A COMPARATIVE STUDY ON PROBLEM SOLVING ABILITY AND ACADEMIC ACHIEVEMENT MOTIVATION OF SECONDARY SCHOOL STUDENTS OF LAI AUTONOMOUS DISTRICT COUNCIL (LADC) AND CHAKMA AUTONOMOUS DISTRICT COUNCIL (CADC) IN MIZORAM

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In Partial Fulfilment of the Requirement for the Degree of Master of Philosophy in Education of Mizoram University, Aizawl.

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CERTIFICATE

This is to certify that **Mr. H.C. Lalzawmliana** has prepared the dissertation title "*A Comparative Study on Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) And Chakma Autonomous District Council (CADC) in Mizoram"* under my guidance and supervision for Master of Philosophy in Education (IASE), under Mizoram University. In preparing the dissertation, **Mr. H.C. Lalzawmliana** has complied with all the requirements as laid down in the M. Phil regulations of the University. This dissertation is the original work of the scholar and has not been submitted for any degree to any other University.

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DECLARATION

Mizoram University

February, 2022

I H.C. Lalzawmliana, hereby declare that the subject matter of this dissertation is the record of work done by me, that the contents of this dissertation did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that this dissertation has not been submitted by me for any other research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Master of Philosophy in Education.

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ACKNOWLEDGEMET

During the period of my research work, I have been helped by a large number of eminent scholars and other people. It is my humble obligation to acknowledge their contribution. First of all, I am extremely thankful to my supervisor, Professor Lallianzuali Fanai, IASE. She has been supportive from choosing the topic to the last stage of its completion, rendered every possible assistance and supervised the work. Her scholarly approach has been a source of inspiration for me; without her guidance, constructive criticism, and valuable discussion, this thesis would have remained a dream. I attribute the level of my work to her encouragement and effort, and I appreciate all her contributions of time and ideas to make my M.Phil experience productive and stimulating. Even during the difficult times of my M.Phil pursuit, her joy and enthusiasm for research were contagious and motivating.

I would also like to express my sincere gratitude to Professor H. Malsawmi, Head of the Department of Education at MZU, Professor Lynda Zohmingliani, Department of Education, and Dr. Ruth Lalremruati, Assistant Professor, Department of Mizo, MZU, for their valuable input and suggestions at the time of pre-submission. I would also like to express my utmost gratitude to Professor LN Mishra, Department of Education, MZU, for helping me out with checking plagiarism.

I have no words to express the warmth and the sustenance that I have received from my esteemed institution, IASE. The principal and all the faculties were very supportive and helpful throughout this study.

I would like to express my gratitude to all the principals and teachers of secondary schools in all the sample schools for their help and cooperation in data collection.

I would also like to thank my good friends, my family, and my fellow M.Phil. Scholars for supporting me during this research work and I would like to express my sincere thanks to all those who have helped me directly or indirectly towards this accomplishment.

Last but not least, I raise my heart, expressing my deepest sense of gratitude to the almighty God for His abiding grace and blessings, which gave me the strength to complete this research study successfully.

"Writing the perfect paper is a lot like a military operation. It takes discipline, foresight, research, strategy, and, if done right, ends in total victory." Ryan Holiday

Dated: 28.02.2022

(H.C. LALZAWMLIANA)

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ABBREVIATIONS

LADC	Lai Autonomous District Council
CADC	Chakma Autonomous District Council
PISA	Programme for International Student Assessment
PSEB	Punjab School Education Board
CBSE	Central Board of Secondary Education
SK	Skewness
KU	Kurtosis

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CHAPTER-I

1.1 BACKGROUND

All aspects of life require the ability to solve issues, and classroom problem solving exercises are a fantastic approach to get students ready for real-world situations. The capacity to critically evaluate an issue, map out all of its components, and then develop a feasible solution is one of the most useful talents one can gain in life, whether in school, job, or social interactions. Classroom problem solving activities can help students to learn problem solving Abilities from an early age in school. Such activities promote both cognitive and social development, and they can provide children with the tools they need to address and solve challenges for the rest of their lives.

Problem solving is a mental activity that takes place as part of a bigger problem solving process that includes problem identification and problem form. Problem solving is a higher-order cognitive function that requires regulation and control of more basic or routine talents. It is said to be one of the most difficult of all mental operations. Problem resolution is required when an organism or artificial intelligence system wishes to migrate from one state to another. Problems solving tasks enable students to use higher-order thinking skills, which makes them more involved in the learning process. Problem solving entails applying principles and facts to explain new phenomena or anticipate outcomes from known conditions. The task of problem solving necessitates prediction, analysis of data, and application of principles in order to create a cause and effect link in physical events. Problem Solving Ability is the framework or pattern within which creative thought takes occur is referred to as ability. It is the ability to think and reason on a certain level of complexity. People with stronger Problem Solving Ability are typically found to solve issues of greater complexity faster than more intelligent people. Therefore, educators and trainers must pay close attention to the Problem Solving Ability of young boys and girls.

