SUMMARY AND CONCLUSIONS

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6.1 The study in Retrospect.

In this chapter, the investigator attempted to present the summary of the research work conducted and a brief discussion of the result obtained from the study in a systematic manner. The chapter concludes with a discussion of the recommendations and the possible implications for maximizing the learning output of secondary school students through activating the Meta cognitive dimensions of learning and giving due weightage to their varied learning preferences.

6.1.1 Statement of the problem

Since the focus of the study was to identify the effect of Meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving on Malayalam Language learners having varied learning preferences namely, Visual, Auditory and Kinesthetic, at secondary level, the problem under investigation was titled, “Effectiveness of Learning styles and Meta cognition upon the learning of Malayalam Language at secondary level”.

6.1.2 Variables enacted for the study

The independent variables considered in the study were:

1) Curriculum transactional modes based on
   a) Graphic Organizer
   b) Self-Questioning
   c) Problem Solving

2) Learning styles

3) Prevailing activity oriented modes of curriculum transaction.
The Dependent variables were:

- Academic achievement in Malayalam language.
- Awareness about Meta cognition.

6.1.3 Hypotheses of the study

The following hypotheses were formulated for the study.

1) The prevalent curriculum transactional modes of Malayalam language at secondary level are inadequate in enhancing Meta cognitive awareness among the secondary school students.

2) The select Meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving are better than the prevailing activity oriented modes of curriculum transaction in enhancing academic achievement of Malayalam language students at secondary level.

3) The select Meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving are better than the prevailing activity oriented modes of curriculum transaction in strengthening Meta cognitive awareness of students at secondary level.

4) Significant difference exists between the extent of effectiveness of select Meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving on the academic achievement of Malayalam language students having varied learning styles namely, Visual, Auditory and kinesthetic.
6.1.4 Objectives of the study

The study mainly focused on attaining the following objectives.

1) To identify the prevailing modalities of curriculum transaction in the learning of Malayalam language at secondary level with special reference to Meta cognitive classroom practices.

2) To find out the learning preferences of students at secondary level with special reference to their sensory modalities namely, Visual, Auditory and kinesthetic.

3) To find out the effectiveness of select Meta cognitive classroom practices namely Graphic Organizer, Self Questioning and Problem Solving on the academic achievement of Malayalam Language students at secondary level.

4) To find out the effectiveness of select Meta cognitive classroom practices namely Graphic Organizer, Self Questioning and Problem Solving on strengthening the Meta cognitive awareness of Malayalam Language students at secondary level.

5) To compare the effectiveness of select Meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving among the students at secondary level having varied learning style preferences namely, Visual, Auditory and kinesthetic.

6) To analyze the worthiness of the select Meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving in a natural setting through the administration of
a) Strategy Evaluation proforma.
b) Observational checklist
c) Collection of Linguistic Discourses
d) Student Generated Rubric

6.1.5 Methodology in brief

The present study attempted to empower the student folk at secondary school level with high academic achievement in Malayalam language and strengthened Meta cognitive awareness through the active implementation of select classroom practices in accordance with their varied learning preferences. For attaining the set objectives of the investigation both quantitative and qualitative methodology were adopted by the investigator. As a prelude to the study, a semi structured interview was administered over the experts in the field of Malayalam Language Education for getting a deep vision about the prevalent classroom practices with regard to the learning of Malayalam language. The quasi-experimental design with pre-test post test non equivalent group design was employed for the quantitative segment and a rubric on Meta cognitive awareness, collection of linguistic discourses, observational checklist and student generated rubric were adopted for the qualitative segment of the present study.

6.1.6 Tools and Techniques employed.

The tools and techniques employed for the present study were:

1) Interview schedule
2) Learning style inventory
3) Rubric on Meta cognitive awareness
4) Achievement Test on Malayalam language.
5) Lesson Design based on Graphic Organizer
6) Lesson Design based on Self Questioning
7) Lesson Design based on Problem Solving
8) Strategy Evaluation proforma based on the select Meta cognitive classroom practices namely Graphic Organizer, Self Questioning and Problem Solving.
9) Observational Checklist for the select Meta cognitive classroom practices namely Graphic Organizer, Self Questioning and Problem Solving.
10) Collection of Linguistic Discourses.
11) Student Generated Rubric.

6.2 Resume of findings

The major findings and conclusions of the study reciprocating the objectives formulated for the same have been classified and summarized below under the following heads.

Section 1- Conclusions arrived at from the assessment of the opinion of school practitioners and experts in the field of Malayalam language Education.

Section 2- Conclusions arrived at from the categorization of students at secondary level based on their learning preferences.

Section 3- Conclusions that emerged through the conduct of the experiment and the assessment of opinion of students at secondary level gathered through Strategy Evaluation Proforma, Collection of Linguistic Discourses, and conclusions obtained from Observational Checklists and Student Generated Rubric.
Section 1

This section presents a snapshot of the findings emerged from the assessment of opinions of school practitioners, and experts in the field of Malayalam language with regard to the prevalent classroom practices and the need for implementing meta cognitive experiences at secondary level. The major findings pertaining to this section are arranged as follows.

6.2.1 Assessment of opinions of school practitioners, and experts in the field of Malayalam language.

While analyzing the opinions of school practitioners and experts in the field of Malayalam language with regard to the meta cognitive classroom practices needed for developing meta cognitive awareness among the students, it was observed that the prevailing conditions and the classroom climate are not adequate to shore up the execution of Meta cognitive practices in the existing modes of curriculum transaction. The following findings were obtained.

Nearly all the school practitioners and experts (91%) were of the opinion that the learning experiences require some prominent elements towards the development of competence in Malayalam language learning in terms of communication skill, analytical mindfulness, and the need for practice towards making the learners conscious about their own learning process. They opined that the prevailing practices were not enough to stimulate Meta cognitive awareness of students at secondary level. Developing reflection, deeper exploration and giving opportunities for focused introspection are still in a stagnant mode. Almost all (92%) the teachers points out the constraints they are facing while attempting to internalize the Meta cognitive pattern in the classroom set up (vide Table 5.2). They
observed that the overcrowded classrooms and the dearth of needed time frames cause a great deal of hindrance in the pathways of this approach. Most of the experts (85%) favored the need for differentiated instruction towards activating the learning process and building a culture of appreciating diversity in the classroom. They were of the opinion that finding out students’ preferred learning style helps to identify possible challenges for a student in the particular learning content and accordingly design the instructional practices.

Even though majority of teachers are giving opportunity to conduct discussions, provide questioning time in the classrooms, attempt to visualize the information, they are not conscious about the Meta cognitive discussions and self reflections in a noteworthy manner. Considering the learning preferences of students, the classroom practices namely, Graphic Organizer, Self Questioning and Problem solving were generally favoured by the experts towards enriching the Malayalam language classroom. They were of the opinion that the process oriented approach enables the learners to make suitable links with their prior knowledge and the periodical checking of the learning outcome and self evaluation make them autonomous and confident learners in a meaningful way. The awareness about the specific achievable goals and targets enabled them to come up with new ideas and monitor their accomplishment in a sequential manner. A considerable number of teachers favoured the need for implementing monitoring activities in the classroom settings inorder to refresh the learning process(75%).

