3. RESEARCH METHODOLOGY

3.0 Introduction

The previous chapter concluded with a discussion of the central role of task-based research in Second Language Teacher Education (SLTE) in the last decade, with findings indicating the relevance of Multiple Intelligences (MI) and Revised Bloom's Taxonomy (RBT) for learner autonomy in Communicative Language Teaching (CLT) and Task-based Language Teaching (TBLT). These findings are applicable to the present study, where task-framing by teachers is expected to lead to a better understanding of TBLT and its application in the classroom. Conventional workshops, training teachers for limited durations, leaves them with theoretical knowledge of pedagogy. Task-framing, in this study, is expected to sustain knowledge acquiring in workshops through practical application, leading to teacher education and empowerment within the classroom.

This chapter outlines the research methodology of the present study, focussing on a materials-based approach to teacher education that reverses SLTE convention of methods-based approaches. The need for external teacher-training would decrease if English teachers developed professional efficacy through task-planning, implementation and reflection. Teacher autonomy and empowerment would emerge from the freedom to experiment with materials development. In this new approach to SLTE, Collaborative Learning (CL), inducing socio-constructivist or learner-centric TBLT, would enable MI to cater to individual differences and RBT to set cognitive outcomes in tasks framed by teachers for language learning. The learner-oriented focus of previous studies integrating MI-RBT into task-based teaching (Armstrong, 1993, 1998, 2003; McGrath and Noble, 1995a, 1998; Noble, 2004) is widened to include the study of its effects on teachers. The implications of MI-RBT-TBLT for teachers as well as learners in actual classroom practice are, therefore, outlined in this chapter.

3.1 Rationale for the Study

Earlier studies in TBLT (Prabhu, 1987; Nunan, 1989; Ellis, 2005a; Armstrong 1994, 2000; McGrath and Noble, 1995b; Noble, 2002) did not causatively connect task-framing to teacher education in TBLT. Teacher ability to frame tasks is a tacit assumption underlying these studies, with little documented evidence of attitudinal, cognitive and metacognitive development in teachers as a result of task-framing. The long coexistence of TBLT pedagogy and task-banks, therefore, has reinforced the idea that expert TBLT practitioners or researchers frame language tasks and publish task-banks while ordinary grassroots teachers are automatically able to use these ready-made language materials for effective teaching-learning in the classroom. Teachers grass roots are thus viewed as trained task-facilitators rather than task-framers.

The present study, however, tries to prove that teachers at the grass roots are better positioned than researchers or text-book writers to frame MI-RBT tasks for their own classrooms, based on their understanding of individual learner needs. Their lack of practical knowhow would be best remediated by trial-and-error in task-framing, to gradually increase efficacy in TBLT. In other words, instead of confining acquisition of TBLT pedagogy to workshops, teachers would sustain new learning through practical task-framing, with the classroom as their TBLT laboratory.

Conventionally, SLTE programmes have always introduced novice teachers to pedagogical theory in the expectation that new learning will automatically be transformed into practice, which is rarely the observed outcome. The concomitant assumption is that expertise in methods must precede materials-development. This perspective automatically reduces materials to second place as product outcome of expertise in method. The primary focus of teacher-training thus, remains fixed on methods. On this principle, teachers are provided with CLT course-books and teaching manuals containing copious instructions on the method to be followed. These detailed instructions ignore the validity of materials as a tool for learning methods in process. Instead, being told to follow set instructions denies teachers the freedom to experiment with tasks.

Teaching manuals thus, reduce teacher role to that of passive conduit between text and learner. This too, does not succeed in ensuring learner-centric classroom practices. Task-based objectives of CLT texts published by the National Council of Educational Research and Training (NCERT) and the Central Board of Secondary Education (CBSE) are often subverted through teacher ignorance, as task performance is invariably replaced by teacher lectures on textual content. The method followed in the classroom is thus, ultimately based on individual teacher interpretation and decision.

Predominance of teacher-talk at the primary level hinders instead of helping learners acquire language skills. Teachers ignorant of TBLT revert to rote-learning as a remedial measure to ensure high test scores. Teacher ability or lack of it, to effectively use prescribed materials and method, therefore, directly decides language learning outcomes. There is enough evidence that even teachers equipped with pedagogical training and appropriate materials do not achieve seamless transition from theory to practice. Negative learning environments, as the outcome of materials rendered ineffective through wrong methods may, therefore, recur in self-perpetuating cycles (Fig. 3.1):

Ineffective Use of
Materials

Bad   **Poor Learning**
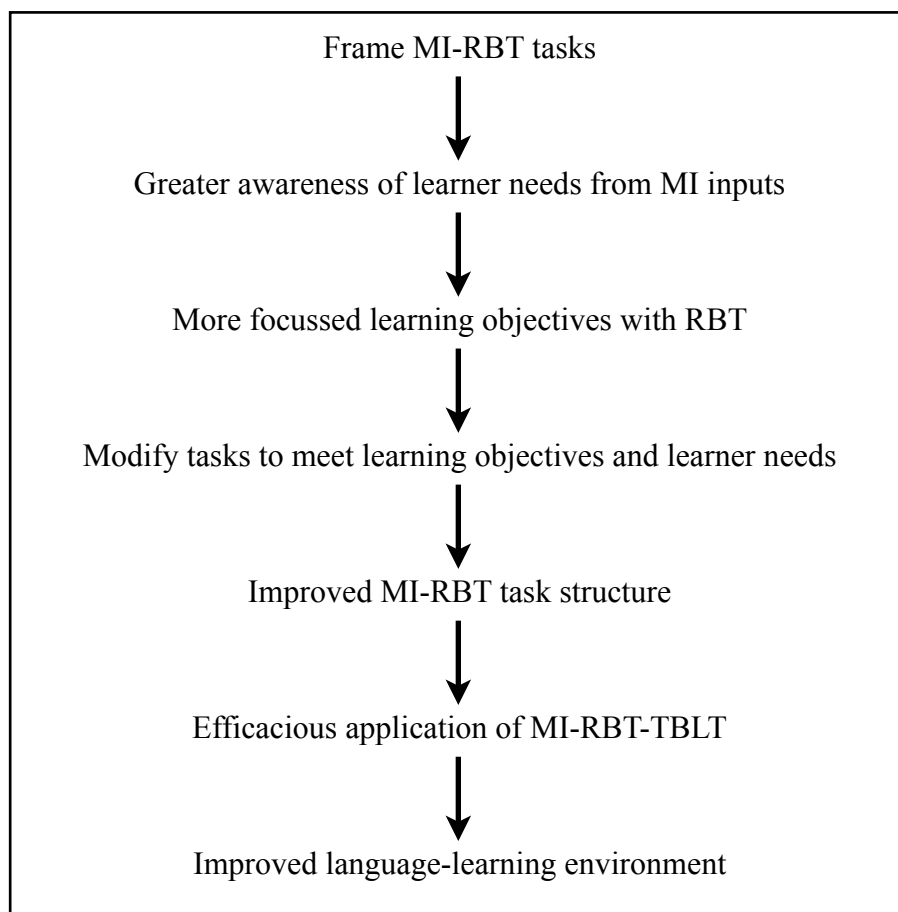**Teaching**   **Environment**
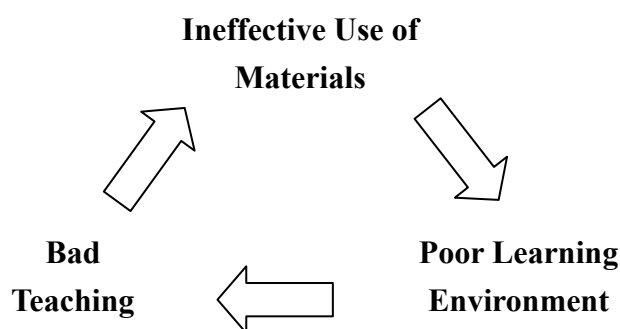
Fig. 3.1 Negative Cycle of Materials and Methods

It may be concluded from this situation that individual teacher differences in interpreting and implementing methods cannot be factored into standard materials, and that there exists a definite hiatus between theory learnt in SLTE and its implementation in the classroom, leading to negative learning outcomes (Fig. 3.1). **The present study positions itself in this perceived hiatus between materials and methods**, logically bridging this lacuna by enabling individual teachers to create their own TBLT materials for implementation in the classroom.

Any new method and its related materials having always evolved in tandem, it may be argued that a method is better understood by creating apposite materials for it. **This study examines whether framing tasks with MI-RBT guidelines and implementing**

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these in the classroom, enables teachers to reflect on and understand differentiated learner needs, and thus, to practice learner-centric TBLT. This research methodology, by reversing the earlier, mostly ineffectual method-to-materials sequence of training, would create an effective language-learning environment, as outlined, below (Fig. 3.2):

Frame MI-RBT tasks

↓

Greater awareness of learner needs from MI inputs

↓

More focussed learning objectives with RBT

↓

Modify tasks to meet learning objectives and learner needs

↓

Improved MI-RBT task structure

↓

Efficacious application of MI-RBT-TBLT

↓

Improved language-learning environment

Fig. 3.2 Rationale for the Research Methodology

The present study thus, focusses on teacher development as the outcome of task-framing, implementation and reflection on the learning process, investigating ensuing attitudinal changes in teachers leading to empowerment. The language-learning outcomes of this MI-RBT-TBLT approach are also studied. Professional empowerment for teachers is thus viewed as being concomitant with better learning outcomes in the classroom through inclusive teaching-learning.

3.1.1 Basic Assumptions

Following from the discussion in the previous section, the research methodology of the present study is based on the following assumptions from TBLT research findings:

1. TBLT with its constructivist basis has the most potential for teacher initiative, innovation and autonomy (Prabhu, 1987). TBLT pedagogy would thus be relevant for the present study due to its potential for teacher-empowerment through these features of professional development.

2. Successful implementation of TBLT is vitally connected with components of task structure (Nunan, 1989; Kumaravadivelu, 1993). Successful learning outcomes of MI-RBT tasks would thus indicate the causative efficacy of task-framing by teachers.

3. MI and RBT provide variety in task inputs and define specific cognitive task outcomes, respectively (Weber, 2001; Kornhaber, 2004; Noble, 2004). TBLT enhanced by MI inputs would therefore, enable teachers to frame tasks catering to individual differences in learners, while RBT would match learning objectives to task outcomes commensurate with the level of cognition attained by learners.

4. The interrelation of task-structure with learner needs and learning objectives is established through feedback and reflection (Ellis and Ellis, 2007). The MI-RBT-TBLT method outlined earlier in Section 3.1 would thus enable the dual learning of task-structure and TBLT through teacher reflection on MI-RBT task-implementation and feedback in the language classroom. This would, in turn, increase teacher efficacy and lead to professional development.

