4. Discussion and Interpretation of Data

CHAPTER OUTLINE

4.0 Introduction

The previous chapter discussed the design of the present study, incorporating MI and Bloom's Taxonomy into TBLT by adapting the models of Armstrong (1994) and Noble (2002, 2004) specifically for language learning. This enabled integration of MI for language learning (Christison, 2005; Hall Hailey, 2001, 2004, 2007) with the entire range of RBT thinking skills, including Creativity. The study thus, examines EG teacher ability to frame language tasks with the entire range of MI inputs and RBT levels, with learner autonomy and teacher empowerment as expected outcomes.

This chapter studies whether the outcomes of MI-RBT-TBLT or the Independent Variable in Research Intervention, support a positive, negative or null hypothesis in all eight Dependent Variables of the three Research Questions. Data collected on all eight Dependent Variables from both EG and CG teacher and learner participants are therefore, presented for the triangulation of Qualitative Data with the Quantitative Data and Test Scores to validate the research hypotheses.

The eight Dependent Variables are subsumed by the three Research Questions of the study. Data collected on the four following Dependent Variables collectively provide responses to the **First Research Question; whether teachers can be empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT):**

- Ability and motivation of EG teachers in framing MI-RBT tasks
- Accuracy of structure in MI-RBT tasks framed by teachers
- Observable use of teaching and learning strategies
- MI-RBT-TBLT across the curriculum, similar to CLIL
- Contribution of MI-RBT task-framing to professional empowerment in teachers

Data collected on the following Dependent Variable provides the response to the **Second Research Question; whether tasks created by the teachers and supported by the MI framework can cater to individual differences:**

- Effectiveness of MI task-inputs in catering to individual differences in learners

Data collected on the two following Dependent Variables collectively provide responses to the **Third Research Question; whether Revised Bloom's Taxonomy (RBT) can help teachers in framing tasks that ensure definite learning outcomes**

- RBT levels in task outcomes posing a varied cognitive challenge to learners
- Efficacy of MI-RBT-TBLT in enabling learner autonomy

Analysis of qualitative and quantitative data on the eight above Dependent Variables in this chapter provide answers to the research questions, relating to attitudinal, cognitive and metacognitive development in EG teachers over one academic year and its

impact on their learners. Data collected from CG and EG teachers and learners before and after the study is analysed by the Research Tool developed for this purpose. Data thus analysed, is classified for triangulation into qualitative data, quantitative data and test scores:

1. **Qualitative Data** constituted:

    - Responses to Teacher and Learner Questionnaires (Appendices A-D)
    - Teacher journals and anecdotal records (Appendix K)
    - Tasks (Appendices G, H) and Task-evaluation reports (Appendix E)
    - Group discussions and interviews (Appendix L)
    - Observer remarks in the class-observation reports (Appendix F)

    Qualitative data from the EG was collected in print and through video-recording. Qualitative CG data from interviews, discussions and observations was collected through observation protocols, strategy checklists and field-notes, as the CG schools did not permit audio-video recording. All EG and CG qualitative data collected before and after the study are analysed in detail.

2. **Quantitative Data** constituted:

    - Likert Scale Responses to Teacher and Learner Questionnaires (Appendix J)
    - Class-observation reports and Strategy Count (Appendix J)

    Quantitative data from the EG and CG was collected before and after the study by administering questionnaires to:

    - 20 EG and 20 CG teacher respondents
    - 223 EG and 119 CG learners
    - 83 EG class observations and 57 CG class observations

    EG class observations consisted of direct and indirect (video) observations, whereas CG lessons were only directly observed. There were therefore, a larger number of

EG than CG class observations. Video-recordings of lessons by EG-teachers were observed later by the researcher.

3. **Test scores** constituted of the integrated scores of EG and CG learners in Listening, Reading, Speaking and Writing tests conducted by their teachers before and after the study, according to CBSE CCE norms (Appendix J). The test scores of the same 223 EG and 119 CG learners mentioned above, were collected by the researcher for triangulation in this study.

Triangulation of Qualitative Data, Quantitative Data and Test Scores validates the positive, negative or null hypothesis of the study. The following sections of this chapter discuss the analysis of the qualitative and quantitative data and its triangulation with the test scores.

4.1 Analysis of Qualitative Data

This section examines the qualitative data collected before and after the study on eight dependent variables in response to the three research questions, as outlined above. Comparing the qualitative data before and after the study reveals differences between EG and CG participants at the end of the study, as a result of the Research Intervention.

4.1.1 Qualitative Analysis of MI-RBT-TBLT for Teacher Empowerment

The First Research Question asks whether **teachers can be empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT).** The response to this question is provided by the data collected on the **five following Dependent Variables (DV)**:

(1) Ability and motivation of EG teachers in framing MI-RBT tasks (DV-1)

(2) Structure of the MI-RBT tasks framed by the EG teachers (DV-2)

(3) Teaching and learning strategies used by the teacher and learner participants (DV-3)

(4) MI-RBT-TBLT across the curriculum in the CLIL context (DV-4)

(5) Contribution of MI-RBT task-framing to professional empowerment (DV-5)

Discussion on Five Dependent Variables - Research Question 1

Dependent Variable - 1

(1) Ability and motivation of EG teachers in framing MI-RBT tasks: Data was collected before and after the study on this Dependent Variable, stating whether EG teachers are able to frame MI-RBT tasks and can sustain motivation for MI-RBT-TBLT. This data is analysed below:

a. Language teaching-learning by EG and CG before the study: Data from teacher interviews, discussions, questionnaires and class observations before the study showed that EG and CG teachers followed similar patterns of text-based teaching with teacher-talk predominating and little skill-based learning. Teaching in middle school was exam-oriented. Testing items from CBSE summative assessments (Appendix I) were replicated in grammar exercises, textual questions, written composition and unseen comprehension passages through one or two revision worksheets every term. The typical features of EG and CG English lessons before the study were:

- Teachers reading and explaining textual content, with passive listening by learners
- Occasional textual questions by the teacher to check understanding
- Occasional reading aloud of textual passages by learners
- Silent reading of the text as revision by learners
- Absence of tasks for active listening

- Speaking skills only for periodic assessment through debate, public-speaking, extempore speech, skit, oral answer to textual question and group discussions
- Absence of needs-diagnosis in formative assessment
- Low speaking proficiency, even in learners with high scores in written tests
- Writing tasks replicating testing items through grammar exercises, textual questions and compositions
- CG writing mainly done in homework or copied from dictation by teachers, whereas EG teachers did not dictate answers in class
- CG learner notebooks of the same class with almost identical content, copied from teacher dictation
- Evidence of multiple errors in grammar, spelling and writing in most EG and CG learner notebooks in all classes
- CG teachers took tuitions, even for their own students, whereas no EG teachers were allowed to do so
- Over ninety percent of EG as well as CG learners were dependent on tuitions
- High incidence of rote-learning, more in the CG than in EG learners

Language teaching-learning by the CG after the study: Data from CG teacher and learner interviews, discussions, questionnaires and class observations at the end of the study is almost identical with that collected before the study. This indicates very little qualitative change in the CG teaching-learning situation, in the features outlined above. The lessons remain teacher-led, text-centric and exam-oriented.

Language teaching-learning by the EG after the study: Data from EG teacher and learner interviews, discussions, questionnaires and class observations after the study indicated significant changes, identified as under:

- Increase in the frequency of MI-RBT task-framing and implementation

- High motivation for learning with MI-RBT tasks in teachers and learners
- Reduced dependence on prescribed NCERT texts.

b. Incidence of MI-RBT task-framing in the EG and CG before the study: Before the study, EG and CG teachers read and explained textual content to prepare learners for summative assessment, with the results discussed in the previous point.

Incidence of MI-RBT task-framing by CG teachers after the study: CG teachers **did not engage in task-framing** or implementation. They continued with text-based lectures, covering a unit every week on average. Only four or five CG teachers were observed conducting learner-centric activity to link existing knowledge with new learning. Teacher-talk predominated in lessons. CG teachers created five or six revision worksheets and test papers (Appendix H) over the academic year, replicating CBSE testing items to prepare learners for summative assessment. CG teachers and learners were unable to respond to questions on MI-RBT-TBLT, citing the reason as MI, RBT and TBLT not being applicable to their teaching-learning context (Appendix B-2).

Incidence of MI-RBT task-framing by EG teachers after the study: After the study, EG teachers framed MI-RBT tasks based on NCERT English texts prescribing 'activity-based learning', thus anchoring new TBLT theory to the familiar textual point of reference (Appendix A-4). EG teachers created task-sheets (Appendix G), each with ten or more MI-RBT tasks for every NCERT textual unit, in a task-cycle of two to three weeks. They continued this throughout the study, each teacher creating nineteen to twenty task-sheets over the academic year. These skill-based task-sheets with many MI-RBT tasks incorporating content from other subjects**,** received positive feedback from EG learners as well as their parents (Appendices K, L).

One textual unit coinciding with a task-cycle of two to three weeks, enabled EG learners to perform MI-RBT tasks integrating LSRW skills with every textual unit, and pre-tasks eliciting prior learning (Appendices A-3, A-4, D-2, G, E). By the end of the study, EG teachers expressed confidence in their ability to frame MI-RBT tasks complementing the prescribed NCERT texts (Appendices A-4, B-2, K, L), proving that framing MI-RBT tasks enabled teachers to adopt learner-centric NCERT objectives without remaining passive recipients of materials.

c. **Degree of text dependence in the EG and CG before the study:** EG teachers and learners before the study used only prescribed NCERT Communicative English texts, whereas CG teachers and learners supplemented NCERT texts with privately published guidebooks and grammar manuals (Appendices A-4, D-2). Different learning methods of EG and CG teachers were indicated even before the study, with EG teachers preferring skills-based NCERT texts for 'content relevant to global youth culture' and providing scope for 'teacher innovation and learner collaboration', whereas CG teachers preferred private publications for the prolixity of exam-based exercises (Appendices A-4, K, L).

Degree of text dependence in the CG after the study: CG teachers stated after the study that 'students get adequate practice and learn better with language items in prescribed texts than with teacher-made questions' and that 'NCERT texts are sub-standard because they lack the required quantity of textual questions and grammar-composition exercises'. CG teachers borrowed exam-based exercises from an increasing number of guidebooks and manuals over the academic year, to supplement the perceived 'lack' of these in NCERT texts. CG teachers and learners thus, were even more text-dependent after the study (Appendix A-4).

Degree of text dependence in the EG after the study: At the end of the study, the EG participants were less text-dependent, preferring to complement NCERT textual content with MI-RBT tasks framed by teachers, thus proving that framing their own tasks made teachers less text-dependent (Appendices A-4, K-1, K-3, L).

d. **Accuracy and range of MI and RBT in EG and CG before the study:** Before the study, neither the EG nor CG teachers framed tasks. During initial stages of task-framing by EG teachers, they made errors in identifying MI and RBT inputs, as indicated in task-evaluation (Appendix E) and feedback (Appendices B-2, E, K, L). For instance, a task with a song as input was labelled Musical-Rhythmic, although not requiring any musical output from learners. Lack of higher-order RBT thinking skills (Analysis-Evaluation-Creativity) and a restricted range of MI inputs (Verbal and Logical) were observed during initial task-framing by EG teachers. Application was mistaken for Creativity in the RBT level of task outcomes. A contingent problem was teacher preference for ready-made tasks from the Internet.

Accuracy and range of MI and RBT in CG after the study: The CG, as stated earlier, did not use MI or RBT in language items (Appendix A-3). There is no change in CG pedagogy after the study.

Accuracy and range of MI and RBT in EG after the study: At the end of the study, all MI and RBT were identified, used and labelled accurately in tasks (Appendix G). This was evidence of increasing EG teacher ability in distinguishing process from product in task input and outcome.

The growing ability of EG teachers for task-framing over the study period is visible in their discussion of tasks borrowed from the Internet. Analyzing conformity of tasks downloaded from websites with MI-RBT parameters gave teachers deeper understanding of task-framing. This enabled task-framing in stages, first altering

Internet tasks to suit learner needs through MI and RBT (Fig. 4.1), and next, framing new MI-RBT tasks through trial-and-error:

Analytical Evaluative Task borrowed from a free web source (Class VIII):
Make a poster with your group.

- Pre-task: Select your materials. Use your 5 senses to walk around and select five things that remind you of home.
- Task: Draw and colour the pictures of the things you have selected on the poster.
- Post-task: Pin up your poster and give a talk about the things you have drawn before the class.

Modified Task after group discussion:
Pre-task:

- Walk around the school with a notebook-pencil. Use your five senses to select different objects that will remind you of your school after you graduate from it. Note these down. [10 mins]

Task (Planning & Preparation):

- Next, plan out the dialogues for enacting a scene with your group members:
- Setting - Twenty years later, when you are all working.
- Location - A reunion dinner at one member's house.
- Theme - Remembering the good old school days. What do you miss most about school and what reminds you of your student life? Select one favourite item of school, at present.
- Weave the items you have selected into your dialogues. [30 mins]

Post-Task:

- Enact the scene before your classmates. [5 mins]
- Take their oral feedback on the skit and how it can be improved in:
  - Opening the conversation
  - Interpolating remarks or questions
  - Use of past tense and present tense
  - Use of adjectives and adverbs [5 mins]

MI: Interpersonal, Verbal. RBT: Creative

Fig. 4.1 Modifying a Task from the Internet with MI-RBT Inputs

A task borrowed from an external source would often be modified (Fig. 4.1) to suit language-learning needs of learners. By the end of the study, all EG teachers framed tasks, as it was less time-consuming and more creatively satisfying than borrowing from the Internet, indicating that teachers could successfully frame language tasks with MI inputs using RBT guidelines.

e. Teacher motivation for task-framing in EG and CG before the study: Before the study, CG teachers showed no motivation for framing tasks independently, preferring

to replicate language items from past test-papers. This attitude was reinforced exam-centric CG institutional policy which discouraged any deviation from the set exam syllabus. EG teachers on the other hand, showed high motivation for MI-RBT task-framing as quantitative increase in language-testing items did not fulfill the remedial needs of individual learners.

Teacher motivation for MI-RBT task-framing in CG after the study: CG teachers showed no change in beliefs after the study. They had low motivation for developing materials, finding no time to access extra-textual resources 'because the prescribed texts have to be covered'. Their reasoning was that 'spending time on materials development is a waste' when available materials from reputed private publishers offer 'language tasks framed by experts' and therefore, 'save teachers [the] time and trouble of forming questions' (Appendices A-2, A-4, C-1, D-2). CG teachers thus, did not manifest intrinsic motivation for task-framing. Absence of peer-collaboration in lesson-planning, team-teaching or materials-development, allowed no scope for peer-motivation either.

Teacher motivation for MI-RBT task-framing in EG after the study: Spending two to three hours every day in lesson-planning and task-framing, EG teachers manifested high motivation levels after the study (Appendices A-2, B-3, K, L). EG teachers identified the reason for this as the accessing of extra-textual resources like the Internet, blogs and audio-visual media. EG teachers 'enjoy the challenge' of framing MI-RBT tasks that 'engage and motivate learners'. EG teachers thus demonstrated sustained intrinsic motivation for framing tasks.

Peer-motivation was also manifest in EG teacher-collaboration (Appendices B-1, B-2, K, L) as a primary motivational and problem-solving factor over the study period. Difficulties faced by EG teachers in lesson-planning, syllabus completion, task-framing, class-observation, feedback or reflection were resolved collaboratively without intervention by the researcher, indicating self and peer motivation for MI-RBT task-framing in EG teachers.

f. Learning versus testing in the EG and CG before the study: Before the study, both CG and EG used testing items for language teaching, following the CBSE summative assessment pattern (Appendix I).

Learning versus testing in the CG after the study: After the study, language items in CG worksheets (Appendix H) were structurally identical with CBSE summative testing items. CG language items for formative and summative testing were directly borrowed from previous test-papers or from syllabus texts (Appendices A-4, A-5). The reason for this as explained by CG English teachers was that rote-learning 'correct answers' dictated by the teacher for a fixed set of language items could predictably ensure high test scores. The CG conducted debates, public-speaking, poster-making and drama only for testing and grading, with no rubric or feedback for diagnosing remedial needs. CG teachers, thus focussed on oral/written language products and showed no awareness of language learning processes.

Learning versus testing in the EG after the study: After the study, it was observed that EG teachers framed MI-RBT tasks for learning as well as continuous formative/ diagnostic assessment (Appendix G), which were different from summative testing items in structure. MI-RBT tasks enabled peer-learning, peer-feedback and

formative/diagnostic assessment of individual remedial needs through rubrics. EG language tasks thus focussed on learning processes and not just on language testing.

Comparative summary of ability and motivation in EG and CG teachers for framing MI-RBT tasks after the study: Analysis of data indicated that over the study period CG teachers remained passive recipients of textual content, whereas EG teachers willingly reconstructed themselves as facilitators by framing learner-centric MI-RBT tasks. EG teachers applied MI and RBT accurately in tasks to engage diverse learners and enable language-use for higher-order thinking skills, whereas CG teachers repeated language items from previous test-papers, focussing solely on exam products. The following points sum up the impact of research intervention on the **First Dependent Variable:**

a. Skills-focused and learner-centric MI-RBT-TBLT by EG teachers as opposed to text-based and exam-oriented teaching by CG teachers
b. High incidence of MI-RBT task-framing by EG teachers, but absent in the CG
c. EG teachers supplemented NCERT texts with MI-RBT tasks, whereas there was high text dependence in CG teachers
d. Increased accuracy and range of MI and RBT in tasks framed by EG teachers, whereas CG teachers remained unaware of MI-RBT
e. MI-RBT tasks and rubrics framed by EG teachers focussed on learning processes and diagnosis of remedial needs, whereas CG teachers used language testing items for teaching-learning
f. EG teachers showed high levels of sustained intrinsic motivation for task-framing but CG teachers borrowed language items from old test-papers

EG teachers manifested knowledge, ability and motivation for MI-RBT-TBLT after research intervention, in contrast to the absence of these features in CG teachers without research intervention. **The analysis thus, indicates a Positive Hypothesis for the**

Dependent Variable stating that teachers have the ability and motivation for framing MI-RBT tasks.

Dependent Variable - 2

(2) Structure of MI-RBT tasks framed by EG teachers: Data was collected on this Dependent Variable before and after the study, stating whether MI-RBT tasks framed by EG teachers were correctly structured to promote language learning. This data is analysed below:

a. MI-RBT task-planning by EG and CG teachers before the study: Data on task-framing and evaluation (Appendices A-3, A-4, E) showed that before the study, EG and CG teachers did not practice TBLT and focused on preparing learners for summative exams, without promoting higher-order thinking or catering to individual differences.

EG teachers first attempting TBLT were confused by the varied MI-RBT combinations in the grid/matrix for task-framing. They reported that they were unable to 'think in rows and columns like a spreadsheet' (Appendices K, L). This corroborates that novice teachers usually follow a sequential, linear model of task-planning or decision-making while experienced teachers adopt a more complex problem-solving method of planning, based on learner needs (Tyler, 1950, cited in Tsui, 2003, p. 23). EG teachers at the beginning of the study preferred simple linear planning to the more complex grid-model.

