Chapter 1

Introduction to the Study

1.0 Introduction

The purpose of education is to prepare pupils for the world beyond the school gates. We have come a long way from the bygone days when we struggled for earning a meal as hunter-gatherers. Today's global village is challenged by information explosion, cut-throat competition, oppressions, and natural calamities. We have glided into an age where information is available at the click of the mouse as a result of which change is quick, deep, and continual. Life and living has become intricately complex. In the creation of this complex world, we have used our rational powers. Ironically, to disentangle the complexity, we have to depend again on our rational faculties. For the development of these rational faculties among children, the onus is placed on educators and education systems. We need to prepare our students to think for themselves and society at large. Schools should assume a fundamental and constructive role in nurturing thinking skills and dispositions in their pupils to equip them to rise and respond to the challenges posed by the ever-changing society. Simply put, only a school that apportions time to thinking and nurtures the disposition to think is worthy of being considered a school (Harpaz, 2014).

This chapter, in the process of introducing the study, discusses the paramount need for teaching thinking in the ESL curriculum. The need for teaching thinking can probably be traced to basic human passions and human fallibility, leading to complex problems. These problems and challenges of society influence educational policies. These policies decide the goals of individual subjects taught at school or college.

One of the avowed goals of the second language curriculum is to develop thinking abilities. Teaching thinking in the ESL curriculum has many benefits—learner autonomy increases, transfer of learning takes place, and personality develops. Above all, it is hypothesized here, that language learning also improves. Gone are the days when educators thought that thinking or intelligence cannot be modified. The studies in cognitive psychology and Neuro-Linguistic Programming
(NLP) indicate that thinking can be developed through conscious effort and language can be used as an effective tool for such development.

An elaborate discussion on the aspects mentioned above is necessary to understand and appreciate the significance of teaching thinking in the ESL curriculum.

1.1 Rationale for teaching thinking in the ESL curriculum

As mentioned above, there are many aspects that provide justification for teaching thinking in the ESL curriculum. Perhaps, it would be appropriate to begin with delving into the nature of human beings and human thought processes which are driven by instincts that are the roots for the existing complexity in the world. So, it is necessary to understand these instincts in the context of other factors and developments related to human thought processes.

1.1.1 Human passions

There are forces that cannot be observed directly in the universe. Similarly, it is believed that there are some basic forces in humans, which drive, influence, and motivate our intellectual capabilities. These central passions, according to Costa and Garmston (2001), are the passion for efficacy, flexibility, craftsmanship, consciousness, and interdependence. These passions create the need for effective thought and action; and they can become habits, if nurtured.

*Efficacy* includes the ability and willingness to make a difference. This is a key determinant in the resolution of complex problems. Instances where people think of doing their best, assessing the availability of the resources, drawing on past experience, etc., indicate the passion for efficacy.

When people reflect on how to approach a problem flexibly, how to view a situation from a different perspective, etc., they exhibit their passion for *flexibility* in thinking.

*Craftsmanship* refers to the drive to achieve mastery, grace, and economy to produce good results. Craftsmen strive to achieve perfection and have clear visions and goals. As people acquire more precise language for describing their decisions,
problems, and thought processes, they can make effective decisions. Nurturing this passion can enhance precision, mastery, clarity, and perfection in thought and action.

Consciousness refers to people’s awareness of their values, intentions, thoughts, behaviours, and their effects on them and other people. This passion can be developed in students by creating an environment that promotes metacognitive thinking.

Interdependence means participating in, contributing to and receiving from relationships. Human mental ability grows in the process of interaction with others. Developing a sense of community through methods such as cooperative learning can nurture this passion and pave way for the development of thinking.

Therefore, the goal of education should aim at nurturing these passions at the best. While these passions press people to progress towards a better living, erroneous thinking in the urge for advancement has the potential to create many problems.

1.1.2 Human fallibility

Many instances in history demonstrate that humans fall prey to fallacious reasoning. Ruggiero (2009) discusses some of the greatest inaccuracies in human judgment:

"Sir John Eric Erichsen, a famous British surgeon, predicted in 1837 that surgery would never be performed on the abdomen, the chest, or the brain. In 1899, the commissioner of the U.S. Patent Office recommended that the office be abolished because "Everything that can be invented has been invented." ... When the railroad was invented, a London professor declared. "Rail travel at high speed is not possible because passengers, unable to breathe, would die of asphyxia." The speed he was referring to was about 25 MPH." (p. 7).

The instances cited above reflect the judgment of experts of the time. If this is the case with experts, the erroneous thinking of ordinary people is not difficult to estimate. An average person might be more vulnerable to fallacious reasoning and fall prey to thinking errors. There are many types of errors among which three broad categories can be briefly discussed here (Ruggiero, 2009).
Errors of perception are faulty ways of perceiving reality. These prevent us from being open-minded. Errors such as mine-is-better thinking, selective perception, either/or thinking, etc., fall into this category.

Errors of judgment take place in evaluating evidence. They prevent us from arriving at reasonable conclusions. Common types among them are using double standards, irrelevant criterion, and stereotypes.

Errors of reaction may be committed when we convey our point of view reacting negatively to other’s viewpoint. Several factors such as self-image, fear of criticism, etc., might be the causes of such errors. Fallacies like shifting the burden of proof, straw man, etc., are examples of such errors.

These errors occur separately, and they are also subject to domino effect—one error invites another and leads to several other errors. A perception error (e.g. ignoring important distinctions/features) might lead to a judgment error (e.g. stereotype) and this, in turn, could lead to an error of reaction. For instance, if we are unable to perceive or recognize one of the characteristics of a person, say, honesty, which is guised in his/her terse replies or comments, we commit an error of perception. As a result, we might judge the person to be presumptuous. Such an error in judgment might influence our interactions with the person adversely, leading to an error in reaction.

Raising awareness among the students about various types of erroneous thinking will help them exercise caution and thereby reduce the incidence of thinking errors.

Our passion for advancement and our thinking errors in the process of progress have made us come a long way from a simple society where the primary aim of man was to survive. Today, we witness a complex world that is technologically advanced and economically prosperous. A host of societal factors also add to the intricacy.