5. The predominantly learner-centric MI-RBT-TBLT framework helps teachers to metacognitively conceptualise their role as facilitators (Campbell, 1997; Hall Haley, 2001, 2004). Modifying tasks to suit process-oriented TBLT methods rather than product-oriented examination requirements, would therefore enable teachers to focus on language learning processes instead of solely on product outcomes of testing.

6. Internalising learner-centric principles (Nunan, 1988a, 1991; Brown, 2002; Beglar and Hunt, 2002) helps teachers to reconstruct themselves as facilitators, instead of remaining passive recipients of CLT materials (Krashen, 1985a, 1985b). Integrating the learning objectives of NCERT English texts with self-framed MI-RBT tasks would therefore enable teacher uptake of the learner-centric TBLT method.

7. CLT teachers operating in a Content and Language Integrated Learning (CLIL) context (Spratt, 2011), can teach English across the curriculum. MI-RBT tasks framed by teachers would thus be useful also in CLIL context, the same principles being applicable for learning English as a Second Language (ESL) across the curriculum.

3.1.2 Research Variables

An experimental study examines the relationship between variables, or the manner in which an independent variable influences and changes a dependent variable in a controlled experiment (Nunan, 1992b). The present study uses one independent and eight dependent research variables in its experimental methodology:

Independent Variable: The independent variable of the present study is MI-RBT task-framing by teachers. This composite construct includes three components:

•   Multiple Intelligences (MI)

- Revised Bloom's Taxonomy (RBT)

- Task-based Language Teaching (TBLT)

Together, MI-RBT-TBLT formulate the theoretical basis for the research methodology of this study.

Dependent Variables: The eight Dependent Variables expected as the outcome of the operation of the Independent Variable are as follows:

1. Ability and motivation of EG teachers in framing MI-RBT tasks

2. Accuracy of structure in MI-RBT tasks framed by teachers

3. Observable use of teaching and learning strategies

4. MI-RBT-TBLT across the curriculum, similar to CLIL

5. Contribution of MI-RBT task-framing to professional empowerment in teachers

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

7. RBT levels in task outcomes posing a varied cognitive challenge to learners

8. Efficacy of MI-RBT-TBLT in enabling learner autonomy

3.1.3 Research Hypotheses

The emergence of characteristic features of self-empowerment in teachers with resultant benefits in learners is predicted in the present study. These predictions, if observed in the study results, will indicate a Positive Hypothesis as follows:

1. Teachers can successfully frame language tasks with MI inputs using RBT guidelines (Noble, 2004).

2. Teachers manifest motivation (Nunan and Lamb, 1996) for MI-RBT task framing.

3. Teachers framing their own tasks become less text-dependent (Willis and Willis, 2007).

4. Teachers show metacognitive awareness of learning processes (Bruner, 1986; Hickey, 2004). As effective facilitators, they model appropriate learning strategies. They successfully motivate and engage learners in tasks (Littlewood, 2004).

5. Teachers autonomously engage in promoting their own cognitive growth (Candlin and Murphy, 1987).

6. More discernible use of direct and indirect strategies is observed in learners (Rubin, 1987; Oxford, 1993). A measurable improvement in language proficiency is observed in learners (Anderson, 2002; Airasian and Miranda, 2002).

7. Teachers manifest awareness of and empathy with learner needs (Chamberlin-Quinlisk, 2008; Senior, 2010). They provide emotional and psychological support to learners to motivate learning (Armstrong, 1994; Beckman, 1998). They engage proactively in classroom management, praise learner contribution and build learner self-esteem (Breen, 1985b; Wenden, 1995).

8. Learners participate more frequently in the decision-making process (Breen and Candling, 1980; Ellis and Sinclair, 1989).

9. Greater learner autonomy is seen in the classroom through shared responsibility for learning (Christison, 2005; Weber, 2005).

10. Learners engage in peer-collaboration and peer-feedback, manifesting measurable improvement in language proficiency (Senior, 1997; Jacobs and Hall, 2002; Dörnyei and Murphey, 2003).

The absence of the Dependent Variables outlined in Section 3.1.2 would indicate a Null Hypothesis and their reverse would indicate a Negative Hypothesis. The aim of the present study is to arrive experimentally at any one of the above results, based on the eight Dependent Variables, in answer to the Research Questions.

3.1.4 Aim of the Study

The aim of the present study is to find answers to the three following Research Questions (stated earlier in Chapter One):

Research Questions:

(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)?

The aim of this study is to analyse whether the theoretical frameworks of MI and RBT provide teachers with the cognitive knowledge required to frame English language tasks and develop their use of teaching strategies, thus leading to their empowerment. Earlier research (Armstrong, 1994; Weber, 2001; Noble, 2004) takes teacher ability in framing MI-RBT language tasks for granted. The first five Dependent Variables discussed earlier in Section 3.1.2, collectively provide responses to the First Research Question:

- 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

(2)   Can tasks created by the teachers and supported by the MI framework cater to individual differences?

The aim of this study is to analyse whether the tasks with MI inputs framed by the teachers cater to individual differences in learners (Armstrong, 1994; Weber, 2001, 2005). MI should thus cater to individual differences during task intake, processing and output by

learners. The following Dependent Variable discussed earlier in Section 3.1.2, provides a response to the Second Research Question.

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

(3) Can Revised Bloom's Taxonomy (RBT) help teachers in framing tasks that ensure definite learning outcomes?

The aim of this study is to analyse whether RBT helps teachers to frame tasks with definite learning outcomes (Anderson et al., 2001; Krathwohl, 2002). The task should engage learners in cognitive processing manifested at a specific RBT level to arrive at the task outcome. The following Dependent Variables discussed earlier in Section 3.1.2, collectively provide responses to the Third Research Question:

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

The Aim of this study is thus, to experimentally arrive at answers to the three Research Questions subsuming the eight Dependent Variables, indicating either a Positive, Negative or Null Hypothesis as its outcome. In other words, the aim is to discover whether framing MI-RBT tasks would lead to teacher empowerment and learner autonomy as outcomes of effective TBLT. The ability to develop materials or frame MI-RBT tasks along with increased teacher efficacy in TBLT would causatively correlate materials with methods as a tool for self-empowerment. The conventional method of SLTE from methods to materials would then be replaced with a developmental cycle starting with task-framing (materials) and leading to efficacy in TBLT (method) with self-empowerment as its outcome. The research design of the present study, therefore, is commensurate with the three aims of the study, as discussed below.

3.2 Research Design of the Study

Research Design involves a systematic plan to study a problem, defining the study type and duration, the research questions, hypotheses, independent and dependent variables, experimental design, and methods of data collection and statistical analysis (Dörnyei, 2007). The structural aspect of research design in the present study is primarily dictated by the research questions, aims, hypothesis and variables discussed in the preceding sections; but the theoretical design of this study is also influenced by models and approaches used in earlier studies.

The research design of this study is therefore, discussed from two aspects in the following sections. First, earlier models in task-based studies are reviewed as theoretical predecessors. Second, the theoretical and structural aspects of research design in the present study are discussed in detail. The theoretical models for task-framing, influencing the research design of this study are discussed first, in the following section.

3.2.1 Review of the Research Design

The theoretical framework of the present study is task-based. The research design includes task-framing principles from mainstream TBLT (Prabhu, 1987; Nunan, 1989; Ellis, 2005a; Willis, 1996) and also from later Multiple Intelligences Teaching Approach (MITA) models combining MI and RBT in task-based learning (Armstrong, 1994; Noble, 2004; Weber, 2005). The aspects and structure of a language-learning task, as well as the sequenced phases of task processes are adapted from mainstream TBLT but simplified for the convenience of novice teachers.

Learner-centric, constructivist principles of MITA cater to a wide range of learner profiles by stimulating different MI in task processes (Cuban, 2004; Denig, 2004).

Collaborative learning (Wu, 2004; Kagan and Kagan, 2009) reduces individual differences in attention, memory, language, sequential and spatial ordering, higher-order thinking and social interaction affecting learning determined by MI profiles of learners (Gardner 1995, 1999a, 1999b; Armstrong, 1994; Denig, 2004; Weber, 2005). This "pluralizing" of intelligences (Gardner, 1993a, pp. 44-45, 1993b, pp. 83-84) in MI tasks reduces individual differences through shared learning and induces a state of "flow" or highly focussed task engagement (Csikszentmihalyi, 1993, pp. 190-212), as seen in numerous case studies (Weber, 1992, 2001; Campbell, 1990, 1995; Dickinson, 1996; Forester and Reinhard, 2001; McKenzie, 2002; Hoerr, 2004; Meyer and Glock, 2004; Ribot, 2004).   MITA research on language learning (Armstrong, 2003; Christison, 2005; Hall Hailey, 2001, 2004, 2007, 2010) indicates that MI in language tasks increase cognitive processing and problem-solving ability in learners, promoting autonomy. MITA task-framing guidelines therefore, are expected to enable teachers to achieve these outcomes.

A definite cognitive dimension is added to task-framing by integration of RBT with MI in Armstrong's (1994) and Noble's (2004) MI-RBT matrices. Teacher ability in MI-RBT task-framing is taken for granted in these studies, whereas task-framing ability may, in reality, vary in teachers, which is the focus of the present study. Constructivist teaching practices, by facilitating corresponding changes in teacher belief and attitude and leading to learner autonomy (Guskey, 1986, as cited in Noble, 2004), are expected to positively affect teacher ability for MI-RBT task-framing.