MI-RBT task-planning by CG teachers after the study: After the study, no change was observed in CG teaching methods, which continued to be text-centric and exam focussed, with complete absence of MI-RBT awareness. CG worksheets repeated language items from previous test papers after the study (Appendix A-5).

MI-RBT task-planning by EG teachers after the study: After Research Intervention, EG teachers began MI-RBT task-framing. A comparative analysis of

tasks framed by EG teachers in the first and last task-cycles revealed considerable improvement in task structure planning, implementation, feedback and reflection, over the study period.

At the end of the study, EG teachers followed complex task-planning trajectories based on learner needs (Appendices K, L). At first, teachers preferred interviews and discussions on task planning. Think-aloud protocols tracing EG task-framing were not included in the Research Tool, because with a few exceptions, teachers were uncomfortable using it to record task-planning processes. The transcript of a think-aloud protocol on MI-RBT task-planning, however, recorded by an EG teacher in the last task-cycle, is represented below (Fig. 4.2) to reveal the complexity of task-planning processes at the end of the study:

Mmm...first, I try to think of a task...an MI task...um...RBT also...also language has to be…
It is like...um...a Maths task, actually...Manju had said, she...the students are weak in problem sums.
My students also...they do not know...mmm...actually, they don't *read* the problem properly.
Yesterday, Minal said to me, she is a very sincere girl, but her weakness is in Maths.
She told me, ma'am I cannot understand. I asked her what she didn't...she said, nothing...*nothing* I can understand in this problem!
So, I said, Minal, first you *read* the problem.
She said, I have read, but I *can't* understand.
Then, I read the problem out loud...before I could explain, she said, oh! Ma'am, *now* I understood. I know what to do.
So, it is both...reading *and* listening. The Maths part is actually okay. So, how I can…?
(long pause)
First, reading and listening. Okay, I will ask them to look at the book, the unit introduction. They should read it and then explain it to the class...to their partners...to each other.
Then, they can make their own problem...um...that will be creativity...RBT. *Okay*, no! They can act out the problem in their unit, that will be MI...kinesthetic, *Okay*! RBT, it is...mmm...I don't know...yes, application, it will be...*chalega*! That is the best I can...tomorrow, I will ask Manju, what she thinks...
Okay! First, they will read, then [they] will be listening and explaining to each other - understanding, *na*, RBT? Then, together with partner, make your own problem...mmm - creativity. No! Application. No! Creativity...these are only Class 4 children, after all...so, creativity...I'll ask Manju to present the maths formulae…
Then, they will act out their problem...role-play...mm...to the class. So, that is MI. Kinesthetic also, but Visual also...for the class, that is. If they *see* the problem acted out in front of their eyes, they will understand...lots of answers, then. Now, I have it! Okay, so that is the plan for the task...they will do it on Wednesday. Manju can observe and record the lesson. Finished. *Whew!*

Fig. 4.2 Think-aloud Protocol of Task-planning by EG Teacher

The think-aloud protocol (Fig. 4.2) reflects the sequence of logical connections made by an EG teacher while task-framing. First, she focussed on the need to integrate MI and RBT with language learning. Next, she recalled individual remedial (reading) needs identified earlier in collaboration with a Maths teacher. This interface was similar to content and language integrated learning (CLIL).

The teacher, then, selected the task input of Mathematical-logical Intelligence for cross-curricular application, with intensive reading/comprehension as its objective. She then reversed the process of solving Maths problems, by setting learners to frame their own problem. This enabled learner comprehension of mathematical syntax and vocabulary.

Lastly, the teacher fixed the RBT level of task-outcome, basing her decision on the age of the learners. Framing a Maths problem may have been Application of existing knowledge for older learners, but according to her, it involved Creativity for young learners of Class IV.

The teacher's primary concern while task-planning emerged as skill-based remedial learning, with MI-RBT as the tool. Learner-centric combinations of MI-RBT in task-framing revealed the diagnostic awareness of individual needs of Minal (name of student in think-aloud protocol in Fig. 4.2), as well as sensitivity to the essential difference between teaching and testing tasks. This learner-centric, need-based planning rationale was representative of EG teacher approach to MI-RBT task-framing, as it emerged from the questionnaires, journals, group discussions and interviews (Appendices A, B, K, L).

An attempt is made below (Fig. 4.3) to represent this complex and non-linear task-framing process, indicating progress in teacher thinking from novitiate to more experienced planning:

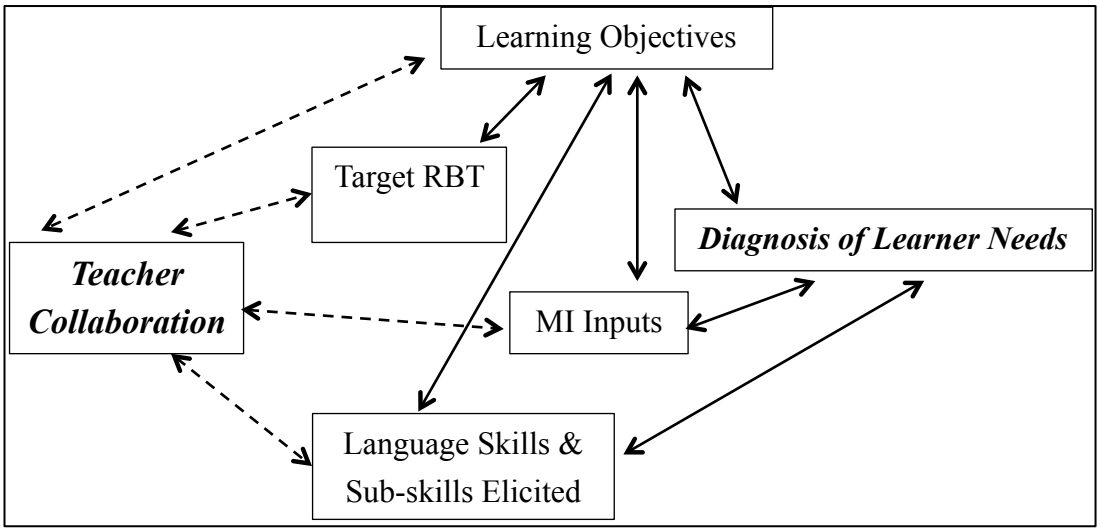

Fig. 4.3 Trajectory of Task-Planning by EG Teacher

EG teacher thinking followed multiple trajectories, moving repeatedly between learning objectives, MI inputs and RBT outcomes during task-planning, as indicated by continuous line arrows (Fig. 4.3). EG learner collaboration in decision-making sometimes led to modification of the task-plan, based on individual needs. EG teacher-collaboration, as shown by dotted arrows (Fig. 4.3) included content subject teachers in decision-making during task-planning. In the last task-cycle of the study, EG task-plans emerged as non-linear, fluid and flexible, with the following characteristic features:

- Language-learning objectives integrated with content subject topics
- Collaboration between English and content-subject teachers
- MI inputs selected to enable differentiated learning by developing diverse learner intelligences
- RBT cognitive level of task-outcomes based on learner need

- Task outcomes relating with real-life contexts
- Use of digital technology in task resources
- Learner-collaboration in task-phases
- Task instructions connecting new learning with prior knowledge
- Class-observation and peer-feedback on task-performance
- Reflection on task-framing

These features of TBLT are discussed further in following sections.

b. Improving task-structure for TBLT by EG and CG teachers before the study: Neither the EG nor the CG teachers practised TBLT before the study. Both groups followed text-centric methods based on teacher-talk.

Improving TBLT and task-structure by CG teachers after the study: No changes were observed in CG teaching methods after the study.

Improving TBLT and task-structure by EG teachers after the study: Analysis of task-framing in the first task-cycle by two different EG teachers below, shows how MI-RBT task-structure influenced teaching-learning as task-framing, peer-feedback and reflection helped teachers in assimilating TBLT theory into practice (Appendices E, F, K, L). The first MI-RBT task for Class I (Fig. 4.4) integrated language skills with content from Environmental Science:

Task 1 *(first version)*:
- Look at these pictures of early man and discuss what life was like in those times. *(pre-task)*
- Read your text and discuss the differences between early and modern life. *(task)*
- Write a few lines describing these differences. *(post-task)*

MI inputs: verbal-linguistic, visual-spatial
RBT challenge level: knowledge ➔ understanding

Fig. 4.4 Original Version of MI-RBT Task-1

The learners were asked to study twelve pictures (projected on the smart board)

depicting scenes from prehistoric life with tools, weapons, food, clothing and art. They were next instructed to read the text, describe the pictures and relate textual information with pictures. This plan failed at the onset as the pictures distracted learners from reading their textbook. They began to discuss pictorial information in L1, ignoring the teacher's repeated injunctions to read the text first and to speak in English. They interrupted her continually (in L1) with random questions about the pictures. This continued till the lesson ended, with none of the reading or writing objectives met.

Peer-feedback from class-observation indicated that group discussion had obstructed the silent-reading objective of the lesson. Peer-learning therefore, had to be sequenced as a separate task-phase for learners to first read (Verbal-linguistic Intelligence) and then discuss textual content (Logical and Interpersonal Intelligences). The task-outcome had to build in Application (RBT level 3) as evidence of Understanding (RBT level 2). Post-reflection reframing of the task by the same teacher (for implementation in another class) is given below (Fig. 4.5):

Task 1 *(second version)*:

- Spot 6 differences between these two pictures of early life and modern life. *(pre-task)*
- Complete this table with the differences you have spotted: *(task)*

Early man		Modern man	
wore		wears	
ate		eats	
lived in		lives in	
used		uses	
activities		activities	

- With the help of the completed table, write five sentences each about early man and modern man. *(post-task)*

MI inputs: verbal-linguistic, visual-spatial, interpersonal
RBT challenge level: knowledge ⟶ understanding ⟶ application

Fig. 4.5 Modified Version of MI-RBT Task-1

The EG teacher used pair-seating in class for peer-learning, giving a picture of early life to one learner and one of modern life to the partner. She first instructed each pair to compare their pictures, identifying six differences (Visual-Spatial Intelligence at RBT level of Analysis). Next, they were instructed to use these differences in completing the given vocabulary table (writing in past and present tenses). Lastly, they composed five sentences based on the completed vocabulary table. Class observation reported that:

- Focussed discussion on objects in the pictures enabled guessing and peer-learning (Visual, Verbal, Logical and Interpersonal Intelligences) as well as seeking clarification from the teacher.
- Use of L1 was restricted to transactional exchanges between learners and switch-over from L1 to English was induced by the need to complete the vocabulary table, as preliminary discussion fed directly into writing.
- The task utilized learner predilection for pictures to feed into language-learning and built in teacher instructions to match.
- Reduction in teacher talk-time enabled monitoring of individual learners.
- Teacher-learner and peer interaction furthered problem-solving to meet learning objectives.
- Learners completed the vocabulary table and sentences with the teacher supplying new words like fur, hammer, punch, etc.
- Reading was included as a post-task activity at the RBT level of Application, as learners who had completed the writing task were instructed to silently read the textual unit, noting down points for additional sentences.

The second EG teacher framed an MI-RBT task for Class VII (Fig. 4.6):

Task 2 *(first version)*:

Teacher's verbal instructions:
- Read the story given to your group. Discuss what it means to you and what you like about it. *(pre-task)*
- Rewrite it as a one-act play script *(task)* and
- enact it in class *(post-task)*.

MI inputs: verbal-linguistic, logical, kinesthetic
RBT challenge level: knowledge ⟶ understanding ⟶ application

Fig. 4.6 Original Version of MI-RBT Task-2

Class-observation feedback reported that:

- Large groups of twelve to thirteen members should be reduced in number for functional cohesiveness.
- One learner reading aloud the story could better hold the attention of all group members if each had a copy of the story.
- Use of L1 in group-discussions detracted from the learning objective.
- Silent onlookers should be actively engaged in the task through individual roles within the group.

Reflection on this feedback led to the following modified version of the task, implemented by the same EG teacher in another class (Fig. 4.7):

Task 2 *(final version)*:

Teacher's verbal instructions: Here is an envelope with strips, each containing one part of a story. Every member of your group will come up and silently read one strip and hand it over to the teacher. Going back to your group, explain the part of the story you have read in your own words. When the last strip has been explained in this manner, your group has to piece the story together and take turns in narrating it to the class in a dramatic manner. *(task)*
Discuss with group members what is interesting about the story's plot and characters and why. *(post-task-1)*
Next, individually write a paragraph on how you would improve the story by any change in plot, character, or both. *(post-task-2)*
MI inputs: verbal-linguistic, logical, interpersonal
RBT challenge level: knowledge ⟶ understanding ⟶ application ⟶ analysis ⟶ evaluation ⟶ creativity

Fig. 4.7 Modified Version of MI-RBT Task-2

Class observation indicated that:

- A pre-task jigsaw-game (joining pieces of a picture illustrating the story-theme) helped in forging cohesive group identity (through thematic unity) without reducing group numbers.
- Partial knowledge of the plot allowed every learner a meaningful individual role in contributing to collective construction of meaning (Interpersonal replacing Kinesthetic Intelligence).
- Post-task-1 discussion at the RBT levels of Analysis and Evaluation helped post-task-2 writing at the RBT level of Creativity, induced replacement of L1 with English.

MI-RBT tasks framed by EG teachers in the last task-cycle showed task-outcomes meeting learning objectives (Appendices E, G), as discussed above. Peer-feedback and reflection on MI-RBT task-framing thus, enabled EG teachers to plan task processes flexibly, with positive wash-back from product outcomes (Appendices B-5, E, F, K, L).

By the end of the study, MI-RBT tasks shifted the focus of teaching-learning objectives from mere factual Knowledge to Analysis of texts. This encouraged learners to think about textual characters and motives, and to make predictions, discuss textual meaning and formulate alternative plots. Creating their own stories and poems achieved the highest RBT level.

c. **Correlating learning objectives with MI-RBT by EG and CG teachers before the study:** Before the study, both EG and CG teachers correlated teaching-learning objectives only with the summative assessment, MI-RBT playing no role.

Correlating learning objectives with MI-RBT by CG teachers after the study: There was no change in exam-oriented CG learning objectives after the study.

Correlating learning objectives with MI-RBT by EG teachers after the study: MI inputs sometimes diluted language-learning objectives in the EG tasks framed in the first task-cycle of this study, by engaging learners in differentiated colouring, singing or model-making activities without any visible language-learning outcome. In such cases, focussing on RBT levels of cognitive processing helped to reinforce language learning in task outcomes, while promoting higher-order thinking in task process.

The following task (Fig. 4.8) promoted language use for higher-order thinking in learners at just threshold level fluency:

Comprehension Task (Class I):

Frog on a Log

Kut the frog was lost. He could not find his home. Kut hopped to a tree. "Is this my home?" A bird sang "No, this is my home." Kut hopped to a hole. "Is this my home?" A mouse wiggled his nose. "No, this is my home." Kut hopped on and fell into a pond. *Splash!* He swam to the top. He hopped on a log. "Ah! this is my home." A bug flew by. Zip! "Yum, yum!" Kut the frog went to sleep. Zzzzzzzz!

1. Watch the video on frogs. [3 mins]
2. Share what you learnt with your friends. [4 mins]
3. Listen to teacher reading out the passage. Did you like the story? [2 mins]
4. Read it with your partner in a role-play. [5 mins]
5. Discuss with your group: [5 x 2 mins]
   - Was Kut a boy or a girl frog? Pick two words that tell you the answer.
   - Why was Kut lost?
   - How many homes did Kut visit?
   - What did Kut do to the bug? Which words tell you this?
   - Is Kut safe at home at night? What do you think may happen at night?

MI: Visual-spatial, Verbal-logical RBT: Analysis, Creativity

Fig. 4.8 Higher-Order Thinking in MI-RBT Task

Conversely, MI was also used to reinforce learning objectives or cognitive RBT level of task-outcomes. For instance, in the MI-RBT task below (Fig. 4.9), the

reading and note-making objective (Verbal-Logical Intelligence), requiring learners to compare and contrast information (higher-order RBT level of Analysis) was not fulfilled because the learners found and copied a readymade table of comparisons (lower-order RBT level of Knowledge) from the Internet:

Analytical Task (Class VI):

- Read up individually on the Internet (e.g. Wikipedia) about the reigns of Sultan Iltutmish and Sultan Muhammad bin Tughlak. [30 mins]
- While reading, note down points of their similarities and differences. [30 mins]
- Along with your group, present the comparison of the two Sultans in a Venn diagram with the common points and differences from your research. [20 mins]

Fig. 4.9 Using MI to Reinforce RBT Level in Task

In the previous task (Fig. 4.9), changing MI inputs enabled the task-outcome (through its MI aspect) to arrive at the desired RBT level of cognitive processing. This was done by introducing Musical-Rhythmic Intelligence as learners were instructed to play roles of rival court bards in *qawwali* groups, chanting praise of their respective monarchs or pointing out flaws in the other ruler (in English), with help from their ready-made table of comparisons. Selectively phrasing content in poetic and persuasive terms, adding catchy refrains, and setting the whole to tune and rhythm, enabled learners to reach RBT cognitive levels of Analysis and Evaluation, verging on Creativity in language use.

By the end of the study, EG teachers reported that integrating RBT with MI aspects of tasks was essential for task-outcomes to meet learning objectives and individual needs. Setting task-duration, seen in the tasks above (Figs. 4.8 and 4.9), was initiated by EG teachers as time regulating guidelines for effective task-planning and presentation.

d. Evaluation of task-structure by EG and CG teachers before the study: Both EG and CG used language-testing items for teaching-learning before this study.

Evaluation of task-structure by CG teachers after the study: There is no change in CG use of language-testing items for teaching-learning after the study. In the absence of tasks or evaluating rubrics, CG teachers did not conceive of peer assessment or feedback and even teacher assessment was subjective, with written/ oral task products being graded (Appendix A-5). CG language items being copied from old test-papers, provided no scope for reflection on language inputs, learning outcomes or learner needs.

Evaluation of task-structure by EG teachers after the study: Task-structure in the first EG task-cycle covered six out of seven task aspects discussed in Section 3.2.2 (pp. 108-111): (1) Aim, (2) Outcome and Information Output, (3) Inputs, (4) Performance and information processing, (5) Nature of collaboration, (6) Duration, and (7) Rubric.

Task rubrics, essential for task-evaluation, feedback and reflection, were missing in most early MI-RBT tasks. Therefore, out of five stages of task procedure described in Chapter Three (p. 107), the first three: (1) Pre-task, (2) Task, and (3) Report only took place. The last two stages: (4) Analysis and (5) Reflection, based on the task rubric, frequently did not occur in the first task-cycle. Self and peer assessment of task outcomes were, however, enabled by evaluation rubrics framed by EG teachers in later task cycles (Appendices E, F, K). Learner reflection on task-outcome was thus added to teacher reflection on class-observation feedback.