1.1.3 Information explosion

Many technological innovations have revolutionized the lives of people beyond imagination. It is no exaggeration that today’s world just freezes without mobiles and emails. The computer chip has become so pervasive that it regulates our
cars, ATM's, cell phones, etc. Among the above, the humongous catalyst for change is the Internet. Internet offers easy access to information in proportions that boggle one's mind. The amount of information generation has been increasing at such a rate that an individual cannot master even a fraction of it. The indexed web in Google contains billions of pages. The accumulation of information has been increasing exponentially. The impact of the Internet on teaching and learning is just beginning to be experienced.

With the democratization of information, relying on memory has virtually lost its ground in education. This does not mean that students should not memorize anything. Indeed, memory is central to all cognitive processes. The question here is how much importance and time should be given to memorization in school. Other important skills, in the context of information explosion, such as assessing, synthesizing, and distinguishing relevant and irrelevant information, etc, need to find place in the curriculum.

In the light of the ever-increasing information, teaching thinking can come to the rescue of posterity in not only manipulating the data in complex ways but also deciding what is worth knowing. Hence, schools must also function as institutions of thinking.

1.1.4 Economic scenario

The result of technological development is that a large portion of the workforce today engages more in the manipulation of data than in the production of goods. This was caused by the change in the nature of production. The low-skilled jobs are performed by machines and people are needed primarily in dealing with smart machines. This means that the objectives of industrial-era schools to prepare students for repetitive and routine work are to be revisited and revised to replace them with higher level thinking skills.

Fierce competition among business firms drives them to explore novel approaches to survive in the market. This struggle for survival can have a profound impact on the employees. Workers in this age cannot be complacent with a single specialization as it only relegates them to lower ranks of the organizational hierarchy.
In India, a teaching job in a Government school, a clerical job in a public sector bank, or a driver’s job in one of the State Road Transportation Corporations was viewed as secure. Currently, there are no conductors for many buses in the Andhra Pradesh Road Transport Corporation (APSRTC) and drivers can be seen standing in front of their bus at the halting point and shouting and persuading people to travel in their buses. Teachers in a government school are now highly accountable than they were. If they are found to be ineffective either in increasing the number of students or in producing good results, the school will as well be closed. Bank clerks, sitting at the desks and doing just the tasks allotted to them, are no longer favoured. They have multiple responsibilities and targets to fulfill and reach, failing which the organization seeks alternatives.

In other words, the burden on the employees to find ways to develop the organization is tremendous and overwhelming. To successfully navigate in such organizations, employees need to think critically and creatively to solve problems and make effective decisions.

Of late, there has been a clamour from the Indian industry and several national and international organizations about the lack of higher-order thinking skills among new graduates aspiring to get a job in conglomerates. In a survey conducted in India by the National Association of Software and Services Companies (NASSCOM) in association with McKinsey & Company in 2005, it was estimated that only 25% of the engineering college graduates in India were immediately employable in the IT industry. A wide gap was noticed between what the industry required of the employees and what it got. According to the report, employers are looking for critical thinkers who can challenge the status quo and help companies to adapt to changes and promote innovation.

More recently in India, the Federation of Indian Chambers of Commerce and Industry (FICCI) conducted a survey in association with World Bank and published the report in April, 2011. The survey report, authored by Blom and Sacki (2011), revealed that the engineering students in India were not skillful at problem solving, decision making, and creative thinking. With regard to the skill gap identified, Blom, a senior education economist at the World Bank, stated that the survey highlights the
need for colleges to focus on higher-order thinking skills of the graduates. Each college should define the set of skills that a graduate is supposed to have after each semester.

More interestingly, contrasting the general impression among educators that engineering students lack communication skills, the survey revealed the following:

...the authors find that employers perceive Soft Skills (Core Employability Skills and Communication Skills) to be very important. Skill gaps are particularly severe in the higher-order thinking skills ranked according to Bloom’s taxonomy. In contrast, communication in English has the smallest skill gap, but remains one of the most demanded skills by the employers... These findings suggest that engineering education institutions should refocus the assessments, teaching-learning process, and curricula away from lower-order thinking skills, such as remembering and understanding, toward higher-order skills, analyzing and solving engineering problems, as well as creativity. (Blom and Saeki, 2011, p. ii) [emphasis added]

The analysis of the survey spells out that Indian employers are keen to hire graduates having higher-order thinking skills. Furthermore, Blom and Saeki (2011) pointed out that the reasons for demanding higher-order thinking skills are likely to be a result of increased international and national competition, the pervasiveness of technologies in today’s world, the focus on increased quality products and innovation. As skills acquired in school and workplace become obsolete more quickly in the globalization era, higher-order thinking skills and an ability to learn new and more complex skills are indispensable to respond to accelerating technological change. (Blom and Saeki, 2011, p. 25)

1.1.5 Societal factors

People need to be active thinkers to maneuver through every day life that is bombarded with subtly deceptive advertisements in the media and distortion of facts by politicians. One of the health drinks in an advert on TV claims that 4 out of 5 children who took the drink grew two times faster. Here, an average person, who does not have the knowledge of how a survey takes place, might tend to think that 4 out of 5 children refers to the total child population in India. But how many children were taken for the survey? Was there any bias in the survey? How should ‘two times faster’ be understood? Is it two times faster than people who used another drink? If so, what is the composition of that drink? Such an inquiring attitude and critical
thinking needs to be inculcated in our children to guard themselves against such manipulation.

It is agreed by everyone that most politicians are good at distorting facts and diverting issues. Live political discussions on TV are sometimes so ridiculous that the politicians who sit for discussion just start criticizing the member of the other party when the former is to give an explanation for the criticism leveled by the latter. In other words, we should sensitize students to see through, for instance, the red herring thrown by a politician when he/she says that using the revenue generated from liquor sales, his/her party would build hospitals to offset the number of deaths that arise due to excessive consumption of alcohol.

Media, be it print or electronic, in many instances, distort facts at the highest levels. They are experts in deciding what should be shown on TV how many times in a day and what news should be relegated to the sixth or the seventh page of the newspaper, or how to turn a commercial advertisement into seemingly important news.

However, the positive role of the media in bringing awareness about many aspects should not be undermined. The concern expressed above is that students need to be enlightened about how to analyze, judge, and evaluate the information they come across.

Another gigantic system that functions beyond the rational abilities of human beings is religion. In the Indian context, religious issues are so sensitive that the rational powers of human beings slide into the realms of darkness. Though every religion agrees and supports monotheism overtly, the religious heads try to prove that their religion is superior to that of others. Just the thought of questioning the assumptions based on the scriptures is horrifying to the average person, let alone a critical analysis.