Problem solving also involves applying logic and reasoning to a multiplicity of problems encountered in daily life. Problem solving is an important element of children's development since it allows them to practise what they have learned in the classroom by applying what they have learned in different situations. It is a method of overcoming obstacles that appear to be impeding the achievement of a goal. Despite

the fact that it is based on inference, it is also a procedure for making adjustments. Thus, problem solving is cognitive processing aimed at changing a problem from its current condition to its desired state when the problem solver is unaware of a solution technique. Thinking, reasoning, decision making, critical thinking, and creative thinking are all connected to problem solving. The capacity to solve problems has a critical influence in students' academic achievement and idea creation. Many studies have shown that problem solving skills is an important component in content learning and academic success. One of the primary responsibilities of education is to build problem solving skills. So, problem solving can be defined as "The capacity to engage in cognitive processing to understand and resolve problem situations where a method of solution is not immediately obvious" (Creative problem solving - PISA, n.d.)

Therefore, it is crucial that parents and instructors understand the psychology of problem resolution in order to help their children. Addressing problems at school allows students to gain knowledge that can be applied in many different situations, as well as the capacity to transfer that knowledge to solving difficulties in their personal and communal lives. Once the learner has mastered the capacity to solve problems, he or she will be able to eliminate errors and make the proper distinctions for practical work. When students move on to pursue their studies, problem solving becomes a required and vital skill. Enhancing Problem Solving Ability is a significant component of the learning content. The following definitions help to clarify the meaning and nature of problem solving:

According to Woodworth (1948), Problem solving behaviour happened in novel or challenging situations in which a solution is not attained by the habitual methods of applying perceptions and principles derived from past experience in very acquainted situations.

According to (Hooda &Devi, 2018), Problem solving is an individual phenomenon that requires the use of higher-order cognitive abilities, as well as constant and persistent struggle on both conscious and unconscious levels in order to be successful. Some people can manage a situation, while others cannot. Problem solving is the process of determining solutions to problems through an ordered cognitive process. This is a process in which creative and critical thinking is used to solve or reason out difficulties presented by students in groups or individually. It is a

mental process that provides effective problem solving strategies for resolving and overcoming problems that appear to be impeding the accomplishment of a solution.

Skinner (1958) also said that Problem solving is a method of overcoming difficulties that appear to interfere with the fulfilment of a goal. It is a process of making adjustment in spite of interferences.

Hence, all problems have two features in common which are: Goals and Barriers.

Goals: Problems include attempting to attain some aim or desirable condition of things, which can include attempting to avoid a circumstance or incident. Goals can be whatever they desire to achieve or wherever they want to go. If he is hungry, his goals is most likely to eat something.

Barriers: If there were no barriers in the way of achieving a goal, then there would be no problem. Problem solving involves overcoming the barriers or obstacles that prevent the immediate achievement of goals. Following examples: if he his feel hungry then his goal to eat. A barrier to this may be that he has no food available, so he is taking a trip to the supermarket and buy some food, removing the barrier and thus solving the problem. (2011-2021, n.d.)

In a nutshell, problem solving is a process that assists an individual in accomplishing his goals when there is no ready-made answer to the problem. It removes all sorts of hurdles in the way of finding the best potential solution to the problem and it can leads to achieve better results in academic field.

Significance of Problem Solving: Problem solving is the key to success and has been regarded as the most significant aspect of human behaviour. One of the major aims of education is to develop the ability to attain better performance. No two individuals are alike. There are individual differences in Problem Solving Ability. Some individuals can handle a situation, but others cannot. A large part of an individual's life is spent in a struggle to find an effective solution to his problems. A student having good Problem Solving Ability will be properly adjusted in the class as well as at home. A problem cannot be solved without thinking. The need for problem solving behaviour is to create the power of thinking which helps to find out the solution to the problem. The main objective of problem-solving is to go through the physical,

psychological, social, and environmental factors which hinder the progress of an individual to attain certain goals.