Armstrong (1994, 2003) and Noble (2002, 2004) used similar task-framing models consisting of an MI-RBT matrix with nine MI arranged along the horizontal dimension and six RBT levels along the vertical dimension of this matrix. The aim of enabling teachers to plan differentiated tasks with MI catering to individual learner needs and RBT setting learning outcomes is appropriate for language learning in this study. There are, however,

drawbacks in these earlier models, requiring adaptations for the present study Armstrong (1994) integrated MI theory with the older version of Bloom's Taxonomy (see Fig. 2.8, p. 68) for selectively combining MI inputs for differentiated learning with cognitive RBT challenges ending with Evaluation but omitting Creativity (Table 3.1):

Intelligence	Bloom's Six Levels of Educational Objectives					
	Knowledge	Comprehension	Application	Analysis	Synthesis	**Evaluation**
Linguistic Intelligence						
Logical-Mathematical Intelligence						
Spatial Intelligence						
Bodily-Kinesthetic Intelligence						
Musical-Intelligence						
Interpersonal Intelligence						
Intrapersonal Intelligence						
Naturalist Intelligence						

Table 3.1 MI Theory and Bloom's Taxonomy (Armstrong, 1994: 118-119)

Armstrong's grid-matrix did not include Creativity, a required outcome of higher-order language use in TBLT in this study. This problem was resolved in Noble's (2004) model incorporating MI into a matrix with Revised Bloom's Taxonomy (RBT), enabling the inclusion of each MI at every cognitive level of RBT, including Creativity (Fig.3.3):
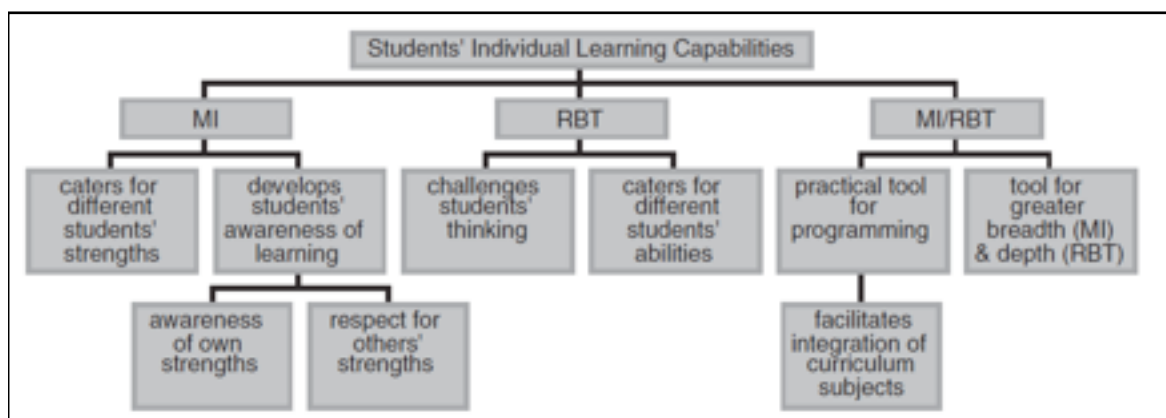
Fig. 3.3 Differentiated Higher-order Cognition with MI-RBT (Noble, 2004, p. 196)

Inclusion of Creativity makes Noble's (2004) MI-RBT matrix (Fig. 3.3), more appropriate for framing language tasks. The lock-step use of every MI at each RBT level (Fig. 3.4), however, makes this model problematic for language teaching:
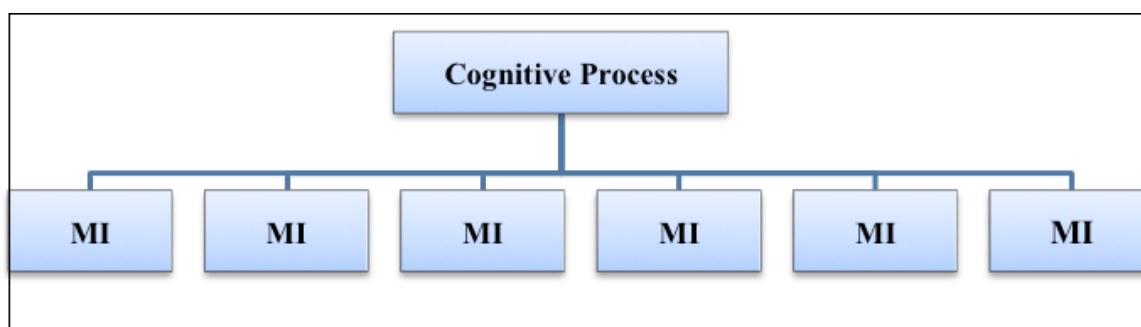
Fig. 3.4 Noble's MI-RBT Matrix (Noble, 2004)

Not being specifically intended for language learning, the aim of this model was to enable all possible MI-RBT combinations, so as to maximise MI-RBT task inputs for learning all subjects. This, however, led to MI-RBT combinations not directly applicable in framing tasks for language learning, for example Mathematical-logical (MI) with Application (RBT) or Physical-kinesthetic with Evaluation. Denying teachers freedom to select MI-RBT combinations to frame language tasks can, moreover, reduce them to automatons instead of promoting autonomy. To quote one such teacher, "thinking in rows and columns like a spreadsheet" is not be conducive for creative task-framing. Both models (Armstrong, 1994; Noble 2004) therefore, are not acceptable in totality, as originally used. The MI-RBT matrices are therefore, modified in structure and function for framing language tasks in the present study. The function of the research model modified by the researcher for this study is discussed later, in the Research Tool, while its structure is discussed below.

3.2.2 Research Design

The present research design differs from earlier studies (Armstrong, 1994; Noble, 2002, 2004) in two aspects:

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(a) Outcomes of MI-RBT-TBLT in terms of language proficiency and learner autonomy

(b) Teacher ability in MI-RBT task-framing as an indication of self-empowerment

Firstly, the design of the present study focuses specifically on the applicability of MI-RBT tasks to language acquisition and strategy use by learners. Secondly, the design of study enables focus on teacher ability in task-framing and its outcomes in terms of teacher autonomy and empowerment, unlike earlier MI-RBT-TBLT models, which took high levels of knowledge and expertise in teachers for granted. The present study design therefore, allows freedom of choice in selecting MI-RBT combinations conducive for language learning, so as to examine the effects of such choices on teacher development.

Adopting only the learner-centric MI-RBT framework of the two earlier models, without aiming at maximal use of all MI-RBT combinations, teachers can selectively decide MI-RBT inputs that they consider suitable for language learning. A task-evaluation format framed by the researcher is added to the design, enabling teachers to measure the effectiveness of MI-RBT combinations, and thus, to examine their own task-framing ability. Efficacy, autonomy and accountability in learners are valorized as in the earlier models, but with special reference to developing TBLT efficacy for teacher empowerment, to study the impact of task-framing on teachers and its outcome in learners.

The research design does not rigidly rely on tasks alone as in earlier studies (Armstrong, 1994; Noble, 2004, Weber 2005), but applies a task-supported teaching method, with MI-RBT tasks framed by teachers being integrated with the prescribed NCERT/CBSE Communicative English texts. The present study design, therefore, engages learners collaboratively in complex problem-solving, enabling them to identify and develop diverse MI. In the researcher's prior experience, teachers framing tasks with MI inputs often focussed on MI activity, sidelining language use and posing low cognitive

challenge. RBT is integrated with MI to solve this cognitive problem. Teachers can monitor differentiated learning through MI inputs catering to a wide range of learner profiles (pluralizing), while promoting language engagement (flow) through high RBT levels of cognitive complexity in task outcomes.

MITA approaches in TESL show that linguistic structures in vocabulary and syntax can be learnt by drawing on stronger learner intelligences/MI (pluralizing) when engaging them (flow) in activities like dancing, drawing or debating (Gardner, 1993b). Task outcomes using the present study design therefore, focus on learning processes as well as products through learning strategies and rubrics for interviews, graphic organizers, shared inquiry, peer-teaching, computer-assisted audiovisual inputs, role-plays, projects, semantic mapping, etc. while enabling reflection through portfolios and learning logs. Task variety enabled by research design helps teachers to focus on language learning processes, instead of solely on the oral/written products of testing.

The present design thus, focuses on teaching behaviours characterized by MITA (Williams, 1999; Tomlinson, 1999; Bravmann, 2004; Westwood and Arnold, 2004):

- Proactive planning of instruction in language skills and strategies for meaning-making and expressing learning in MI ways, based on individual differences and needs

- Teaching strategies like flexible time, multi-option assignments, differentiated resource materials (linguistic, audio and visual), and multiple approaches to content, process and product, allowing for individual readiness, interest, ability and learning profiles

- Teacher facilitation of learner autonomy in solving problems and achieving individual learning goals through a range of whole-class, small group and individual activities

- Multiple ongoing and diagnostic assessment to make interactions supportive and instruction responsive to learner needs.

This cognitive aspect of MITA in the present research design enables teachers to motivate and challenge learners through problem-based learning and assess task outcomes through rubrics enabling multiple approaches to problem-solving. MI-RBT-TBLT for constructivist, problem-based collaborative learning can thus, enhance challenge without threat to create a community of autonomous learners. The research design thus, articulates professionalism in instructed SLA (Ortega, 2005) through instructional and assessment strategies (Campbell, 1997), systematic reflection (Christison, 2005; Met, 2006) and by allowing teachers "to work from heart and head together to extend teaching practices" (Kornhaber, 2004, p. 69), for self-empowerment.

The second aspect of research design involves the research methodology followed to find answers to research questions with reference to dependent variables. This aspect of research design is experimental, to arrive at results indicating a positive, null or negative hypothesis. The research design is therefore of an Interventional, Longitudinal, Mixed-Methods Study, including a Control Group and an Experimental Group, with the researcher as a Non-Participant Observer. A discussion of these aspects of Research Design follows.

Interventional Study with Control and Experimental groups: An Interventional study consists of an Experimental Group (EG) and a Control Group (CG). The presence of both EG and CG are imperative, as the complexity of the teaching-learning process makes it difficult otherwise, to isolate experimental conditions in context for testing the relationship between the Dependent and Independent Variables (Nunan, 1992b; Dörnyei, 2007). This is an interventional study to validate the formal hypothesis with intervention applied only to the EG. The hypothesis is verified by validated outcomes in the eight Dependent Variables observed in this group, subject to the operation of the Independent Variable through research intervention, in contrast to the absence of the same outcomes in the CG. The

Independent Variable operates through the structured process of MI-RBT-TBLT as Research Intervention, applied through three instruments of the Research Tool:

(a) Teacher orientation workshops

(b) MI-RBT-TBLT method of task framing

(c) MI-RBT task-evaluation

The results of a mixed-methods study are verified by comparing the data collected from the experimental and control groups before and after the study (Wallace, 1998) for:

- Comparison of data from two groups at the beginning of the study would establish the initial condition of the Dependent Variables.

- Comparison of the data from two groups at the end of the study would indicate any change in one group as a result of the operation of the independent variable, in clear contrast to the other group, which is not expected to show these changes.

- Comparison between the data from the beginning and the end of the study would prove that any changes in the eight Dependent Variables (Section 3.1.2) are the result of the operation of the Independent Variable.

Longitudinal Study: Longitudinal studies have proved to be the most effective in describing patterns of change and explaining causal relationships (Menard, 2002). They are hence, most reliable and effective in SLA research where language learning happens over time (Mellow et al., 1996; Ortega and Iberri-Shea, 2005). The present study would take place during one academic year, from April 2012 to March 2013. The minimum duration of a longitudinal or panel study on record being 12 weeks (Bogdan and Biklen, 1992), this would thus qualify for a longitudinal study. One academic year would give teachers sufficient time to practice TBLT for observable outcomes, and is also the established period for measuring and reporting on learner progress at school.

Non-participant Observation: A non-participant observer is one who remains present and observes the ongoing action to collect data, without taking part in the action or trying to influence it beyond the research intervention (Wallace, 1998; Morse and Richards, 2002). The role of the researcher in the present study would be that of a non-participant observer. The researcher would not participate in teaching, but remain an observer collecting data.