The experts participated in the interview discussed their views regarding the specificities of the learning procedures that learners may
prefer. They opined that some learners usually enjoy learning by inserting the information in a pictorial format such as diagrams and charts and learn and retain it through visualizing the same. Practice with Graphic Organizer satisfied the needs of such learners to a greater extent. It offered various techniques to categorize the needed information and there by strengthen them to think critically about the way they understood the information. Some learners liked discussions and discourses and to learn through listening activities. For them, verbal lectures and interpretation of information were the beneficial stimuli rather than written information. Self Questioning practices ensured them to structure a variety of oral output through engaging class discussions, asking and answering varied questions, dictating their ideas and the like. They opined that some learners prefer problem solving practices and they liked to get involved in solving a real problem in a creative way. They liked project works, making postures cartoons and hands on activities. From the observations the investigator concludes that differentiated instructional practices can be utilized for discovering varied strengths and talents of learners in a natural setting.

The above findings escort the conclusion that, the prevailing curriculum transaction modes of Malayalam language are not sufficient to strengthen the Meta cognitive awareness of the students in an appreciable manner. It calls for the dare need of active implementation of Meta cognitive classroom practices by considering the preferred learning modalities of students towards making them self directive and independent learners.
Section 2

6.2.2 Conclusions arrived at from the categorization of students in accordance with their preferred learning styles namely, Visual, Auditory and Kinesthetic.

The conclusion emerged from the categorization of students revealed that, they can be categorized in accordance with their sensory modalities namely, Visual, Auditory and Kinesthetic and it is substantiated by the following findings.

The data collected from the school practitioners and experts in the field of Malayalam language revealed that the identification of learning styles had a parallel correlation with the academic attainment of learners at secondary level. The instructional practices accompanied with the preferred learning style will produce a massive productivity in the learning process. As per the information collected through the Learning Style Inventory, it was found that around 34.67% of the students are Visual, who rely more on graphical representation of content material. The Inventory revealed that 34.8% of the students are Auditory who like to learn by discussion circles and lecturing and nearly 30.52% of learners are Kinesthetic who prefer to learn through practical experiences and hands on activities. (vide Table 5.4).

The above findings lead to the conclusion that, it is possible to categorize the students on the basis of the select learning styles namely, Visual, Auditory and Kinesthetic. It strongly advocates the need for presenting differentiated instructional practices and experiences in the language classroom for optimizing the learning output.
Section 3

6.2.3 Conclusions emerged from the comparison between the test scores of the experimental group 1 who were exposed to the meta cognitive classroom practice, Graphic Organizer and the test scores of control group who were exposed to the activity oriented modes of curriculum transaction.

6.2.3.1 The findings and conclusions emerged while analyzing the test scores obtained through the conduct of the experiment are detailed in the succeeding section.

While comparing the performances of total sample of students and the sub sample of students with respect to the learning styles namely, Visual, Auditory and Kinesthetic belonging to the experimental group 1 who were exposed to the meta cognitive classroom practice, Graphic Organizer and the test scores of control group who were exposed to the activity oriented modes of curriculum transaction, it was noted that students from the experimental group 1 exhibited an improvement in academic achievement in Malayalam language than their counterparts in the control group. The statistical results of the comparisons are given below.

While comparing the performances of the total sample of students belonging to the experimental group 1 who were exposed to the meta cognitive classroom practice namely, Graphic Organizer and the students in the control group who were exposed to the prevailing activity oriented modes of curriculum transaction (vide. Tables 5.5, 5.6, 5.7 & 5.8), it was found that the experimental and control groups differ in the post test achievement scores. The effect of the classroom practice, Graphic Organizer was statistically established through ANCOVA wherein F value obtained were statistically
significant. (F=586.77, P<0.01). The computation of the adjusted means of post test achievement scores of both control and experimental groups of the total sample of students (vide Table 5.8, Adjusted mean Exptal gp,22.5 and contl gp,9.22) showed that the Adj.AM of experimental group is higher than the Adj.AM of control group which implies that the meta cognitive classroom practice namely Graphic Organizer had a greater impact than the prevailing activity oriented modes of curriculum transaction of Malayalam language in enhancing academic achievement of students at secondary level.

**Comparison between the Visual students in experimental group 1 namely, Graphic Organizer and Visual students in control group.**

While comparing the academic achievement of Visual students belonging to the Graphic Organizer group and the Visual students in the control group (vide Table 5.11) it was found that the experimental group and control group differ in the post test achievement scores. The effect of the classroom practice, Graphic Organizer was statistically established through ANCOVA wherein F value obtained were statistically significant. (F=362.83, p<0.01). The computation of the adjusted means of post test achievement scores of both control and experimental groups of the total sample of students (vide Table 5.12, AM of exptal group, 27.22; control group, 9.45) showed that the Adj. AM of experimental group is higher than the Adj. AM of control group which implies that the meta cognitive classroom practice, Graphic Organizer had a greater impact on the academic achievement of Visual students than the prevailing activity oriented modes of curriculum transaction.
The efficacy of the Graphic Organizer was established through comparing the performance of Auditory students in the experimental group who were exposed to the meta cognitive classroom practice, Graphical Organizer and the Auditory students in the control group who were exposed to the prevailing activity oriented modes of curriculum transaction (vide Table 5.15). The effectiveness of G.O was statistically established through ANCOVA, wherein F value obtained were (F=518.98, p<0.01) statistically significant at 0.01 level. The computation of the adjusted means of post test achievement scores of Auditory students in both control and experimental group (vide Table 5.16, AM of exptal. group 20.28 & AM of control group 8.88) showed that the Adj.AM of experimental group is higher than the Adj.AM of control group which implies the efficacy of Graphic Organizer as a meta cognitive classroom practice on Auditory students with regard to their academic achievement in Malayalam language.

While comparing the performance of Kinesthetic students belonging to the Graphic Organizer group and the Kinesthetic students in the control group, it was found that the experimental and control groups differ significantly in the post test achievement scores by eliminating the pre test achievement scores of Kinesthetic students in experimental group 1 and Kinesthetic students in control group (vide Table 5.19, F=579.57, p<0.01) The computation of the adjusted means of post test achievement scores of Kinesthetic students in both control and experimental groups (vide Table 5.20, AM of exptal. group
19.09 & AM of control group 9.04) showed that the Adj. AM of experimental group is higher than the Adj. AM of control group which also implies the efficacy of Graphic Organizer as a meta cognitive classroom practice for heightening the academic achievement of Kinesthetic students than the prevailing activity oriented modes of curriculum transaction

The above results show that the select Meta cognitive classroom practice, Graphic Organizer had a significant effect on improving the academic achievement of secondary school students having varied learning styles. This leads to the conclusion that the select meta cognitive classroom practice has a tremendous effect in structuring, analyzing and retaining the information into meaningful schemes.