Next, good citizenship is an essential prerequisite to finding solutions to complex macro problems the world is facing today—the dwindling of natural resources, the extinction of a number of species, water, air and sound pollution, melting of arctic ice, etc. The solutions to these problems lie in collective thinking. To enable students to participate in and contribute to such collective thinking, we
should teach thinking skills and dispositions. Inculcating a culture of critical and creative thinking needs to begin at school. Through systematic instruction in various thinking skills and dispositions, students can be effective thinkers who can hold things as possible and probable, seek for and weigh evidence, and do not give in to prejudices and bias, etc. It should be noted that the school has a crucial role and responsibility in the making of critical and creative societies.

In the above description, we have seen a range of aspects related to technology, economy, media, and business, which necessitate the teaching of thinking skills and dispositions. Informed by these situations, educators attempt to review the goals and standards in education policies.

1.1.6 Educational policies

Consequent to the above trends, education departments and organizations in various countries have acknowledged the need for the enhancement of higher-order thinking among students at school. In India, The National Curriculum Framework (2005) emphasized the inclusion of higher-order thinking questions in textbooks and assessment systems. While this trend is recent in India, countries like England, Malaysia, and the USA are ahead in the thinking skills movement.

In England, in the year 1998, the Department for Education and Employment (DfEE) commissioned a review and evaluation of research into thinking skills and related areas. The study primarily aimed at analyzing what was understood by the term “thinking skills” and its role in the learning process; and identifying ways and means of developing students’ thinking; and evaluating its effectiveness. Presenting several programs, the study emphasized the importance of teaching thinking skills, as evident in the following excerpt.

Developing thinking skills is supported by theories of cognition... Focusing on thinking skills in the classroom is important because it supports active cognitive processing which makes for better learning. It equips pupils... to deal systematically yet flexibly with novel problems and situations, to adopt a critical attitude to information and argument as well as to communicate effectively. There is a need to be explicit about what we mean by better forms of thinking and of educating directly for thinking. If students are to become better thinkers - to learn meaningfully, to think flexibly and to make reasoned judgements - then they must be taught explicitly how to do it. [emphasis added] (Department for Education and Employment, 1999, p. 2)
In Malaysia, a fundamental objective of secondary school education is to develop and enhance students’ intellectual capacity with respect to rational, critical, and creative thinking. Emphasizing the importance of thinking skills, the curriculum states “The contents of the curriculum promote the development of thinking abilities to enable students to analyze, synthesize, explain, draw conclusions, and produce ideas that are both constructive and useful” (as cited in Rajendran, 2001, p. 44-45). In 1993, four models were adopted for the teaching of thinking skills in Malaysian secondary school education. They were ‘Boston Model’ developed by Robert Swartz and Sandra Parks, KWHL (Know, What, How, Learn) model, CoRT (Cognitive Research Trust) Thinking program developed by Edward de Bono, PILTS (Programmed Instruction in the Learning of Thinking Skills) developed by John Arul Phillips and Fatimah Hasim. Further, the ministry of education focused on teacher education with respect to teaching thinking skills and since as early as 1980s many courses and workshops have been in place in the country.

1.1.7 The ESL curriculum

In India, English is treated as a second language and it is learnt for several reasons:

To participate in and acquire knowledge through academic study, i.e. from school education to higher education and research;

To pursue professional careers—at national and international levels; and

To carry out national and international business, etc.

While these are the primary purposes for learning English language in the Indian context, there could be many other individual reasons for such learning viz., to understand a foreign culture, to integrate oneself with a particular community, to learn about and follow a religion, and so on.

The various purposes mentioned above determine the goals and objectives of teaching English as a second language. The importance of English has been well recognized in India at various levels of education and a lot of endeavour has been going into the implementation of several policies and programs. One major reason for
this trend is Globalization. With opportunities galore in the international market especially in the IT sector, the need for communicating with the international business and professional community has become decisive in the survival of organizations. Ironically, engineering education, which generally gives marginal importance to language and communication, has seen dramatic changes where typical communicative activities such as role plays, group discussions, just-a-minute speeches, and mock interviews, have become buzz words in the campuses. Following the trend, other streams in education have also incorporated necessary changes in their curricula.

At the same time, even as we have made sincere attempts to develop communication skills among students, it is argued here that there is a lacuna in fulfilling the objectives of a second language curriculum, i.e., English. We have realized the significance of English as an important language in the global village. Nevertheless, it needs to be recognized that language is a thinking medium, i.e., language as a tool for the development of critical, creative, and metacognitive thinking. Even though the inter-functional relationship between language and thought has been well established by philosophers such as John Dewey, Ludwig Wittgenstein, and psychologists such as Jean Piaget, and Lev Semenovich Vygotsky, there have been virtually few attempts to teach thinking skills in the ESL curriculum.

When the term “thinking skill” is used, there might be a misconception that thinking already exists in English language teaching. In fact, language learning does involve cognitive processes and there is no denying this fact. But these cognitive processes aim at mastering various skills and elements of language, for example, ability to decode the phonological code, ability to seek clarification in a conversation, ability to understand the meaning of a word in a context, ability to produce coherent and cohesive discourse, etc. In all these, the primary focus is not on critical thinking, creative thinking, problem solving, and decision making. Given the role of language in learning, thinking, communicating, and constructing knowledge, language curriculum is an appropriate platform for developing student ability to apply, analyze, synthesize, and evaluate information. In fact, teaching of thinking skills is not
something newly found in this study. Many ELT experts have emphasized the need. Elliott-Cannon (1962) pointed out that

Many English syllabuses are divided into three sections—Oral work, Reading and Writing; but it is possibly more helpful to think of five or even six, elements in English—Looking, Listening, Thinking [emphasis added], Talking, Reading, [and] Writing. (p. 1)

Quite obvious in the above suggestion is the recognition of “thinking” as a distinct component even at a time when listening was given very little importance in English syllabuses. More recently, Cook (2008) reminds that

The reasons why the second language is being taught depend on the overall educational goals, which vary from one country to another and from one period to another. One avowed goal of language teaching is to help people to think better—brain training and logical thinking. (p. 9)

So, irrespective of the other goals and objectives of a second language curriculum, it is the responsibility of language educators to develop thinking skills among students. Similarly, Alan Waters (2006) expressed concern for promoting thinking through ELT activities:

...there is evidence that the use of such activities [ELT activities that encourage active mental processing] has not still become widespread in a number of ELT situations. One reason for this may be lack of awareness about how levels of thinking can be conceptualized in ELT activities. (p. 319)

What Waters suggests here is the designing of ELT activities that encourage and promote thinking skills of the students. But the point here is when an activity or a task is designed to develop thinking skills, in other words, when the objective is “thinking skills”, cognitive development is given equal importance with the language proficiency at the least, if not subordinated to language proficiency. So, when the instructional objective of an activity or a task becomes a “thinking skill”, such activity or task can be viewed as a thinking task as well as a communicative task. This emphasis on the cognitive development supports the present argument that thinking skills need to be taught explicitly.