Qualitative task-evaluation reports of EG teachers (Appendix E) showed task-framing as a cyclic process of MI-RBT planning, implementing, observation-feedback, and reflection on task outcomes and learning objectives. Rubrics played an important role in completing this cycle, by framing reflection on task outcomes vis-à-vis learning objectives. Evaluation rubrics were not printed in task-sheets as a paper-saving measure, because they took up too much space (Appendix G). They

were, instead, digitally displayed on smart boards during task-implementation. Teacher-framed rubrics formed an essential part of the MI-RBT-TBLT process and task-structure.

The peer-evaluation rubric below (Table 4.1), framed by an EG teacher in collaboration with a colleague teaching Science, reflects an integrated focus on content knowledge and language use, with two descriptive indicators for each:

Task (Class VII): Prepare a healthy-diet plate for any one meal for a family with the following different age groups: (60 min) Children (8-10 years), Teenagers (12-14 years), Parents (30-35 years), Grandparents (60-70 years) Rubric for Assessment:				
My Healthy Meal Rubric				
Attribute	**Healthy- 4**	**Almost There- 3**	**Slightly Unhealthy- 2**	**Unhealthy- 1**
Name and Title	Includes student details and the project title clearly indicating the theme.	Student details and thematic title are written but the name of the meal is missing.	Student details are written but title theme is not clear or the name of the meal is missing. Some language error.	Student details are written but the title does not incorporate the theme. Language errors.
Accuracy	Incorporates all six food groups in a balanced way, has variety in the items. Explains the inclusion of each item. No language errors.	One food group is missing. One or two language errors.	Two food groups are missing. Two or three language errors.	Three or more food groups are missing. Over three language errors.
Coherence	The points are in proper order, with the advantages of each food item listed correctly.	One or two points may be missing.	The points are not properly arranged, with two or three points missing.	Three or more points are missing and advantages are not clearly explained.
Neatness	The writing is legible, with no spelling or grammar errors, and the text is accompanied by a meal-plate diagram with its food items are correctly labelled.	The project is either a little difficult to read, has a spelling error, or two items of food are on top of each other.	The project has two of the following: a little difficult to read, has a spelling error or two, or the items of food are on top of each other.	The project has several negative qualities such as: difficult to read, has multiple spelling errors, and the food is on top of each other.
Add the total number of points in each category and divide by 4 to get the average grade point. Round off decimal of 0.5 or above to the next whole number. A=4, B=3, C=2, D=1.				

Table 4.1 Peer-Evaluation Rubric

MI-RBT task-structure therefore is present in all its aspects in task-framing by EG teachers at the end of the present study.

e. **Task-evaluation by EG and CG teachers before the study:** EG and CG teachers did not participate in evaluation, selection or sequencing of language items before the study.

Task-evaluation by CG teachers after the study: In the absence of MI-RBT-TBLT, there was no change in the CG situation after the study. CG teachers rated language items solely by probability of recurrence in upcoming examinations.

EG teachers re-evaluating task-evaluation in the study: The EG teachers, as mentioned earlier (p. 103), modified the researcher's task evaluation model because they found it 'too theoretical' for practical application. The EG teachers developed a **Task Evaluation Report format** (Appendix E) in three stages. The new task-evaluation format integrated the researcher's models for task-framing, TBLT-procedure and task-evaluation, specified in the Research Tool, as follows:

- **Stage One** of the teachers' **Task Evaluation Format** covers the **Aim**, **Duration,** the MI, RBT, LSRW and material **Inputs**, and the **Nature of Learner Collaboration** of the researcher's task-evaluation model.

- **Stage Two** of the teachers' model covers the **Rubric,** the **Performance & Information processing** and the **Outcome and Information Output** details of the researcher's task-evaluation model, as well as the **Pre-task, Task, Report** and **Analysis** phases of TBLT procedure. According to the EG teachers, task-outcome is not disjunct from its language-learning objective as

the presentation of any task outcome by learners necessarily elicits one or more language skills. The language-learning objective and the task outcome, considered separately in the researcher's task-evaluation model, are hence, merged in the teachers' model.

- **Stage Three** of the teachers' model includes **Reflection** or introspective task-evaluation, leading to a second cycle of task-planning and follow-up.

Re-framing of the task-evaluation model by EG teachers is clear evidence of their having grasped the principles of TBLT sufficiently for practical application and their growing confidence and autonomy. EG teacher discussion rationalised the following premises of task-evaluation (Appendix L):

- Efficacy in fulfilling learning objectives
- Ability to motivate and engage diverse learners in the learning process
- Stimulating higher-order thinking
- Facility in implementation

The EG teachers identified a 'good' task by the simplicity of task design combined with maximum effectiveness in promoting learning in diverse learners. This proved their learner-centric, differentiated and process approach to TBLT. The ability of EG teachers to frame good tasks ensured that they were no longer passive recipients of theory. This proves that framing tasks to suit process-oriented TBLT methods rather than product-oriented examination requirements, enabled teachers to metacognitively conceptualise their role as facilitators of learner-centric processes. This professional development of EG teachers was a gradual process, traceable to its roots in teacher attitudes before the study, as discussed next.

f. **EG and CG teachers writing for reflection before the study:** CG teachers before the study used computer software to generate anecdotal reports, lesson plans, etc., to fulfill CBSE requirements. EG teachers before the study, composed reports on students for report cards, twice annually. Writing to reflect, therefore, was almost entirely absent in both groups of teachers before the study.

CG teachers writing for reflection after the study: There was no change in the CG situation after the study. CG teachers did not respond favorably to requests for maintaining teaching journals or anecdotal records, citing lack of time and disinclination for introspective writing in the face of commercial availability of automated software for generating such reports. The researcher had to rely on her own field notes as qualitative data from interviews, group discussions and class observations, as even the most articulate CG teachers entirely shirked written reflection. Use of time-saving technology or resorting to automated generation of teaching-learning records for CBSE-CCE hindered CG teacher reflection, and led to lack of relevant qualitative data for this study.

EG teachers writing for reflection after the study: A serious procedural problem observed during initial stages of the study was the lack of time and effort for reflection reported by EG teachers for journal-entry, anecdotal records, lesson observation, collaborative discussion and task evaluation. This paucity of reflective writing was disturbing because it indicated lack of introspection on task-framing and its outcomes in learners, inhibiting professional development.

The sketchiness of the task evaluation report by an EG teacher in the first task-cycle below (Fig. 4.10), is evident in comparison with similar reports from later task cycles (Appendix E):

Task: How strong is the postcard? (*Based on Class II EVS Unit*)

Language Skills Used: Listening, Speaking
Thinking Levels Reached: Analysis (Compare & Contrast)
MI used by learners: Verbal-linguistic, Visual-spatial, Physical-kinesthetic
Group / Partner Activity: Working in partners
Materials used: Postcard-size chartpaper, scissors, tape, books
Task Commencement: Students held the postcard size paper on one end and placed a book on the other end. The chart paper was not able to hold the weight of book and collapsed.
Instructions: Students were instructed to roll the chart paper into cylindrical shape and stick it with tape.
Task Activity: In the beginning of the activity students chose their partners. After instructions from the teacher, they held the chart paper in one hand and placed a book at the other end the chart paper. The chart paper was not able to support the weight of the book. The students then rolled the chart paper into a cylindrical shape and stuck it with tape. They placed one end of the rolled chart paper on the table and placed books on top of the other end. The students were surprised to see that the chart paper could support the weight of the books. The class discussed with the teacher the reasons behind this.
Task completion: All the groups completed their task satisfactorily.

Fig. 4.10 Early Task Evaluation Report

In this perfunctory report (Fig. 4.10), the teacher only mentioned the level of learners, MI inputs and targeted RBT level of task-outcome, material resources and language skills, without describing these, and thus, providing incomplete data on language-learning. This report moreover, did not do justice to the lesson, as observed by the researcher. The researcher's immediate interview of the same teacher elicited evidence of her reflections on the following task-aspects that were missing in her subsequent written report:

- Learning objective (language of logical questioning)
- Rubric for assessing task outcome

- Patterns of learner interaction
- Questions asked by teacher and learners
- Learner responses to teacher questions
- Difficulties faced by individual learners in explaining and reasoning in English and instances and contexts of strategic L1 use.

Writing task evaluations clearly, did not reflect teacher reflection which nonetheless occurred, based on peer-feedback and group discussion. EG teacher feedback indicated that writing postponed until a convenient time usually led to forgetfulness of detail, whereas verbal prompts in discussions and interviews revived memory on interesting details concerning:

- Nature of peer collaboration
- Changes in MI-RBT task-plan
- New insights into MI-RBT-TBLT
- Addressing learner differences through MI and collaborative learning
- Teacher autonomy and professional development

Collaborative problem-solving helped to overcome this obstacle as comparison of task-evaluation reports with peer feedback on MI-RBT tasks uncovered deep-structure task-functioning. Initially, the researcher also modeled reflection through writing, to help teachers 'notice' the aspects overlooked. The initial reluctance to write task-evaluations, teaching journals of classroom events (Jarvis, 1992) and anecdotal records of learners, in the narrative enquiry mode (Clandinin and Connelly, 1987, 2000), was overcome by EG teachers mainly through peer-motivation.

The teachers were chiefly motivated to write by peer-feedback stating that their written reports did not do justice to their task-framing or reflective abilities, which consequently appeared to be limited to lower-order RBT thinking. This gradually led to greater teacher effort in reflective writing in teaching journals, anecdotal records and task evaluations (Appendices E, K-1, K-2). This can be attributed to continual referral to these records during peer-discussions, parent-teacher meetings and meetings with departmental heads (Appendices K, L), on teaching measures adopted for learner progress. Writing about teaching thus, being put to practical use, enabled EG teachers to move beyond mere description into reflective awareness of learning processes. This also led to increased depth and intensity of class observations. Reflective writing reinforces observation through the articulation of problems encountered in everyday classroom experience, to learn from them (Bailey et al., 2001). It distances the observer to a more detached or objective viewpoint of teaching (McDonough, 1994).

An unexpected byproduct of this was voluntary self-appraisal by EG teachers at regular intervals, followed by their introduction of self-appraisal for learners as well (Appendices K-3, K-4), following established precedents in research (Santos, 1997; Halbach, 2000). Teacher collaboration alone was responsible for these reflections. The growing need to reflect on new learning and to document such reflection as an index of growth, marked the beginning of teacher autonomy initiated by task-framing. Teacher journals and anecdotal records indicate the beginnings of a professional discourse community bound by learner-centric concerns and shared learning (Ho and Richards, 1993; Bailey, 1996; Dong, 1997). This was reflected in reflective writing by EG teachers.

Orienting teachers in TBLT theory did not engender the confidence and ability to develop their own task-evaluation model, which stemmed instead, from actual MI-RBT task-framing. EG teachers became conversant in task-structure by creating rubrics, reflecting on learning processes and distinguishing these from testing outcomes. Self-initiated collaboration with colleagues for CLIL enabled peer-feedback, problem-solving and teacher reflection on task objectives and outcomes, marking progress towards autonomy. Some EG teachers internalized MI-RBT-TBLT to an extent that enabled the integration of MI and RBT to learner needs and task outcomes without conscious effort (Appendix B-2).

Comparative summary of the structure of MI-RBT tasks framed by EG and CG teachers after the study: Analysis of qualitative data collected on this Dependent Variable indicates that over the study period, CG teachers selected language items solely on the basis of their recurrence in exams, instead of framing tasks, whereas EG teachers increased their knowledge of task structure, functions and parameters by framing MI-RBT tasks. The following points sum up the impact of research intervention on the Second Dependent Variable:

a. EG teachers were aware of differences between MI-RBT tasks and testing items but CG teachers were ignorant of differences between teaching and testing
b. EG teachers improved TBLT methods by revising task-structure, but CG language-testing items were disconnected from learning
c. EG teachers correlated language learning objectives with MI inputs and RBT outcomes in tasks, whereas CG teachers replicated earlier test papers
d. EG teachers gained knowledge of MI-RBT task-structure but CG teachers remained unaware of the link between the structure and function of tasks

e. Evaluation of task-structure by EG teachers led to the creation of a task-evaluating format, which was absent in CG teaching-learning

f. EG teachers reflected on task-structure and learning objectives, whereas CG teachers mechanically generated academic records with computer software

EG teachers manifested knowledge of MI-RBT task-structure after research intervention, in contrast to its absence in CG teachers without research intervention. **The qualitative data thus, indicates a Positive Hypothesis for the Dependent Variable stating that MI-RBT task structure promotes language learning.**

Dependent Variable - 3

(3) Use of Direct and Indirect Teaching and Learning Strategies: Qualitative data was collected on this Dependent Variable stating whether MI-RBT tasks framed by EG teachers promoted the use of teaching and learning strategies by the participants. This data is analysed below.

a. Focus on Teaching and Learning Strategies in the EG and CG before the study: There was low incidence of strategy use in both EG and CG learners before the study, as the lessons were teacher-led, with learners as passive listeners. Use of strategies by EG and CG teachers was also very limited as teaching was restricted to the lecture method.

Focus on Teaching and Learning Strategies by the CG after the study: There was no change in the CG teachers and learners after the study, with teacher-talk resulting in passive listening and rote-learning. There was little scope for using strategies in CG lessons, due to predominance of teacher talk-time (Appendix F-5). CG teachers expressed only superficial interest in new teaching-learning methods or strategies (Appendices A-2, A-3, B-1, B-2, C-1, C-2). Exam-oriented teaching thus

neglected learning strategies. CG learners had less practice in LSRW skills and strategies than EG learners did in every task-cycle.

Focus on Teaching and Learning Strategies by the EG after the study: Task-based, learner-centric and collaborative English lessons enabled shared-learning of new teaching and learning strategies by EG teachers and learners, respectively (Appendices A-2, A-3, B-1, B-2, C-1, C-2, D-2). Most EG teachers expressed eagerness to model appropriate learning behaviours and strategies for learners (Appendices K, L) at the end of the study. This confirms that communication-oriented lessons facilitate positive learner attitudes and the acquisition of a range of teaching-learning strategies, as seen in factor analysis (Horwitz, 1985, 1987; Hedge, 2000; Wette, 2009; Littlewood, 2010; Wong, 2010). MI-RBT tasks allowed EG teachers to observe and record strategies used by learners and by colleagues. Peer-collaboration in the social dimension of tasks is also interrelated with effective learning of strategies (Doyle, 2006; Carter and Doyle, 2006). The EG approach to language learning was thus based on the acquisition of strategies.

b. Use of direct strategies for language-learning by the EG and CG before the study: Before the study, both EG and CG methodology was lecture-based which did not include much scope for use of direct or indirect language-learning strategies or strategies for teaching language skills.

Use of direct strategies by the CG for learning language skills after the study:

i. Listening: There was no observable use of listening strategies by CG learners.

ii. Speaking: CG learners answered textual questions orally. Negligible 'wait-time' being allowed, only fluent learners seized the opportunity to speak. Role-play, debate

or recitation took place only twice or thrice annually, for graded assessment. CG teachers controlled the duration of class discussion. A few CG learners in almost every CG class claimed not to have spoken in class above twice or thrice in the entire academic year, and that only during oral assessment.

iii. **Reading:** CG teachers reading aloud and explaining texts left few opportunities for learners to read. Comprehension passages from workbooks were usually set for homework (Appendix C-2).

iv. **Writing:** Writing, for CG learners, meant grammar exercises, composition, answers to textual questions, and constituted homework or tests. Older CG learners engaged in guided writing, while younger learners copied or wrote to teacher dictation (Appendix D-2).

v. **Grammar:** CG learners did syntax and vocabulary exercises. CG teachers were frequently observed using L1 for explanation (Appendix F). CG learners rarely spoke in English, except when answering textual questions .

Use of direct strategies by the EG for learning language skills after the study: MI-RBT-TBLT in EG lessons focussed on LSRW skills and sub-skills, enabling the use of teaching-learning strategies for these, as discussed below.

i. **Listening strategies:** The qualitative data from questionnaires and task sheets (Appendices A-3, B-5, C-1, C-2, D-2, G) indicated that EG learners engaged in active listening by responding to task-instructions, to peers in problem-solving and feedback, and to audio-visual task inputs through note-taking or other activity. Listening strategies observed in EG learners included:

- Turn-taking
- Acknowledging previous speaker contribution

- Completing information gaps
- Selective and directed attention
- Querying for clarification
- Contextualisation
- Inferencing
- Using linguistic clues
- Transfer
- Analyzing contrastively

At the end of the study, EG teachers, unlike CG teachers are aware of the difference between passive and active listening (Appendices D, F-5).

ii. **Speaking:** EG learners frequently practiced speaking skills through recitation, discussion, presentation, role-play, problem-solving and negotiation in MI-RBT tasks in every task-cycle (Appendices A-3, B-5, C-1, C-2, D-2). EG classes invariably functioned in small groups, enabling shy learners to speak with peers and develop confidence for public-speaking, corroborating that learner beliefs and opinions about language learning can be developed in the collaborative classroom through dialogue (Lambert, 2001; Riley, 2009). EG teachers encouraged learners to question, seek clarification and debate, allowed 'wait-time' for reflection and assimilation, and modelled feedback protocols like 'two stars and a wish'. Speaking strategies observed in EG learners (Appendices A-7, A-8, C-1, C-2, D-2, D-4, D-5, D-6, M) reflected tolerance for opposing ideas and viewpoints in group discussions, as modelled by teachers.

iii. **Reading:** The MI-RBT tasks engaged EG learners in extensive reading (Appendix A-3), both, online and in print. Comprehension passages were used

for skimming, scanning or intensive reading by EG learners (Appendix G). EG learners read the text silently for meaning, or aloud in different modes, for instance: Guided Reading where the teacher modelled comprehension strategies like inferencing and predicting; Shared Reading where a more proficient peer thought aloud while interpreting text; and Echo Reading where the teacher demonstrated punctuation cues with voice modulation, to be followed by learners reading aloud the same passage (Appendices A-3, B-5, C-1, C-2, D-2, M). This confirms that positive teacher attitudes to reading promotes extensive reading in learners (McAlester, 2010).

iv. **Writing:** MI-RBT tasks integrated several writing sub-skills like brain-storming, mind-mapping, revising, peer-feedback, note-taking and note-making for EG learners, and allowed factual-expository, descriptive-narrative, persuasive and reflective styles of writing (Appendices A-3, A-4, B-5, C-1, C-2, D-2, G, M). This enabled EG learners to focus on strategies for opening and concluding, sequencing, illustrating, using cohesive devices, linking cause with effect, reformulating text and reader awareness.

v. **Grammar:** EG learners did syntax and vocabulary exercises along with playing language games (Appendices A-3, B-5, C-1, C-2, D-2). When explaining or instructing, EG teachers spoke slowly, with frequent repetitions and superfluity, while retaining natural pronunciation and volume, and using short, direct sentences (Appendix A-4). EG learners made transactional exchanges or asked for clarification in L1, although all instructional, directive, eliciting, informative and feedback exchanges were in English. EG teachers

only corrected major errors in grammar or pronunciation by repeating the incorrect statement or word correctly in context (Appendix C-2). The learning and retention of new vocabulary taught directly or arising spontaneously during teacher-student and student-student interaction are positively interlinked in the analysis of classroom discourse (Robinson, 2001; Sinclair and Coulthard, 1975, 1992 cited in Todd et al., 2008).

c. **Use of indirect strategies by the EG and CG before the study:** There was little observable use of indirect metacognitive, affective and social mediation strategies like self-monitoring, self-evaluation, tolerance of differences, shared-learning and peer-feedback by EG and CG learners before the study. These strategies were also absent in EG and CG teaching.