The present study would combine three kinds of observation, in terms of real time, video-taping and peer observation:

i.   <u>Real time (direct) observation</u> (Wallace, 1998): The researcher would directly observes lessons for data collection.

ii. <u>Peer observation</u> (Wajnryb, 1992): Teachers would observe each other's lessons during the study for peer feedback as data on MI-RBT-TBLT.

iii. <u>Video-taping (indirect)</u> (Wajnryb, 1992; Beck et al., 2002): Lessons would also be video-recorded for indirect viewing.

Quantitative method: Quantitative research is the scientific method of collecting and analyzing numerical data related to a given hypothesis and thereafter, drawing conclusions based on this process (Brown and Rodgers, 2002; Dörnyei, 2007). In the present study, numerical data on student and teacher beliefs about and attitudes to ESL and their use of teaching and learning strategies would be collected. The English test scores of learners at the beginning and end of the study would also be collected as quantitative data.

Quantitative data, however, has been criticized for its tendency to lead to generalizations that are not commensurate with the specific relevant situation and it is also regarded as incomplete for its failure to record the reasons behind the occurrence of any

phenomenon (Bryman, 1992; Bazley, 2003). These shortcomings would be overcome by collecting Qualitative data to fulfill the deficiencies of quantitative data.

Qualitative method: Qualitative data is non-numerical data that is descriptive and/or introspective in nature, relevant to specific cases and usually inclusive of the reasons underlying the observed phenomena (Morse and Richards, 2002; Bryman, 1992; Dörnyei, 2007). In the present study, qualitative data on teacher and learner background, attitudes, beliefs, ELT method, materials and strategies, etc., would be collected in response to the eight Dependent Variables of the three Research Questions.

A **Mixed-Methods Study** combines the Quantitative and Qualitative methods to scientifically study the available evidence without impressionistic bias and to analyse the circumstances (if any) leading to a Positive Hypothesis, for future replication (Brown and Rodgers, 2002; Bazley, 2003; Dörnyei, 2007). This Mixed-Methods approach (Dörnyei, 2007) combines the strengths of the qualitative and quantitative methods, while overcoming their individual drawbacks (Brewer and Hunter, 1989; Cresswell, 1994, 2003). **The present study design would thus be of a Mixed-Methods Study combining the Quantitative and Qualitative methods, collecting both these types of data to provide answers to the three Research Questions.**

Mixed methods data-collection would enable thorough comparative analysis of the effectiveness of MI-RBT-TBLT in learners as well as teachers before and after the study. Mixed-methods are fair, inclusive and empathetic to all participants by enabling greater validity of results through triangulation of data from two or more sources (Denzin, 1978). Adequate stress on quantitative data and rational balance between quantitative and qualitative methods ensures that data triangulation is valid and reliable (Patten, 2002). The

present study would therefore, develop an adequate Research Tool for collecting qualitative data, quantitative data and test scores of learners for triangulation.

3.2.3 Development of the Research Tool

A composite **Research Tool** comprising nine individual instruments for research intervention and data collection is prepared by the researcher in the present study design, as follows:

1)   Workshops for Teacher Orientation

2)   MI-RBT Task-framing Model

3)   MI-RBT-TBLT Procedure

4)   MI-RBT Task Evaluating Model

5)   Questionnaires

6)   Class Observation Protocols

7)   Interviews and Group Discussions

8)   Teacher Journals and Anecdotal Records

9)   English Tests on LSRW (Listening, Speaking, Reading, Writing) Language Skills

The application of the first three instruments; the (1) Workshops for Teacher Orientation, (2) TBLT Procedure, and (3) MI-RBT Task-Framing Model, enable Research Intervention, showing the operation of the Independent Variable of the study. The effects of research intervention on the eight Dependent Variables are measured by the next six Instruments; (4) MI-RBT Task Evaluating Model, (5) Questionnaires, (6) Class Observation Protocols, (7) Interviews and Group Discussions, (8) Teacher Journals and Anecdotal Reports, and (9) Written Tests, by collecting qualitative and quantitative data at

the beginning and end of the study. A detailed discussion of the ten Instruments constituting the composite Research Tool, follows.

(1) **Workshops for Teacher Orientation:** A workshop is the conventionally accepted method of practically demonstrating new ideas and skills to novice teachers (Widdowson, 1984; Ellis, 2005b). Workshops conducted at the beginning of the present study, constitute the first, fundamental Instrument for equipping teachers with skills for MI-RBT-TBLT task-framing and implementation (Appendix O). Teachers equipped to act independently from their own knowledge and skills constitute appropriate subjects of self-empowerment (Johnson, 1996).

Six introductory workshops are conducted by the researcher over two months on the topics below:

1. Differentiated Learning for Individual Differences

2. MI and Learning Styles

3. TBLT and Collaborative Learning

4. Thinking Skills

5. LSRW across the Curriculum

6. Assessment through Rubrics

(2) **MI-RBT Task-framing Model:** The second and central Instrument of Research Intervention is the MI-RBT task-framing model, a modified version of earlier matrices (Armstrong, 1994; Noble, 2004), discussed in Review of the Research Design.

The modified MI-RBT model (Table 3.2) of the present study repeats the earlier planning-grid, but is different in application:

Gardner's Multiple Intelligences	RBT Cognitive Levels					
	Knowledge	Understanding	Application	Analysis	Evaluation	Creativity
Verbal-linguistic Intelligence						
Logical-mathematical Intelligence						
Visual-spatial Intelligence						
Physical-kinesthetic Intelligence						
Musical-rhythmic Intelligence						
Naturalistic Intelligence	*Sample Task 1*			*Sample Task 2*		*Sample Task 3*
Interpersonal-Intelligence						
Intrapersonal Intelligence						

Table 3.2 Task-Framing Design (adapted from Armstrong, 1994; Noble, 2004)

The present model (Table 3.2) modifies the lock-step task-framing design of the earlier matrix to allow teachers free choice of MI RBT combinations, based on suitability of task processes for language learning outcomes. This system enables planned variation in task inputs and outcomes. A language task can be positioned in any cell of the given table, enabling teachers to selectively include MI inputs and to set a definite cognitive level for the task. The MI-RBT inputs and outcomes of tasks can be varied by locating each task in a different cell of the planning table.   The teacher can also plot the range and variety of tasks framed by checking the number of cells used. It should be noted that the RBT cognitive levels represent a hierarchy ranging from Knowledge (lowest) to Creativity (highest), so that every level of RBT

is automatically subsumed in the next higher level. A task outcome fixed at Creativity will thus, automatically include all the five lower levels of RBT. The individual MI however, have no hierarchical relationship with each other. The use of this MI-RBT framework for task-planning is illustrated below.

The teacher may for instance, plan a language task with Naturalistic Intelligence, with its outcome at any cognitive level from Knowledge (lowest) to Creativity (highest). A task requiring the learner to examine different shapes of leaves and make an oral or written presentation of their findings, is placed at the intersection of **Naturalistic Intelligence** with **Knowledge** (*Sample Task 1* in Table 3.2). To reach a higher cognitive level, the task requires that the learner should Apply or Evaluate the findings. For instance, in *Sample Task 2* set at the **Naturalistic Intelligence-Analysis** cell, the learner can compare different kinds of metamorphosis in leaves and explain the reasons for these. *Sample Task 3* in the **Naturalistic Intelligence-Creativity** cell requires that the learner should imagine and describe a metamorphosis in human beings to enable survival under specific natural conditions. *Sample Task 3,* covering six cells, is more versatile and challenging than *Sample Task 2* which covers four cells, or *Sample Task 1,* covering only one cell. If *Sample Tasks 1, 2* and *3* are set as collaborative activities, then Interpersonal Intelligence is also included. Such variations enable higher-order planning for innovative task-framing in teachers.

(3)   **MI-RBT-TBLT Procedure:** This third Instrument of Research Intervention, includes five sequenced phases of TBLT methodology: (1) Pre-task, (2) Task, (3) Report, (4)

Analysis (not to be confused with the RBT level), and (5) Reflection. These five phases of MI-RBT task-implementation are described below:

1. **Pre-task:** The teacher introduces the expected aim and outcome, preparing learners for the task (Ellis, 2003a, 2003b). The teacher may model the task with suitable illustrations or conduct a preparatory activity (Ellis and Ellis, 2007).

2. **Task:** Learners perform the task in small groups. Learner-centred methodology limits teacher role to that of an observer or counsellor, answering questions that may arise and monitoring learners (Prabhu, 1987; Nunan 1989, 2004).

3. **Report:** Learners present the task product to the rest of the class as a written or oral report. Teacher and observing learners provide written or oral feedback (Willis, 1996, 2004).

4. **Analysis:** The teacher reviews the task process for the whole class, including language forms used, problems faced and task outcomes reached by learners (Ellis, 2003a, 2003b).

5. **Reflection:** Teacher reflection on task-framing and implementation, based on feedback received, leading to improved task-outcomes (White, 1998; Willis and Willis, 2007; Farrell, 2011a, 2011b).

These five phases are followed by teachers as MI-RBT-TBLT procedure in the classroom. The next seven Instruments of the composite Research Tool discussed below, are used for data collection and analysis.

(4) MI-RBT Task Evaluation Model: Qualitative data on MI-RBT task-framing and TBLT procedure is collected through the MI-RBT task evaluation model, the fourth Instrument of the Research Tool (in a format modified by teachers, as discussed later). The Task Evaluation Model integrates three TBLT principles (Candlin, 1987):

- Problematicity: Diagnostic extent of a task, explaining variations in learner ability and providing feedback for future action. Applicability of MI-RBT tasks in differentiated learning contexts thus, determine task aim and nature of learner collaboration required.

- Implementability: Task complexity with reference to its adaptability to available resources. MI-RBT parameters appropriate for the language learning objective of the task correlate with task inputs, duration, performance and information processing involved, and are commensurate with the resulting information output in task outcome and rubric for peer-assessment.

- Combinability: Extent to which the task can be integrated in sequence with other tasks. Pre-task activity connects new learning with existing knowledge and post-task activity prepare the way for real-life learning.

Data from direct and indirect (video) observation enables task evaluation on the basis of implementation, relative to seven aspects of a task: Aim, Duration, Inputs, Performance and information processing, Outcome and Information Output, Nature of collaboration, and Rubric, are described in detail in the following discussion.

1. **Aim:** The explicit or implicit language-learning objective, involving a language skill or sub-skill (Ellis, 2000, 2003a) focusing on:

   - Eliciting prior learning through a pre-task (Ellis and Ellis, 2007)

   - Task relevance to language and content-subject syllabus (Willis, 2004)

2. **Duration:** The total time available appropriately divided for each phase of task planning, performance and presentation (Willis, 1996, 2004).

