Review of Related Literature:

While doing research every researcher should know the sources available in the field. For that the researcher should review the related information. There are three forms of gathering such information.

(i) Direct sources which includes thesis, periodicals, journals, books, etc.
(ii) Indirect sources as encyclopedia, indexes, abstracts, etc.
(iii) Electronic sources through internet.

Review the literature is a continuous process. The literature is an integral part of the entire research process and makes a valuable contribution to almost every operational step. It helps the researcher to –

1. Improve the Methodology of the research.
2. Broaden the knowledge base in the research area.
3. Bring clarity and focus the research problem.
4. Contextualize the findings.

The main sources for identifying literature are books and journals. Every researcher must equip themselves with such type of knowledge for worthwhile study in the field of research. Every researcher must know where and how to find out the information because in absence of up-to-date information, his/her research work cannot be worthwhile. For this research the researcher has reviewed the following journals and books.

*Kamaruzaman Jusoff et al (2011)* Explores the answer of the question ‘should English for Teaching Mathematics and Science (ETeMS) in Malaysia be abolished?’ By conducting the survey of the students and by examining the primary merits researchers stressed on the following points-

1. Learners’ Performance in Mathematics and Science.
2. Learners’ Language Proficiency.
3. Level of Enjoyment of learning Mathematics and Science.
4. Level of difficulty of Learning Mathematics and Science in English.

The research concluded that –

1. Learning Mathematics and Science in English is difficult for learners and their academic performance in these subjects have deteriorated.
2. Almost half of the students (47.7%) reported that now fared better in English exams.
3. More than half of the students (56.8%) enjoyed learning Mathematics and Science in English.
4. More than students (56.8%) felt it was difficult learning Mathematics and Science in English compared to those who felt it was easier (36.4%).
5. Learners attributed the difficulty in learning Mathematics and Science in English to two reasons. Their own lack of fluency in English (50%) and their teachers’ limitations in English (50%).

Ihsan Ismail (2009) The Study of ‘English in the teaching of Mathematics and Science Subjects (ETeMS) Policy’ made conceptual analysis about School performance. This study intended to look at the implications of the policy for the school performance in mathematics and science subjects and to test for any significant different in the performance of school in different location ant type. The techniques used to measure schools performance in science and mathematics subjects is hybrid return to scale DEA model while Malmquist index was used to measure the change in schools performance after the implementation of ETeMs policy.

The researcher concluded:

1. In conclusion this study has contributed to the usefulness of DEA in measuring organizational performance by developing a suitable model to measure school performance.
2. It has also contributed to the new understanding of the implications of ETeMS policy for the schools performance in mathematics and science subjects.
3. It suggested the need of teachers’ qualification and experience which might contribute to the students’ performance in examination.

Ahmad Maher Nakhallah (2011) Studied on ‘Difficulties and Problems Facing English Students at QOU in the Translation Process form English to Arabic and Their solutions’ the study aimed at exploring the difficulties that face the students of Al Quds Open University in the translation process from English to Arabic. The researcher attempted to find suitable solutions for these difficulty and problems that these students experienced. The researcher selected a random sample of students.

The researcher suggests that the student and the translator should acquaint with the followings of both source and target languages:

The researcher recommends the following:
1. Simplifying of translation process for the students.
2. Teaching and introducing all translation difficulties and problems in details.
3. Paying the attention for cultural, conceptual, idiomatic and grammatical difficulties.
4. Boosting and encouraging translation of different kinds of subjects such as tenses and proverbs from English to Arabic.
5. Adopting and composing courses for translating of different kinds of translation.
6. Teaching English language in comparison with Arabic language for the students of English Department at the University level.
7. Giving more attention for English style and Arabic style.
**Bracken Reed & Jennifer Railsback (2003)** Studied the ‘Strategies and Resources for Mainstream Teachers of English Language Learners. In the study ten things the mainstream teacher can do today to improve instruction for English Language Learners students are given:

1. Enunciate clarity, but do not raise your voice. Add gestures point directly to objects or draw pictures when appropriate.  
2. Write clearly, legibly and in print- many ELL students have difficulty in reading cursive.  
3. Develop and maintain routines. Use clear and consistent signals for classroom instructions.  
4. Repeat information and review frequently.  
5. Try to avoid idioms and slang words.  
6. Present new information in the context of known information.  
7. Announce the lessons objectives and activities and list instructions step by step.  
8. Present information in a variety of ways.  
9. Provide frequent summations of the salient points of a lesson and always emphasize key vocabulary words.  
10. Recognize student success overtly and frequently.