Use of indirect strategies by the CG after the study: There was no change in CG teachers and learners after the study. CG teachers selected, initiated and controlled activity and decision-making without involving learners in the process and thus disabling use of metacognitive strategies. Exam-centric institutional policy made CG teaching-learning revolve around weekly and terminal tests (Appendix A-4), with repetition and revision for testing. Debates, poster-making, drama, recitation and skits were not assessed by rubric but subjectively, with no scope for metacognitive strategies like monitoring, self-evaluation or social mediation strategies like peer-feedback (Appendices A-3, A-4, C-1, D-2).

Unless directly approached for help, CG teachers often left learners unmonitored during the planning stages of debates, skits or speeches and corrected notebooks instead of modelling social mediation strategies for individual

participation in group planning. CG teachers only observed the presentation phase of tasks for grading. When asked for help by slow learners, they completely took over and controlled learner functioning, thus restricting the use of affective strategies like verbal sharing and encouragement.

Use of indirect strategies by the EG after the study: MI-RBT tasks framed for language learning engaged EG teachers and learners in collaborative learning, extensive reading, note-taking, drafting, categorising information, analysing rubrics and learning other process skills without focussing exclusively on test products (Appendices A-3, A-4, B-5, C-1, C-2, D-2, M). These MI-RBT tasks were different from testing tasks, as they enabled assessment of individual roles as well as the group product. Individual testing evaluates the efficacy of tasks in developing vocabulary, reading fluency, comprehension, oral language and critical interpretation (Fall et al., 2000).

Peer learning, assessment and feedback were enabled by task rubrics specifying expected outcomes. Learner-centric MI-RBT tasks thus allowed EG learners to use metacognitive, social mediation and affective strategies for planning, collaboration, organizing, negotiation, problem-solving, making choices and decisions, self-management, self-monitoring, self-evaluation, self-reinforcement and providing constructive feedback (Appendices A, B, C, O). After the study, EG teachers viewed language proficiency as an ongoing, differentiated and intrinsically motivated developmental process involving risk-taking and error-tolerance. EG teachers therefore, from their metacognitive awareness of the learning processes, consistently modelled learning strategies and behaviours for their learners. EG

teachers focussing on learning processes instead of test products, proved that MI-RBT-TBLT shifted teaching focus from product-based testing towards use of learning strategies.

Comparative summary of the Use of Direct and Indirect Teaching and Learning Strategies after the study: The analysis of qualitative data in the above discussion revealed that over the study period, CG teachers did not use and model strategies, thus inhibiting the development of learning strategies, whereas EG teachers, by modeling direct and indirect learning strategies and behaviours, enabled the development of these in learners. The following points sum up the impact of research intervention on the Third Dependent Variable:

a. Increased focus on teaching and learning strategies in the EG as opposed to no discernible focus on these in the CG
b. High incidence of direct strategies for language-learning in EG teachers and learners as opposed to very low incidence of these in CG teachers and learners
c. Prevalence of indirect strategy use by EG teachers and learners as opposed to little scope for this in CG teaching-learning

The points outlined in the discussion above show visible increase in the use of direct and indirect strategies by EG teachers and learners at the end of the study, in contrast to CG teachers and learners. **The analysis of qualitative data thus, indicates a Positive Hypothesis for the Dependent Variable stating that MI-RBT tasks enable the application of teaching and learning strategies.**

Dependent Variable - 4

(4) MI-RBT-TBLT for CLIL: Qualitative data was collected on this Dependent Variable stating whether English teachers can frame MI-RBT tasks for Content and

Language Integrated Learning (CLIL) extending teaching-learning of English across the curriculum. This data is analysed below.

a. **EG and CG teacher collaboration for CLIL task-framing before the study:** Before the study, both EG and CG teachers expressed awareness of language-related problems recurring across the curriculum, along with their inability to solve these problems, as they did not teach language integrated with content in other subjects (Appendix A-2). EG and CG teacher feedback also indicated that they were directly or indirectly held accountable by the school for language proficiency of learners in content subjects (Appendices A-2, C-1).

CG teacher collaboration for CLIL task-framing after the study: After the study, CG English teachers continued working in academic isolation from colleagues in other subjects, and even those who taught other subjects did not integrate language skills with content. CG teachers selected language items from English texts or previous test papers. The standard response of CG teachers to low language proficiency in learners was to quantitatively increase grammar-composition practice based on test items. There was greater focus on written output than on language input skills like listening and reading (Appendices A-2, A-3, A-4, A-5).

EG teacher collaboration for CLIL task-framing after the study: EG teachers, on the other hand, began integrating English with content subjects through MI-RBT task-framing in collaboration with content-subject colleagues, to address common language-related problems faced by learners in all subjects. EG teachers thus collaborated with colleagues from content subjects and also with each other, in task-

planning, team-teaching, class-observation and peer-feedback on a regular basis (Appendices F, K, L, M).

Qualitative data analysis showed that framing MI-RBT tasks by integrating language skills with content from other subjects provided opportunity for CLIL to EG teachers, through collaboration with colleagues in other departments. The importance of language teachers working collaboratively with content area teachers in schools is recognized around the world (Kaufmann and Crandall, 2005; Davidson, 2006). Strategies for integrating language learning into content lessons are included in SLTE curriculum (Snow and Brinton, 1997) as a policy initiative to support collaboration for CLIL (Bourne, 1997; Crandall, 1998a, 1998b; Nunan, 1992c).

Some EG teachers taught other subjects as well as English (Appendix A-1), as stated in the description of the Study Sample (pp. 123-124). These teachers met cross-curricular language requirements of learners by introducing content from other subjects taught by them into MI-RBT tasks. Group discussions on task-evaluation led to this trait being emulated by other EG teachers, bringing them into collaboration with colleagues teaching content subjects for task-planning and team-teaching. Such cross-curricular collaboration for CLIL was an outcome of MI-RBT task-framing.

By the end of the study, collaboration between English and other subject teachers enabled the inclusion of a wider range of MI inputs and higher-order RBT thinking skills in task-framing for CLIL. This allowed focus-shift from exclusive text-dependence to integrating remedial language needs across the curriculum. Subject specific grammar (syntax, phraseology and vocabulary) was incorporated

into MI-RBT tasks across the primary and secondary curriculum, in accord with basic CLIL principles.

b. **MI Inputs for CLIL by EG and CG teachers before the study:** Before the study, neither EG nor CG teachers actively used MI inputs for language teaching, as they did not realise its potential for catering to learner differences and engaging diverse learners in language learning.

MI Inputs for CLIL by CG teachers after the study: There was no change in methods by CG teachers after the study. They did not often draw upon learner MI for language learning, but used MI (without conscious intention) for prescribed activities like poster-making or enacting skits.

MI Inputs for CLIL by EG teachers after the study: MI-RBT task-framing led to CLIL by EG teachers. Having to add MI inputs like Visual-spatial, Mathematical-logical, Naturalistic, Musical-rhythmic and Physical-kinesthetic in tasks also motivated EG teachers to look beyond the English text at other subjects and their specific linguistic requirements. Combining varied MI with Verbal-linguistic inputs from content subjects enabled MI-RBT task-framing to cater to learner needs across the curriculum.

For example, content from textual units in science was integrated with language learning in MI-RBT tasks, when English and Science teachers collaborated for task-framing. The English teacher focussed on language use while the Science teacher provided the (Naturalistic Intelligence) content input of a video on fruit-processing and collaborated with the EG English teacher in task-planning, team-teaching and answering learner queries on scientific content in the MI-RBT task

below (Fig. 4.11). The task outcome was letter-writing. The task thus, supplemented an English textual unit by enabling a deeper understanding of its scientific content.

Application Task (Class VII):

- Apu's grandfather has a mango orchard which yields delicious fruits in summer.
- Watch the video on the stages of fruit-processing in a factory. [7 mins]
- While watching, take notes on the products. [7 mins]
- Next, with your partner, draft and write a letter from Apu to his grandfather, describing how different products can be made from mangoes. [15 mins]
- Grade the letter of another group, as follows:

Grade A: The letter has an appropriate introduction, a detailed description of preservation processes, and concludes suitably but has 1-2 spelling or grammatical errors.

Grade B: The letter has an appropriate introduction, the conclusion is suitable, but some steps are missing from the description of preservation processes. It has 4-5 spelling or grammatical errors.

Grade C: Points are missing in the introduction and/or the conclusion and there are errors in the preservation processes outlined. There are over 5 spelling and grammar errors.

Fig. 4.11 Collaborative MI-RBT Task-framing for Content and Language

MI-RBT task-framing integrated LSRW skills with content from other subjects to address language-proficiency problems. EG teachers expressed the belief that MI-RBT tasks could extend language-learning across the curriculum (Appendices F, K), proving that English teachers could frame MI-RBT tasks for CLIL, based on their awareness of learner needs across the curriculum. Teacher awareness of cross-curricular language needs is discussed in the next point.

c. **CLIL discourse in EG and CG lessons before the study:** EG and CG teachers before the study did not develop teaching materials and showed no awareness of the specialized discourse of CLIL that enabled language learning to be directed towards specific goals, focusing on content vocabulary.

CLIL discourse in CG lessons after the study: There was no change in CG lessons after the study, as these continued to be restricted to English texts and language use focussing solely on preparing for English exams.

CLIL discourse in EG lessons after the study: Learner participation in classroom discourse being essential for learning, MI-RBT task-framing by EG teachers took into consideration learner differences in language knowledge, learning ability, cultural aspects, or interest in the topic selected (Appendices G, K). Learners face language problems in content subjects because conventional teacher expectations of appropriate logical-scientific thinking and discourse usually leads them to treat academic knowledge as separate from social/personal experience (Bruner, 1996).

MI-RBT tasks encouraged less proficient learners to participate in an integrated, socio-cognitive classroom discourse by bridging the gap between formal, logical-scientific discourse and informal, social narrative through self-expression, often in the story-telling mode (Appendices B, C, D). To enable language learning for both academic and social purposes, classroom discourse has to inclusively incorporate vocabulary and syntax common for both, in the structuring of conversation, narration and formal talk, or deciding, maintaining and changing topics (Cazden, 2001; Morine-Dershimer, 2006).

The EG teachers transformed MI-RBT-TBLT from a textual adjunct into a cross-curricular learning tool, accessing different content resources. For instance, T-Charts (Gutierrez et al., 1999) enabled learners to incorporate their social experience into academic content by creating a hybrid discourse, with prior personal information on the topic arranged on the left-hand column of the 'T' and related academic facts listed on the right-hand column.

In the MI-RBT task below (Fig. 4.12), the T-chart is used to help learners in making logical connections, bridging the gap between personal narrative on the left side column and scientific or academic discourse on the right:

Scientific-Reasoning Task (Class VII):

1. With your group, interview the farmers adjacent to our school on the different characteristics of soil used to grow sugarcane, ladies-fingers, rice and bajra. Describe these soil features on the left-column of a T-chart. [30 mins.]
2. Next, carry out the soil-sample tests from the science unit on *Soil* on a sample from the school garden. [20 mins.]
3. Compare the test results with the soil types described in your textbook to identify the sample. [15 mins.]
4. On the right-hand column of your T-chart, list the characteristics from the *Soil* unit matching your test-sample. [10 mins.]
5. Now, discuss with your group-members, the similarities and differences between the information in the right and left hand columns. [10 mins.]
6. Write the profile of your soil sample for growing crops, matching the two columns. [20 mins.]

MI: Interpersonal, Naturalistic, Physical-kinesthetic, Logical, Verbal-linguistic. RBT: Evaluation

Fig. 4.12 Logically Connecting Personal Experience with Content Discourse

Similarly, EG teachers modified *Maths Fact Friends*, a mnemonic card-game to engage learners in compiling Maths and Science cards with subject-specific word-cues (MI: Verbal-Logical, RBT: Application) to create Maths and Science Dictionary Cards, developing reading proficiency for Maths and Science problem-solving. MI-RBT tasks eliciting group-writing techniques reportedly improved EG learner ability to organise information coherently in the Social Sciences. EG teachers found from recurring practical experience that cross-curricular learner problems stemming from poor language proficiency could be addressed through MI-RBT tasks, like the one described above.

Comparative summary of MI-RBT-TBLT used for CLIL after the study: Analysis of qualitative data on this Dependent Variable proves that over the study period, CLIL was evident in EG teaching, with positive cross-curricular interdependence making each

teacher aware of her specialised role in the larger teaching community (Appendices K, L). On the other hand, even CG 'mother-teachers' of all subjects, maintained the boundaries separating subjects, thus denying themselves a cross-curricular role or membership in a larger professional community. The following points sum up the impact of research intervention on the Fourth Dependent Variable:

a. High EG teacher collaboration for CLIL task-framing versus its absence in CG teachers

b. MI Inputs in tasks for CLIL by EG teachers but no task-framing by the CG

c. Operation of CLIL discourse in EG lessons but not in the CG

The contrast between EG and CG teachers could thus be attributed to the Research Intervention of MI-RBT-TBLT enabling English teachers collaborating in a CLIL context to frame MI-RBT tasks for teaching English across the curriculum. **The discussion above indicates a Positive Hypothesis for the Dependent Variable stating that MI-RBT task-framing by EG teachers extends across the curriculum.** The ramifications of teacher-collaboration are discussed next.

Dependent Variable - 5

(5) MI-RBT-TBLT for teacher empowerment: Data collected before and after the study on this Dependent Variable, stating whether framing MI-RBT tasks leads to professional empowerment of teachers, is analysed below.

a. Autonomy in task-framing by EG and CG teachers before the study: The EG teachers did not express any definite idea about autonomy before the study. Various CG teachers equated autonomy variously, with higher income, heading the department or school, or ownership of a lucrative private coaching centre.

Autonomy in task-framing by CG teachers after the study: There was no change in the opinions of CG teachers after the study.

Autonomy in task-framing by EG teachers after the study: By the end of the study, emergent autonomy in EG teachers was evident in their confident interpretation of MI-RBT task-framing guidelines. During discussions for task-evaluation, effective MI-RBT tasks were identified, not solely by MI and RBT parameters, but primarily through effectiveness in promoting language learning or catering to remedial needs of slow learners. EG teachers thus shaped their professional identity on the common learner-centric platform of teacher-collaboration for shared experience, collective reflection and self-evaluation.

b. **Seniority in the workplace among EG and CG teachers before the study:** EG and CG teachers both identified seniority on the basis of age, teaching experience, classes taught and pay-scales (Appendices A-1, A-2) before the study. Senior teachers were described as subject-experts, role-models and mentors for other staff members.

Seniority in the workplace among CG teachers after the study: The above views crystallised in CG teachers after the study. Seniority was expressed as an attitude of dominance or superiority with some reactions of resentment against this sentiment, expressed by others (Appendix A-2).

Seniority in the workplace among EG teachers after the study: EG teachers continued to believe in seniority as a more democratic role (Appendix A-2). The differences in actual functional relationships between junior and senior teachers in CG and EG schools is discussed next.

c. **Experience versus efficacy in EG and CG teachers before the study:** EG teachers did not have definite professional views before the study, except equating efficacy with experience. CG teachers were observed to follow a strictly hierarchical professional relationship, where juniors deferred to seniors in decision-making, rarely expressed individual views on teaching methods or materials, and were actively discouraged from assuming equality. Collaboration was seen as an indication of personal shortcoming or professional inadequacy by senior CG teachers (Appendix A-3).

Experience versus efficacy in CG teachers after the study: There is no change in the attitudes, beliefs or interactional relationships of CG teachers after the study.

Experience versus efficacy in EG teachers after the study: MI-RBT task-framing initiated teacher-collaboration and valorized efficacy and skill above seniority based on experience. This modified EG teacher views after the study. Senior EG teachers expressed admiration for teaching-efficacy and learner-empathy in junior colleagues, and were frequently observed collaborating with less experienced colleagues on equal terms. Mutual respect among EG teachers was observed, regardless of teaching experience and efficacy (Appendix L).

d. **Autonomy versus hierarchy in EG and CG teachers before the study:** Decision-making in CG schools on class allocation, textbook selection, resource distribution and assessment policy rested with departmental heads advising the school principal. Junior CG teachers expressed apprehension of their seniors, were not permitted to observe classes by senior teachers, or to participate in decision-making and diffident or reticent in expressing their ideas on teaching-learning at interviews with the

researcher. While observing deference to seniority, EG teachers followed more democratic decision-making procedures (Appendix B-1).

Autonomy versus hierarchy in CG teachers after the study: There was no change in the CG relational structure after the study.

Autonomy versus hierarchy in EG teachers after the study: EG teachers manifested greater team-work and collaborative equality after the study. In departmental meetings, journals, self-appraisals and interviews (Appendices K-1, K-3, L), EG teachers expressed belief in turn-taking, regardless of seniority, when problem-solving, observing classes or giving feedback on MI-RBT tasks. EG teachers took collective decisions on teaching methods, materials and evaluation, based on democratic consensus, reflection and peer-feedback.

e. **Attitudes and values of EG and CG teachers before the study:** Before the study, all EG teachers expressed 'learner improvement' as the greatest value in their professional belief system. A few CG teachers expressed the same view. Most CG teachers, however, expressed the idea, worded as 'good teaching' being of the greatest value in their professional belief system (Appendix A-2).

Attitudes and values of CG teachers after the study: CG teachers after the study translated 'good teaching' into standard, self-centric measures of professional development and self-empowerment as having 'proper class-control', attaining 'seniority' in the CG school hierarchy, being 'promoted to teach Board classes [IX-XII]', 'delivering excellent Board results', becoming 'Head of department', and 'getting greater financial benefit' through 'higher pay-scales' or by owning lucrative 'private-coaching classes'. According to CG teachers, institutional guidelines

encouraged such attitudes and values while restricting individual teacher experiments (considered synonymous with risk-taking) with materials or methods. Only nine CG teachers mentioned 'learning innovative teaching' or 'writing text-books' as criteria of professional development along with power, control, seniority, promotion and financial independence. CG teachers expressed preference for attending periodical workshops to 'learn from expert guidance' to peer-learning (Appendices A-2, B-1).

Attitudes and values of EG teachers after the study: At the end of the study, EG teachers defined empowerment strongly in learner-centric terms of self-efficacy and autonomy (Appendices A, K, L). EG teachers thus linked seniority with professional development, identifying it with the ability to motivate learners, frame tasks engaging learner attention and catering to individual differences in attitude and aptitude, and to enter into successful collaborative relationships with colleagues. Methods, procedures and strategies were therefore, viewed by EG teachers as crucial for self-empowerment. Significantly, EG teachers while expressing willingness to learn new methods and strategies from pedagogical workshops and experts, also emphasised peer-collaboration as essential for sustained and learner-centric professional development. The EG teacher construct of empowerment thus, emerged as more self-deterministic than that of CG teachers (Appendices A, B, K, L).

f. Collaboration versus competition in EG and CG teachers before the study: EG teachers expressed no clear awareness of professional competition but nor did they engage in collaboration, before the study. CG teachers, on the other hand, described their work environment as very competitive, with comparison between teachers based on exam results of learners, which in turn decided departmental promotions.