3. **Inputs:** The instructions, information, materials and MI required to perform the task activity:

    •   Verbal and material task inputs engaging learner interest and motivating task planning and performance (Weber, 2001).

    •   Instructions including an information-gap, reasoning-gap, opinion gap or a combination of these for problem-solving (Prabhu, 1987). This problem-solving aspect combines the planning, performance and presentation stages of the task.

    •   Combination of two or more MI inputs integrally into the task's performance requirements (Noble, 2004).

    •   Planning and preparation by learners including their understanding of:

        -   Instructions, expected outcome and standards of self-evaluation in the given rubric (Noble, 2002)

        -   Sequencing of the task phases (Nunan, 1989)

        -   Allotment of individual roles for the collaborative effort (Doyle, 2006)

        -   Resources necessary to perform the task (Nunan, 2004)

    This aspect overlaps with the performance aspect of the task.

4. **Performance and information processing:** The cognitive level of RBT reached by learners during planning and performance, and the different learner MI engaged during the planning and task activity (McGrath and Noble, 1995b), connecting learners with their real environment in age-appropriate ways (Willis, 1996), while focusing on:

    •   Clarity of oral and written task instructions (Nunan, 1995)

- Task material and technological requirements being age-appropriate for learners (Willis, 1996)

- Maintaining learner attention, motivation and engagement levels by the task (Ellis, 2003b)

- Task potential for replicating real-world experience for learners (Armstrong, 1998)

5. **Outcome and information output:** The meaning-focused presentation of the task product after completion, it can be separate from task aim in the last phase of task performance (Ellis, 2005a, 2005b). The product can be oral, written, visual, musical, kinaesthetic or a selective combination of these (Willis and Willis, 2007). The focus here is on:

- Setting RBT targets commensurate with the task's language learning objectives (McGrath and Noble, 1995a)

- Providing cognitive challenge in information access, processing and output by learners with recourse to extra-textual sources (Prabhu, 1987)

6. **Nature of collaboration:** Decisions on which task phases are to be performed individually, with partners or in small groups, and the different roles played by individual members in time management, research, MI application and conflict management **(**Sticchi-Damiani, 1981; Atwell, 1987), focusing on:

- Collaborative potential of the task overcoming individual differences (ID) in diverse learners (Antil et al., 1998; Daniels, 2002)

- Task potential for promoting group cohesion with clearly defined roles for individuals within the group, thus facilitating classroom management (Calkins, 1983; Nelson-Barber et al., 2000)

- Task promotion of autonomous learning, with minimal need for teacher intervention (Johnson and Johnson, 1994; Gambrell et al., 2000)

7. **Rubric:** The grades along with descriptive indicators for evaluating each level of task-performance, facilitating self and peer evaluation and ensuring fair and holistic evaluation of all phases of task planning, performance and presentation (Nunan, 1991, 1992a), focusing on:

- Setting a clear and simple rubric for self and peer evaluation of task outcome (Nunan, 1992c)

- Task potential for follow-up learning activities (Ellis, 2005b)

(5) **Questionnaires:** A questionnaire is a broad term covering many kinds of printed lists of questions, inventories, checklists, rating scales and even interviews for eliciting information on background, beliefs, behaviours and attitudes and other data on study participants (Wallace, 1998; Dörnyei, 2007). The present study uses four sets of Questionnaires (Appendices A-D) as the fifth Instrument of the Research Tool to collect both qualitative and quantitative data in response to the three research questions. Learner responses on the Likert scale constitute quantitative data in the questionnaires. The Likert scale is a five-point scale used to elicit coded quantitative responses that balance open-ended questions (Matell and Jacoby, 1971; Nunan, 1992b, Silverman, 1993). Qualitative feedback corroborates quantitative data in overlapping information domains of different questionnaires, for example, common areas of teacher and learner experience. The questionnaires of this study are divided into four sets from A to D, on the basis of administration to different participant groups to collect different types of information.

Qualitative data from teachers is elicited through questions based on:

- Personal and educational background (Wallace, 1998)

- Professional knowledge of ELT methods (Douglas Brown, 1987; Mitchell, 1976; Nunan, 1988a) and materials (Richards, 2006), assessment (Pianta et al., 2008; Newmann et al., 1995) and rubrics (Leukowiscz and Nunan, 2004)

Quantitative data is elicited through coded response on a five-point Likert scale on:

- Inherent professional beliefs influencing teaching, as adapted from Horwitz's (2008, pp. 233-234) Beliefs About Language Learning Inventory (BALLI)

- The use of direct and indirect teaching strategies, as adapted from the Strategy Inventory for Language Learning (SILL) (Rubin, 1975, 1981, 1987; O'Malley et al., 1985a, 1985b; Weinstein and Mayer, 1986; Oxford, 1990; Oxford and Crookall, 1989; Oxford and Burry-Stock, 1995)

Teacher Questionnaires A1-A5 for collecting qualitative data and A6-A8 for collecting quantitative data (Appendix A) are administered **only to teachers before and after the study,** as follows:

- Teacher Questionnaire A-1 on background and teaching experience

- Teacher Questionnaire A-2 on teacher attitude to content, skills and practices of teaching-learning English, and ideas on professional growth

- Teacher Questionnaire A-3 on teaching-learning ESL and knowledge of MI, RBT, TBLT, action research, and LSRW skills and sub-skills

- Teacher Questionnaire A-4 on the development and use of language-learning materials

- Teacher Questionnaire A-5 on assessment and rubrics

- Teacher Questionnaire A-6 on teacher beliefs about language learning

- Teacher Questionnaires A-7 and A-8 on direct and indirect teaching strategies

Qualitative data is elicited through questions based on:

- Teacher collaboration and motivation (Spratt and Leung, 2000; Creese, 2005; Davidson, 2006; Wild et al., 2008)

- Action research (Carr and Kemmis, 1986; Crookes, 1993; Burns, 1996),

- MI-RBT task-framing for language learning across the curriculum (Coyle, 2008; Spratt, 2011)

- Anecdotal records and teaching journals as relevant aspects of self-empowerment (Brinton et al., 1993; Dong, 1997; Tsui, 2003; Tedick, 2005),

- MI profiles of learners as adapted from Armstrong (1994, 1998)

- Learning styles (Aljaafreh and Lantolf, 1994; Cotterall, 2000; Iwashita, 2003)

- Collaborative learning (McDonough, 1981; Freeman, 1992; Dörnyei and Malderez, 1999; Dörnyei, 2005)

- Learner attention, attitude, motivation and aptitude for language learning (Snow, 1980, 1989; Brophy, 1985; Widdowson, 1990, 1993; Bandura, 1991)

Quantitative data on learner motivation for learning through MI-RBT tasks (Armstrong, 2003) is elicited through coded response on a five-point Likert scale .

Questionnaires B1-B2 are administered **only to teachers** and Questionnaires B3-B5 **only to learners** (Appendix B) **before and after the study**:

- Teacher Questionnaire B-1 on the nature of teacher collaboration, action research, anecdotal records and journals

- Teacher Questionnaire B-2 on MI-RBT-TBLT and professional development

- Learner Questionnaire B-3 on the MI profile of learners

- Learner Questionnaire B-4 on learner motivation for MI-RBT tasks

-     <u>Learner Questionnaire B-5</u> on MI-RBT-TBLT and language learning

Questionnaires B-1 to B-5 elicit qualitative data through questions based on:

-     Efficacy in teaching-learning language skills (Wesche and Skehan, 2002)

-     Learner feedback (Cotterall, 2000) on learning preferences, individual learner needs (Cronbach and Snow, 1977; Victor and Otis, 1980; Armstrong, 2000), and motivation levels (Wentzel, 2003, 2006).

Questionnaires C1-C3 (Appendix C) are administered to **both teachers and learners before and after the study** for comparing dual **teacher and learner feedback on shared experience**, as follows:

-     <u>Teacher-Learner Questionnaires C-1 on</u> learning English language skills

-     <u>Teacher-Learner Questionnaires C-2</u> on learning strategies

-     <u>Teacher-Learner Questionnaires C-3</u> on learner motivation and preferences

Qualitative data is elicited through questions based on learner background, English learning foundation and language use at school and in real life (Valette and Disick, 1972; Willis, 1996, 2004; Tickoo, 2003).

Quantitative data is elicited on:

-     Learner Beliefs about Language Learning, adapted from Horwitz's (1985, 1987) Beliefs About Language Learning Inventory (BALLI)

-     Learner attitude to learning English across the curriculum (Piaget, 1973; Snow and Brinton, 1997; Perez-Vidal, 1999; Pally, 2000; Pica, 2002; Stoller, 2004)

-     Direct and indirect learning strategies for learning English, adapted from the Strategy Inventory for Language Learning (SILL) (O'Malley et al., 1985b; Padron and Waxman, 1988; Oxford and Burry-Stock, 1995)

Questionnaires D1-D6 (Appendix D) are administered **only to learners before and after the study**, as follows:

- Learner Questionnaire D-1 on learner background and foundation in learning English

- Learner Questionnaire D-2 on the use of English at School and in real life

- Learner Questionnaire D-3 on learner beliefs about language learning

- Learner Questionnaire D-4 on learner attitudes to school, teachers, and learning English across the curriculum

- Learner Questionnaires D-5 and D-6 on use of direct and indirect learning strategies adapted from the Strategy Inventory for Language Learning (SILL) (Oxford, 1993, 1996; Purdie and Oliver, 1999, Hong-Nam and Leavell, 2006).

(6) **Class Observation Protocols:** This is the sixth Instrument of the Research Tool to collect quantitative and qualitative data in answer to all three research questions. Classroom observation is defined as "nonjudgmental description of classroom events that can be analyzed and given interpretation" (Gebhard, 1990, p. 35). The central aim of classroom observation is therefore to develop self-awareness through empathy with other teachers (Fanselow, 1977).

The present study design incorporates use of class observation protocol in five parts (Appendix F: Class Observation Protocols [COP] 1-4, and Strategy Count) to collect quantitative data on EG and CG teacher practices and on teaching and learning strategies observed either directly or indirectly (video) (Wallace, 1998; Beck et al., 2002; Wajnryb, 2002) before and the study.