Above all, the call for teaching thinking has already been set forth as a goal by the Indian National Curriculum Framework (NCF, 2005), which states that “the goals for a second-language curriculum are twofold: attainment of a basic proficiency, such
as is acquired in natural language learning, and the development of language into an instrument for abstract thought and knowledge acquisition through (for example) literacy” (p. 39). As the NCF (2005) lays down, the language objectives are divided into two dimensions and one of them is to focus on the development of thinking abilities. It should be noted that cognitive development and communicative proficiency are given equal importance. Further, the critical spirit is strongly asserted by the National Curriculum Framework (2005)—

Students are not just young people for whom adults should devise solutions. They are critical observers of their own conditions and needs, and should be participants in discussions and problem solving related to their education and future opportunities. Hence, children need to be aware that their experiences and perceptions are important and should be encouraged to develop the mental skills needed to think and reason independently and have the courage to dissent (p. 22).

Clearly, from the above statements, we have the responsibility of fostering critical thinking abilities among students to raise awareness about their perceptions, beliefs, values, etc., in order to inculcate intellectual curiosity and courage. The teachers of all the subjects share such responsibility. As language teachers, we ought to teach thinking in the ESL curriculum. In such teaching, we can use listening, speaking, reading and writing as the medium. Of all the four language skills, writing forms a significant medium for teaching thinking since its characteristics can help articulate and modify cognitive processes. Therefore, it is necessary to understand the connection between writing and thinking.

1.1.8 Writing skills

Writing is a purposeful selection and organization of experience (Arapoff, 1967). Experience could include facts, opinions, or ideas whether first- or second-hand. The process of learning to write is largely a process of learning to think more clearly. “Clear writing leads to clear thinking, clear thinking is the basis of clear writing” (Olson, 1985, p. 102). Thinking and writing are interdependent processes—the depth and clarity of thinking enhance the quality of writing whereas writing is a tool for enhancing and improving thinking. But, “neither of these facts implies that
practice in writing will automatically develop strong thinking skills" (Whimbcy, et. al., 2001, p. 298). An explicit attempt to develop thinking is necessary for the improvement in thinking abilities.

In Andhra Pradesh, in fact in most of the states in India, writing skills are crucial in that students have to write examinations. Standard forms of writing such as essays, reports, letters, etc., form the main elements in the writing section of the course books. Though writing is the major form of assessment in the Indian context, students demonstrate poor performance in writing. Even in the case of the students studying the much acclaimed CBSE (Central Board of Secondary Education) syllabus, problems with grammar and writing are very evident. Most of their writing reflects the spoken and informal style. While this is the problem on the one hand, on the other hand, writing is not effectively used as a tool for the development of thinking. Therefore, writing might be utilized maximally to understand, express, and improve thought processes.

Teaching thinking attempts to achieve some of the general goals of education. Developing thinking skills can create confidence in low-achievers as a result of which their autonomy in learning increases. Further, it helps in transferring the knowledge to everyday situations, which in turn leads to the personal well-being of students.

1.1.9 Teaching thinking and low-achievers

There has been a misconception among educators that low-achievers are not ready for instruction focusing on the cultivation of their higher level thinking until they have mastered basic knowledge. As a result, the curriculum is fraught with factual questions, and critical and creative thinking are supposed to be taught only after schooling, i.e., in undergraduate studies. Such an assumption that realising higher order thinking is possible only with deep subject matter is detrimental to students at school. English textbooks produced by the Government of Andhra Pradesh for secondary school are prepared to meet the needs of low-achievers. The mainstream educational practice has viewed learning as a process of knowledge and skills acquisition which was functionally organized into hierarchies such as those developed by Bloom and Gagne. At the top of the widely used Bloom’s hierarchy are the higher-order thinking skills; and at the bottom are the lower order thinking skills of
application, comprehension, and knowledge. The hierarchy implies that the students can be taught higher order thinking skills only when they have mastered the factual knowledge. Another questionable assumption is that thinking skills need not be applied to basic content and basic content can be taught without attracting higher order thinking skills. For instance, in a writing task where a student has to choose to buy a pen from the options given to him/her along with the information about them, higher order thinking skills such as synthesis and evaluation are involved besides comprehension and knowledge. Therefore, to associate higher order thinking skills with advanced content matter and higher studies is untenable.

On the contrary, teaching thinking (includes higher- and lower-order thinking) in the ESL curriculum at school level has several advantages. First, it develops inquisitiveness. When developing thinking becomes the aim in a lesson, it has the potential to engage even a low achiever in the learning process. Second, given the current ESL context where communication is given top priority, the proposition that thinking should be a component in the ESL curriculum enhances the value students hold about English. Though a hard fact, it cannot be denied that most English classes are perceived by the students as something related to ‘fun’, ‘enjoyment’, ‘playing’, etc. Consequently, students might take English less seriously.

In fact, as mentioned in the earlier sections, one of the main goals of second language curriculum is the development of students’ language as a tool for thought. By incorporating thinking into the current ESL curriculum, low achievers become more serious and engaged in learning English also.

Therefore, teaching thinking at secondary school level is beneficial especially to low-achievers from the economically disadvantaged communities, who form the major part of school population in India.