CG teacher-collaboration was impeded not only by institutional policy but also by inherent, hierarchical teacher attitudes and beliefs. Top-down departmental meetings decided examination procedure, text-book selection, syllabus changes or other policy directives. CG teacher discussions were observed to be authoritarian in tone, with disagreement sometimes leading to acrimonious arguments, and junior CG teachers preferring to remain prudently silent. Junior CG teachers privately described staff-meetings as a waste of time, and lacking power to decide the agenda or outcomes, claimed no interest in attending meetings. Learning to share divergent beliefs about ESL and listening without judgement is essential for participation in a community of practice and to prevent derailing the dialogue by issues of identity and power (Crandall, 2000; Johnston, 2000; Creese, 2002).

Collaboration versus competition in CG teachers after the study: There was no change in CG situation after the study, but teacher opinion on collaboration and competition did evolve. Paradoxically, many CG teachers expressed desire for greater collaboration and for freedom to teach without exam constraints, although unable to articulate their concept of collaboration with clarity. CG teachers, being intelligent and articulate, with definite ideas on their learners, methods, materials, and problems, the researcher surmises that their lack of collaboration stemmed from their teaching-learning processes, which were exam-centric and text-bound. These features have been found to inhibit teacher autonomy (Crandall, 1987; Echevarria et al., 2004), where the inherent complexities of teacher relationships, institutional policy and professional environment are obstructive to collaboration (Hurst and Davidson, 2005; Wild et al., 2008).

Collaboration versus competition in EG teachers after the study: In the think-aloud transcript (Fig. 4.1), the EG teacher refers thrice to a colleague, for collaborative planning, team-teaching, and peer-feedback on task implementation. Peer-collaboration for problem-solving in MI-RBT-TBLT emerged during the pilot and extended into the main study in task-planning, team-teaching, class-observation and peer-feedback (Appendices A, B, C, F, K, L). Collaborative relationships among EG teachers included instances of novice teachers freely sharing innovative ideas with more experienced colleagues who accepted their contribution. Peer collaboration thus helped EG teachers to actively engage with the challenges posed by MI-RBT-TBLT and accept responsibility for their own learning, as the first step to self-empowerment. The principles of collaborative peer-learning enable professional development in TESL through improved classroom instruction and materials development, which ultimately affects learning outcomes (Johnson and Johnson, 1989; Roger and Johnson, 1994).

Task evaluation meetings, voluntarily conducted by EG teachers after every task-cycle, enabled indirect (video) observation of lessons, accompanied by discussion on effective MI-RBT task-structure and processes, learner motivation and task-engagement, learner feedback, turn-taking and language remediation. EG teachers described their meetings as shared learning experiences, and collaborating teachers of other subjects frequently attended these meetings. Interpersonal sensitivity among EG teachers increased with practice. This enabled impersonal yet constructive feedback combining appreciation with suggestions for improvement on specific task features through 'two stars and a wish', a feedback strategy learnt in an action research workshop attended earlier. Disagreements were prevented from

becoming acerbic through peer-intervention.

g. **Leadership in EG and CG teachers before the study:** Absence of team-work before the study showed no clear leadership roles among either EG or CG teachers. Seniority rather than leadership was the status quo.

Leadership in CG teachers after the study: There was no change in the status quo as far as CG teacher relationships were concerned, after the study.

Leadership in EG teachers after the study: In the first task-cycle, EG teachers expressed the need for guidance, clarification and feedback from the researcher on a regular basis. They progressed gradually to definite and consistent preference for autonomous or collaborative problem-solving with peers (Appendices K, L). Autonomous leadership roles emerged from positive collaborative relationships among EG teachers, based on traits like efficacy in task-framing, observation-feedback, use of technology, proactive problem-solving, conflict-resolution, professional-discourse and trust-building. Collaborative learning promotes creativity, self-esteem and positive affective-cognitive experiences (Johnson and Johnson, 1989; Creese, 2005, 2006) with opportunities for widening social and intercultural perspectives (Creese, 2002; Chamberlin-Quinlisk, 2008; Senior, 2010). EG teacher-leaders in the present study played a vital role in the dynamics of maintaining a supportive learning community extending beyond conventional classrooms into a virtual learning environment through class blogs and wikis.

h. **Action research by EG and CG teachers before the study:** Action Research is a process of critical reflection or inquiry by teachers into the assumptions, values and theories underlying their own practice, and thus leading to self-empowerment

(Nunan, 1992; Crookes, 1993; Burns, 1996; Johnson, 1996; Bailey et al., 2001). Shortly before this study, almost all the EG and CG teachers had attended a workshop on action research conducted by Dr. Sue Lyle from the University of Swansea, Wales, at DPS Surat. Neither the EG, nor the CG teachers, however, had engaged in action research prior to this study.

Action research by CG teachers after the study: Some CG teachers who expressed sincere desire to help learners, were yet, unable to implement new learning from Dr. Lyle's workshop on action research, declaring that it was inapplicable in their context (Appendix B-1). This attitude could be correlated with their lack of commitment to data-collection for the present study, which, combined with poor time-coordination, led to CG teachers not maintaining any teaching journal or anecdotal records. Records were maintained by CG teachers for CBSE inspections, using software to generate automated lesson plans and reports on learner progress. The lack of teacher initiative for recording classroom practice was evident in the paucity of CG teacher and learner responses in questionnaires (Appendices A, B, C, D), limiting their teaching-learning effort. The CG learning environment was not ready for action research.

Action research by EG teachers after the study: Spontaneous individual initiative for action research projects in MI-RBT task-framing, without researcher intervention, was observed during the pilot and repeated by EG teachers in the main study. This voluntary decision modified EG teacher role from objects of the present study into researchers in their own right. They indicated their autonomy by thus, assuming control of their time, space and action. Action research by EG teachers in the present study is evidence of an attempt to apply theory in practice through MI-RBT task-

framing. Teacher-orientation workshops and collaborative action research during the main study enabled professional interaction among the EG teachers, extending into professional interaction with a virtual learning community through class blogs, by the end of the study (Appendices F, K, L).

The present study, providing EG teachers with opportunity for action research, was validated as a teacher-development programme in the EG schools. Professional learning included MI-RBT task-framing, class-observation, self-evaluation, peer-feedback and reflection as innovative teacher practice. A common time-space fulcrum thus united EG action research with the researcher's own study, meeting learner needs and learning objectives within the timetabled school curriculum. MI-RBT-TBLT was thus assimilated into the curriculum, instead of remaining a temporary research intervention, as MI-RBT tasks became tools for ongoing action research on LSRW by EG teachers (Appendix B-1).

EG teachers stated that such reflective teaching enabled them to question their own assumptions and values, systematically changing specific aspects of their practice over the study period to address learner problems. Relevant qualitative and quantitative data for individual action research and for the present study thus overlapping, EG teachers participated in data collection through class observation and video-recording, in dual roles as study sample and researchers. This facilitated data collection and was a measure of teacher autonomy.

i. **Reading for research by EG and CG teachers before the study:** The EG and CG teachers were not regular readers before the study, excepting prescribed language texts and CLT coursebooks by well known publishers like Oxford, Cambridge, Ratna

Sagar, Gulmohor, and exam guidebooks published locally. This was solely for the purpose of selecting language items and exercises for teaching.

Reading for research by CG teachers after the study: There was no change in the reading pattern of CG teachers. The end of the present study coincided with summative exams in all schools. CG teachers claimed to have no time for 'extra reading' outside the prescribed texts and exam guide books (Appendix A-4).

Reading for research by EG teachers after the study: By the end of the study, the EG teachers were reading widely, both online and in print, on language pedagogy, language use, classroom management, CLT and TBLT, including books and journals. From little or no inclination towards reading, they developed avid curiosity about the global scenario of ELT pedagogy which prompted them to read more. They expressed keen interest in reading direct classroom experiences and task-banks by other teachers, but mostly found research articles difficult to understand or relate to. Academic writing is not average teacher-speak.

EG teachers made time to read to increase their knowledge of task-framing, from task-banks, collaborative pedagogy, TBLT, action research and skill-based extending of learner ZPD (Appendices A-4, K). The MI-RBT tasks framed by EG teachers drew on ideas researched by them like:

- Vocabulary pairs (Antil et al., 1998) to enable vocabulary learning from more proficient peers
- Group writing (Calkins, 1983) with brainstorming, rough drafts, peer review and feedback
- Individual writing products like books and research projects shared as class

resources (Rothstein-Fisch and Trumbull, 2008)

- Group, choral and popcorn reading (Alu and Jordan, 1981) to strengthen pronunciation, intonation and modulation
- Literature circles (Noll, 1994; Fox and Wilkinson, 1997; Daniels, 2002) for textual discussions from various critical perspectives by learners with heterogeneous reading ability
- Choral-response games (Nelson-Barber et al., 2000) based on textual questions.
- Listening-speaking tasks with puppets (Galarcep, 1971), mime (Long and Castanos, 1976), simulation (Jones, 1980), role-play (Livingstone, 1983) and drama (Maley and Duff, 1978; Holden, 1981; Early and Tarlington, 1982; Fernandez and Coil, 1986; Dougili, 1987) to enable heterogeneous language ability groups to understand literary texts or even maths problems by enacting them. Reading and research thus, enabled EG teachers to maximise learner engagement in CLIL through MI-RBT language tasks. EG teachers, therefore, used reading as a tool for professional growth, proving that MI-RBT-TBLT engaged teachers in autonomously promoting their own cognitive growth.

j. Class observation and peer feedback by EG and CG teachers before the study: Initially, both EG and CG teachers expressed resistance to the idea of peer-observation and feedback. Observation was seen to be borrowed from culturally alien professional standard of measurement. It was only expected to be used to vet novice candidates for a teaching post. Teachers were more willing to be observed by the researcher than by their own colleagues.

Class observation and peer feedback by CG teachers after the study: CG teachers retained their reluctance for class-observation at the end of the study, claiming lack of free-time due to time-tabling, notebook correction and other duties. Only a few senior CG teachers joined the researcher in observing their junior colleagues. The cultural or professional bias against senior teachers being observed by junior colleagues, was due to their interpretation of observation as a judgmental activity rather than a learning tool (Appendix B-1). The CG school principals expressly discouraged the researcher from telling junior teachers to observe senior colleagues, as this was seen as being detrimental to departmental discipline.

Class observation and peer feedback by EG teachers after the study: Initial resistance to peer-observation was resolved collaboratively and practically by EG teachers. Non-judgmental and reciprocal class-observation, especially between collaborating teachers, came to be accepted as an aspect of task-planning and team-teaching by them over the task-cycle (Appendices B-1, K, L). Teacher reluctance to being observed was gradually overcome. Class-observation was accepted as a necessary reciprocal dynamic of collaboration for professional growth rather than as an arbitrary, static appraisal of individual ability. Class-observation as a tool of individual action research engaged EG teachers in direct and indirect (video) observation and peer-feedback as an antecedent to reflection on task-framing. Mutual respect, collaborative task-framing, team-teaching, turn-taking in peer observation, and balancing positive feedback with constructive suggestions, all contributed to transform observation-feedback from static, judgmental episodes into dynamic and shared processes of professional growth.

Teachers observing video-recordings of their own lessons with peer-teachers were able to participate simultaneously as observer and observed, distancing themselves for objectivity. This objectivity extended to peer feedback and was reflected in teaching journals and anecdotal records (Appendices K-1, K-2), enabled when teachers became voluntary participants in the developmental process. Objectivity in observation thus contributed to more inclusive, constructive and less judgmental or confrontational language of peer-feedback.

Indirect (video) observation of lessons offset time-tabling problems that prevented direct observation, and also enhanced 'noticing' in observation protocols and strategy checklists (Appendix F) through rewinding, pausing and reviewing parts of the lesson, thus providing accurate confirmatory details to data collected through direct observation. Direct and indirect (video) observations together provided significant qualitative data in:

- Impact of MI-RBT-TBLT on teacher and learner performance
- Specific areas of teacher strength and weakness
- Impact of peer collaboration on teachers
- Insights on teacher behaviours fulfilling or obstructing learning objectives
- Significant teacher-learner interactions, peer-interactions
- Effect of constructive and focused peer-feedback on teacher-learner interactions
- Supportive teacher practices in the social-emotional, organizational and instructional domains
- Professional development through efficacy in MI-RBT-TBLT

Direct and indirect observation being a critical tool for data-collection based on accurate identification of methods, strategies, interaction patterns and other aspects

of classroom procedure, “mismatches between actual occurrences during a lesson and their critical interpretation” (Kumaravadivelu, 1999, pp. 37-38) could affect qualitative data. Cognitive, communicative, attitudinal, instructional, strategic and evaluative mismatches between actual occurrences and their interpretation may occur, due to:

- low learner proficiency inhibiting task outcomes
- learner preference for L1 to English
- strategy misidentification
- misunderstanding of task rubric
- disputed achievement of task outcome

Mismatches as indications of multiplicity of interpretation, when linked to critical reflection can be a powerful self-exploratory tool as learning from difference and discrepancy occurs when observers apply the same critical parameters to their own lessons (Zeichner and Liston, 1996). These linguistic and pedagogic factors were therefore taken into consideration during EG and CG data analysis from observation, through counterchecking with overlapping data from questionnaires.

Peer-observation feedback from EG teachers indicated that reciprocal observation led to the emergence of a supportive framework of peer-learning in the classroom (Appendices K, L):

- *Learning environment* – EG teachers were motivated to learn from and collaborate with peers observed by them.
- *Teacher awareness* – EG teachers learned from observation to effectively address the socio-cognitive needs of learners.
- *Peer-learning* – The presence of an observer motivated EG learners to assume meaningful, autonomous roles by voicing their ideas and opinions

and solving language-related cognitive problems, thus enabling peer-learning.

- *Classroom management and organization* – Peer-observation motivated better management of time, available resources and learner interaction as indicators of EG teacher competence. It led to proactive redirection of negative behaviour and reinforcement of positive learning behaviour by the EG teacher and facilitated self-regulation of learner attention to optimise response to instruction.
- *Language modeling and Learning Strategies* – Effective EG teachers provided support to novice colleagues by allowing them to observe their lessons, modelling language learning strategies and communication skills to engage learners in meaningful conversations. Learners replaced memorization with understanding of facts, concepts and principles on being motivated to solve problems through higher-order thinking skills.
- *Modelling feedback:* For the benefit of novice observers, more effective EG teachers modelled consistent feedback on learner performance, focussing on the process of learning rather than on its product.
- *Task outcomes and learning objectives* – The task phases, relevant learner roles and task outcome as related to the learning objective were clearly defined in instructions as observer-presence resulted in better instruction and feedback, efficient resource use and fewer hindrances to task outcome. This verifies that MI-RBT-TBLT increased teacher efficacy, leading to professional development.

k. **Use of technology by EG and CG teachers before the study:** Both EG and CG schools provided technological infrastructure in their classrooms. There was little evidence of use of technology in the CG beyond the programmed software package of smart boards. A few EG teachers sometimes used to access the Internet for videos to augment syllabus content or make power points of collated information for lessons.

Use of technology by CG teachers after the study: The CG teachers, as final exams approached at the end of the study, rarely used the pre-programmed lessons of the interactive smart boards. CG school policy suspected audio-video recording as intrusive and violating privacy, as evident in their refusal to allow the researcher to record data digitally.

Use of technology by EG teachers after the study: Class observation and feedback through video-recording by EG teachers extended the use of digital technology beyond task-implementation. EG teachers and learners were highly motivated by opportunities to use digital and mobile technology in lessons through wi-fi networking, Internet, Twitter, Facebook, blogs, digital cameras, smart boards, TV, iMacs, Macbooks and iPads. EG teachers accessed a globally networked teaching-learning community, which enabled them to function in a system of positive interdependence with English lessons in different continents and promoted autonomy in learning and decision-making. Unlike the CG learners, who were extremely restricted in their use of teaching technology, EG learners frequently operated smart boards or iPads in the classroom.

l. **Process versus product goals in the EG and CG before the study:** EG and CG teachers used to focus on exam results of learners. Both groups took pride in high exam grades scored by learners. Their goals and vision were thus product focussed.

Process versus product goals in the CG after the study: There was no change in CG teachers, except for even more intense exam-focussed vision after the study, as annual exams approached.

Process versus product goals in the EG after the study: EG teachers integrated MI-RBT-TBLT with action-research to engage in learner-centric teaching (Appendices A, B, C, D, E, K, L). Reflection on MI and higher-order RBT thinking-skills activated their own MI profiles and thinking skills with direct impact on EG learners, infusing their learning environment with initiative, innovation and autonomy. Frequent discussion and debate among EG teachers on effective MI-RBT task-structure and evaluation indicated their growing knowledge, confidence, autonomy in decision-making and a dynamic process-vision of empowerment (Appendix L).

At the end of the study, EG teachers attitudes, skills and autonomous development reflected the learner-centric traits of differentiated instruction identified in earlier research (Tomlinson and McTighe, 2006; Goe et al., 2008):

- Assuming responsibility for learner success
- Facilitating positive academic, attitudinal and social outcomes in tasks
- Building learner awareness of subject-specific skills and learning strategies
- Experimenting with instructional strategies through peer-collaboration, reflection and feedback
- Planning flexibly with diverse resources to engage learners, cope with

unpredicted occurrences, formatively monitor progress, adapt instructions to learner needs and evaluate learning with multiple evidence

- Developing value diversity and ethics in students
- Collaborating with teachers, administrators and parents to ensure student success
- Developing a learning community with mutual respect between teachers and learners
- Reflecting on their own and their learners' progress for growth and empowerment

The EG teachers thus, appeared to have developed a process-based professional identity of themselves as agents of change and self-empowering professionals through their collaborative MI-RBT task-framing, observation-feedback and autonomous problem-solving.

It should be clarified that all EG and CG teachers responses are not equally positive or negative, as it may appear from the discussion so far. Individual variations in the degree of agreement or disagreement with any item in questionnaires, interviews and group discussions usually ranged along a continuum, with the EG and CG responses tending towards opposite ends of the scale, at the end of the study. This verifies that MI-RBT-TBLT enables teacher initiative, innovation and autonomy, these traits developing through learning how to interrelate task structure and objectives with learner needs, and through feedback and reflection on MI-RBT-TBLT.