Quantitative data on five aspects of classroom procedure is collected through:

- <u>COP Part-1</u>: On the teacher's method of Organizing and Managing the Learning Environment (Nunan and Lamb, 1996; Kumaravadivelu, 1999; Rothstein-Fisch and Trumbull, 2008)

- <u>COP Part-2</u>: On teaching Instructions given to learners (Ryans, 1963; Swank et al., 1989; Shrum and Glisan, 2009)

- <u>COP Part-3</u>: On teacher Interaction with Learners and Feedback Provided to them (Day, 1990; Lyster and Ranta, 1997; Storch, 2005)

- <u>COP Part-4</u>: On enabling Effective Learner Collaboration (Freeman, 1992; Gambrell et al., 2000)

- <u>Strategy Count during Class Observation</u>: Observation of MI-RBT lessons by the researcher to record strategies used by teachers and learners (Oxford, 1993, 1996; Oxford and Burry-Stock, 1995)

Observation protocols can record specific coded data (Cohen et al., 2000) as well as unstructured yet significant qualitative data (Allwright and Bailey, 1991). The observation protocols in the present study allow both coded data and free remarks on significant observations. This includes items covering the following topics from standard classroom observation schedules, adding MI-RBT-TBLT as specifically pertinent to the present study:

- Conduciveness of seating arrangement - from Classroom Environment Scale (CES) (Moos and Tricot, 1974)
- Sequence of classroom routines and procedures - from Classroom Environment Scale (CES) (Ibid.)
- Individualization of instruction - Communication Orientation of Language Teaching (COLT) (Spada and Fröhlich, 1985 cited in Dörnyei, 2007)

- Relevance of the task objectives to the language syllabus - from Foreign Language Interaction Analysis (FLINT) (Moskowitz, 1971 cited in Allwright and Bailey, 1991)

- Selection and use of instructional materials - from Instructional Environment Observation Scale (IEOS) (Secede, 1997 cited in Pianta et al., 2008)

- Teacher energy and motivation level - from Motivation Orientation in Language Teaching (MOLT) (Guilloteaux and Dörnyei, cited in Dörnyei, 2007)

- Teacher interaction with learners - from Classroom Observation Schedule (COS) (Waxman et al., 1988)

- Learner response to the teacher - from Classroom Assessment Scoring System (CLASS) (Pianta et al., 2008)

- Learner attitude towards the lesson - from Observing Patterns of Adaptive Learning (OPAL) (Patrick et al., 1997 cited in Hamre et al., 2010)

- Learner behaviour with peers - from Differentiated Classroom Observation Scales (DCOS) (Cassady et al., 2004)

- Teacher feedback - from Assessment Practices in Early Elementary Classrooms (APEEC) (Maxwell et al., 2001)

- Strategies used by learners - from The Framework for Teaching Observation Survey (Danielson Protocol) (Danielson, 1996)

- Strategies used by the teacher - from Classroom Systems Observational Scale (CSOS) (Fish and Dane, 2000)

- Motivation level of learners - from Observation of Teaching and Learning (OTL) (Newmann et al., 1995)

- Time management - from Classroom Observation Schedule (COS) (Waxman et al., 1988)

- The appropriateness of MI-RBT tasks for language use and learning (Weber, 2005)

(7) Interviews and group discussions: Interviews (time-intensive) and discussions (time-saving) are used to collect qualitative data to corroborate and clarify

quantitative data gathered from questionnaires and observation schedules (Brown and Rodgers, 2002; Tsui, 2007). Interviews are semi-structured by their relatedness to the questionnaires and observation protocols and supplement the data from these (Brown, 1988; Bryman, 1992; Silverman, 1993). Group discussions are more relaxed and flexible, with open-ended questions encouraging the participants to freely comment, brainstorm, argue and probe issues related to the study (Shavelson and Stern, 1981; Smithson, 2000; Patton, 2002; Richards, 2003). The researcher's interviews and discussions with teachers and learners (Appendix L) comprise the seventh Instrument of the Research Tool for collecting qualitative data on the six following topics:

1. Personal or background information

2. Knowledge of concepts relevant to the study

3. Direct personal experience and behaviour during the study

4. Feelings about direct personal experience

5. Opinions on contexts relevant to the study and values related to it

6. Feedback from peer-observation

(8) Teacher journals and anecdotal records: Teacher Journals provide qualitative data in the affective domain and on planning, implementation, feedback and analytical reflection (Shavelson and Stern, 1981; Bogdan and Biklen, 1992; Wallace, 1998; Dörnyei, 2007). Anecdotal Reports record episodic and immediate coverage of individual learner behaviour (Brown, 1988; Brown and Rodgers, 2002). Data from teacher journals and anecdotal records have immediacy, authenticity and accuracy (Bolger et al., 2003), providing insights into the time-related evolutions (Nunan, 1992b; McDonough, 1994) of individual progress and setbacks. The eighth

Instrument of the Research Tool consists of teaching journals and anecdotal records (Appendix K) for collecting qualitative data on lesson-planning, task-framing, teaching-learning experiences and learner progress in language learning in response to the three research questions, in the interval-contingent entry method (Bolger et al., 2003).

(9)   Written and Oral Tests: Tests scores comprise valid and reliable quantitative data (Bryman, 1992; Brown and Rodgers, 2002). The ninth Instrument of the Research Tool constitutes tests in listening, speaking, reading and writing conducted before and after the study for collecting test scores as quantitative data.

Technological support in data collection: Digital data collection and storage formats are user-friendly, authentic and accurate, enabling accuracy and attention to detail (Bolger et al., 2003). Digital cameras, iPads, computers and networked servers are therefore used for data collection and storage in digital soft-copy (audio, video and data files) in back-up discs, as paper-saving environment-friendly measures. Qualitative and quantitative data collected by the Research Tool described above will be grouped as follows:

1.   Qualitative data from questionnaires, journals, anecdotal records, interviews, group discussions, task evaluation formats

2.   Quantitative data from observation protocols and questionnaires

3.   Quantitative data from test scores of learners

The above data will be collected and triangulated to validate the hypotheses of the present study, with reference to the eight dependent variables.

3.2.3 The Study Sample

An adequate sample size with fairly representative stratified random sampling ensures that the results of a study are both valid and reliable (Patten, 2002; Dörnyei, 2007). The present study sample, therefore, is selected accordingly for adequate size and fair population representation. The present study incorporates an Experimental Group (EG) and Control Group (CG) to validate outcomes of research intervention or operation of the independent variable observed in the eight dependent variables. Inclusion of the CG, as discussed earlier in Study Design, was crucial for establishing that the EG generates the desired positive changes in the dependent variables due to the operation of the independent variable, while in contrast, the CG does not generate the same results in the absence of research intervention (Silverman, 1993).

The EG being subject to the MI-RBT-TBLT research intervention or operation of the independent variable while the CG is not, designates both groups as appropriate subjects of the study (Dörnyei, 2007). The CG and EG in the present study are further subdivided into teacher and learner participants to facilitate study of the impact of research intervention on each sub-group at the beginning and end of the study. An adequate sample size of teacher and learner participants serves to establish the study results as valid and replicable. The selection of EG and CG for the study sample according to these guidelines is presented below.

Selection of EG and CG Schools: The context of the present study involves teaching-learning English in CBSE English medium schools at the primary level. The researcher's prior familiarity with five private, English medium, CBSE schools of Surat enabled the choice of these schools for the present study, on the basis of their similarity in

infrastructure, teacher pay-scales and working conditions, fee structure, socio-economic background of teachers and learners, student-teacher ratio, teaching medium, school hours, classroom conditions, timetable of academic and co-curricular activities and number of English periods in the week.

The schools approached for permission to select the EG and CG are located in Surat, a rapidly growing coastal city of Gujarat, in western India, where the researcher lives and works.   The management of only two out the five CBSE schools mentioned above approached by the researcher, granted permission to introduce the MI-RBT-TBLT research intervention for a whole academic year, record videos and take photographs of lessons and interviews.

The nature of this study relating to self-empowerment, makes it a necessary condition for EG teachers and learners to be ready and willing participants. Granting of formal permission for research intervention as well as the researcher's prior interaction with teachers and learners, confirming their willingness to participate for an entire academic year, designated these two CBSE schools as the EG of this study:

(1)   Delhi Public School Surat

(2)   Delhi Public School Tapi. The researcher is the principal of this second school.

The three remaining English medium CBSE schools approached, agreed to be participants in the study only on the condition of anonymity and with explicit stipulation that there should be no intervention in teaching-learning in the classroom and no audio-video recording of interviews or class observation. On the basis of these set conditions, the three schools were therefore, designated as the CG of the study.

The restrictive conditions imposed reflected the apprehension of CG school managements that publication of audio-visual evidence of negative teaching-learning outcomes in the CG might adversely effect their reputation. The names of the three CG schools are therefore withheld. The CG school managements, however, permitted the researcher to administer questionnaires, record field notes on direct class observation and interviews, and they agreed to provide photographs, worksheets and test papers from official school records, for data collection.

Too many initial differences in EG and CG participants can result in skewed observations, thus falsifying conclusions drawn from the comparison of data collected before and after research intervention. English teachers therefore, were selected for the EG and CG at the commencement of the study, on the basis of uniformity in qualifications, professional background, age group, teaching experience and working conditions.

EG and CG learner participants were selected for homogeneity in age groups, gender ratio, classes, language background and standard of education, for the same reason. The number of teacher and student participants was sufficiently large, so as to allow for attrition over the study period and to enable parity in the number of EG and CG participants at least, at the beginning of the study.

Experimental and Control Group Teachers: EG and CG teachers of the present study teach English and in some cases, other subjects as well in primary classes. Coincidentally, all EG and CG teacher participants are female. The high attrition rate in female teachers at school due to gender-specific personal circumstances are therefore, expected to equally affect EG and CG teachers in the present study.

The Experimental Group had twenty-five qualified and trained English teachers at the beginning, with twenty remaining at the end of the study, due to attrition. The profile of the EG teacher participants is depicted below (Table 3.3):

Category	Descriptive Profile of 20 EG Teachers
Age:	Ranging from twenty-five to thirty six years
Gender:	Female
Socio-linguistic Background:	Middle and upper middle class, from several different Indian states, with different L1 backgrounds like Punjabi, Haryanvi, Malayalam, Gujarati, Sindhi, Marwari, Bengali, Oriya, Telegu, Tamil and Hindi.
Education:	B.A. (English), B.Ed or M.A. (English), B.Ed. All participants have a B.Ed in English and one additional subject (Social Science, Mathematics, Economics or Political Science).
Teaching Background:	CBSE, State Board and ICSE schools in different cities of India, including Surat.
Teaching Experience:	Ranging from two to seven years, teaching Classes I-X. 84% of the EG teachers have taught in at least one Indian city, other than Surat. 5% of the EG teachers have taught in two or more Indian cities, other than Surat. 11% of the EG teachers have taught only within Surat.
Subjects taught:	English combined with one or more other subjects, including Social Sciences, Environmental Science and Mathematics.
Workshops & Seminars attended	All EG teachers have attended 2 to 7 workshops and seminars on various topics related to ELT, MI, Action Research, Classroom Management, Educational Leadership and Drama.
Publications	Two EG teachers have read papers on topics in English literature in Indian and foreign seminars. No EG teacher has any ELT publication. One EG teacher has published articles in an English daily.
English Periods	Ranging from twenty-one to thirty periods every week (averaging 15 hours per week)

Table 3.3 Profile of the Experimental Group of Teachers

The Control Group consisted of twenty-six qualified and trained English teachers at the beginning of the study, with only twenty CG teachers remaining, due to attrition.