**Dennis Malone (2005)** It was the study of knowing what we see: Research and evaluation in mother tongue-based multilingual education programs in ethno linguistic minority communities. This paper focuses on several of the situations in which Mt-Based MLE programs have been established in Asia and Africa and the Pacific. Traditional approaches to quantitative and qualitative studies are examined for insights they might provide in overcoming obstacles to quality research in the often remote, sparsely-resourced areas where the ethno linguistic minority communities live.

The study arises the main question of ‘Why is research & evaluation in mother tongue-based multilingual education so difficult? Charles Berg (2003) suggests one reason: we are combining into a single effort three distinctly complex processes-language (in the plural), education (including non-dominant, marginalized, frequently impoverished language communities), and learning to read and write in multiple languages –

1. Research and evaluation are integral to keeping pace with the kind of rapid change that is occurring worldwide.  
2. This is particularly important if our unspoken goal is to be able to know what we are seeing.  
3. Priority needs to be given to new and innovative designs for research and evaluation that can help a wide range of stakeholders see what is there.  
4. More recent approaches to research and evaluation are summarized for participant’s consideration.

**Ambigapathy Pandian & Revathi Ramiah (2003)** They researched on Mathematics and Science in English Teacher voices. This research is important to understand perceptions,
knowledge and the main thing that is readiness of the teachers towards the teaching of mathematics and science in English, This study sought to obtain some feedback from teachers teaching mathematics and science in respect to the change in the medium of instruction. Actually two questionnaires were used in this study. While first questionnaire solicited selected personal background information of subjects and second questionnaire comprised twenty four statements related to teacher views and teaching practices.

The finding of this study suggest that –

1. Generally teachers of mathematics and science recognize the need for the change in the medium instruction.
2. The problem here is multi-faceted and therefore not only related to mathematics and science educators and curriculums developers language educators- English teachers need to re think their role and the immediate needs of the students that they teach.
3. Joint action is the kind of collaboration that is required to ensure success in un\sing English as the medium of instruction.
4. For correct implementation of ETeMS extended time and effort on the part of the teachers may require and thus may not be practicable in our present school context.

Galina Kavaliauskiene (2009) believes that a revival of interest to using a mother tongue in the English classroom is stipulated by necessity to improve language accuracy, fluency and clarity. The state-of-the-art teaching of languages is based on the communicative method which emphasizes the teaching English through English however the idea of abandoning the native tongue is too stressful to many learners, who need a sense of security in the experience of learning a foreign language. In the study of ‘Role of Mother tongue in Learning English for Specific Purpose’ she aims at examining students’ perceptions of the use of mother tongue and translation in various linguistic situations. The activities that help raise learners’ awareness of language use are described. The findings demonstrate that all learners need a support of mother tongue in English classes, but the amount of the native language needed depends on students’ proficiency in English.

In the study post reading activities gave student’s opportunity to review, summarize and react to a reading material through discussions in small or large groups.

The following conclusions have been drawn in the study-

1. All the learners customarily rely on their mother tongue in learning English.
2. The amount of the native language that students need depends on their proficiency and linguistic situations.
3. The statistical processing of the research findings showed that the data are significant in spite of the small sample of recipients.
4. The students autonomously generated reading comprehension exercises; summary writing and back-translation activities help raise learners’ awareness of differences between English and the mother tongue and facilitate linguistic development.
5. The ultimate analysis of re-translated text by students and teachers feedback allows raising learner’s awareness of vocabulary, grammar, style and language transfer.

**Helen Ten and Chan Swee Heng (2003)** Published Paper on Teaching Mathematics and Science in English. It is a perspective from University Putra Malaysia. Actually this paper discussed issues and concerns about the efforts involved in equipping Mathematics and Science. Trainee teachers (MSTT) at university with the necessary English language skills so that teaching along the stated objective could achieved. As teachers are the main implementers and advocator of change so it is important that how they were trained and their makeup would affect policy change.