It follows from the above that teaching thinking can bolster students’ confidence, which encourages them to learn with increased willingness. Such willingness can make them autonomous in learning, as a result of which they become less dependent on teachers.
1.1.10 Learning and learner autonomy

In view of the ever-changing needs of society, it is not enough to learn a few subjects at school and college, rather it is imperative that people need to be lifelong learners. In the Indian context, people have begun to realize the necessity of continuous learning. An instance of this is the software industry where the employees have to continually update and adapt themselves to new projects, places, and people, which means a lot of learning. Even in the field of education, where teaching is generally considered to be relatively relaxed since the same textbook is used for several years, teachers have to update themselves for every two years or so as a result of frequent updates in the syllabus. While this is the current scenario, it is not so difficult to imagine the pace of change in the future. As we all agree that we teach our students for the future but not only for the present, we should inculcate in them a positive attitude to continuous learning. It is everybody's knowledge that teaching fishing is far better than just giving fish since learning to fish enables us to live on our own. A fact-based curriculum only fills the students with information whereas thinking skills and dispositions promotes learner autonomy. Robert J. Sternberg sums up this notion clearly.

Bodies of knowledge are important, of course, but they often become outdated. Thinking skills never become outdated. To the contrary, they enable us to acquire knowledge and to reason with it, regardless of the time or place or the kinds of knowledge to which they're applied. (Sternberg, 1985, as cited in Beyer, 1987, p. 4)

Bruner describes how essential thinking is in education:

[Education] should be an invitation to generalize, to extrapolate, to make a tentative leap, even to build a tentative theory. The leap from mere learning to using what one has learned in thinking is an essential step in the use of the mind. Indeed, plausible guessing, the use of the heuristic hunch, the best employment of necessarily insufficient evidence – these are the activities in which the child needs practice and guidance. They are among the great antidotes to passivity. (Bruner, 1996, p. 126)

One of the goals of education is to help learners take charge of the learning that they need to continue even after the period of formal education. All learning that takes place outside the classroom is basically dependant on the degree of learner
autonomy; and language learning is no exception. In language learning, the most successful pupils are autonomous learners because "they accept responsibility for their learning, why they are learning, how they are learning, and with what degree of success; and their learning is fully integrated with the rest of what they are" (Little, 1999, p. 13). On closer observation of Little's statement, it is clear that "the development of explicit metalinguistic awareness is fundamental..." to our capacity for autonomy as language users" (Little, 1997, p. 3). It should be noted that such aspects as reflective planning, implementing, monitoring, and evaluating learning do form a necessary condition for the development of learner autonomy. Tan (2002) emphasizes the importance of opportunities for students to reflect so that their autonomy in learning increases.

"...one of the reasons why school may fail to produce independent learners is the lack of opportunities for students to reflect...It is probably true to say that explicit reflection is seldom used as a conscious learning strategy in the classroom. Teacher-led drilling has helped students to perform effectively in national public examinations; in the same way, teacher facilitated reflective learning can help students enhance and deepen their learning, both now and on leaving school" (Tan, 2002, as cited in Noor, 2005, p. 3).

Hence, teaching thinking, which involves the development of reflective and metacognitive thinking, needs to be taken up to promote learner autonomy. Once students become independent in their learning, it is very likely that they will also be able to transfer their learning to various academic and everyday contexts.

1.1.11 Transfer of learning

Transfer is a seemingly simple concept. "Transfer refers to how previous learning influences current and future learning, and how past or current learning is applied or adapted to similar or novel situations" (Haskell, 2001, p. 23). We constantly transfer our previous learning and experience in order to learn a new skill more quickly and efficiently. For instance, a person who learnt the guitar can learn the veena with relative ease. Such similarities among several actions, objects, phenomena, etc., help us reduce our world to manageable proportions, and create
generic or general structures of thinking (2001). Thus the concept of transfer is central to all learning.

In the context of the current education system, it is generally agreed that language learning is central to the education process since it helps learn other subjects. The underlying assumption of such proposition is that the generic skills and elements in language can be transferred to other subject areas also. In such assumption lies the notion that the cognitive processes associated with language learning are generic in nature and thus transfer across other domains is possible. Furthering this notion, it is argued here that if thinking is taught explicitly as a distinct component in the English language curriculum, then, it would address the transfer problem effectively. This is possible because teaching thinking in the English language curriculum in its generic sense focuses, by foregrounding the thinking skills and dispositions, on the development of thinking and language as well. As a part of teaching thinking (explained in second chapter in detail) the stimuli would be taken from all the subject areas as a result of which the otherwise far transfer would become near transfer. Hence, teaching thinking has the potential to provide a solution to the transfer problem.

In addition to the transfer of thinking skills across academic subjects, students might be able to use these skills in everyday situations. It is hoped that such deliberate and conscious thinking can enhance the quality of their problem solving and decision making. It will also help them gain control over their emotions and think more logically resulting in personal well-being.

1.1.12 Personal development

A person's emotions play a significant role in his/her thought processes. Emotions such as anger, fear, and hatred lead people to do things that they themselves think they should not have done. Stricken by intense fear, one cannot think properly resulting in poor decision-making. So, one's control over emotions and ability to contain them can have a significant impact on the effectiveness of one's thought processes. But, it is not as simple as it appears. The extreme view that all emotions should be suppressed is based on the belief that strong emotions misguide us in our
lives. However, in many instances, people are successful because of their fear of failure or poor performance and their consequences. The positive role of emotions should not be undermined.

On the other hand, one might acquire control over emotions through exercising conscious reasoning. If, for instance, a person who is frequently affected by anger can analyze the causes for such anger carefully, he/she will be able to understand that his/her expectations of others were not met. Further, if he/she analyzes the consequences of demonstrating such anger, he/she could avoid a confrontation that can potentially harm relationships.

The relationship between thought and emotion can be summed up as “thought without emotion is dormant; emotion without thought is blind” (Swartz, 2001a). Emotions have a function in our lives and at the same time we need thought to reflect about what should be done based on the emotions we experience.

Another direct benefit of teaching thinking is self-awareness, which is quintessential for the growth of any person. Only when a person knows about his strengths, weaknesses, learning styles, personality attributes can he/she strengthen or minimize them. Therefore, it is also the responsibility of the school to teach metacognitive thinking as a part of the curriculum.

Till now, we have understood various aspects that attempt to provide a rationale for teaching thinking in the ESL curriculum. Before, we conclude it is necessary to understand two more aspects that support the proposition of teaching thinking in the ESL curriculum. One: the current research in second language acquisition suggests that use of L2 affects one’s intelligence positively. Two: the techniques and strategies in Neuro-Linguistic Programming point to the positive role of language in the development of thinking abilities.