The profile of the CG teachers is depicted below (Table 3.4):

Category	Descriptive Profile of 20 CG Teachers
Age:	Ranging from twenty-five to forty years
Gender:	Female
Socio-linguistic Background:	Middle and upper middle class, from several different Indian states, with different L1 backgrounds like Punjabi, Haryanvi, Malayalam, Gujarati, Sindhi, Marwari, Bengali, Oriya, Telegu, Tamil and Hindi.
Education:	B.A. (English), B.Ed or M.A. (English), B.Ed. All participants have a B.Ed in English and one additional subject (Social Science, Sanskrit, Economics, Gujarati, Hindi).
Teaching Background:	CBSE, State Board, IB, IGCSE and ICSE schools in different cities of India, including Surat.
Teaching Experience:	Ranging from two to nine years, teaching Classes I-XII. 79% of the CG teachers have taught in at least one Indian city, other than Surat. 12% of the CG and EG teachers have taught in two or more Indian cities, other than Surat. 9% of the CG teachers have taught only within Surat.
Subjects taught:	English combined with one or more other subjects including Social Sciences, Environmental Science and Mathematics.
Workshops & Seminars attended	All CG teachers have attended 3 to 5 workshops and seminars on various topics related to ELT, MI, Action Research, Personality development and Drama.
Publications	Three CG teachers have read papers on topics in English literature in Indian university and state level seminars. Two CG teachers have written and published guidebooks with local publishers, for GSEB English exams for Classes X and XII.
English Periods	Ranging from twenty-one to thirty-five periods every week (averaging 17 hours per week)

Table 3.4 Profile of the Control Group of Teachers

A comparison of Tables 3.3 and 3.4 reveals uniformity of attitudes, interests, aptitudes, beliefs and methods of teaching, in EG and CG teachers at the beginning of the study. This initial uniformity is effective in relating any changes in EG teachers at the end of the study causatively with the application of research intervention. One significant

difference between EG and CG teachers, however, is that EG school policy strictly forbids private tuitions, whereas some CG teachers admittedly take private tuitions, including learners from their own schools.

Experimental and Control Group Learners: The student subjects of the present study range from Classes I-VIII. There were approximately 300 students in the EG and the CG each, at the beginning of the study. This sample size allowed for attrition while ensuring validity and replicability of study outcomes. Only 223 EG learners and 119 CG learners responded to all the questionnaires both, before and after the study.

The Experimental Group of Learners from the two EG Schools mentioned earlier, have varied backgrounds, as detailed in their profile (Table 3.5) below:

Category	Descriptive Profile of 223 EG Learners
Age:	Ranging from six to thirteen years
Gender:	Female and male (Ratio 1:3)
Socio-Linguistic Background:	Lower-middle class, middle-class and upper-middle class; With Gujarati L1 and other different Indian regional L1 backgrounds (Gujarati: Non-Gujarati Ratio = 2:1); Hailing from service-class, professional, commerce and agricultural backgrounds.
Education:	Classes I-VIII in English medium CBSE schools in Surat at the time of the study.
Education Background:	According to the EG school records, 56% students attended CBSE, ICSE, GCSE and different State-Board schools in various Indian cities as well as in Surat, prior to their admission in the current schools.
English Periods	Ranging from six to eight periods every week (average 4.5 hours)
English Books	NCERT Communicative English Books (Marigold, Honeysuckle, Honeycomb, Honeydew) and supplementary readers

Table 3.5 Profile of the Experimental Group of Learners

The Control Group of Learners belong to three CG schools, as discussed. The varied

backgrounds of the CG learners are detailed in their profile (Table 3.6) below:

Category	Descriptive Profile of 119 CG Learners
Age:	Ranging from five to thirteen years
Gender:	Female and male (Ratio 1:3)
Socio-Linguistic Background:	Lower-middle class, middle-class and upper-middle class; With Gujarati L1 and other different Indian regional L1 backgrounds (Gujarati: Non-Gujarati Ratio = 4:1); Hailing from service-class, professional, commerce and agricultural backgrounds.
Education:	Classes I-VIII in English medium CBSE schools in Surat at the time of the study.
Education Background:	According to the CG school records, 61% students attended CBSE, ICSE, GCSE and different State-Board schools in various Indian cities as well as in Surat, prior to their admission in the current schools.
English Periods	Ranging from six to eight periods every week (average 4.5 hours)
English Books	NCERT Communicative English Books (Marigold, Honeysuckle, Honeycomb, Honeydew), Private publication series of course-books, workbooks, grammar manuals and literature readers

Table 3.6 Profile of the Control Group of Learners

Comparison of Tables 3.5 and 3.6 shows uniformity of age, background and learning

profile in EG and CG learners at the commencement of the study. This initial uniformity is

effective for relating any changes in EG learners at the end of the study causatively with

the Research Intervention applied only to this group.

A few additional facts about CG and EG learners relevant to this study, need to be

mentioned. Almost none of these learners spoke English outside the classroom at the

beginning of the study, preferring to communicate in first language (L1) or Hindi, as is

typical of Surat schools. Matching test grades before the study with the 6-point Common

European Framework of Reference for Languages (CEFRL) Proficiency Scale, set by the

Council of Europe in 1996, speaking and writing proficiency of EG and CG learners of all classes ranged from the lowest breakthrough (A1) level for beginners up to the threshold or intermediate (B1) level, with far more learners at A1 than B1. At the beginning of the study, almost all CG as well as EG learners, with few exceptions, attended private tuitions in English and other subjects.

3.2.4 Data Collection

Teacher Orientation: The EG teachers participating in the study were introduced to the basic knowledge and skills required for MI-RBT-TBLT through six workshops conducted by the researcher over two months. The workshop topics are discussed below:

1. **Differentiated Learning for Individual Differences:** The topic of the first workshop was, the need to focus on individual differences in learners. This being the central creed of MITA (Tomlinson and McTighe, 2006) and an important consideration for TBLT (Rothstein-Fisch and Trumbull, 2008), formed an appropriate introductory topic to all the six workshops in the series.

2. **MI and Learning Styles:** This was expected to enable EG teacher understanding of Gardner's MI theory (Gardner, 1982, 1983, 1989, 1993a, 1993b, 1993c, 1995, 1999a, 1999b, 2004a, 2004b) and its applications in the classroom (Armstrong, 1993, 1994, 1998, 2000), as one aspect of the theoretical framework of research intervention.

3. **TBLT and Collaborative Learning:** The second workshop introduced teachers to TBLT as an aspect of research intervention and to learner-collaboration for practical application of differentiated learning in TBLT:

    •   Basic principles underlying task-framing (Prabhu, 1987; Ellis, 2003b; Nunan, 1989, 2004; Willis, 1996, 2004; Ellis and Ellis, 2007; Willis and Willis, 2007)

- Differences between collaboration and cooperation (Alu and Jordan, 1981; Bruffee, 1999; Noll, 1994; Johnson and Johnson, 1994; Antil et.al., 1998; Fall et al., 2000; Carter and Doyle 2006)

- Advantages and disadvantages of collaboration (Sticchi-Damiani, 1981; Calkins, 1983; Atwell, 1987; Johnson and Johnson, 1994; Antil et al.,1998; Nelson-Barber et al., 2000; Gambrell et al., 2000; Daniels, 2002; Doyle, 2006)

  Teacher attitudes, confidence-levels and team-spirit in collaboration and during individual problem-solving were discussed to promote empathy with individual learner needs in collaborative learning, analyse effects of degrees of teacher control and learner autonomy in group work, identify individual roles within a group, promote inclusive learning, and consider the varying efficacy of group work in different parts of the lesson.

4. **Thinking Skills:** In the third workshop, RBT (Anderson et al., 2001) was introduced in comparison with other thinking-skills models. The cognitive framework of RBT was discussed with specific reference to TBLT, including strategies to enable higher-order thinking skills in problem-solving and autonomous learning.

5. **LSRW across the Curriculum:** The fourth workshop reviewed the four language skills of listening, speaking, reading and writing (LSRW) and sub-skills.

6. **Assessment Rubrics:** The sixth and last workshop focused on the formative, diagnostic and summative aspects of testing. The discussion included CBSE Continuous and Comprehensive Evaluation (CCE) guidelines, compared testing with teaching tasks, and explored ways of testing higher-order thinking. The benefits of alternative assessment through journals, portfolios and anecdotal records were also

discussed, along with assessment rubrics, grade point scales and descriptive indicators (Brookhart, 2010).

The handouts, power-points and videos for all six workshops are enclosed in DVD (Appendix O). The six workshops were expected to provide teachers with a comprehensive overview of teaching-learning through planning, framing, implementing, reflecting on and evaluating MI-RBT tasks within the language curriculum (Fig. 3.5):
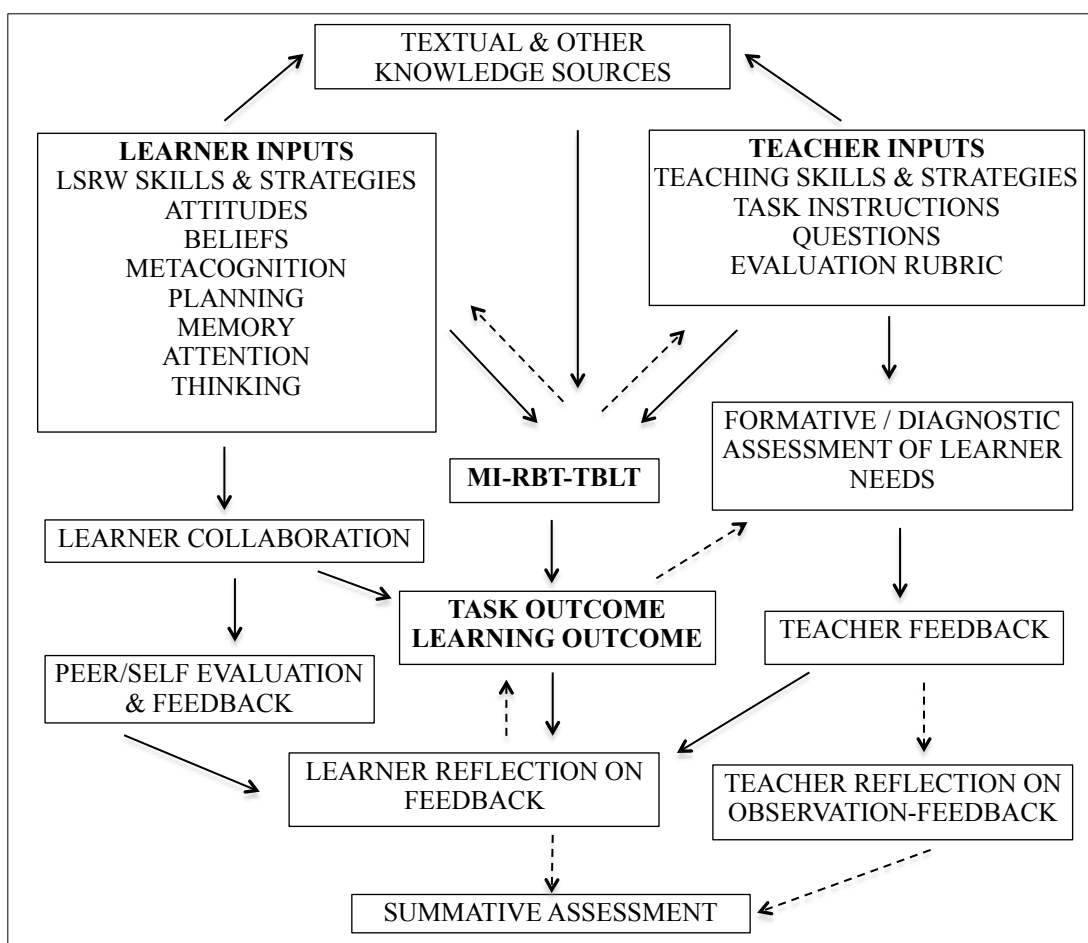
Fig. 3.5 A Process Overview of the Teacher Orientation Workshops