The study suggested that-

1. Changes in language education may still bring forth many sentiments and sensitivities related to identity, power relations, economic advantage and ideology.
2. With the policy change, the ancillary programmes such as manpower training, material preparation, and awareness of the teachers needs and problems warrant attention.
3. For long term planning of the English course to train MST it is felt that materials ought to be specifically prepared and there should be continuity in its use.
4. Course duration, number of credits and status of such courses all these factors would have a major impact on the success of the programme.

**Thuwayba Ahmad Al Barwani et al (2012)** Searched for ‘An effective teaching model for public school teachers in the sultanate of Oman’ The purpose of the paper was to investigate what is the most important characteristic that leads to effective teaching in the general education schools in Oman. The study is based on descriptive survey method.

In terms of the findings, this research discovered that-

1. The “Community Relationships” factor is the most important factor that leads to effective teaching and that it predicts and effective teacher in Oman.
2. To have effective teaching in Oman from the students’ perspectives, the school must involve the society to participate and support the educational process.
3. While an effective teacher should align his/her teaching service with society needs.
4. Teaching strategies were found to be second factor and predictor for teaching effectiveness.

**Yuko Nakahama (2012)** It was the study of “Emergence of conversation in a semi-structured L2 English interview” In this pilot study a Japanese intermediate level ESL learner interacted with another Japanese speaker whose English was at near-native level by means of a 30-minute semi-structured interview. The aim was to investigate how shared cultural and language background affect learner discourse. Major characteristic of turn taking mechanism of conversation are include in the study. They are as following –

1. Occurrence of more than one person speaking at the same time are common but brief and can be corrected by repair mechanism for such turn taking errors.
2. Neither turn size nor order are fixed, but varies.
3. Neither length nor content of conversation, nor relative distributions of turns are fixed in advance.
4. Turns can be one word long or sentential in length.
5. A current speaker may choose a next speaker or next speaker may self select.

M.Bakri Musa (2005) worked on the subject “Continue Teaching Science and Mathematics in English”.
It suggested and concluded that –
1. There are many challenges to the policy of teaching science and Mathematics in English.
2. The Problem of our student’s deficiency in English is most acute in rural areas.
3. As it is foreign language admission to such schools would be restricted only to those with already near-native fluency in Malay or whose habitual language in Malay.
4. Some Teachers colleges should convert into exclusively English-medium institutions to train future teachers of English, science and mathematics.

Ong Saw Lan & May Tan (2008) In the study of “Mathematics and Science in English Teachers Experience inside the classroom.” researcher found three factors appear to be salient in influencing how quickly a teacher can affect the transition into teaching entirely in English. They are the prior educational background of teacher, the linguistic environment in school and the linguistic abilities of their students.
It suggests that –
1. For teachers to move successfully toward the visions of this policy, major changes in their knowledge and beliefs, as well as their instructional practices are required.
2. To ensure the successful implementation of the educational reform, the Malaysia government should provide adequate support for teacher’s professional development.
3. A financial incentive should give to Mathematics and Science teachers to motivate them in using English in their teaching.

Marguerite Bonous-Hammarth (2012) It is the research on “Practicing what we preach: Racial and Ethnic School Composition, Educational Practice, and Student Achievement in California”

The author examines-
1. Critical precollege learning contexts with a focus specific to California and the nation.
2. Trends within these school communities often illustrate achievement below state averages for students from low-income status.
3. While demonstrating increasing segregated learning communities for the same groups with related achievement gaps for the students and their schools.
4. The opportunities for transformation within public education using evidence- based practices to benefit students primarily from these educational setting in and beyond California.
Antoinette Errante (2008) worked on the subject of “globalization, education and the trouble with peace” it is based upon a grounded analysis of a review of the existing social and education, literature regarding globalization and peace from approximately 1960 to the present.

1. It consisted of identifying emergent themes in the literature and from these identifying conceptual categories and the relationships among them.
2. It explained some of the ways in which globalization, peace and educational process are linked.
3. It showed how these sensibilities have influenced the reproduction of inequalities through the education sector socialization and policy context.