Problem Based Education is an approach that aims to have students gain the skills of learning with self-governance, independent studying, questioning, and problem solving. It is an approach that allows students to self-research and learn whenever they encounter similar situations throughout their lives. This method is based on real-life circumstances that are used to create problem situations and scenarios. Learners, under the direction and supervision of the teacher, learn to find, analyse, and solve problems, as well as to work together to study in groups and individually. The teacher is the most important person who can assist pupils in improving their Problem Solving Ability. This situation allows students to practice problem solving skills, which will help them become better problem solvers in the future. Teachers' understanding, beliefs, and methods for problem solving are critical in this situation. (Mandal, 2019) Using effective problem solving techniques will help children avoid conflicts in a school setting and in their day to day lives. It can also strengthen children beginning empathy skills. It can help children learn more positive attributions about other persons' intentions. Problem solving is essential for school readiness and academic success. Student's problem solving skills is more reliable and increases students learning quality. Therefore, it is evident that problem solving attitude is very important for all of the students in handling problems in life. (Moneva et al., 2020)

Steps in Problem-Solving: In order to solve a problem correctly, a set of steps must be followed. Many researchers refer to this as the problem-solving cycle, which also involves creating strategies and organizing data. These are the most essential steps which is required to be followed while solving the problems: (*Psychological Steps Involved in Problem Solving - Psychestudy*, 2017)

1. Identifying the Problem: It may seem clear, but diagnosing the problem is not always as straightforward as it seems. A problem can be misidentified, resulting in ineffective or even futile efforts to fix it. The problem should be clearly defined, and the solution should only be considered after the problem has been defined.

2. Defining the Problem: After the problem has been discovered, it is necessary to clearly characterise the problem so that it can be solved.

3. Forming a Strategy: The next step is to come up with a plan to solve the problem. The methodology adopted will depend on the scenario and the individual's preferences.

4. Organizing Information: Organizing the available information is another crucial step to the process. It needs to consider: What do they know about the problem? What do they not know about the problem? The accuracy of the solution to his or her problem will depend on the amount of information available. Proper organisation of the information will force them to revise their strategy and refine it for best results.

5. Allocating Resources: Time, money and other resources are not unlimited. Choosing how important it is to solve his or her problem will help them determine the resources they will use to find a solution. If the problem is important, they can allocate more resources to solving it. However, if the problem is not as important, it is not worth the time and money they might spend on it if not for proper planning. For instance**,** let's consider a different scenario where he or she is stuck, but it is a few thousand miles away. Now, they need to analyse the problem and the resources they can afford to expend to solve the particular problem. If the deal is not really in their favour, they could just try to solve it over the phone. However, more important deals might require them to fly to the location in order to solve the issue

6. Monitoring Progress: They need to document their progress as they are finding a solution. Do not rely on memory, no matter how good memory is. Effective problem-solvers have been known to monitor their progress regularly. And, if they are not making as much progress as they are supposed to, they will re-evaluate their approach or look for new strategies. For example- If everything is according to plan, he or she will be allocating more and more time to their studies until they are confident that they are improving. One way to make sure that they are on a right path to solving a problem is by keeping track of the progress.

7. Evaluating the Results: They need to evaluate the solution to find out if it is the best possible solution to the problem. The evaluation might be immediate or might take a while. For instance, the answer to a math problem can be checked then and there. However, the solution to their yearly tax issue might not be possible to evaluate right there.

1.2 PROBLEM SOLVING STRATEGIES

Algorithms: An algorithm is a step-by-step method that will always yield the correct solution. A mathematical formula is a good example of a problem-solving algorithm. This method is not practical for many circumstances because it can be so time-consuming. This approach is not practical for many conditions because it can be so time-consuming

Heuristics: A heuristic is a mental rule-of-thumb strategy that may or may not work in particular situations. Unlike algorithms, heuristics do not always guarantee a proper result. However, employing this problem-solving technique allows people to simplify complicated issues and limit the total number of viable answers to a more manageable range.

Trial-and-Error: A trial-and-error method to problem solving entails attempting a variety of ideas and eliminating those that do not work. This approach can be a good option if they have a very limited number of options available.

Insight: In certain situations, the answer to an issue may emerge as a sudden insight. This might happen when people discover that the situation is comparable to something they have dealt with in the past. However, the fundamental mental processes that lead to insight occur outside of consciousness.

So, students' behaviours are difficult to monitor and analyse in a classroom context, but educators may utilise the study's findings to change how they deliver information to students in the classroom and in more individualised settings It is important for educators to not only educate pupils with academic material, but also act as role models in the problem solving process for students. Teachers must assist students overcome emotional and cognitive barriers to acquire effective Problem Solving Ability in order to create better problem-solvers. For successful learning, teachers must first create a pleasant classroom environment and assist pupils overcome their concerns about solving problems. Students should be encouraged to reflect on the Problem Solving process itself by employing a variety of pedagogical and methodological techniques. They should also be given critical tools and practise in productive problem solving. As a result, pupils will become more adept problem solvers, capable of handling increasingly difficult issues with growing independence. Students will benefit from Problem Solving Ability since they will be able to apply

what they have learned to new situations. To improve their Problem Solving Ability, a variety of co-curricular activities may be conducted on a regular basis to develop values such as collaboration, tolerance, open-mindedness, and sharing of responsibility.