**Conclusions emerged from the comparison between the test scores of the experimental group 2 who were exposed to the classroom practice, Self Questioning and the test scores of control group who were exposed to the activity oriented modes of curriculum transaction.**

While comparing the academic achievement of total sample of students and the sub sample of students with respect to learning styles namely, Visual, Auditory and Kinesthetic belonging to the experimental group 2 who were exposed to the classroom practice, Self Questioning, and the test scores of control group who were exposed to the activity oriented modes of curriculum transaction, it was noted that students from the experimental group 2 exhibited an improvement in academic achievement in Malayalam language than their counterparts in the control group. The statistical results of the comparison are given below.

While comparing the performances of the total sample of students belonging to the experimental group 2 who were exposed to
the meta cognitive classroom practice namely, ‘Self Questioning’ and the students in the control group who were exposed to the prevailing activity oriented modes of curriculum transaction (vide Tables 5.21, 5.22, 5.23 & 5.24), it was found that the experimental and control groups differ in the post test achievement scores. ANCOVA shows that the students in the experimental group and the students in the control group differ significantly in their post test achievement scores after eliminating the effect due to their initial pre test scores (F=753.60, P<0.01). The computation of the adjusted means of post test achievement scores of both control and experimental groups (vide Table 5.24, Adjusted mean experimental group, 21.05 and control group, 9.20) showed that the Adj.AM of experimental group is higher than the Adj.AM of control group which implies that the meta cognitive classroom practice namely Self Questioning had a greater impact on experimental group than the prevailing activity oriented modes of curriculum transaction of Malayalam language in enhancing academic achievement of students at secondary level.

**Comparison between the Visual students in experimental group 2, namely Self Questioning and Visual students in control group.**

While comparing the academic achievement of Visual students belonging to the Self Questioning group and the Visual students in the control group (vide Table 5.27), it was found that the experimental group and control group differ significantly in the post test achievement scores after eliminating the effect due to their initial pre test scores (F=372.33, p<0.01). The computation of the adjusted means of post test achievement scores of Visual students in both control and experimental groups (vide Table 5.28, AM of exptal. group, 19.10; control group, 9.62) showed that the Adj.AM of experimental group is higher.
than the Adj.AM of control group which implies that the meta
cognitive classroom practice, Self Questioning had a greater impact
on the academic achievement of Visual students than the prevailing
activity oriented modes of curriculum transaction.

Comparison between the Auditory students in experimental group 2
namely, Self Questioning and Auditory students in control group.

The efficacy of the Self Questioning was also statistically
established through comparing the performance of Auditory students
in the experimental group 2 who were exposed to the meta
cognitive classroom practice, Self Questioning and the Auditory
students in the control group who were exposed to the prevailing
activity oriented modes of curriculum transaction after eliminating
the effect due to their initial pre test scores (vide Table 5.31,
F=629.29, p<0.01). The computation of the adjusted means of post
test achievement scores of Auditory students in both control and
experimental groups (vide Table 5.32, AM of exptal. group 24.99
&AM of control. group 8.94) showed that the Adj.AM of
experimental group is higher than the Adj.AM of control group
which implies the efficacy of Self Questioning as a meta cognitive
classroom practice on Auditory students with regard to their
academic achievement in Malayalam language.

Comparison between the Kinesthetic students in experimental
group 2 namely, Self Questioning and Kinesthetic students in
control group.

While comparing the performance of Kinesthetic students
belonging to the Self Questioning group and the Kinesthetic students
in the control group, it was found that the experimental and control
groups differ significantly in the post test achievement scores after
eliminating the effect due to their initial pre test scores (vide Table 5.35, F=690.07, p<0.01). The computation of the adjusted means of post test achievement scores of Kinesthetic students in both control and experimental groups (vide Table 5.36, AM of exptal.group 19.06 & AM of control group 9.02) showed that the Adj.AM of experimental group is higher than the Adj.AM of control group which also implies the efficacy of Self Questioning as a meta cognitive classroom practice for heightening the academic achievement of Kinesthetic students than the prevailing activity oriented modes of curriculum transaction.

The above results show that the select Meta cognitive classroom practice, Self Questioning had a significant effect on improving the academic achievement of secondary school students having varied learning styles. The findings led the investigator to conclude that, the select classroom practice could build a structural format capable of incorporating differentiated patterns of questions and could thereby enable them to trigger and scaffold their thinking towards promoting greater academic achievement.

**Conclusions emerged from the comparison between the test scores of the experimental group 3 who were exposed to the classroom practice, Problem Solving and the test scores of control group who were exposed to the activity oriented modes of curriculum transaction.**

While comparing the academic achievement of the total sample of students and the sub sample of students with respect to learning styles namely, Visual, Auditory and Kinesthetic belonging to the experimental group 3 who were exposed to the meta cognitive classroom practice, Problem Solving, and the test scores of control group who were exposed to the activity oriented modes of curriculum
transaction, it was noted that students from the experimental group exhibited an improvement in academic achievement in Malayalam language than their counterparts in the control group. The statistical results of the comparisons are given below.

While comparing the performances of the total sample of students belonging to the experimental group who were exposed to the meta cognitive classroom practice namely, ‘Problem Solving’ and the students in the control group who were exposed to the prevailing activity oriented modes of curriculum transaction (vide. Tables 5.37,5.38,5.39&5.40), it was found that the experimental and control groups differ significantly in the post test achievement scores after eliminating the effect due to their initial pre test scores (F=720.23, P<0.01). The computation of the adjusted means of post test achievement scores of Kinesthetic students in both control and experimental groups (vide Table 5.40, Adjusted mean exptal.gp 20.98 and contl gp 9.22) showed that the Adj. AM of experimental group is higher than the Adj. AM of control group which implies that the meta cognitive classroom practice namely Problem Solving had a greater impact on experimental group than the prevailing activity oriented modes of curriculum transaction of Malayalam language in enhancing academic achievement of students at high school level.

**Comparison between the Visual students in experimental group 3, Problem Solving and Visual students in control group.**

While comparing the academic achievement of Visual students belonging to the Problem Solving group and the Visual students in the control group (vide Table 5.43), it was found that the experimental group and control groups differ significantly in the post test achievement scores (F=274.84,p<0.01). The computation of the adjusted means of post test
achievement scores of Visual students in both control and experimental groups (Vide Table 5.44, AM of exptal. group, 19.15; control group, 9.60) showed that the Adj.AM of experimental group is higher than the Adj.AM of control group which implies that the meta cognitive classroom practice, Problem Solving, had a greater impact on the academic achievement of Visual students than the prevailing activity oriented modes of curriculum transaction.