Alobiedat Ahmad (2011) This study aimed to detect the effectiveness of school performance, within different variables of study from the perspective of public school principals and teachers of Al –Petra Province. The results of the study indicated that:

1) The principal showed a positive attitude the implementation of educational technology.
2) The results not only the willingness of the principals towards support of technology in their schools but were also willing to improve their knowledge, skills abilities to facilitate the integration of technology into curriculum.
3) The level of strategic planning was to a medium degree. This could be due to the fact that the practice of school administrators for planning still depends on improvisation and randomization or sometimes on situational management.
4) The study also revealed that there were significant differences attributed to the gender and it was in favour of male school administrators. This reason could be traditionally the stereo-type in our society’s attention for reflection is still male dominated than female.
5) There were no statistical significant differences attributed to the variable of educational credentials for all domains except for the domain of strategic planning where the difference came in favour of whom educational credentials were Diploma and above.
6) The study also showed that the female teachers were more satisfied with their professional role as a teacher than were their male counter parts.

J.C Aggarwal (2011) In the book of teacher and education in developing society the author explains about education for international understanding. It is authoritative text book for B.Ed. student but the fourth edition of the book has added a fresh material on the latest developments and initiatives taken in the field of education in India. As per the book ten major merits of the new pattern are as follows –

1. Education and productivity.
2. Strengthening national unity.
3. Specialization at the appropriate time.
4. Inter- State adjustments.
5. Implementation of national programmes of school improvement.
7. Raising of standard of education.
8. Vocationalisation of education.
9. Education for employment.
10. Upgrading for the first degree course.

**A.K. Nayak & V.K. Rao (2003)** Discussed healthy school environment- teaching methods in “Classroom Teaching Methods and Practices” It explains about-

1. The Primary purpose of schooling, which is only one of the institutional influences in a person’s education, is to assist the individual to better develop the knowledge, attitudes and skills to interact with the environment in a successful manner.
2. The educational expansion universalization of elementary education, vocationalisation of secondary education, higher and professional education and overall quality of education are major challenges before the country.
3. Advances in the fields of curriculum audiovisual aids, telecommunication, etc. demand updating and orientation of teachers.
4. Innovations both at the macro & micro levels would fail if teachers are not equipped and properly oriented to implement them.

**Randolph Quirk (1998)** In the book of “The use of English” it gives the answer of why our government likes to use English as medium of instruction for mathematics and science

1. The fastly growing interest in English cuts across political and ideological lines because of the convenience of a lingua franca increasingly used as a second language in important areas of the world.
2. Demands for help in learning English are therefore widespread.
3. English has retained a good deal of the importance that macaulay outlines with such clarity and foresight.
4. English is the language of commerce and trade; it is the language of business.

**Kulbir Singh Sidhu (2000)** Explained the whole topic on the questionnaire in the book ‘Methodology of Research Education’ It explained every terms of questionnaire in brief.

1. A questionnaire is a form prepared and distributed to secure responses to certain questions.
2. It is a device for securing answer to question by using a form which the respondent fills by himself.
3. It is a systematic compilation of questions that are submitted to a sampling of population from which information is desired.
4. The questionnaire is probably the most used and the most abused of the data gathering devices.
5. The scope questionnaire has been very vast. It has been used for studying a wide range of problems.
   The book also explains the type of questionnaire. A questionnaire can be prepared by three different methods-
1. Structured V/s Non-structured
2. Closed V/s Open Form
3. Fact and opinion form.

**John W. Best & James V. Kahn (2011)** Explains about selecting a problem in ‘Research in Education’ There are different 50 areas are suggested for selecting topic in the book from which research problems may be further defined. These areas are definitely helpful for beginner in research after selecting the problem it is the best way to evaluate the problem. For testing research problem the book suggest to ask the following chain of questions-

1. Is this the type of problem that can be effectively solved through the process of research?
2. Is the problem significant? Would the solution make any difference as far as educational theory or practice is concerned?
3. Is the problem new one? Is the answer already available?
4. Is research on problem feasible?
5. Will the researcher be able to carry it through a successful conclusion?


1. One peculiar feature of English education in India was its emphasis on general subjects and neglect of scientific and technical education. Scientific and technical education being the essential ingredients of indigenous technological development, the neglect of it not only created a gulf between the colonial power and the colonies, but also increased disparities at least on two counts: between types of education and between levels of education.
2. The English education had one common characteristic, whether it was practiced in rural or urban areas: it systematically detached the educated from their natural work environment.
3. The English education in India contributed in making the country intellectually indebted to Great Britain and this was a part of their general policy of domination. This education is also partly responsible for educational development had implications for the development of an indigenous technological base.