### 1.1.13 Intelligence and L2 development

A general belief among educational researchers until 1960s was that learning using a second language would have a negative effect on an individual’s intelligence. “Intelligence”, then, was supposed to be a unitary trait as measured by the standard IQ tests. These tests expected one correct answer to the questions and called for convergent thinking. During this period, which Baker (1988) called “the period of
detrimental effects” (p. 9), research showed the poor performance of bilinguals on the traditional IQ tests. This was followed by research studies that showed no significant differences between monolinguals and bilinguals and it was viewed that “[b]ilingualism is not necessarily a source of intellectual disadvantage” (Baker, 1988, p. 16). A major landmark occurred in 1962 with the research conducted by Peal and Lambert, who revealed that bilingualism might have positive effect on a person’s intelligence. This study assumes significance in that it has done away with the narrow concept of intelligence and upholds a wider view of the construct of intelligence.

This was followed by theoretical frameworks of the structure of intelligence such as Guilford’s (1967). An important component of Guilford’s Structure Of Intellect (SOI) is divergent thinking, which is “a more creative, imaginative, open-ended and free-thinking skill” (Baker, 1988, pp. 23). It is well established that bilingualism promotes divergent thinking and vice versa (Baker, 1988). Although cognitive benefits are claimed in the case of second language learners, research is still inconclusive about the magnitude of such benefits (Baker, 2001). However, it has been fairly established that there are no cognitive deficits, which implies that using a second language in the classroom does not make students suffer in terms of their thinking abilities. In this context, the current study assumes importance in that it attempts to develop the thinking abilities of regional medium students through their second language, i.e., English.

1.1.14 Intellige nce is modifiable

The notion of Intelligence has been usually associated with the tests of IQ developed by Alfred Binet. A common view has been that it is a fixed and a unitary trait and could be assessed relatively simply. However, Binet did not believe that intelligence was either a unitary or a fixed faculty—

Some recent philosophers have given their moral approval to the deplorable verdict that an individual’s intelligence is a fixed quantity, one which cannot be augmented. We must protest and act against this brutal pessimism . . . it has no foundation whatsoever . . . What [slow learners] should learn first is not the subjects ordinarily taught, however important they may be; they should be given lessons of will, of attention, of discipline; before exercises in grammar,
they need to be exercised in mental orthopedics; in a word they must learn how to learn. (Alfred Binet, cited in Lucas & Claxton, 2010, p. 33)

Binet warned against the dangers of viewing intelligence as a fixed commodity. Having recognized that intelligence is modifiable, Lucas and Claxton (2010) assert the need for

"orchestration of intelligence, not just in terms of the membership, but in the way the different ‘instruments’ are grouped. The issue is a scientific one, but is also pragmatic: what kind of framework is most useful in helping teachers think about how they develop their practice to capitalize on the insights emerging from the science of learnable intelligence?" (p. 183)

What Lucas and Claxton emphasize here is the necessity of articulating the components of intelligence, i.e., thinking and learning skills, which help in academic and everyday problem solving (Sternberg, 1981).

Gardner’s theory of multiple intelligences is one such framework that presents the broad domains of intelligence. While this is intuitively appealing, many experts view them as cognitive styles or ways of thinking rather than types of intelligence. Gardner’s multiple intelligences do not explicate the specific thinking skills and abilities that can be taken up for teaching. Furthermore, applying one’s intelligence is heavily dependent on one’s willingness to do so, but such intellectual dispositions do not find place in Gardner’s framework. Thus, there is a strong need for explication of thinking skills, strategies, and dispositions that inform the practice of teaching thinking in the ESL curriculum.

Hence, it is possible that thinking can be taught and the mental abilities of students can be improved. The view that intelligence is modifiable is also supported by many effective strategies in Neuro-Linguistic Programming, which indicates that it is possible to modify cognitive process using language as a medium.

1.1.15 Neuro-Linguistic Programming

Neuro-Linguistic Programming (NLP) is the art and science of achieving personal excellence for effective communication, personal development and improved learning. Neuro- refers to the neurological system, linguistic refers to the use of
language, which includes body language, to conceptualize and communicate our experiences. Programming addresses how we encode our experiences in our mind, based on which it attempts to recode those experiences to get the outcomes we want.

A common aspect in NLP and in the concept of thinking is the outcome-driven mental activity. Once the desired outcome is defined clearly, the person undergoing NLP training is made to observe and articulate his/her cognitive experiences. In the process, the language labels used by the trainee or the trainer would be highly significant since language can reveal thought processes. When the trainee expresses his thoughts in a certain language, the trainer understands the way the trainee coded his experience. The trainer, then, gives appropriate language labels to recode the trainee's experiences, as a result of which the trainee's beliefs, attitudes, etc. are expected to transform. "Therefore, much of NLP is devoted to discovering how to think and communicate more effectively within yourself and with others." (Ready & Burton, 2010, p. 10)

NLP supports the notion of using language to develop thinking. Drawn from the fields of psychology and neuroscience, various techniques and strategies in NLP are helpful for teaching thinking.

1.2 Questions about teaching thinking in the ESL curriculum

In the above sections, the need for teaching thinking in the ESL curriculum was spelt out comprehensively. Though such a need has been well argued by experts and researchers in ELT, there is a lack of awareness in terms of teaching thinking skills in ELT classes (Waters, 2006). A few frequently asked questions by the English language teachers are presented below, followed by the summary of the researcher's interaction with them.

1. Why should we teach thinking in the ESL curriculum?
2. Thinking is not related to English language teaching. So, it is not part of English language teaching. It is something related to other subjects Mathematics, Physics, Biology, etc.
3. It is impossible to separate language and thinking. So, it is not possible to teach thinking.

4. When you teach language, you automatically teach thinking?

5. When students use language, are they not thinking? Are they using language without thinking? Can they learn language without thinking?

6. Thinking is so abstract. You cannot teach it. It depends on individuals. Is there any perfect way of thinking? Not one, definitely!

7. Thinking is for graduates and post graduates but not for school children.

8. There is no need for teaching thinking, it develops automatically.

9. Thinking needs to be taught but how should we do it?

When there was a discussion about teaching thinking, most of the English language teachers the researcher interacted with argued against teaching thinking. Their comments and questions are invaluable and relevant to the current study. Therefore, a discussion is necessary to put them in perspective.