**Comparison between the Auditory students in experimental group 3, Problem Solving and Auditory students in control group.**

The efficacy of the ‘Problem Solving’ was also statistically established through comparing the performance of Auditory students in the experimental group 3 who were exposed to the meta cognitive classroom practice, Problem Solving, and the Auditory students in the control group who were exposed to the prevailing activity oriented modes of curriculum transaction after eliminating the effect due to their initial pre test scores (vide Table 5.47, $F=579.86, p<0.01$). The computation of the adjusted means of post test achievement scores of Auditory students in both control and experimental group (vide Table 5.48, AM of exptal. group 19.40 & AM of control group 8.94) showed that the Adj.AM of experimental group is higher than the Adj.AM of control group which implies the efficacy of Problem Solving as a meta cognitive classroom practice on Auditory students with regard to their academic achievement in Malayalam language.

**Comparison between the Kinesthetic students in experimental group 3, Problem Solving and kinesthetic students in control group.**

While comparing the performance of Kinesthetic students belonging to the Problem Solving group and the Kinesthetic students in
the control group, it was found that the experimental and control groups differ significantly in the post test achievement scores after eliminating the effect due to their initial pre test scores (vide Table 5.51, F=391.79, p<0.01). The computation of the adjusted means of post test achievement scores of Kinesthetic students in both control and experimental groups (vide Table 5.52, AM of exptal group 24.12 & AM of contrl. gp 9.14) showed that the Adj. AM of experimental group is higher than the Adj. AM of control group which also implies the efficacy of Problem Solving as a meta cognitive classroom practice for heightening the academic achievement of Kinesthetic students than the prevailing activity oriented modes of curriculum transaction.

The above results also show that the select meta cognitive classroom practice, Problem Solving had a significant effect on improving the academic achievement of secondary school students having varied learning styles. It lead to the conclusion that, the select meta cognitive strategy has a positive impact on captivating students’ attention to solve problems and developing analytical thinking among them.

Thus it can be inferred that the select meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving are beneficial for students having varied learning style preferences. Thus the experimental findings mentioned above conclusively point towards the fact that the select classroom practices are superior to the prevailing activity oriented modes followed in the secondary school sector for improving the academic achievement in Malayalam Language learning.
6.2.3.2 Conclusions arrived at from the self assessment of secondary school students with regard to their Meta cognitive awareness

This section throws light on the outcome of the findings that emerged from the self assessment of students at secondary school level with regard to the extent of their awareness on Meta cognition.

The average percentage of the learners of control group belong to D.M.E,P.M.E,M.E, and E.E levels of performance with regard to the meta cognitive awareness before the experiment was Nil,2,8.33 and 89.66 respectively and that of experimental group was Nil,3.33,9.66 and 86.66 respectively (vide Table 5.53). The table shows that none of the students in experimental and control group deserved the categorization, ‘Exceeding Expectation’ with regard to the selected components of meta cognition namely Planning, Monitoring, and Evaluation. A negligible proportion of students from both control and experimental groups (control group 2%, experimental group, 3.33 %) at high school level could be categorized in the strata, ‘Meet Expectations’ on the select components of Meta cognition. The table further reveals that few of both experimental and control groups (control: 8.33%, experimental: 9.66 %) students could be categorized in the strata, ‘Partially Meet Expectations’ in terms of the set features. The data also shows that majority of the selected sample of students from both control and experimental groups (control: 89.66 %, experimental: 86.66 %) belonged to the category, ‘Doesn’t Meet Expectations’.

After the intervention, the variations in the attainment level of meta cognitive awareness of secondary school students were found out by re administering the meta cognitive awareness rubric to both control and experimental groups selected for the study. Referring the
Table 5.54, it is understood that there is no significant changes in the levels of learners with regard to the meta cognitive awareness in the control group. They didn’t show any clear pattern of remarkable difference in the attainment of meta cognitive awareness with regard to the set components namely, Planning, Monitoring and Evaluating. But in the case of experimental group, levels of learners under M.E, E.E P.M.E categories have increased considerably and the levels of learners under D.M.E category have decreased with respect to their meta cognitive awareness. A small proportion of students in experimental group (28.33 %) got categorized under the lowest level of meta cognitive awareness, namely, ‘Doesn’t Meet Expectation’ level. In comparison with the pre scores on Rubric, the post scores of experimental group on the P.M.E, M.E levels too showed an increase in the confidence level with regard to the varied components of Meta cognition. The rubric also revealed that a small proportion of students ( 1.66 % ) could rise to the E.E level and they showed a high degree of confidence in the selected area of meta cognition.

The findings reveal the efficacy of the select Meta cognitive classroom practices for strengthening the Meta cognitive awareness of students at secondary level. It lead to the conclusion that incorporation of Meta cognitive components in the usual classroom practices are beneficial for making them conscious about the learning procedures and strengthen their meta cognitive abilities in a lively manner.

The next section deals with the conclusions derived from the comparison between the extent of effectiveness of the select meta cognitive classroom practices on the academic achievement of students having varied learning style preferences.
Conclusions derived from the comparative effectiveness of the select Meta cognitive classroom practices on students having varied learning styles

The statistical analysis of the study reveals the effectiveness of the select Meta cognitive practices in enhancing the academic achievement of students at high school having varied learning styles. This section intends to find out the comparative effect of the select practices namely, Graphic Organizer, Self Questioning and Problem Solving on the academic achievements of students having varied learning style preferences like, Visual, Auditory and Kinesthetic.

In order to find out which among the select meta cognitive classroom practices could exhilarate the academic achievement in Malayalam language of students having varied learning styles at secondary level, a cross comparison of the test scores of the three experimental group have been carried out and the findings are given below.

Comparative effectiveness of the select meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving on Visual students.

While analyzing the comparative effect of the select meta cognitive classroom practices, namely, Graphic Organizer, Self Questioning and Problem Solving on the academic achievement of Visual students it is revealed that, the three experimental groups differ significantly in the post test achievement scores after eliminating the effect due to their initial pre test achievement scores (F=87.04, P<0.01) (Vide Table 5.57). The adjusted AM of post test achievement scores of Visual students who were exposed to the three experimental treatment showed differences (Vide Table 5.58, AM of G.O 27.07; AM of S.Q 19.13 & AM of P.S 19.16) in
their academic achievement in Malayalam language which implies that the three select classroom practices have varied impact on the Visual students in the learning of Malayalam language. In addition to the above analysis, LSD test was also administered for comparing the extent of effectiveness of the select classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving for enhancing the academic achievement in Malayalam language learning of Visual students at secondary level. The results show that the effect of meta cognitive classroom practices, Self Questioning and Problem Solving do not differ significantly where as the effect of ‘Graphic Organizer’ differ significantly from the other two classroom practices (vide Table 5.59, MD 7.94, 7.91 & -0.03, P<0.01, P<0.01 & P>0.05 respectively). It is also revealed that the select classroom practice, Graphic Organizer has a strong impact on Visual students than the other two meta cognitive classroom practices namely, Self Questioning and Problem Solving. It can be concluded that Visual students can easily absorb and retain the information in a greater amount through the active implementation of graphic organizers in a particular learning context.