Comparative summary of teacher empowerment from MI-RBT-TBLT after the study: The discussion on this Dependent Variable indicates that over the study period, the CG and EG teachers, coming from almost similar ideological teaching-learning

backgrounds (Appendices A, B, C), held very different ideas of professional empowerment by the end of the study (Appendices E, K, L). CG teacher beliefs remained static whereas EG teacher concepts of professionalism and empowerment evolved over the study. In contrast, as discussed earlier, CG teacher values and beliefs which were competitive and self-centric rather than learner-centric or peer-centric did not promote collaborative discourse, leading them to envision empowerment as a static product-goal centring on promotion, departmental status and financial gain (Appendices A-2, A-3). The following points sum up the impact of research intervention on the Fifth Dependent Variable:

a. Autonomous task-framing by EG teachers, but absent in CG teachers
b. Seniority as dominance among CG teachers but more democratic in EG relationships
c. Experience valued by CG teachers versus efficacy valued by EG teachers
d. Autonomy enabled in EG teachers versus hierarchy in the CG relationships
e. Learner-centric attitudes and values of EG teachers versus self-centric ideas of autonomy among CG teachers
f. EG teacher collaboration versus individual professional competition in the CG
g. Leadership emergent in EG teachers but absent in CG teachers
h. Action research by EG teachers but not by CG teachers
i. Reading for research by EG teachers but not by CG teachers
j. Class observation and peer feedback by EG teachers, but absent in CG teachers
k. Innovative use of technology by the EG versus its passive acceptance by the CG
l. Process goals of EG teachers versus product-focussed goals of CG teachers

The analysis of qualitative data confirms a Positive Hypothesis for the Dependent Variable stating that MI-RBT-TBLT leads to autonomous professional development and self-empowerment in the EG teachers.

Analysis of the data collected on all five Dependent Variables reveals that:

(1) EG teachers manifested ability and motivation in framing MI-RBT tasks

(2) MI-RBT tasks framed by the EG teachers were appropriately structured for language learning

(3) MI-RBT-TBLT enabled the use of teaching and learning strategies

(4) MI-RBT-TBLT extended across the curriculum for CLIL

(5) MI-RBT task-framing contributed positively to professional empowerment in teachers

To conclude, teachers were empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT), thus proving a Positive Hypothesis for the First Research Question.

4.1.2 Qualitative Analysis of MI Inputs for Individual Differences

Data was examined in response to the **Second Research Question on whether tasks created by teachers and supported by the MI framework can cater to individual differences.** The Dependent Variable responding to this Research Question is:

- **Effectiveness of MI in catering to individual differences in learners (DV-6)**

Qualitative data on this Dependent Variable is examined below to determine whether MI inputs in tasks framed by teachers cater to individual differences (ID) by providing multiple learner-centric ways of processing information and presenting task outcomes.

<u>Discussion on Sixth Dependent Variable - Research Question 2</u>

Effectiveness of MI-RBT tasks in catering to individual differences: Analysis of data collected before and after the study on this Dependent Variable is discussed next.

a. **Identification of individual needs by EG and CG teachers before the study:** EG and CG teachers could identify linguistic strengths and weaknesses of individual learners but did not cater to these in their teaching. They predicted that increasing the quantity of grammar exercises should lead to improved performance but found it inexplicable that this did not always happen. They also set exam grades as the ceiling of individual learner achievement, without trying to enable individual potential to reach beyond this standard.

Identification of individual needs by CG teachers after the study: CG teachers did not refer to individual differences or needs, as exam priority was the declared basis of selecting language items for learners (Appendices A-4, A-5, C1, D-2).

Identification of individual needs by CG teachers after the study: The EG teacher interviews, group discussions (Appendix L) and the think-aloud (Fig. 4.1) discussed earlier revealed that the primary focus of task-framing was on individual learner needs, ability and MI profile vis-à-vis the language learning objective. This quick adaptation of MI theory in classrooms is attributed to its principles articulating already existing learner-centric aspects of teacher practice (Gardner, 1995).

b. **Reconciling individual differences through MI in EG and CG learners before the study:** Both EG and CG teachers were not aware of the role played by MI in reconciling individual differences through group work, shared strategy learning and provision of multiple entry points into information processing.

Reconciling individual differences through MI in CG learners after the study: There was no change in CG teaching-learning after the study.

Reconciling individual differences through MI in EG learners after the study: The EG teachers reconciled Individual Differences (ID) through intrinsic motivation by engaging learner MI through a range of MI inputs in task-sheets (Appendix G). Learner ID stem from linguistic-cultural background, language proficiency, cognitive development, aptitude, attitude, age, academic goals, strategies, anxiety and motivation and language awareness (Raimes, 1991; Ferris and Hedgcock, 1998) and can be influenced by environmental, emotional, sociological, and physical features of the classroom (Atwell, 1987; Johnson and Johnson, 1994; Gambrell et al., 2000). The MI inputs motivated individual learners by enabling them to engage in the task-process with their stronger Intelligences. The individual need to identify with the group (Buck, 1976) develops communicative strategies and sustains motivation (Najam and Hodge, 1965; Sticchi-Damiani, 1981; Dörnyei, 2005). Group-discussion in learner-centric classrooms facilitates the expression of minority opinion (White, 1977) and a high standard of task outcome (McDonough, 1981; Dörnyei and Malderez, 1999). ID in EG learners were thus reconciled by engaging individual MI within the heterogeneous group composition during collaborative problem-solving.

c. **Differentiated teaching by EG and CG teachers before the study:** All CG and EG teachers selected language items and planned lessons to prepare students for summative exams. They did not cater to individual needs, as they did not know how to do so.

Differentiated teaching by CG teachers after the study: There was no change in CG teaching-learning after the study (Appendix A-3).

Differentiated teaching by EG teachers after the study: All EG teachers conducted MI-profiling of their learners to learn about their individual learning profiles (Appendix B-3). It was observed that efficient EG teachers relied on practical experience to eclectically blend methods and strategies that were compatible with learner preferences and thus, effective in increasing learner engagement with MI-RBT tasks (Appendices A-3, A-5, B-2, B-5, C1, C-2, C-3, D-2). Teachers reported that MI-RBT tasks, by enabling rapport with learners, needs diagnosis and learner feedback, helped in developing teaching-learning strategies and formulating positive beliefs about language learning aptitude, confidence, motivation and attitude (Appendices A-2, A-6, B-4, B-5, C-2, K, L). No one MI-RBT task could cater to all MI profiles of learners, but every learner found some tasks especially motivating and engaging in every task-sheet. MI-profiling conducted at the end of the study helped to plot changes in learners.

d. **Range of MI inputs in EG and CG language tasks before the study:** EG and CG teachers did not use MI tasks before the study, except for occasional debates, skits and poster-making, etc., prescribed by the CBSE for formative assessment. They did not analyse MI inputs for causative connections with task outcomes but only focussed on grading task products. There were therefore, very few MI in the rare tasks used for formative assessment.

Range of MI inputs in CG language items after the study: There was no change in the process of selection of language items by CG teachers after the study. Language items for CG learners (Appendix H) imitated CBSE summative testing items (Appendix I), focussing only on the Verbal and Logical Intelligences in a one-standard-for-all pattern.

Range of MI inputs in EG language tasks after the study: At the beginning of the study, EG teachers identified MI required for task activity but did not try to extend its range, framing tasks limited to only one or two MI throughout the task sheet. Such tasks could only engage the few students with high Linguistic and Logical Intelligences in their MI profiles. The last task sheets of this study (Appendix G), however, showed purposeful variation of MI in planning task activity to match a wider range of MI profiles, engage more learners and meet their individual needs. This proves that TBLT enhanced by MI inputs enabled teachers to frame tasks catering to individual differences in learners.

e. **Exposure of EG and CG learners to differentiated learning before the study:** As discussed above, EG and CG learners had no exposure to analysis of MI-profiles, identification of individual learning profiles or differentiated teaching, before the study.

Exposure of CG learners to differentiated learning after the study: CG learners did not express any clear awareness of their own MI profiles or preferred learning styles as CG teachers made no use of learner profiles (Appendix B-3). They did not appear familiar with the different RBT levels of cognitive processing in debates, skits, poster-making and similar activity in which they engaged only four to five times annually, solely for assessment.

Exposure of EG learners to differentiated learning after the study: EG teachers introduced and explained MI and RBT to older EG learners to increase their engagement and motivation levels through self-directed and purposeful participation in TBLT while doing MI-RBT tasks. EG learners therefore, were conscious of their own MI profiles and learning preferences (Appendix B-3), and performed more tasks

suitable for their individual MI profiles to elicit language for planning, speaking, reading, writing, negotiating and deciding. CG learners had more exposure to language testing items over the academic year.

f. Differentiated learning through technology in the EG and CG before the study: The EG and CG teachers were aware of the attractions of technology for learners, but had not considered the possibility of using it to engage learners with different learning profiles.

Differentiated learning through technology in the CG after the study: CG teachers rarely used audio-visual technology although every classroom was equipped with smart boards, as negotiating the prescribed syllabus indirectly through exam guides consumed nearly all available time. CG learners were prohibited from touching the expensive digital technology to prevent damage.

Differentiated learning through technology in the EG after the study: Audio-visual inputs from digital and mobile technology played a major role through MI-RBT tasks in the EG learning process. The EG learners used linguistic, digital, audio-visual and material resources in MI-RBT tasks to elicit MI matching individual interests and abilities. MI inputs in technology enabled language learning by catering to individual differences in attention, attitude, aptitude and ability that prevent learners from benefiting equally from predominantly verbal-linguistic exercises in prescribed texts. Varying the Verbal-linguistic input in tasks with other MI engages learners according to their MI profiles (Appendix B-3), promoting language learning through task-engagement and compensating for individual language difficulties through shared strategies in collaborative learning.

In reaching MI-RBT task outcomes, the EG learners contributed to class blogs, played online language games, read extensively from the Discovery, Nat-Geo and Wikipedia websites, wrote skits, enacted role-plays, conducted debates, took notes from videos, and created their own digital presentations, iBooks and iComics, subject-dictionaries and online verbal puzzles (Appendices C, D, K, L, M). The learning outcomes of these tasks corroborated research findings that visual, auditory and kinesthetic stimuli activate information-processing through cognitive constructivism (Westwood and Arnold, 2004), promote differentiated instruction and collaborative learning (Walker Tileston, 2004b), build learner resilience by minimising individual competition (Hollins, 1996), encourage learner dialogue and constructive feedback, set purposeful achievement goals, and valorise efficacy, autonomy and accountability (Walker Tileston, 2004a).

Comparative summary of the effectiveness of MI-RBT tasks in catering to individual differences after the study: Analysis of qualitative data in the above discussion indicates that over the study period, EG teachers learnt how to use MI inputs in tasks to cater to individual differences in learners, whereas CG practice remained static in exam-centric teaching. The following points sum up the impact of research intervention on the Sixth Dependent Variable:

a. EG teachers identified individual needs through MI profiling while the CG remained unaware of learner needs
b. EG teachers tried reconciling individual differences in learners through MI inputs matching learner profiles whereas CG teachers focused on exam preparation
c. EG teachers practised differentiated teaching through MI-RBT-TBLT based on MI

profiles of learners whereas CG teachers prepares students for exams through revision of test papers

d. EG tasks involved a wide range of MI inputs for all MI profiles whereas CG language items were replicated from test-papers

e. EG learners consciously engaged in differentiated learning through awareness of their own learning preferences whereas CG learners did testing items

f. EG teachers and learners used technology for differentiated learning inputs, whereas the CG teaching-learning marginalized technology to focus on texts, exam guides and test-papers

Analysis of Qualitative Data in the discussion above verifies a Positive Hypothesis for the Sixth Dependent Variable in response to the Second Research Question of the study, that MI-RBT tasks promote collaborative language learning by catering to individual differences in learners.

4.1.3 Qualitative Analysis of Cognitive RBT Levels in Task Outcomes

Qualitative Data was examined in response to the **Third Research Question on whether Revised Bloom's Taxonomy (RBT) can help teachers in framing tasks that ensure definite learning outcomes.** The qualitative data collected on the following Dependent Variables respond to this Research Question:

(1) RBT levels in task outcomes posing varied cognitive challenge to learners (DV-7)

(2) Efficacy of MI-RBT-TBLT in enabling learner autonomy (DV-8)

Data collected on these two Dependent Variables is examined to determine whether Revised Bloom's Taxonomy (RBT) can ensure definite learning outcomes in tasks.

Discussion on Seventh and Eighth Dependent Variables - Research Question 3

Dependent Variable - 7

(1) Effectiveness of MI-RBT tasks in varying the level of cognitive challenge: Qualitative data was collected at the beginning and end of the study on this Dependent Variable, stating whether MI-RBT tasks provide variety in the level of cognitive challenge. This data is analysed in the following points.

a. Cognitive range of tasks for EG and CG learners before the study: EG and CG learners did language testing items with cognitive outcomes predetermined mainly at the Knowledge or Application level.

Cognitive range of tasks for CG learners after the study: There was no change in the CG after the study. The CG language items (Appendix H) showed a predominant bias towards the RBT levels of Knowledge and Application, only occasionally reaching the higher-order thinking skills of Analysis (debate, public speaking) and Creativity (drama, poster-making).

Cognitive range of tasks for EG learners after the study: In the first task-cycle, task-processing and outcomes in MI-RBT tasks framed by EG teachers reached only the lower-order RBT thinking skills of Knowledge, Understanding and Application. In the MI-RBT tasks framed in the last cycle (Appendix G), however, some tasks in every task-sheet reached the higher-order RBT thinking skills of Analysis, Evaluation and Creativity.

The emergent trend was to name each 'think-task' (EG teacher coinage) after its RBT cognitive outcome, to focus learner attention on the targeted level, engaging group or individual language functions to reach the specified task outcome. This

verifies that the RBT levels of task-outcomes were commensurate with learning objectives met by learners.

b. Higher-order thinking by EG and CG learners before the study: EG and CG language items before the study consisted mainly of text-based questions confined to lower-order thinking skills asking *who, what, where* and *when*. This situation persisted in CG language items after the study (Appendix H).

Higher-order thinking by CG learners after the study: There was no change in the CG after the study.

Higher-order thinking by EG learners after the study: Not just MI-RBT tasks but also textual questions framed by EG teachers after research intervention focussed on asking *how* and *why.* These questions related thinking with the higher-order cognitive skills of Analysis, Evaluation and Creativity. The two following MI-RBT tasks (Fig. 4.13) from the last cycle, supplementing a textual poem and a grammar lesson, respectively, illustrate this feature:

1. Comprehension & Analysis Task (Class V):
   A tree that may in summer wear / A nest of robins in her hair
   Which of these has the poet compared a nest with?
   □ birds □ ornament □ toy [0.5 mins]
   Do you wear anything in your hair? If yes, then what? If no, then why? [2 mins]
   What other comparisons does the poet draw in the poem?
   Select and set a melody for the lines showing such comparison.
   Sing each line with feeling. [10 minutes]
   MI: Verbal-logical, Visual-spatial, Naturalistic. RBT: Analysis, Evaluation

2. Grammar-Creativity Task (Class III):
   trust friendship happiness sadness excitement
   Compose a poem for a theme-based Greeting Card using the abstract nouns given above. [15 mins]
   MI: Verbal-logical, Visual-spatial, Interpersonal. RBT: Creativity

Fig. 4.13 Using Language for Higher-Order Thinking

Individual EG learners, even if not always achieving the expected RBT level of the learning objective, could perform MI-RBT tasks according to their own capacity, without any effort undermined or unappreciated in the collective group achievement. On-task learning and retention are proportional to the individual learner's task engagement (Hulstijn and Laufer, 2001), as greater involvement increases the on-task time (Keating, 2008).

Comparative summary of the effectiveness of MI-RBT tasks in varying the level of cognitive challenge: The above discussion indicates that over the study period, RBT helped EG teachers to frame tasks with definite learning outcomes, engaged learners in cognitive processing at the specified RBT level of task outcome and that RBT levels in tasks posed varied levels of cognitive challenge to learners. The following points sum up the impact of research intervention on the Seventh Dependent Variable:

a. Greater range of RBT from Knowledge to Creativity in MI-RBT tasks, unlike CG testing items which were limited to Knowledge and Application
b. Higher-order thinking was applied by EG learners for cognitive outcomes of MI-RBT tasks, whereas CG language-testing items elicited lower-order thinking

This confirms a Positive Hypothesis for the Seventh Dependent Variable stating that RBT in tasks effectively varies the level of cognitive challenge for learners and ensures task outcomes with definite cognitive levels.

<u>Dependent Variable - 8</u>

(2) Efficacy of MI-RBT tasks in enabling learner autonomy: Qualitative data was collected at the beginning and end of the study on this Dependent Variable, stating whether MI-RBT tasks enable learner autonomy. This data is analysed next.

a. **EG and CG learning environment before the study:** Both EG and CG learners were compliant rather than active participants in decision-making. Classrooms were arranged like lecture-theaters, favouring individual competition instead of peer collaboration, with learners as passive recipients of teacher instructions.

CG learning environment after the study: CG teachers had a text and exam-centric perspective. They gave no time or effort to analysis of individual needs or observation of learning strategies (Appendices A-5, C-2, M, N), maintaining physical dimensions conducive to the lecture method and social dimensions favouring individual effort more than collaborative learning, in the classroom.

EG learning environment after the study: Action research in MI-RBT-TBLT helped shift EG teacher focus from a text-centric to learner-centric method, facilitating individual proficiency, remedial learning and learning strategies (Appendices B-1, B-2). In this process, EG teachers rearranged the physical dimension of classroom space, furniture, available time, material and equipment required for task outcomes, and reorganised social dimensions to add inclusive and collaborative forms of peer-learning (Appendices A-3, B-2, B-5). The social and physical dimensions of tasks affect standard classroom organisation and management skills (Carter and Doyle, 2006; Doyle, 2006).

b. **Learner collaboration in EG and CG schools before the study:** There was no learner collaboration among EG or CG learners before the study, except during occasional debates, skits or similar group projects for graded assessment.

CG learner collaboration after the study: CG learner-collaboration was limited to group discussion or debate for graded assessment as per CBSE (Appendix A-5). CG

teachers expressed strong doubts about the efficacy of learner-collaboration in promoting better exam results or language-learning in English, based on their belief in knowledge as an individual construct and learning as an individual process. They pointed out that collaborative work would lead to learners shirking their work and relying on dominant group members for product outcomes, resulting in degeneration of the learning environment (Appendices A-3, C-1). This perspective promoted a teacher-controlled learning environment and teacher-directed learning instead of shared responsibility.

EG learner collaboration after the study: EG teacher collaboration in MI-RBT task-framing enabled them to understand its nature and benefits and thus, implement it with greater effectiveness for their learners (Appendix L). The dynamics of teacher-collaboration carried over and facilitated EG learner-collaboration. The social dimension of tasks was structured for learner roles within the group, in interactions, inclusive discourse and activity sequences promoting language-learning objectives (Appendices A-2, A-3, B-2, D-2). Pre-tasks initiated peer-collaboration through instructions specifying pair, group and individual phases of task-activity at the outset. Tasks involved learners in planning together, exploring ideas and information.