To answer question one, we need to understand the goals of the ESL curriculum. The Indian National Curriculum Framework (NCF, 2005) which states that “the goals for a second-language curriculum are twofold: attainment of a basic proficiency, such as is acquired in natural language learning, and the development of language into an instrument for abstract thought and knowledge acquisition through (for example) literacy” (p. 39).

According to NCF (2005), the objectives of the second language curriculum are divided into two dimensions and one of them is to focus on the development of thinking abilities. In the second goal, it should be noted that language is considered to be a tool and thinking is viewed as the objective. This preempts the question “Why should we teach thinking in the ESL curriculum?”

With regard to the second question, being informed of the goals of the ESL curriculum, some ELT professionals still believe that thinking is related to other subjects but not English. For instance, logical thinking is related to Mathematics and Physics, but not English. This is where Waters showed his concern for the English
language teachers. There is no doubt that thinking is related to all the subjects. But the kind of thinking that is related to Mathematics, Physics, etc., is subject-specific. This is so because the knowledge in these subjects operates on a set of principles, systems, and procedures that are specific to them.

However, arguably, there are general thinking skills that are common to all these subjects. For example, the logical thinking involved in imagining a required solution as $x$ is specific to mathematics whereas observing the properties of a geometrical shape is necessary in Physics, Geography, Art, etc., in addition to Mathematics. So, in each subject, there would be subject-specific and general thinking skills. But language is considered to be central to the education process and it is seen as a tool for acquiring knowledge of other subjects. Therefore, if the general thinking skills are taught in the ESL curriculum, the thinking skills learnt here could be transferred to other subjects also. Besides, while other subjects deal with specific systems and principles, ELT materials have the potential to accommodate everyday situations. This unique advantage supports ELT professionals to discharge their obligation of developing thinking among students. Students would be able to assimilate and apply thinking skills better since they can identify themselves with everyday situations. Thus, teaching thinking skills in the ESL curriculum is highly beneficial to students.

It should not be misunderstood that thinking should not be taught as a part of the other subjects. In fact, it needs to pervade the school curriculum. Each and every subject curriculum has the obligation to develop thinking abilities. Similarly, English language teachers should also develop critical, creative, and metacognitive thinking among students.

Regarding the third question, some well-informed ELT professionals argue that language and thinking cannot be separated. Though language and thinking are inextricably linked, they are not one and the same. They have distinct ontogenetic roots. Language is one of the representation systems that can express thought. Thought can exist without language but language cannot exist without thought. If not for thought, language does not have a purpose. Language, primarily, is a carrier of
thoughts. Other forms such as gestures, pictures, etc., can also convey thoughts and ideas. Thinking that is discussed here is related to the basic cognitive processes in relation to language as a representation system. But the thinking that is recommended to be taught in this study constitutes a set of general thinking skills and dispositions that can help students solve problems, make decisions, and improve learning of all the subjects including English language learning. In other words, learning these thinking skills can also enhance the quality of language learning processes. To exemplify, let us take the skill of distinguishing between facts and opinions. If students are taught this skill explicitly and if they gain reasonable mastery of the skill, it is possible that the way they read a passage changes significantly. They would read so carefully that they would be able to distinguish between statistical information and the author’s emotion-laden words. Further, it is likely that they would apply these skills in speaking in everyday situations too.

At this juncture, one might argue that the skill of distinguishing between facts and opinions, though not taught explicitly, pervades in many of the reading comprehension questions. Thus, when students are exposed to several passages across years, it automatically develops this skill. But, with such implicit teaching of the skill, the students associate it only with reading or listening comprehension. Transferring this skill to an everyday situation such as buying a phone is highly difficult unless it is taught explicitly. Learning that does not transfer is futile. It is argued here that such implicit objective of developing the skill does not enable students, say, to distinguish between facts and opinions at a generic level so that they would transfer the skill to subject areas as well as everyday situations.

Such a view of implicitness also reveals entrenched beliefs about English language teaching. If one argues that why a skill like distinguishing between facts and opinions should be taught explicitly in the ESL curriculum, supposing that such explicitness can result in transfer to other domains, it only reveals one’s belief that English language is considered to be an end in itself. If this is the case with most of the English language teachers, it is important to emphasize that the goals of the second language curriculum, as laid down by the NCF (National Curriculum Framework),
2005, suggests that English language should be seen as an effective and powerful means for acquiring knowledge. The notion of teaching thinking explicitly views language as a means for the improvement of thought, language, and knowledge.

As for question four, it is also misconceived by some of the ELT professionals that if language is taught, thinking is also taught automatically. So, there is no case for teaching thinking separately. This line of reasoning implies that if one has expert-level proficiency in English, one automatically becomes an effective thinker. By extension of this logic, one would be able to make better decisions and solve problems effectively if one is good at English. It is quite apparent that there is little causal link between proficiency in English and the ability to make decisions, solve problems effectively and create new concepts, objects, etc. This implication divulges that critical, creative, and metacognitive thinking skills in the ESL curriculum are dormant. It is argued here that developing these skills and dispositions should also be recognized as a part of the goals of ESL curriculum.

With respect to the fifth question, it is true that language use requires cognitive processing. Not only language, cognitive processing is required in every act of ours. The brain functions when we dial a number, insert a plug into a socket, delete messages, etc. Similarly, in reciprocating a wish, “Good Morning”, requires attending to the stimulus (other person’s wish), activating working memory to retrieve the language labels “Good” and “Morning” from long term memory, and sending signals to the mouth apparatus to utter the wish. Such cognitive processing happens almost without deliberate effort. But the thinking that is recommended here for teaching is conscious and goal-directed. It aims at solving a problem, creating an innovative solution, making a decision, etc. So, only language use cannot ensure that students develop these abilities.

As far as the sixth question is concerned, the view that thinking is abstract and there is no standard way of thinking is not a reason for dispensing with the idea of teaching thinking. Instead, the very abstract nature of thinking and the fact that each people’s value systems and backgrounds influence their way of thinking are the precise reasons for teaching thinking. Thinking needs to be taught because it is
intangible and effective thinking requires conscious effort and careful guidance. It is true that one’s thinking patterns are influenced by one’s previous experiences. When each and every individual is unique in any sense, it is only unrealistic to expect one perfect way of thinking. In teaching thinking, it is not suggested here that the teacher should give the best formula for thinking, which works as a magic wand in finding solutions to problems, etc. Rather, it is recommended that students need to be informed of various strategies and techniques for effective thinking so that they become independent thinkers. Therefore, students should be exposed to various thinking types, styles, strategies, techniques, etc., to develop their own thinking.