Comparative effectiveness of select Meta cognitive classroom practices namely Graphic Organizer, Self Questioning and Problem Solving on Auditory students

While analyzing the comparative effect of the select meta cognitive classroom practices, namely, Graphic Organizer, Self Questioning and Problem Solving on the academic achievement of Auditory students it is revealed that, the three experimental groups differ significantly in the post test achievement scores after eliminating the effect due to their initial pre test achievement scores (F=49.89,
P<0.01) (Vide Table 5.62). The adjusted AM of post test achievement scores of Auditory students who were exposed to the three experimental treatment showed differences (Vide Table 5.63, AM of G.O 20.23; AM of S.Q 25.01; & AM of P.S 19.42) in their academic achievement in Malayalam language which implies that the three select classroom practices have varied impact on the Auditory students in the learning of Malayalam language. In addition to the above analysis, LSD test was also administered for comparing the extent of effectiveness of the select classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving for enhancing the academic achievement in Malayalam language learning of Auditory students at secondary level. The results show that the effect of meta cognitive classroom practices, Graphic Organizer and Problem Solving do not differ significantly where as the effect of ‘Self Questioning’ differ significantly from the other two meta cognitive classroom practices(vide Table 5.64, MD -4.78, 0.81 & 5.59, P<0.01, P > 0.05 & P<0.01 respectively). It is also revealed that the select meta cognitive classroom practice, Self Questioning has a strong impact on the Auditory students than the other two meta cognitive classroom practices namely, Graphic Organizer and Problem Solving. It can be concluded that Auditory students can retain the information in a greater amount through creating a learning space consisted of activities like discussion bonds, question answer sessions, varied forms of brainstorming activities and the like.

Comparative effectiveness of the select Meta cognitive classroom practices namely Graphic Organizer, Self Questioning and Problem Solving on Kinesthetic students

While analyzing the comparative effect of the select meta cognitive classroom practices, namely, Graphic Organizer, Self
Questioning and Problem Solving on the academic achievement of Kinesthetic students, it is revealed that, the three experimental groups differ significantly in the post test achievement scores after eliminating the effect due to their initial pre test achievement scores ($F=31.42$, $P<0.01$) (Vide Table 5.67). The adjusted AM of post test achievement scores of Kinesthetic students who were exposed to the three experimental treatment showed differences (Vide Table 5.68, AM of G.O 19.21; AM of S.Q 19.18 & AM of P.S 24.21) in their academic achievement in Malayalam language which implies that the three select classroom practices have varied impact on the Kinesthetic students in the learning of Malayalam language.

In addition to the above analysis, LSD test was also administered for comparing the extent of effectiveness of the select classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving for enhancing the academic achievement in Malayalam language learning of Kinesthetic students at secondary level. The results show that the effect of meta cognitive classroom practices, Graphic Organizer and Self Questioning do not differ significantly where as the effect of ‘Problem Solving’ differ significantly from the other two meta cognitive classroom practices (vide Table 5.69 , MD 0.03, -5.00, -5.03 $P>0.05, P<0.01, P<0.01$ respectively). It is also revealed that the select Meta cognitive classroom practice, Problem Solving showed a strong impact on kinesthetic students than the other two Meta cognitive classroom practices namely, Graphic Organizer and Self Questioning. It can be concluded that Kinesthetic students can easily recall and retrieve information in a greater amount through collaborative learning, hands on experiences, learning by doing activities etc.
Conclusions arrived at from the analysis of the results obtained from Strategy Evaluation Proforma, Collection of Linguistic Discourses, Observational Checklists and Student Generated Rubric.

The findings obtained through this study are supplemented by the analysis of the results obtained from Strategy Evaluation Proforma, Collection of Linguistic Discourses, Observational Checklists and Student Generated Rubric.

Conclusions arrived at from the analysis of the results obtained from the Strategy Evaluation Proforma administered to the students in the experimental group 1 who were exposed to the meta cognitive classroom practice, ‘Graphic Organizer’.

The results obtained from the administration of Strategy Evaluation proforma revealed that almost all the students (82%) exposed to the practice Graphic Organizer were of the view that this practice has helped them to focus on the information and prioritize them into different forms (vide Table 5.70). They were of the opinion that (93%) this classroom practice helped them to understand the relationships among ideas and concepts which automatically led them to the retention and mastery of content material. Among the participants, 90% of learners viewed the cognitive and Meta cognitive discussions as a way for expanding the knowledge about the content and the process of learning. The findings led to the conclusion that the select practice is better than the prevailing activity oriented modes of curriculum transaction in enhancing the academic achievement of Malayalam language at secondary level. The findings lead to the conclusion that the transfer of textual learning context to a more visual learning context results in more positive effects in learning outcome and acts as a catalyst for retrieving information in an organized set up.
Conclusions arrived at from the analysis of the results obtained from the Strategy Evaluation Proforma administered to the students in the experimental group 2 who were exposed to the meta cognitive classroom practice, ‘Self Questioning’.

The analysis of the responses of students who were exposed to the meta cognitive classroom practice namely, Self Questioning revealed the efficacy of this classroom practice towards heightening their academic achievement in Malayalam and strengthening meta cognitive awareness to a greater extent (vide Table 5.71). The students (90%) opined that carefully constructed questions helped them to develop confidence and stimulate interest in generation of questions and they could use their strengths as building blocks for their increased effectiveness. They were of the opinion that providing generic question stems and signal words encouraged them to think more deeply and to make new connections in learning. Among the respondents, most of them (82%) agreed that self questioning serves as a fundamental tool for self checking about what they have learned and this feedback optimized the learning that acts as a merit of scholarship. Most of the learners (95%) were of the opinion that group discussions and thoughtful interactions enabled them to expand and clarify the questions cited by peers in the classroom. Most of the students (92%) were of the opinion that Meta cognitive discussions enabled them to check the worthiness of the classroom practice in a fruitful manner. The findings lead to the conclusion that self questioning practices can enhance monitoring power and employ self corrective methods towards producing better outcome in learning.
Conclusions arrived at from the analysis of the results obtained from the Strategy Evaluation Proforma administered to the students in the experimental group 3 who were exposed to the meta cognitive classroom practice, ‘Problem Solving’.