Significant improvements in collaborative learning were observed in EG learners at the end of the study:

i. The EG collaborative processes (Appendix L) reflected social constructivist principles (Dewey, 1933; Piaget, 1973; Vygotsky, 1978, 1986) encouraging experiential, learner-centric instruction, enabling problem-solving and peer-feedback (Lewin, 1935; Bruffee, 1999; Deutsch, 2000, 2003). This replaced the

individual cognitive concept with knowledge as a social construct and learning as a social process (Stone and Kidd, 2011), developing positively interactive learner relationships.

ii. EG learners were able to interrelate with their learning environment without teachers trying to control it. They mutually decided on ways to improve interpersonal relationships and share responsibility for learning through peer-collaboration and peer-feedback, increasing self-esteem and autonomy through shared responsibility for learning (Appendices A-2, B-1, B-2, B-5, C-1, C-2, D-2). Individual accountability and equal participation (Cohen, 1994; Johnson and Johnson, 1994; Slavin, 1990, 2006) prevented "socialisation void" (Kagan, 1992, p. 2) or loss of values like equality and trust in reciprocal teacher-learner relationships through positive interdependence (Johnson et al., 1994).

iii. EG discussions developed communication skills for problem-solving and discovery-learning (Appendices B-5, C-1, C-2, D-2, K), enabling mediation between the teacher as facilitator and heterogeneous groups of learners. This proved that in collaborative learning, social interaction is correlated with the task-outcome and learning objective (Wentzel, 2003; Sheets, 2005).

iv. MI-RBT tasks provided individual EG learners with significant roles in the group, for brain-storming, information-sharing and problem-solving, thus socialising and valorizing individual contribution, reducing inhibitions and minimising individual differences (ID) in a democratic manner (Appendices B-2, B-5, C-1, C-2, D-2, K, L, M). This verified that leadership and other individual roles are determined by group goals and the group dynamics of functional equilibrium (Senior, 1997).

v. Other established features of collaboration (Hargreaves, 1994; Johnson, 1999) observed in EG learners included:

- Respect for different cultures and equal attention and care to all
- Mutual respect between peers with shared responsibility for learning
- A safe learning environment through tolerance of error and difference
- Collaborative behaviours and reflection modelled on the teacher
- Autonomy in choices and decision-making

MI-RBT-TBLT thus enabled EG teachers to manifest awareness of and empathy with learner needs and build emotionally and psychologically supportive relationships with them.

c. Reflection on learning by EG and CG learners before the study: There was no report of conscious reflection on learning in EG or CG learners before the study. They would reflect on grades rather than monitor their learning.

Reflection on learning by CG learners after the study: There was no documentation of CG learners reflecting on learning after the study.

Reflection on learning by EG learners after the study: EG learner reflection was built into MI-RBT tasks in a continual process (Appendix K-4). Individual and collaborative reflection by learners helped in identifying their strengths and weaknesses to improve learning (Appendices B-5, C-1, C-2, K-2). EG learners introspected collaboratively on their learning using the K-W-H-L-S strategy:

- K: what the learners already **K**now
- W: what they **W**ant to learn
- H: deciding **H**ow to share ideas and information, compare perspectives and move towards the task-outcome

- L: evaluating what has been **L**earnt
- S: **S**haring the new learning through group presentations and oral reports

In the Report and Analysis stage of task process, each group presented its findings before peers and the teacher for critical constructive feedback based on the given rubric. Reflection on learning thus occurred through group discussion, clarifying meaning, organising information, elaborating points and correcting errors in logical synthesis. The teacher summed up the knowledge gained from presentation and feedback (Appendices E, F, K, L).

Individual reflection carried over to EG learners from their teachers, who, on the basis of their own reflection, began developing self-appraisal sheets (Appendix K-4) for their learners for guided and focussed reflection on learning after every task-cycle. The teacher modeled reflective processes and provided introspective questions, encouraging learners to express their thoughts and feelings about learning processes involved in MI-RBT tasks (Appendix M). These self-appraisal formats for individual learner reflection were developed from EG teacher initiative and autonomous decision. Individual and group reflection on MI-RBT-TBLT transformed the EG learning experience from mere pen-and-paper exercises into active processes with shared responsibility for learning.

d. Shared responsibility for decisions in the EG and CG before the study: Shared responsibility for learning was not a clearly expressed concept before the study, with EG and CG teachers as well as learners expressing their understanding of teaching and learning as dichotomous rather than shared roles.

Shared responsibility for decisions in the CG after the study: CG learners were intelligent and articulate in their written and oral products, but lacked opportunity to develop peer-learning, turn-taking, peer-feedback, and other team-work, owing to high levels of competition. CG learners stated that they did not engage in problem-solving as it was not required in preparing for exams, which involved rote-learning of notes and answers to English questions from exam-guides (Appendices D-1, D-2). This also reduced application of higher-order thinking-skills for learning. Ready-made notes and answers were only available to learners attending private coaching by their teachers, that functioned as parallel classrooms. CG teachers justified private-tuitions for attending to students individually, unlike in the classroom (Appendix A-2). CG learners taking private tuition, reportedly, scored highest in tests at school, with the effect of making CG learners doubly dependent on the teacher, at school and through private tuition.

Shared responsibility for decisions in the EG after the study: The freedom and responsibility invested in EG learners through MI-RBT tasks enabled planning and decision-making for autonomous learning. In contrast to competitive individual behaviour, the underlying premise of collaborative learning is learner engagement in consensus-building, which develops their critical thinking (Reid et al., 1989; Brufee, 1993).

EG learner autonomy rested on decision-making and responsibility shared between teacher and learners, in varying degree according to the age of the learners. EG lessons with very young learners were more teacher-directed, the responsibility for task outcomes remaining largely with the teacher. These young EG learners engaged in guided-collaboration at its incipient cooperative stage. The MI-RBT tasks

at this level were usually closed problems with predetermined answers. Teaching was more transmission-oriented with teacher guidance for group structure, individual roles, deciding evaluation rubrics, and included frequent modelling of collaborative skills by the teacher (Appendix B-1).

EG learners in middle school collaboratively engaged in more open-ended MI-RBT tasks with self-evaluation rubrics. MI-RBT task instructions and rubrics were flexible, allowing EG learners to change task outcome according to their aptitude and ability, to take decisions in task-planning, allot roles within the group and exercise higher-order thinking skills. EG learners of all ages participated in peer-feedback on task outcomes, indicating that learner contribution was valued in MI-RBT-TBLT (Appendices A, C, E, F, K, L). Transferring responsibility for task-outcomes to learners allowed them more freedom in decision-making, group-forming and individual roles, proving that frequent participation in decision-making enabled learner autonomy through shared responsibility for learning.

Even learners with low exam-scores projected high self-esteem and confidently used language for higher-order thinking in content subjects. EG learners showing the ability to correlate basic language skills and strategies across the curriculum (Appendices A-2, D-1, D-2). They engaged in peer-learning and were less teacher-dependent, giving up private tuitions as they gained in confidence. All these traits replicated features of autonomous learning in EG learners (Senior, 1997; Johnson, 1999; Slavin, 2006).

e. **EG and CG learner motivation before the study:** EG and CG learners did not manifest intrinsic motivation for language learning. They worked hard just before

tests, thus showing extrinsic motivation at periodic intervals.

CG learner motivation after the study: CG learners when interviewed, described their academic work either as too easy, uninteresting, lacking in fun and variety, or as routine hard work that was sometimes boring. CG learners considered reading for examinations as more useful than reading extensively outside the syllabus, some describing the latter as a waste of time (Appendix D-2). They were thus, not intrinsically motivated to develop language skills.

EG learner motivation after the study: EG learners responded positively to MI-RBT task challenges throughout the study, maintaining high motivation levels for problem-solving, positive attitudes to teachers and school (Appendices B-4, B-5, C-1, C-3, D-2, K-2) and expressing low anxiety about marks and grades. EG learners stated that learning with friends made challenges easier, that all learning was fun and learning outside the syllabus even more fun (Appendices B, C, D, M). This indicates that MI-RBT tasks intrinsically motivated learners.

f. **Bilingual Planning by EG and CG learners before the study:** Both EG and CG learners spoke L1 more than English before the study. Any group activity was observed to include only L1 use at the planning phase, switching to English with low fluency at the performance phase.

Bilingual Planning by CG learners after the study: The CG situation was observed to be the same after the study. As even the most fluent CG learners rarely engaged in offline or online task-planning, bilingual strategies were not evident in their speech production.

Bilingual Planning by EG learners after the study: After the study, EG learners limited their use of L1 to the strategic, off-line planning phase of tasks before performance, switching over to English for online planning or monitoring, formulation and articulation during task performance (Appendices B-4, B-5, C-1, C-2, D-3, D-6). L1 and English together play major cognitive roles in online planning, in three stages of speech production: (1) conceptualisation of the semantic content and purpose of a message, (2) formulation of the grammatical and phonological features of this preverbal message, and (3) articulation of the phonetic plan in actual speech (Levelt, 1989). The use of L1 during pre-task group discussions is especially productive for learners with limited transactional fluency in L2 (Bygate, 1996, 2001; Wendel, 1997 cited in Ellis, 2003a, p. 25; Dörnyei and Murphey, 2003).

g. **Evaluation and feedback to EG and CG learners before the study:** Both CG and EG learners were solely dependent on formative and summative grades as the only form of feedback. Formative grades did not fulfill the intended diagnostic or remedial role, thus subverting CBSE-CCE norms.

Evaluation and feedback to CG learners after the study: CG learner proficiency was measured by test scores and grades with maximum weight to written tests and very little to oral-aural performance through activity-based tasks (Appendices A-5, D-2). CG teacher feedback was limited to written output through perfunctory remarks, as the learners were mainly expected to reproduce answers from notes handed out earlier and most CG notebooks examined by the researcher had almost identical content. No peer feedback was observed. CG learner performance in debates and other non-textual activities was graded subjectively, with no rubric or

teacher feedback. CG learners thus received only quantitative feedback or grades six times annually, following CBSE norms.

Evaluation and feedback to EG learners after the study: EG learner proficiency was measured summatively in written tests and formatively through MI-RBT tasks. While EG written tests were marked by teachers, oral and written task performance was peer-reviewed as well as teacher-evaluated, based on evaluation rubrics. EG teachers gave equal importance to written and oral performance. Technology in MI-RBT tasks had inbuilt instant feedback. There was thus much qualitative feedback to EG learners on a regular basis.

Comparative summary of the effectiveness of MI-RBT tasks in varying the level of cognitive challenge: Data analysis in the points above indicates that before the study, CG and EG learners were fairly homogeneous, but after the study, the CG learners had only increased their text-based knowledge (the 'what' of language-learning) whereas EG learners showed greater awareness of factors promoting autonomy (the 'how' of language-learning). This was visible in their attitudes, motivation, skills, strategies and interactive problem-solving. The chief difference between EG and CG learners emerging at the end of the study was in their autonomy levels. The following points sum up the impact of research intervention on the Eighth Dependent Variable:

a. The EG environment promoted collaborative learning while CG environment reinforced individual competition
b. Learner collaboration existed in EG but was absent in the CG
c. Reflection on learning by EG learners versus its absence in the CG
d. Shared responsibility for decisions in EG versus passive compliance by the CG

e. Consistent high intrinsic motivation in EG learners opposed to periodic extrinsic motivation in CG learners

f. Bilingual Planning by EG learners versus L1 predominance in the CG

g. Frequent peer, self and teacher evaluation and feedback provided to EG learners but only exam grades from teachers for CG learners

The analysis above confirms a Positive Hypothesis for the Eighth Dependent Variable stating that MI-RBT tasks enable autonomous learning in the EG learners. The CG learners, in contrast, are observed as not developing autonomy.

The Third Research Question of this study, that Revised Bloom's Taxonomy (RBT) can help teachers in framing tasks that ensure definite learning outcomes, stands validated in the light of the above discussion indicating positive hypotheses for the Seventh and Eighth Dependent Variables.

The Qualitative Data discussed so far is tabulated below, for convenience (Table 4.2):

Table 4.2 Qualitative Data on Eight Dependent Variables in Three Research Questions

Research Question - 1: Can teachers be empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT)?	
Dependent Variable 1: Ability and motivation of teachers in framing MI-RBT tasks	
EG Teachers	**CG Teachers**
• Skills-focused MI-RBT-TBLT	• Text and exam oriented teaching
• High incidence of MI-RBT task-framing	• Absence of MI-RBT task-framing
• Supplementing of NCERT texts by MI-RBT tasks	• High degree of text dependence
• Increased accuracy and range of MI and RBT in tasks framed	• Unawareness of MI and RBT as language learning parameters
• MI-RBT tasks framed and rubrics focused on learning processes and diagnosis of remedial needs	• Use of language testing items for teaching-learning
• High levels of sustained intrinsic motivation	• Low motivation for creating language items

Table 4.2 Qualitative Data on Eight Dependent Variables in Three Research Questions	
Dependent Variable 2: Structure of the MI-RBT tasks framed by teachers	
EG Teachers • Awareness of difference between MI-RBT tasks and testing items	**CG Teachers** • Ignorance of the difference between language teaching and testing items
• Improving TBLT method by revising task-structure	• Disconnect between language-testing items and learning
• Correlation of language learning objectives with MI inputs and RBT outcomes in tasks	• Replication of testing items for learning
• Knowledge of MI-RBT task-structure	• Ignorance of the link between structure and function of language items
• Evaluation of task-structure leading to the creation of a task-evaluating format	• Absence of evaluation of language items by CG teachers
• Writing to reflect on task-structure and learning objectives	• Dependence on mechanical generation of academic records by computer software
Dependent Variable 3: Teaching and learning strategies used by teachers and learners	
EG Teachers and Learners • Increased focus on teaching and learning strategies	**CG Teachers and Learners** • No discernible focus on learning strategies
• High incidence of direct strategies for language-learning	• Very low incidence of direct language-learning strategies
• EG teachers and learners: Prevalence of indirect strategy use in teaching-learning	• Little scope for indirect strategy use
Dependent Variable 4: MI-RBT-TBLT across the curriculum in the CLIL context	
EG Teachers • High EG teacher collaboration for CLIL task-framing	**CG Teachers** • No CLIL task-framing or teacher collaboration
• MI Inputs in tasks for CLIL	• Language items based on CLT texts
• Operation of CLIL discourse in EG lessons	• Absence of CLIL
Dependent Variable 5: Contribution of MI-RBT task-framing to professional empowerment in teachers	
EG Teachers • Autonomous task-framing	**CG Teachers** • Borrowing items from previous test papers
• Democratic professional relationships	• Seniority in the workplace expressed as dominance
• Efficacy is valued	• Experience is valued
• Autonomy is enabled	• Hierarchy in relationships
• Learner-centric attitudes and values	• Self-centric ideas of autonomy

Table 4.2 Qualitative Data on Eight Dependent Variables in Three Research Questions	
• Teacher collaboration	• Individual professional competition
• Emergent proactive leadership	• Dominance of seniors
• Action research	• Preparing learners for exams
• Reading for research	• No time for professional reading
• Class observation and peer feedback as a professional development tool	• Observation and feedback viewed as a dominance tool
• Innovative use of technology	• Passive acceptance of technology
• Process-based goals	• Exam product-focussed goals
Research Question - 2: Can tasks created by the teachers and supported by the MI framework cater to individual differences?	
Dependent Variable 6: Effectiveness of MI task-inputs in catering to individual differences	
EG Teachers • Identification of individual needs through MI profiling	**CG Teachers** • Unaware of learner needs
• Individual differences in learners reconciled through MI inputs matching learner profiles	• Focus on group remedial as quantitative increase in practice
• practice of differentiated teaching through MI-RBT-TBLT based on MI profiles of learners	• Preparing students for exams through revision of test papers
• Tasks involving a wide range of MI inputs for all MI profiles	• Language items replicated from test papers
EG Learners • Consciously engaging in differentiated learning through awareness of their own learning preferences	**EG Learners** • Practicing testing items in common
EG Teachers and Learners • Technology use for differentiated learning inputs in teaching-learning	**CG Teachers and Learners** • Marginalization of technology to focus on texts, exam guides and test-papers
Research Question - 3: Can Revised Bloom's Taxonomy (RBT) help teachers in framing tasks that ensure definite learning outcomes?	
Dependent Variable 7: RBT levels in task outcomes posing a varied cognitive challenge to learners	
EG task outcomes • Greater range of RBT from Knowledge to Creativity in MI-RBT tasks	**CG task outcomes** • Testing items limited to Knowledge and Application
• Higher-order thinking skills applied for cognitive outcomes of MI-RBT tasks	• Language-testing items based on lower-order thinking

Table 4.2 Qualitative Data on Eight Dependent Variables in Three Research Questions	
Dependent Variable 8: Efficacy of MI-RBT-TBLT in enabling learner autonomy	
EG teaching and learning • Environment promotes collaborative learning	**CG teaching and learning** • Environment reinforces individual competition
EG learners • Learner collaboration	**CG learners** • Collaboration only for graded projects
• Reflection on learning as self-monitoring	• Absence of self-monitoring or reflection
• Shared responsibility for decisions	• Passive compliance
• Consistent high intrinsic motivation	• Periodic extrinsic motivation
• Bilingual Planning	• L1 predominance
• Frequent peer, self and teacher evaluation and feedback provided	• Only exam grades from teachers

Comparison of qualitative data from the EG with that from the CG before and after the study therefore, leads to the conclusion that a Positive Hypothesis is indicated for all eight Dependent Variables in response to the three Research Questions of the study. Next, quantitative data from the EG and CG before and after the study are comparatively analysed and correlated with qualitative data.

4.2 Analysis of Quantitative Data

Quantitative data from EG and CG participants was collected as responses on the Likert Scale in Teacher and Learner Questionnaires (Appendix J), Class-observation reports and Strategy Counts (Appendix J). Data collected thus, from 20 EG and 20 CG teachers, 223 EG and 119 CG learners, and 83 EG and 57 CG class observations was used to compare the following features before and after the study:

- Teacher and learner beliefs about language learning (Appendix A-6, D-3)
- Direct and indirect teaching and learning strategies (Appendices A-7, A-8, D-5, D-6)
- Learner attitudes and motivation levels (Appendices B-4, D-4)
- Classroom methods and outcomes (Appendix F)

The number of participants were determined by attrition in teachers and learners. There were direct and indirect (video) EG class-observations but only direct CG-class observations, as CG recordings were not permitted. The physical presence of the researcher being necessary in CG observations accounts for the lesser number of CG than EG class observations. Collation and statistical analyses of the large quantity of raw data was a complex process. This is presented in detail on DVD (Appendix J).

The raw quantitative data was grouped under the Eight Dependent Variables corresponding with the Three Research Questions of this study. The raw data from the EG was then compared with that from the CG before and after the study. Changes within the EG and CG were quantified by the differences in their scores before and after the study. The Two Sample F Test for Variances and Two-Sample t-Test Assuming Unequal Variances were used for comparative analysis of the changes in the EG and CG. These statistical analyses were carried out separately in each of the eight dependent variables.

First, the Two Sample F-test found the variance between the EG and the CG to be significantly high after the study. The F-Test for Variances compares and interprets differences in data samples from the two populations under discussion (Markowski and Markowski, 1990). The Two-sample t-test was then conducted to test the EG and CG comparative data for positive hypotheses. Significantly unequal variance in the two populations were compared by conducting t-Test Assuming Unequal Variances. The difference between the two sets of data being significantly higher than critical value after Research Intervention, indicated a positive hypothesis (Sawilowski et.al., 2002; Ruxton, 2006).