Regarding question seven, quite a few English language teachers opined that thinking, or higher-order thinking is not for school children. It should be taken up for teaching at graduate level. This implies that children do not need higher level thinking. Research studies and experience suggest that children also engage in complex thinking processes. For example, they need to organize their books to attend specific classes on a day, organize their study schedule to score better, make a decision about what type of school bag to buy, etc. Further, after the completion of class X, they need to choose a stream of education, which decides their path of life. To make an effective decision in such a scenario, a student needs to identify and compare various courses, develop his/her own criteria that govern, evaluate the pros and cons of pursuing each course in the light of personal criteria, and finally, choose a course. When students at school are at the threshold of making decisive choices, it is very essential to enable them to think for themselves.

With respect to the eighth question, a few seasoned professionals argue that thinking need not be taught. It develops automatically. To support their statements, some of them quote the following examples. “My dad has not taught me how to think but I am able to think.” This means that thinking need not be taught. But, if we can retrospect very closely our interactions with the teachers, peers, and parents, it is not difficult to see the thinking strategies and techniques taught to us. Today, in the case of high-achieving students, we attribute their thinking abilities, among many other abilities, to their upbringing. Then, it does not hold that we were not taught how to
think. Moreover, able to think does not mean that one is able to think effectively. Effective thinking takes into consideration the existing conditions, which are subject to change constantly. This means thinking abilities need to be polished throughout one’s lives and it cannot be viewed as accumulated stock that is stationary.

Before we go to the next question, one more example needs to be mentioned. Some of the language teachers say, referring to the skill of identifying similarities and differences, “If you ask a student to compare two flowers and say which is red and which is green, do you think that he would not be able to tell unless he is taught explicitly?” But if we observe closely, it was taught to him explicitly when the student was very young. But this does not mean that the same student would be able to compare the speeches of Martin Luther King and Barrack Obama naturally. For effective comparison, in addition to be able to understand the words in those speeches, the student must be able to develop criteria based on which similarities and differences should be identified. Similarly, a homemaker cooks at home without effortful thinking. Guesswork in adding salt and other ingredients might work because the quantity that is needed most remains the same every day. But, if cooking has to be done for 500 members including a few varieties of dishes that should be delivered and served by a scheduled time, guesswork does not work. Such tasks involve careful planning, calculated decisions, predicting negative consequences, planning for the contingencies, monitoring, and evaluating. It might be naïve to think that these skills develop among students naturally. Skills like these cannot be learnt without asking the students to reflect deeply on their cognitive processes.

Lastly, after a few interactions, most ELT professionals that the researcher interacted seemed to have discerned the need for teaching thinking in the ESL curriculum. But they doubt, “Ok. Thinking needs to be taught. But, how should we teach it? What are those skills which are called thinking skills?” Questions like these stimulated this research study intensely as a result of which the literature on teaching thinking was reviewed comprehensively. A list of thinking skills and dispositions is provided in chapter 2 to help ESL teachers in syllabus design and materials production for teaching thinking. The skills and dispositions listed were gleaned from various
thinking frameworks and models. Many of these existing models describe the constituents of thinking and there is little literature on how to realize those skills and dispositions in the ESL curriculum. This lacuna necessitated a research study that accommodates thinking skills and dispositions in the ESL curriculum.

1.3 The Argument for teaching thinking in the ESL curriculum

As we have seen above, teaching thinking as a distinct component in the English language classes can highly motivate students to use the language and can facilitate language learning. Such an approach provides real educational value in language teaching because the skills involved in critical and creative thinking, as well as in solving problems and making decisions are necessary for effective functioning in the present and the future.

To sum up, it is argued here that thinking needs to be taught as a distinct component in the ESL curriculum because

• people have basic passions, nurturing which can lead to a state of self-actualization/realization;
• people are prone to be fallible; they commit thinking errors and so make poor decisions;
• technology has changed drastically—easy, increased and widespread availability of information has necessitated coping with the complexity of information that needs to be manipulated in multiple ways such as analyzing, evaluating, and synthesizing;
• most of the routine, manual, and low-skilled jobs are being done by high-end computers, machines, and robots with increased accuracy as a result of which workers of the current and the next generation need higher level cognitive skills and dispositions in doing multi-skilled and multi-tasking jobs that necessitate innovation;
• media and politics influence society in such a way that people should exercise caution along with skills to cope with the challenges;
• participation in democratic processes needs skills such as inquisitiveness, open-mindedness, considering multiple perspectives, etc;
• the need for teaching thinking has been recognized by developed as well as developing countries;
• language and thought develop each other, and therefore, teaching thinking in the ESL curriculum can develop English language besides improvement in thinking abilities;
• development of second language can have positive impact on one's intelligence;
• increased awareness of one's metacognitive thinking can improve learner autonomy;
• language is central to education and teaching thinking in the ESL curriculum can lead to effective transfer since thinking skills and abilities pervade the whole curriculum.
• knowledge might change continually but cognitive skills that help organize, analyze, etc., would not become outdated;
• intelligence can be developed, and improved since it is no more treated as a unitary and fixed trait;
• thinking abilities can help in controlling emotions and increasing self-awareness, which contribute to personal well-being;
• the theoretical constructs and the practice of Neuro-Linguistic Programming support the idea that the belief system of a person can be modified using language.

1.4 Conclusion

Modern society is becoming increasingly complex, demanding people to constantly think critically and creatively for solving problems and making decisions. It is the responsibility of educators to help students in this regard. In view of the role of language in the cognitive development of a child, English language curriculum can be considered an appropriate platform to prepare students for the future. In current
ELT practices, the teaching of thinking skills is not explicitly focused and the present study is an attempt in this direction.

In the next chapter, we will discuss the theoretical background of the study and the lacuna in the earlier attempts to teach thinking in the ESL curriculum. A rigorous attempt is also made to articulate thinking skills and dispositions, which can be taken up for teaching.