The responses gathered through the administration of Strategy Evaluation Proforma on Problem Solving indicate that almost all the students who were exposed to the meta cognitive classroom practice, Problem Solving (90%) were benefited from the meta cognitive discussions incorporated in the classroom practice (vide Table 5.72). 75% of students opined the worthiness of this type of classroom practices towards cultivating the needed Meta cognitive strategies among them. 89% of learners were of the view that the meta cognitive prompts made them focus on the frameworks towards reaching the completion of the assigned task. Among the students participated in the study, 80% highlighted the diversified components for delivering a creative output with respect to the content taught. The above findings lead to the conclusion that orchestration of meta cognitive skills and prompts threaded in the instructional settings could accelerate academic achievement and meta cognitive awareness of students.

Conclusions arrived at from the analysis of the results obtained from the collection of Linguistic Discourses with regard to the effect of the select meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving.

The in depth analysis of the students’ experiences with regard to the effectiveness of meta cognitive classroom practices provided a space to rethink about the urgent need for implementing such classroom experiences to the students. Cultivating a habit of meta cognitive mindfulness strongly influenced the students and striven their intellectual capabilities in a fruitful mode. The positive statements
evoked from the students who were exposed to the meta cognitive classroom practices throws light on the richness of the transaction modes in the learning of Malayalam language (vide Table 5.73). Students categorized on the basis of their academic performances namely, above average, average and below average indicate the peculiarities of these designated mechanisms for improving achievement and enhancing self efficacy in a noticeable manner. They also highlighted the innovative trends and practices inculcated in the cooperative learning settings, enormous impact of explicit instruction towards internalizing the concepts and praised the instances of planning, monitoring and evaluating the learning task with confidence and enthusiasm. They also showed an interest towards integrating these sequential frameworks into varied disciplines. All of these experiences target to the active implementation of meta cognitive classroom practices in the secondary school set up. It can be concluded that meta cognitive classroom practices have the capacity to guide and empower learners’ introspective awareness and control of their mental processes.

Conclusions arrived at from the analysis of the data collected through the Observational Checklist administered during the meta cognitive classroom practice on Graphic Organizer.

The data collected from the Observational Checklist revealed that majority of the students (89%) were benefited from the meta cognitive classroom practice, Graphic Organizer to a greater extent. (Vide Table 5.74). The investigator felt that a considerable proportion of students used pictorial representations in an appropriate manner and these clear, crisp and well designed ways of presenting the ideas allowed them to organize information and stay focused on the content material (60%). Majority of students (60%) made clear designs and used colors
and highlighters effectively for clarifying the emphasis of ideas. They pick and choose the most appropriate type of graphic organizer for the accomplishment of the purpose. They tried to incorporate their own words when summarizing the information presented in an organizer. The investigator adjudged that the students became aware of multiple graphic organizers and its contextual use by determining the characteristics of each select organizer. It can be concluded that the classroom practice on Graphic Organizer has a heightened impact on creating and cultivating dynamic interactions among the learners and uplifting academic achievement in a progressive manner.

Conclusions arrived at from the analysis of the data collected through the Observational Checklist administered during the meta cognitive classroom practice on Self Questioning.

The responses gathered through the administration of Observational Checklist revealed that majority of students were able to become pitching the content questions appropriately and sequencing them in an orderly format (70%). They were also made able to link their previous knowledge towards creating focused questions related to the content material (Vide Table 5.75). Majority of students (71%) maintained attention and interest in the process of asking and answering self generated questions within the goal frames. Developing contingent questions led them to a logical conclusion or target answer and the initial questions elicited from the students opened up a way for posing subsequent questions. Among the students, 75% were able to present the self generated questions in a confident manner. It can be concluded that Self Questioning practice could build a facilitative atmosphere towards developing children’s expressive ability in language and their independent level of verbal interaction.
Conclusions arrived at from the analysis of the data collected through the Observational Checklist administered during the Meta cognitive classroom practice on Problem Solving.

The observations collected through the checklist revealed the fact that among the participants, 65% of students have showed clear sense of understanding and conceptual clarity about the particular problem selected for the study. Majority of the students (60%) selected for the study highlighted the subthemes by utilizing the Meta cognitive prompts and synthesized them with specificity. With regard to the persuasive language, 63% of students followed the stipulated format for carrying out the assigned task and were able to write it in an entertaining mode. The investigator felt that most of the students (70%) were actively engaged in this type of classroom practice and also noticed their modes of interaction (Vide Table 5.76). The conclusion derived from the analysis of the observational checklists is that Meta cognitive classroom practices can be implemented in natural classroom settings and it requires a non-threatening atmosphere where in the learners can actively engage in the learning process.

Conclusions arrived at from the analysis of the observations obtained through the implementation of Student Generated Rubric.

In order to familiarize the process of self-evaluation through developing a shared vision and rich information pertaining to the process, the investigator scaffold the students to create a framework on generating a rubric which includes varied levels of quality performances with regard to the particular learning task. This type of assessment is a part of self-regulated learning strategies and enabled the learners to build a comprehensive outlook for judging and validating the learning outcome. Table 5.77 provided a bird’s eye
view with respect to the creation of a student generated rubric. Most of the students actively participated in this process. Framing appropriate levels of quality descriptors also equipped them to cultivate self confidence and self regulated behavior. This sense of self efficacy creates motivation to become thoughtful judges of the learning task and strived to perform and maintain a deeper engagement in the process of learning. The conclusion derived from this experience is that inviting students to develop their own evaluation structure improve motivation, interest and performance in the learning task.

All the above findings gathered through the quantitative and qualitative techniques spot towards the conclusion that, the select Meta cognitive classroom practices can substantially enhance the academic accomplishment and strengthen the meta cognitive awareness of secondary school students having varied learning styles.

6.3 Summary of Conclusions.

The study revealed the fact that the select sample of secondary school students having varied learning style preferences were found to lack in the essential meta cognitive skills needed for the enhancement of language learning. The study found out that the select meta cognitive classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving acted as channels for the improvement of academic achievement and Meta cognitive awareness of students. The Meta cognitive processes solicited the composition of a narrative plan of action and sequential modes of monitoring and evaluating the learning process.

The select component of meta cognition, ‘Planning’ embodies a bunch of activities like goal setting, selection of strategies, allocating
time and resources towards achieving the learning outcome. Activating prior knowledge and selective attention also belonged to the boundary of this phase. The next component, ‘Monitoring’ focused on stimulating learners’ thinking more intensively and helped them to execute the preplanned actions in a comprehensive mode. Periodical checking equipped the learners to keep credibility and increase in developing efficiency. Practices for guided self-evaluation experiences served the purpose of establishing the habit of self-checking the assigned task with clear patterns. The closure activities focused on Meta-cognitive discussions developed awareness about reviewing the procedures and highlighting the peculiarities of the classroom practice towards fulfilling the objectives.