Comparison of the degrees of change undergone collectively by EG and CG participants over the study period was analysed through the Two Sample F-test and the Two-Sample t-test. The results of the F-test and t-test are tabulated below (Table 4.3):

Dependent Variables	N_1	N_2	F_O	F_C	t_O	t_C
First Research Question: Can teachers be empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT)?						
DV-1: Ability and motivation of EG teachers for framing MI-RBT tasks	326	196	8.26	1.24	19.93	1.65
DV-2: Effective structure of MI-RBT tasks framed by the EG teachers	326	196	16.89	1.24	17.70	1.65
DV-3: Participants' use of teaching and learning strategies	326	196	8.99	1.24	36.20	1.65
DV-4: Application of MI-RBT tasks for Content and Language Integrated Learning (CLIL)	243	139	2.35	1.29	41.97	1.65
DV-5: MI-RBT task-framing contributing to professional empowerment in teachers	103	78	5.47	1.43	26.56	1.66
Second Research Question: Can tasks created by the teachers and supported by the MI framework cater to individual differences?						
DV-6: Effectiveness of MI inputs in tasks in catering to individual differences in learners	326	196	4.99	1.24	34.55	1.65
Third Research Question: Can Revised Bloom's Taxonomy (RBT) help teachers in framing tasks that ensure definite learning outcomes?						
DV-7: RBT levels of task outcomes providing varied and higher-order cognitive challenges	326	196	12.31	1.24	34.18	1.65
DV-8: Efficacy of MI-RBT tasks in enabling learner autonomy	326	196	4.99	1.24	34.55	1.65
Test Scores of Learners	223	119	3.10	1.31	16.50	1.65

Key

DV - Dependent Variable	F_O - Significant Variance	t_O - t-stat observed
N_1 - EG Sample Size	F_C - Critical Variance	t_C - t Critical one-tail
N_2 - CG Sample Size		

Table 4.3 The Quantitative Results of F-test and t-test

The observed difference (F_O) between the EG and CG in each of the Eight Dependent Variables being significantly higher than the critical value (F_C) in the Two-sample F-test for Variances, a Two-sample t-test Assuming Unequal Variances was conducted to compare differences between the EG and CG participants in each of the Eight Dependent Variables

after the Research Intervention. The t-stat observed value (t_O) is higher than the t-critical one-tail value (t_C 1.65) for all Dependent Variables. The significance of this is discussed below.

4.2.1 Quantitative Analysis of MI-RBT-TBLT for Teacher Empowerment

The First Research Question is on the efficacy of MI-RBT-TBLT for teacher-empowerment, examined through Quantitative Data on the five following Dependent Variables (Table 4.3 in Section 4.2):

1. **DV-1:** After the study, there was significant increase (19.9) above t-critical value (1.65) in EG teacher ability and motivation for task-framing in contrast with CG teachers, indicating a **Positive Hypothesis for the First Dependent Variable that EG teachers have ability and motivation for MI-RBT-TBLT.**
2. **DV-2:** After the study, there was significant increase (17.7) above t-critical value (1.65) in the structural efficacy of MI-RBT tasks framed by EG teachers, in contrast to CG language items, indicating a **Positive Hypothesis for the Second Dependent Variable that MI-RBT task structure aspects, procedure and evaluation criteria promote learner engagement and meet language-learning objectives.**
3. **DV-3:** After the study, there was significant increase (36.2) above t-critical value (1.65) in the application of teaching and learning strategies by EG teachers and learners in contrast with CG teachers and learners, indicating a **Positive Hypothesis for the Third Dependent Variable that MI-RBT-TBLT enables use of teaching and learning strategies.**
4. **DV-4:** After the study, there was significant increase (41.97) above t-critical value (1.65) in the number of MI-RBT tasks for CLIL framed by EG teachers in collaboration with colleagues from other departments, in contrast with CG teachers,

indicating a **Positive Hypothesis for the Fourth Dependent Variable that MI-RBT tasks are applicable for CLIL with content inputs from other subjects.**

5. **DV-5:** After the study, there was significant increase (26.6) above t-critical value (1.66) in the contribution of MI-RBT task-framing to EG teacher empowerment through growing efficacy in motivating and engaging learners, in contrast with CG teachers in this respect, indicating a **Positive Hypothesis for the Fifth Dependent Variable that MI-RBT-TBLT leads to teacher empowerment.**

Statistical analysis verifies a Positive Hypothesis for the five Dependent Variables in response to the First Research Question stating that MI-RBT-TBLT leads to teacher-empowerment.

4.2.2 Quantitative Analysis of MI Inputs for Individual Differences

The Second Research Question on MI inputs in tasks catering to individual differences in learners, is examined through Quantitative Data on the sixth Dependent Variable (Table 4.3 in Section 4.2).

DV-6: After the study, there was significant increase (34.6) above t-critical value (1.65) in range of MI inputs in tasks framed by EG teachers, in contrast to CG language items in this respect. This indicates a **Positive Hypothesis for the Second Research Question and the Sixth Dependent Variable stating that MI inputs in tasks motivated and engaged diverse learners.**

4.2.3 Quantitative Analysis of Cognitive RBT Levels in Task Outcomes

The Third Research Question on RBT levels of task-outcomes providing varied cognitive challenges to learners, is examined through Quantitative Data on the two following Dependent Variables (Table 4.3 in Section 4.2):

1. **DV-7:** After the study, there was significant increase (34.2) above t-critical value (1.66) in the variety of cognitive challenges posed by the RBT levels of Task-outcomes, in contrast to CG language items in this respect, indicating a **Positive Hypothesis for this Dependent Variable that RBT in task outcomes induce higher-order cognitive thinking by learners.**
2. **DV-8:** After the study, there was significant increase (34.6) above t-critical value (1.66) in the efficacy of MI-RBT tasks enabling learner autonomy, in contrast to CG learners in this respect, indicating a **Positive Hypothesis for the Dependent Variable stating that an environment enriched with peer-collaboration, use of technology, bilingualism and high motivation levels lead to learner autonomy.**

Statistical analysis verifies Positive Hypotheses for the Seventh and Eighth Dependent Variables of the Third Research Question, stating that RBT in tasks enabled definite learning outcomes.

This verifies that the research intervention of MI-RBT-TBLT led to positive outcomes for EG teaching-learning, in contrast to the CG teachers and learners, who did not show the same results in the absence of research intervention. **Statistical analysis thus, indicates definite Positive Hypotheses for the eight Dependent Variables in response to the Three Research Questions.** Next, the test scores of the EG and CG learners before and after the study are triangulated with the qualitative and the quantitative data for validation of the Research Questions.

4.3 Analysis of Test Scores

The integrated scores of the same 223 EG and 119 CG learners mentioned above, in Listening, Reading, Speaking and Writing were collected from tests conducted by their teachers before and after the study, according to CBSE CCE guidelines (Appendix J). The

difference in scores before and after the study quantified changes in language proficiency in EG and CG learners at the end of the study. Any change in test scores was therefore, considered a quantitative measure of language learning over the year. These test scores from EG and CG learners were comparatively analysed through the Two-sample F-test and Two-sample t-test.

The two-Sample F Test for Variances was conducted on the differences of EG and CG test scores before and after the study and the results tabulated (Table 4.3 in Section 4.2). The variance in difference between the EG and CG changes in language proficiency (3.1) was found to be significantly higher than critical value (1.3). A Two-Sample t-Test Assuming Unequal Variances was next conducted to compare whether this increase in language proficiency in EG learners was greater than in CG learners after the Research Intervention. The observed t-stat value (16.5) was significantly greater than the t-critical value (1.65), indicating a **Positive Hypothesis for the study in that greater measurable improvement in language proficiency is indicated from EG test scores than from CG test scores at the end of the study.**

4.4 Data Triangulation

Data triangulation for all Three Research Questions of the study is based on:

1. Qualitative data from questionnaires, journals, interviews and group discussions
2. Quantitative data from observation protocols and questionnaires
3. Test scores of students

Triangulation of the Qualitative and Quantitative Data and the Test Scores provides conclusive evidence of the study outcomes seen separately in these three data fields. It provides reasons for the observed quantified changes over the study period. This is discussed with reference to the eight dependent variables subsumed under the three

Research questions.

The data triangulation below (Table 4.4) refers to the **First Research Question:**

Table 4.4 Data Triangulation: Research Question 1		
Can teachers be empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT)?		
Qualitative Data		**Quantitative Data**
EG teaching-learning	**CG teaching-learning**	**t-test value**
Dependent Variable 1: Ability and motivation of teachers in framing MI-RBT tasks		
Skills-focused MI-RBT-TBLT	Text and exam oriented teaching	19.93
High incidence of MI-RBT task-framing	Absence of MI-RBT task-framing	
Supplementing of NCERT texts by MI-RBT tasks	High degree of text dependence	
Increased accuracy and range of MI and RBT in tasks framed	Unawareness of MI and RBT as language learning parameters	
MI-RBT tasks framed and rubrics focused on learning processes and diagnosis of remedial needs	Use of language testing items for teaching-learning	
High levels of sustained intrinsic motivation	Low motivation for creating language items	
Dependent Variable 2: Structure of the MI-RBT tasks framed by teachers		
Awareness of difference between MI-RBT tasks and testing items	Ignorance of the difference between language teaching and testing items	17.70
Improving TBLT method by revising task-structure	Disconnect between language-testing items and learning	
Correlation of language learning objectives with MI inputs and RBT outcomes in tasks	Replication of testing items for learning	
Knowledge of MI-RBT task-structure	Ignorance of the link between structure and function of language items	
Evaluation of task-structure leading to the creation of a task-evaluating format	Absence of evaluation of language items by CG teachers	
Writing to reflect on task-structure and learning objectives	Dependence on mechanical generation of academic records by computer software	
Dependent Variable 3: Teaching and learning strategies used by teachers and learners		
Increased focus on teaching and learning strategies	No discernible focus on learning strategies	36.2
High incidence of direct strategies for language-learning	Very low incidence of direct language-learning strategies	
EG teachers and learners: Prevalence of indirect strategy use in teaching-learning	Little scope for indirect strategy use	

Table 4.4 Data Triangulation: Research Question 1		
Can teachers be empowered to develop their teaching skills in the language class by learning to frame tasks, supported by the theoretical frameworks of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT)?		
Qualitative Data		**Quantitative Data**
EG teaching-learning	**CG teaching-learning**	**t-test value**
Dependent Variable 4: MI-RBT-TBLT across the curriculum in the CLIL context		
High EG teacher collaboration for CLIL task-framing	No CLIL task-framing or teacher collaboration	41.97
MI Inputs in tasks for CLIL	Language items based on CLT texts	
Operation of CLIL discourse in EG lessons	Absence of CLIL	
Dependent Variable 5: Contribution of MI-RBT task-framing to professional empowerment in teachers		
Autonomous task-framing	Borrowing items from previous test papers	26.56
Democratic professional relationships	Seniority in the workplace expressed as dominance	
Efficacy is valued	Experience is valued	
Autonomy is enabled	Hierarchy in relationships	
Learner-centric attitudes and values	Self-centric ideas of autonomy	
Teacher collaboration	Individual professional competition	
Emergent proactive leadership	Dominance of seniors	
Action research	Preparing learners for exams	
Reading for research	No time for professional reading	
Class observation and peer feedback as a professional development tool	Observation and feedback viewed as a dominance tool	
Innovative use of technology	Passive acceptance of technology	
Process-based goals	Exam product-focussed goals	

Triangulating the qualitative data with the quantitative data and the learner test scores leads to the conclusion that MI-RBT-TBLT empowered the EG teachers. The t-test values for Dependent Variables 1-5 are 19.93, 17.70, 36.20, 41.97 and 26.56, respectively (Table 4.4). The highlight of this triangulation is the effect of MI-RBT-TBLT across the curriculum in the CLIL context (DV-4: 41.97) and teaching-learning strategies used by teachers and learners (DV-3: 36.20). The qualitative data identifies the reasons for this as the frequent collaboration of EG English teachers with colleagues teaching content

subjects, leading to MI-RBT-TBLT across the curriculum for CLIL task-framing, and enabling interdisciplinary discourse among teachers and learners.

MI Inputs in tasks enabled the operation of CLIL discourse in EG lessons, empowering EG teachers to develop teaching skills in an interdisciplinary context while focusing on language skills (as presented in Fig. 4.10 and Fig. 4.11). Teacher development in these ways was made possible by reflection on task-structure and learning objectives, leading to increased use of direct and indirect teaching and learning strategies (as presented in Fig. 4.5 and Fig. 4.6).

The third observed significance in the triangulation was the contribution of MI-RBT task-framing to professional empowerment in teachers (DV-5: 26.56). The high incidence of MI-RBT task-framing supported teacher ability, increased accuracy and range of MI and RBT in tasks and therefore, reduced dependence on NCERT texts. MI-RBT task-framing became a self-sustained exercise due to intrinsic teacher motivation.

Professional empowerment for EG teachers constituted learner-centric attitudes and values. It was democratic, outlining professional relationships that valorised efficacy over seniority or experience (unlike CG teachers), enabling autonomous collaboration, proactive leadership, action research and reading, innovative use of technology and process-based goals. Knowledge of the interrelation of the structure of language items with their function led to the creation of rubrics focussing on learning processes and diagnosis of remedial needs. The absence of these features in the CG could be attributed to the absence of research intervention

The data triangulation below (Table 4.5) refers to the **Second Research Question:**

Table 4.5 Data Triangulation: Research Question 2		
Can tasks created by the teachers and supported by the MI framework cater to individual differences?		
Qualitative Data		**Quantitative Data**
EG teaching-learning	**CG teaching-learning**	**t-test value**
Dependent Variable 6: Effectiveness of MI task-inputs in catering to individual differences in learners		
Identification of individual needs through MI profiling	Unaware of learner needs	34.55
Individual differences in learners reconciled through MI inputs matching learner profiles	Focus on group remedial as quantitative increase in practice	
practice of differentiated teaching through MI-RBT-TBLT based on MI profiles of learners	Preparing students for exams through revision of test papers	
Tasks involving a wide range of MI inputs for all MI profiles	Language items replicated from test papers	
Consciously engaging in differentiated learning through awareness of their own learning preferences	Practicing testing items in common	
Technology use for differentiated learning inputs in teaching-learning	Marginalization of technology to focus on texts, exam guides and test-papers	

The t-test value of DV-6 (34.55) was significant because it revealed the effectiveness of EG teachers in identifying the individual needs of learners and reconciling the differences with MI inputs matching learner profiles (Appendix B3). Task inputs based on MI profiles of learners led to differentiated teaching that allowed individuals to contribute from their specific strengths in group work. Tasks included a wide range of MI inputs to suit all MI profiles, while learner awareness of their own MI profiles and learning preferences allowed them to consciously engage in differentiated learning (Appendix G). Use of technology further enabled differentiated learning inputs in MI-RBT tasks. The absence of MI-RBT intervention prevented the emergence of these features in CG teaching-learning.

The data triangulation below (Table 4.6) refers to the **Third Research Question:**

Table 4.6 Data Triangulation: Research Question 3		
Can Revised Bloom's Taxonomy (RBT) help teachers in framing tasks that ensure definite learning outcomes?		
Qualitative Data		**Quantitative Data**
EG teaching-learning	**CG teaching-learning**	**t-test value**
Dependent Variable 7: RBT levels in task outcomes posing a varied cognitive challenge to learners		
Greater range of RBT from Knowledge to Creativity in MI-RBT tasks	Testing items limited to Knowledge and Application	34.18
Higher-order thinking skills applied for cognitive outcomes of MI-RBT tasks	Language-testing items based on lower-order thinking	
Dependent Variable 8: Efficacy of MI-RBT-TBLT in enabling learner autonomy		
Environment promotes collaborative learning	Environment reinforces individual competition	34.55
Learner collaboration	Collaboration only for graded projects	
Reflection on learning as self-monitoring	Absence of self-monitoring or reflection	
Shared responsibility for decisions	Passive compliance	
Consistent high intrinsic motivation	Periodic extrinsic motivation	
Bilingual Planning	L1 predominance	
Frequent peer, self and teacher evaluation and feedback provided	Only exam grades from teachers	

The t-test values in incidence of higher-order thinking in learners (DV-7: 35.18) and in learner autonomy (DV-8: 34.55) indicate that RBT enabled teachers to frame tasks ensuring definite learning outcomes. RBT levels in task outcomes, ranging from Knowledge to Creativity, posed a variety of cognitive challenges to learners, promoting higher-order thinking skills. MI-RBT-TBLT thus, enabled learner autonomy through cognitive skills and strategies, peer-collaboration, shared responsibility for decisions, self-monitoring and reflective learning (Appendices A, C, K-2, K-4). These features were not observed in the CG learners due to the absence of MI-RBT-TBLT.

Test Scores of Learners: The learner test scores constituted the third point of triangulation.

Table 4.7: Test Scores of Learners	
t-test value of learner test scores	16.50

The t-test value of test scores is 16.5, which is low but positively significant. This low value can be attributed to the different methods followed by the EG and CG teachers. The EG teachers used MI-RBT tasks for formative assessment and CBSE-type of testing tasks for summative assessments, leading to confident and real-life use of integrated language skills and strategies, enabling autonomy. On the other hand, the CG teachers repeated the same questions for both formative and summative assessments and homework, thereby preparing learners only for tests through drilling and rote-learning. CG learners therefore, lacked skill and confidence for using language in real-life contexts.

Triangulation of data, thus, confirms the Positive Hypothesis for the Three Research questions of this study.

4.5 Conclusion

The analysis and presentation of qualitative and quantitative data in this chapter was a complex process involving three research questions subsuming eight dependent variables. Data triangulation proved that MI-RBT task-framing empowered teachers by making them more learner-centric in their approach. Observed outcomes of empowerment were: framing tasks catering to language requirements across the curriculum, solving problems in collaboration, reconciling individual differences through MI inputs and collaborative learning, specifying cognitive outcomes and enabling learner autonomy. The direct conclusion to be drawn from this is that the research intervention of MI-RBT-TBLT

was successful in bringing about the desired outcomes of teacher empowerment and learner autonomy in the study. These outcomes amplify the potential role of materials in pedagogical learning within the classroom.

The central role of CLIL as derived from the study is based on the operation of Verbal-linguistic Intelligence and skills in all content subjects for information-processing, higher-order thinking and problem-solving. MI-RBT task-framing by EG teachers was brought to focus on the concomitant roles of grammatical and content knowledge in all subjects. MI-RBT tasks may thus enable CLIL across the curriculum.

The emergence of teacher collaboration for problem-solving in task-framing is another interesting feature of this study. The extent of its impact on teachers who collaborated during this study was evident in the strength of the learning community that emerged as a result. Motivation, creativity, proactive thinking, empathy and increased learning were study outcomes that contributed to teacher-empowerment and learner autonomy. Team teaching, class observation, peer feedback and action research, not inbuilt in school curriculum, can yet lead to impressive results without recourse to teacher-training workshops.

The study's most significant observation was the sustained development of teacher potential through task-framing in the contextual milieu of school and lessons without relying on external training programmes. These findings of the study prove that self-sustained teacher empowerment within schools is possible through materials development, with positive fallout for learners and the learning environment as well. The various implications of this study and the scope for further research emerging from these are discussed in the next chapter.