Spacing out workshops (one per week) allowed teachers time to apply theory learnt and solve problems faced in practice, in terms of all aspects of MI-RBT-TBLT (Fig. 3.5).

Data Collection: The present study incorporating experimental and control groups, tested the hypothesis by subjecting the EG to the operation of the independent variable to observe

its outcomes in the eight dependent variables. In contrast, the CG was not subjected to research intervention. The data collected from the EG and CG before and after the study was compared for any change in dependent variables observed in the EG but absent in the CG, as the result of research intervention.

Qualitative and quantitative data was collected from EG and CG teachers and learners before and after the study, with the following instruments of the Research Tool:

• Questionnaires (Appendices A-D)

• The MI-RBT task evaluation format (Appendix E)

• Classroom observation protocols (Appendix F)

• Teacher journals and anecdotal records (Appendix K)

• Interviews and group discussions (Appendix L)

• Written and oral tests (Appendix J)

The EG schools permitted the researcher to interact with teacher and learner participants and to observe and record classes. Data was therefore collected from the EG through questionnaires, observation protocols, field-notes and audio-video recording of interviews, group discussions and lessons. Use of technology helped focus observer attention on key features of MI-RBT-TBLT. Network systems of data transmission enabled time-saving communication and feedback channels between collaborating EG teachers and the researcher. EG teachers being novices in digital photography and technology use, the quality of photos, audios and videos collected as data in the present study may not be of very high quality.

The researcher was refused permission to use audio/video recording and photography in the CG schools, as mentioned earlier. The researcher was only permitted to administer questionnaires, take field notes of interviews and group discussions and use CG photographs, test papers and worksheets from official records. CG lessons were directly observed by the researcher and data collected through observation protocols. Data was collected using indirect (video-recorded) and direct observation with the EG and only direct non-participant observation by the researcher with the CG. Qualitative data from interviews and group discussions was collected by video-recording (Appendix L) from the EG and in field-notes by the researcher from the CG.

The researcher instructed EG and CG teachers to maintain informal but regular teacher journals and anecdotal records. The teacher journals (K-1) provided qualitative data on teacher experience, learning and feelings after the completion of every textual unit or task-cycle. The anecdotal records (K-2) provided qualitative data on learner progress, motivation and engagement.

Oral and written English language tests in all four LSRW skills were administered to the CG and EG learners before and after the study, to collect quantitative data on language proficiency before and after research intervention. These tests were conducted and corrected by English teachers in accordance with CBSE-CCE within the language curriculum. The test scores were collected to quantify learner progress over the duration of the study and for data triangulation.

To corroborate the qualitative data with the quantitative data, the difference of the raw scores obtained from EG and CG participants before and after the study on Likert-scale from Questionnaires, Observation Protocols and Tests were first subjected to the

Two-Sample F Test for Variances, to test the hypothesis that the two populations had the same standard deviation. The F-test for the null hypothesis is that two specific, normal populations have the same variance. In this case, there were two large independent samples or populations of different sizes, the EG and CG. Both populations were normally distributed and the variances of both were unknown. The F-test was therefore used for statistically testing differences in the CG and EG. Significant variance indicating inequality was found in the two populations. Further, therefore, a Two-Sample t-Test Assuming Unequal Variances was conducted to determine if the difference between the two sets of data (EG and CG) after the Research Intervention was significantly higher than critical value to indicate a positive hypothesis.

Research Ethics: In keeping with the ethical norms of research (Ortega, 2005; Dörnyei, 2007), permission was first obtained from the EG and CG schools for conducting the present study on their premises. As mentioned earlier, the researcher being the principal in one of the two EG schools facilitated research intervention and data collection, as this was noted as staff development in the two EG schools. Permission was also obtained from the CG schools for conducting the study, but school authorities requested the researcher to preserve their anonymity by not collecting any audio-video recording, citing the reason that the comparison between CG and EG schools in study outcomes might reflect unfavourably on the CG, with unpredictable or adverse consequences for school reputation, admissions, etc. This apprehension appeared ironical because, as the next section shows, only the curriculum of the EG schools went through changes because of intervention, with some risk of negative outcomes. The researcher, however, abided by all conditions set by the CG. These were fairly generous terms, compared to the more restrictive conditions put forward by other schools approached by the researcher.

Risk of Research Intervention: Research intervention in the EG was integrated with the prescribed English syllabus, with MI-RBT tasks supplementing the NCERT Communicative English text. The study therefore, had direct impact on curriculum delivery in primary and middle school for one academic year. Direct intervention in curriculum-delivery affected a large number of EG teachers and learners at the primary level. Positive or negative study outcomes would directly impact academic performance.

Time-frame of the Study: The main study constituted the initial workshops for EG teacher orientation conducted between February to March 2012, and the actual task-framing, conducted over one academic year from April 2012 to March 2013. The orientation workshops being theory-intensive, only one was conducted every week, the intervening time between two workshops being used by teachers to put theory into practice and clarify ensuing doubts with the researcher. The year-long duration of task-implementation was expected to reinforce new knowledge with classroom practice. Data was collected at the beginning (April-June 2012) and end (January-March 2013) of the academic year. This duration is the standard unit of time for measuring learner progress or appraising teacher ability in schools.   Before data collection in the main study, the Research Tool developed was tested and further refined through a Pilot Study. The pilot study was conducted between July 2011 to January 2012. The long period of pilot study before the commencement of the main study in April 2012 was required for refining the Research Tool.

3.2.5 The Pilot Study

A Pilot Study was conducted to test the research tool for the main study. Seven English teachers at primary levels framed and implemented MI-RBT tasks during the pilot

study. The risk of negative outcomes from long term research intervention discussed in the previous section, made the pilot study crucial for determining procedure in the main study. The functions of the pilot study were:

- Testing safe and operable MI-RBT-TBLT intervention

- Validating the relevance and reliability of the Research Tool

- Addressing problems in data collection

Testing safe and operable MI-RBT-TBLT intervention: The pilot focussed attention on the following points of research intervention:

- Integrating tasks with language syllabus

- Planning task-cycles of 2-3 weeks with every textual unit

- Matching task outcomes with prescribed language learning objectives

- Structuring MI-RBT inputs for learning language skills

- Physical re-organization of space and furniture to enable group-work

- Suitable verbal and written instructions

- Facilitating transition between task phases

- Providing material and technological resources for tasks

- Dealing with emergent changes in task-plan

- Mixed-ability grouping, based on MI profiles for learner collaboration

- Enabling individual roles within the group

- Ensuring turn-taking for resource-sharing and feedback

- Regulating the language of peer-feedback

- Effective rubrics for assessment of task outcomes

Validating the relevance and reliability of the Research Tool: The pilot focussed attention on refining the following aspects and functions of the research tool:

• Range of MI inputs in tasks framed by teachers

• Higher-order thinking in language use for task planning and performance

• Overcoming resistance to peer-observation of lessons

• Inducing regularity in journal-entry and anecdotal records

• Arranging a timetable for class observation

• Collecting responses to questionnaires

• Time management for interviews and discussions

Addressing problems in data collection: The pilot teachers, obtained consent from the researcher to modify the task-evaluation framework of the study into a simpler format (Appendix E) to facilitate task evaluation, as discussed in detail in Chapter Four.

Procedural problems in all the above areas were resolved during the pilot. What initially appeared to be shortcomings in the Research Tool, were revealed by the end of the pilot study to be relevant outcomes of its application. The first indications of teacher autonomy and self-empowerment are discussed in Chapter Four, along with other results of the study. The results of the pilot proved the overall effectiveness of the Research Tool, which was now ready for application in the main study.

3.3 Conclusion

This chapter outlines the rationale for the present study with its basic underlying assumption that framing MI-RBT tasks can help teachers develop expertise in TBLT, address individual differences in learners, help language learning and enhance the cognitive levels reached. Task-framing or MI-RBT-TBLT is therefore the operation of the

independent variable or research intervention of this longitudinal, mixed-methods study. Language teaching-learning outcomes of MI-RBT-TBLT are its eight dependent variables for testing the hypothesis. The aims of the study reiterate the three research questions stated in Chapter One, on: (1) teacher ability in MI-RBT task-framing, (2) the role of MI task inputs in addressing individual differences, and (3) the role of RBT in promoting higher-order thinking skills in learners.

The Research Design discusses in detail, the changes made by the researcher in earlier MI-RBT-TBLT models of learning to suit the language-specific context of the present study, as well as to provide teachers with freedom to selectively combine MI inputs with RBT levels for language-learning outcomes. This is followed by the discussion of the composite Research Tool constituted of instruments for research intervention as well as for qualitative and quantitative data collection. The research tool is tested by a pilot study and verified as ready for application in the main study.

This chapter also describes the Study Sample, divided into control and experimental groups of teachers and learners. The logical grounds of their identification and selection are also stated, along with implications for the study. Teacher orientation and data collection is discussed in detail, followed by an outline of the pilot study testing and validating the research tool. Following from this discussion, Chapter Four analyses and compares the quantitative and qualitative data obtained from EG and CG participants for the purpose of triangulation. Triangulating qualitative data with quantitative data and test scores, as stated earlier, is the mixed-methods approach to verifying the hypothesis of the study. Answers to the three research questions, based on the eight dependent variables, are discussed in the next chapter, for drawing relevant conclusions on the study hypotheses.