to the prevailing activity oriented modes of curriculum transaction.

The obtained percentage of pre-scores of students from both control

Table 4: Analysis of Meta-cognitive Awareness of Secondary School Students

.Group	Adj.AM	SE	LCL	UCL
contl	9.22	0.38	8.47	9.97
expt	22.25	0.38	21.5	23.00

The Adj. AM of post test achievement scores of control group is 9.22 with SE 0.38 and 95% confidence interval ranges from 8.47 to 9.97.For experimental group Adj. AM of post test scores is 22.25 with SE 0.38 and 95% confidence interval ranges from 21.50 to 23. The result reveals that the obtained AM of experimental group is found greater than the corresponding AM of control group. It can be inferred from the result that the experimental group is better than the control group with regard to the post test achievement scores. The comparative bar diagram

Fig. 7: Comparitive statistics of pretest, post-test and adj. post-test achiement scores

and experimental groups having their meta-cognitive awareness levels at Exceeds Expectation (E.E), Meets Expectation (M.E) Partially Meets

Expectation (P.M.E), and Doesn't Meet Expectation(D.M.E) are described in the following Table 5.

for setting goals, identifying problems that might be encountered while learning, relevance of checking

Table 5: Percentage of Students under Different Compnents of Meta-cognition

Components of meta-cognition	No of high school students in %							
	EE		ME		PME		DME	
	Contl.	Exptal	Contl.	Exptal	Contl.	Exptal	Contl.	Exptal
Planning	Nil	Nil	3	4.00	14.00	16.00	83.00	80.00
Monitoring	Nil	Nil	2	3.00	8.00	10.00	90.00	87.00
Evaluation	Nil	Nil	1	3.00	3.00	3.00	96.00	93.00
Average	Nil	Nil	2	.33	8.33	9.66	89.66	86.6

Table 5 shows that the average percentage of learners of control group belong to DME, PME, ME and EE levels of performance with regard to the meta-cognitive awareness before the experiment is Nil, 2, 8.33 and 89.66 respectively and that of experimental group is Nil, 3.33, 9.66 and 86.66 respectively. The table also shows that none of the students are deserving the categorisation, EE of both control and experimental groups. A negligible proportion of students from both control and experimental groups (control group 2%, experimental group, 3.33 %) at high school level could be categorised as the strata, 'ME' on the select components of meta-cognition. Even though they face the difficulty in implementing the meta-cognitive strategies in their language learning context, they are aware of the need

progress periodically, need for evaluating the trustworthiness of the strategies used and the like. The table further reveals that few of both experimental and control group (control: 8.33%, experimental: 9.66 %) students could be categorised in the strata, 'PME' in terms of the set features. They exhibited some type of awareness about the components of meta cognition. The data also shows that majority of select sample of students from both control and experimental groups (control: 89.66 %, experimental: 86.66 %) belonged to the category, DME. They were categorised so because they were least confident and not at all aware about the meta-cognitive skills of Planning, Monitoring and Evaluating. Unless learners are actively and personally involved in the meta-cognitive phases in their learning,

there will be no effective outcome and they lack the opportunity for self direction and independence which are the contributors of authentic learning. The following table deals with the analysis of the post scores of total students with respect to their meta-cognitive awareness.

while participating in the classroom activities allowed the students to become more aware of their learning processes and equipped them to become more responsible for meeting their own learning needs. The closure activities focused on meta-cognitive discussions developed awareness

Table 6: Comparison of Post-test Scores of Experimental and Control Group Students w.r.t. their Meta-cognitive Awareness

Levels of performance	EE		ME		PME		DME	
	Contl.	Exptal	Contl.	Exptal	Contl.	Exptal	Contl.	Exptal
Planning	Nil	2	4	23	16	45	80	30
Monitoring	Nil	2	3	21	10	50	87	27
Evaluation	Nil	1	4	20	3	51	93	28
Average	Nil	1.66	3.66	.21.33	9.66	48.66	86.66	28.33

By referring to Table 6, it can be noted that there is no significant changes in the levels of learners in the control group. However, in the case of experimental group levels of learners under ME, EE, PME categories have increased considerably and the levels of learners under DME category have decreased. This was due to the impact of meta-cognitive classroom practices.

DISCUSSION OF RESULTS

The processes inculcated in the meta-cognitive classroom practices motivated the learners to consciously engaged in the learning process. This equipped them to handle the classes effectively with more confidence and it helped them to bump into difficulties with ease and deftness. Conscious engagement

about reviewing the procedures and highlighting the peculiarities of the classroom practice towards fulfilling the objectives. The study also found that the interactive sessions deployed in the select classroom practices namely, Graphic Organiser enabled the learners to recognise the need for budding and extending the repertoire of meta-cognitive processes towards gaining insights into their quality products of learning. The investigator made use of monitoring sheets towards attaining this objective in a clear way. The ongoing awareness of the learning task, periodical monitoring, allocating attention to important ideas and pointing out the informational ambiguities enabled the learners to become conscious about the learning process.

SUMMARY AND CONCLUSION

The new trends in innovative practices and instructional designs need to focus on the higher order forms of thinking which depict the process of learning rather than the product of learning. The 21st century demands lifelong learners who are keen in their learning process as well as their individual strengths and weaknesses. The overall aim of the present study was to find out the effectiveness of meta-cognition in the context of Malayalam language learning by employing meta-cognitive class room practices which focus on the pathways of effective learning. The explicit training in meta-cognition gives opportunities to observe, interact with peers and discuss the classroom practices with team mates and all of these creates a fundamental rhythm in language learning. The visual tools are relatively easy to implement and a rewarding element in the instructional practitioners' repertoire of skills with regard to curriculum transaction.

REFERENCES

Dymoke, Sue and Jennifer Harrison. 2010. R*eflective Teaching and Learning — A guide to professional issues for beginning secondary teachers.* SAGE Publications, New Delhi.

O'Malley, M.J. and A.U. Chamot. 1990. *Learning strategies in second language acquisition.* Cambridge University Press, Cambridge.

Smith, K.A. and S.D. Sheppard. 2005. Pedagogies of engagement: classroom based practices. *Journal of Engineering Education.* Vol. 94, pp. 87–101.

Solomon, P and A.E. Synder. 2012. The effect of Graphic Organisers and Content Familiarity on Second Graders' Comprehension of Cause/Effect Text. (Doctoral dissertation, Columbia university, USA).

Suarez, K. 2014. Graphic organisers and higher order thinking skills with non-fiction text. (Doctoral Dissertation, Waldon University, Minnesotta, USA. UMI number. 3482475.