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. This noticeable change was evidenced through monitoring process carried out by the researcher. Conscious engagement 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. Such objectives can only be achieved when they are trained in explicit practices in their regular classroom activities and through the verbalization of thought processes. These critical mechanisms of Meta cognition allowed the learners to cultivate productive dispositions and expedite the construction of knowledge through building a culture of reflection.
The study also found that the interactive sessions deployed in the select classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving enabled the learners to recognize the need for budding and extending the repertoire of Meta cognitive processes towards gaining insights into their quality products of learning. The study also necessitated the impact of periodical checking and piloting the learning outcome in a systematic manner. This reflective analysis hold the key to effective instruction and helped the learners to keep on track with enthusiasm. For the purpose of the present study, 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.

The ‘evaluation’ process intends to reflect the quality of work and judge the degree to which it reflects with the explicitly stated goals. The strategy of assessing one’s abilities and progress at different points in language learning is vital in the learning scenario and it can improve the learners’ Meta cognitive awareness. In the present study, the investigator made use of a Student Generated Rubric to evaluate their own learning outcome. This type of evaluation is adequate and worthy towards making the learners self regulated. The involvements of students in the assessment process blur the distinction between instruction and assessment and transform classroom assessment into a moment of learning. Meta cognitive practices were seem to exercise distinct influence on secondary school students in enhancing academic achievement of Malayalam language learning and subsequently getting an enriched vision about
the components of Meta cognition. The amazing result got from the analysis was that, even though all the learners in the select three intervention group namely, Graphic Organizer, Self Questioning and Problem Solving showed a remarkable results in their learning outcome, students classified in the ‘Visual’ group benefited more from the select practice, ‘Graphic Organizer’. Likewise, Auditory and Kinesthetic learners show a noticeable change with regard to the classroom practices, Self Questioning and Problem Solving respectively. The present study also enriched the notion that instruction in accordance with learners’ preferred modalities would be able to narrow the existing gap between the presentation of content material and the mode of receiving the same by learners.

The perceptible contribution of the study is that Meta cognitive classroom climate provided a shared vision with regard to the coherent, progressive and long-term strategies, which enabled the learners to achieve challenging goals and outcomes.

This type of classroom practices will enable them to recall the content in a well worthy manner and the power of retention will be increased. We cannot expect to meet every student’s learning style every day, instead, throughout a unit of study, we can include differentiated activities in order to satisfy all types of learners to some extent.

6.4 Pedagogical Implications for designing classrooms for the future

In order to internalize the process of language learning, a reorientation is needed to explicate the underlying features of classroom practices. 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. One advantage of this approach is that it helps to clarify the theoretical concepts of effective learning with practical clarity. Developing a self directive as well as a self reflective behavior acts as the key attributor of such type of learning. In addition to that, identification of learning preferences of students also floor ways of continual achievement. 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 learning styles and meta cognition in the context of Malayalam language learning by employing varied meta cognitive class room practices which focus on the pathways of effective learning and by satisfying all types of learners’ needs to a greater extent. Learning strategies are procedures that facilitate a learning task in a lively and mindful manner and are sensitive to the learning context, which help the learner to become competent learners of the language. Integration of language learning strategies into classroom instruction that closely tied to learning preferences of students enables to capacitate the learners to gain more confidence and independence in learning.

The overture of the present study mentioned the rigorous need to focus on the application of Meta cognitive dimensions of learning. The results of the investigation culminate the necessity of deliberately incorporating Meta cognitive strategies in the learning context. Even though the activity oriented modes were being adopted in the school set up, striking augmentation in the confidence level of language learning is not evidenced. The study indicates the context which
demands more exposure to explicit instruction of varied activities entrenched in the Meta cognitive practices. Specific attempts to categorize students in accordance with their learning style preferences may assist them in actively engaging and involving in the learning process. This may offer opportunities for learners to assume increasing responsibility for insightful regulation of their learning. The categorical outlooks of student bunch with regard to their meta cognitive awareness were identified through the administration of a self assessment rubric. It also throws light on the urgent need to burnish the instructional practices by inculcating Meta cognitive components.

To reach the goal of the study, the learning preferences of the students were categorized by administering a learning Style Inventory prepared by the investigator and the research supervisor. By anchoring upon the categorization of the students based on the patterns of learning preferences, a repertoire of meta cognitive strategies were inducted in the forefront of meta cognitive classroom practices. The select classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving were meant to enhance the memory structure and knowledge creation of different types of learners. Activities such as planning how to approach a learning task, monitoring comprehension and evaluating progress towards the completion of a task are Meta cognitive in nature. The mental steps or operations involved in each phase allowed the learners to regulate their efforts to attain the learning output. Learners with highly developed Meta cognitive skills were able to take control over their learning. They were equipped themselves to direct their own learning and monitor their progress while learning and were able to determine the right trail towards success. The social
experience and shared journey are influential architects and operators of the Meta cognitive instructional platform. The ability to produce varied dimensions of language namely, communicative competence, analytical interpretation of information, internal discourses, richness in vocabulary and grammatical competence are the intended outcome of language 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 conceptual foundation of the Meta cognitive strategy instruction is not to be carried out in isolation, but be integrated in the curriculum and taught as part of every discipline through explicit modes. Here, the investigator adopted certain meta cognitive components namely, Planning, Monitoring and Evaluating into the select classroom practices in accordance with the learning styles of the students. Familiarity with the characteristics of each learning style and the application of multi sensory approaches allows the practitioner to address the needs of each type of learner.

The investigator made use of three classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving towards enhancing Meta cognitive awareness of students at secondary level. The phases included in the classroom practice, Graphic Organizer capacitated the students to build an explanatory framework on the Meta cognitive strategies, which led to the articulation and processing of information and it enabled the learners to construct their own pictorial presentations with regard to the particular content. The patterning of information with the help of this practice allowed the students to retain the information in an organized format. Activation
of prior knowledge, subsuming advanced organizers and selective attention enabled the learners to a greater extent to focus on the essential components of Meta cognition. Modeling equipped the learners to organize information in a sequential pattern, familiarize with interrelationships of ideas and the way to display them in graphically. The ‘practice’ phase provided ample opportunities to the students to practice the new information they were exposed in the presentation phase with a wide range of activities. Targeted and differentiated support for creating appropriate pictorial representations encouraged the learners to talk about the graphic organizers they prepared for getting an elaborative outlook of the content material. The study shows that learners practiced the task with a spirit of cooperation and made conscious effort to produce valuable outcomes. It also revealed the impact of the select classroom practice to spark enthusiasm, promoting retention of the content material and thereby become higher achievers in learning of Malayalam language.

The initial phase of the select classroom practice namely, ‘Self Questioning’ begins by an explicit explanation about the significance and remarkable benefits incorporated in the particular modes of learning experiences. It also includes divulging the peculiarities of Meta cognitive strategy instruction, which helps to cognitively reexamine and reorganize their understanding about the learned content. This phase intended to give an initial discussion about the select pedagogical practice, which is helpful for building Meta cognitive skills among learners. The guided practices inculcated in the classroom instruction offered a gradual release of responsibility from the part of the teacher which is the corner stone of constructivist paradigm. Use of self generated questions advanced student thinking,
learning and achievement and made them confident through the production of appropriate frames of questioning practices.

The classroom practice on ‘Problem Solving’ trained the students to formulate some problematic issues through the process of discussing certain events related to the social context. For this purpose, the investigator distributed some forms of editorials from the Malayalam daily to the students which consisted of mainly societal problems that needed specific attention. Investigator made use of some Meta cognitive prompts towards making the discussions about the pertinent issue in an efficient and effective manner and there by utilize the discussion time productively. Ensuring student talk and collective action together strengthened the process of creating dynamic instructional environments, which produced remarkable results in classrooms. The figuring out of exact problem assisted the learners towards focusing the main theme and captured the attention to the sub themes involved in it. Timely scaffolding and meaning making of the contextualized scenario facilitated learners’ understanding and accelerated the process of constructing and extending knowledge structures towards the creation of the assigned task.

The contextual relevance of the topic and the Meta cognitive prompts for developing analytical skills served the basis for producing a quality outcome in the problem solving process. These Meta cognitive prompts enabled the learners to gather up the threads through active emotional engagement in the class activities and raised their level of confidence with a promising effect. Among the selected participants, the Visual students performed comparatively better in the classroom practice on Graphic Organizer than Auditory and
Kinesthetic learners. They made mental frames in pictorial forms and learned best from visual displays, illustrated books, over head transparencies, videos and computer mediated learning. Students with Auditory and kinesthetic learning styles showed an inclination towards the Self Questioning and Problem Solving practices respectively. Verbal interactions, discussions and listening activities contributed a lot to the Auditory learners and the hands on approach and the practices on problem solving really activated the learning of Kinesthetic learners to a greater extent.

The tangible results of the study show a significant implication towards the language learning context which clearly states that designing Meta cognitive classroom instruction in accordance with the students’ preferred learning styles will be helpful for making them independent and autonomous to a greater extent. The conscious effort to practice these strategies stimulated learners’ attention and expanded their horizons of language proficiency in an appreciable manner. Although it is difficult to meet the needs of entire students of a class at a stretch, it is important to meet many of them as possible. The study shows that the academic performance of students in the learning of Malayalam Language is highly related to the instructional practices based on Meta cognition and differentiated instructional activities. Students without the stipulated Meta cognitive abilities are eventually learners without direction or opportunity to plan their learning, monitor their progress or review their accomplishments for directing their future learning. The unlocking of the potentialities of Meta cognitive practices integrated with students’ learning styles viewed as a vehicle for promoting greater success and achieving autonomy in Malayalam language learning.
The qualitative endeavor of the present study substantiated the fact that the expositions of the select Meta cognitive practices sharpened the power of learners and sparked their interest towards enhancing improvement and intellectual capacities with regard to the specific content. It also helped them to engage and focus on transformation of information in an innovative set up, become alert and efficacious in the process of learning, fortify their Meta cognitive awareness in a deep structured way, provide confidence to manage their own learning and empowering them to be inquisitive and fervent in their pursuits. The general impact of the study reveals that it is high time to orient towards differentiating instruction for creating an enriching environment. Differentiating instruction occurs when teachers produce several avenues to challenge the needs of students having varied learning styles and learning requirements. This instructional approach gives the students a sense of ownership over the learning process and focuses on individual needs. The participants of the present study indicated that they got a rare chance to discuss the processes inculcated in the classroom practices in the form of Meta cognitive discussions. These sharing offered them to visualize and rethink the procedures they go through while learning. The task of educational practitioners is to concede, cultivate, exploit and enhance the Meta cognitive capabilities of all learners. The findings of the present study have implications for learners, teachers, curriculum designers and textbook constructors. Timely initiatives taken by the educational agencies related to quality of education with regard to the implementation of Meta cognitive practices provide a valuable space for deep success in the learning of Malayalam language.
6.5 Limitations of the study

This study has certain limitations that need to be taken into account. First, the validity and reliability of the study are limited by the sample of 331 students from three select schools at secondary level coming under three districts of Kerala. This may act as an unavoidable limitation of the study. Second, the researcher has focused on only three classroom practices namely, Graphic Organizer, Self Questioning and Problem Solving towards improving academic achievement and fostering Meta cognitive skills among the students at secondary level. Third, the study has considered the learning preferences of students based only on the sensory modality perspective. The study has focused mainly on the students at secondary level and the sub stratification of select sample like, gender, locale, and management of the school could not have considered as it makes the study more comprehensive.

Even though the study has been surrounded by certain limitations, it also has enormous possibilities for extending student success to a greater extent which mentioned in the section (6.4). The need for differentiated instructional practices with a view to creating independent learners offers greater chances for the instructional practitioners in language learning classrooms. Eventhough the study has certain limitations, it has implications for future research studies.

6.6 Directions for future research

An extensive examination of the research done in the areas that come under the jurisdiction of the study points towards the pertinent need for a wide array of investigation in the particular areas. A few of the relevant areas with regard to the creation of
transactional modes based on Meta cognitive classroom climate and differentiated instructional practices are cited below.

- An investigation on the effect of Meta cognitive classroom practices for the development of language skills in other languages like English, Arabic and Hindi.
- Developing a blend of innovative practices for enhancing achievement motivation of students having varied learning styles.
- A study on the effectiveness of Meta cognitive strategies for enhancing Reading Comprehension and Vocabulary development of Malayalam language students at secondary level.
- An investigation on the impact of meta cognitive strategies and learning styles for creating self directed learners at higher secondary level.
- The effect of monitoring exercises and feedback on performance and self efficacy of learners at secondary level.
- A study on the influence of learning styles on the development of self efficacy and independent thinking among the learners.
- Developing a learning package for enhancing meta cognition based on Multiple intelligences of learners at high school level.
- Effect of Reflective Teaching Strategies on Communicative Competence of Malayalam language students at secondary level.
- Develop certain intervention packages based on Graphic Organizer for slow learners at primary level.
- Preparation and validation of self assessment practices on enhancing Meta cognitive skills among the higher secondary students.
Summary and Conclusions

- Effectiveness of Problem Solving strategy integrated with meta cognition for enhancing meta cognitive skillfulness and critical thinking skills among the higher secondary students.
- Developing certain Graphic patterns for enhancing comprehension abilities among students at high school level.
- Develop a multimedia package based on differentiated instructional practices for promoting professional excellence of school practitioners at higher secondary level.
- Develop a Self Questioning model for enhancing comprehension and vocabulary of students at high school level.

These suggestive ideas can enrich the language learning classroom by creating a Meta cognitive climate as well as a platform for differentiated instruction which are the key ingredients towards creating active and thoughtful learners.