Problem Solving Ability is the cognitive capability of the problem solver to perform physical or mental operations based upon his knowledge so as to achieve the goal of solving a problem. This is measured as the score of the Problem Solving Ability with three components namely, comprehending the Problem, Clarifying the Problem and Finding Solution to the Problem (Manoj, 2006). Problem Solving Ability is the prediction of achievement in the school environment. The Ability of Problem Solving has a fundamental role in students' academic performance and their construction of the concepts (Adesoji, 2008).

Gupta et al. (2015) concluded that Problem Solving Ability of the students help them building strong cognitive ability, which should be in a better position to reap the benefits of high academic achievement, enrolled in reliable future career choice and job availability. Once the Problem Solving Ability is acquired by the student, the elimination of error and putting correct discrimination for the practical work is achieved. Problem Solving Ability brings out the individual differences among the students. Problem Solving Ability becomes a necessary and important skill, when the students go for their further studies.

1.3 ACADEMIC ACHIEVEMENT MOTIVATION

The term Achievement Motivation may be defined by independently considering the words Achievement and Motivation. Achievement refers to competence (a condition or quality of effectiveness, ability, sufficiency, or success). Motivation refers to the energization (instigation) and direction (aim) of behaviour. Thus, achievement motivation may be defined as the energization and direction of competence-relevant behaviour or why and how people strive toward competence (success) and away from incompetence (failure). (*Achievement Motivation - IResearchNet*, 2016).

Colman (2001) also defined Achievement Motivation as a social form of motivation involving a competitive desire to meet standards of excellence.

Achievement Motivation is the need for excellence and significant accomplishment, despite what rewards may be offered after the achievement has been met. (Hsieh, 2011)

Bigge and Hunt (1980) defined Achievement Motivation as the drive to work with diligence and vitality, to constantly steer toward targets, to obtain dominance in challenging and difficult tasks and create sense of achievement as a result. This definition consists of three elements: the stimulation of personal capabilities, constant efforts with drive and obtaining of sense of satisfaction. Academic Achievement Motivation has been widely characterised as an academic drive, learning attitude, and passion for Academic Achievement.

Academic drive involves measuring items such as work habits and scholastic expectations, and attitude toward learning involves student's opinion of classroom environment and self-efficacy in learning (Entwistle, 1968).

Achievements Motivation is a psychological concept and it is the readiness of an individual to fulfil a deliberate objective, which is one of the most essential acquired inclinations for social needs. Achievement Motivation is a desire for or interest in accomplishment in general or in a particular field of activity. It is a desire to do well in a specific domain, together with a tendency to assess one's own performance spontaneously. Achievement Motivation is a key factor of academic achievement because it energises and focuses behaviour toward achievement.

Academic Achievement Motivation is basically the tendency or inner desire or feeling of a person to accomplish something important and exclusive to attain a spirits of self-accomplishment and contentment. It is a driving force to improve or maintain one's talents in all actions where a high standard of excellence is upheld. Achievement is a responsibility-oriented activity that allows people' performance to be evaluated based on externally or internally set standards, which forces the individual to compete with others or with the standard. Achievement Motivation is the inner force that help a person to achieve certain task, and it is defined by desire, a high level of energy, the need for independence, and the satisfaction that comes from exceeding one's own expectations.

When it comes to modern time, educational success is seen as an important factor in personal and societal development. The whole educational system is centred on students' academic success in school. Children's attention is not vexed by learning

school subjects. Physiological, psychological, socio-cultural, and economic factors have an impact on a child's capacity to learn in school. Studies have indicated that general mental capacity is an important factor in predicting success. Apart from general mental capacity, additional predictors of schooling include personality qualities such as curiosity, Achievement-Motivation, and so on. Motivation is typically seen as a key component in academic success. Achievement is a task-oriented behaviour that allows a person's performance to be assessed against some internal or externally enforced standard that forces the individual to compete with others or achieve a certain degree of perfection. Achievement Motivation is a necessary element for success. It's a strong motivator characterised by ambition, vigour, and a strong desire for independence. Academic Achievement Motivation is a significant motivator of academic performance because it motivates and directs behaviour toward success. Motivation for Achievement is not a single structure, but rather a collection of them, including motivation, task values, objectives, and achievement accelerators.

Atkinson and Feather (1966) suggested that Achievement Motivation is a combination of two personality variables: tendency to approach success and tendency to avoid failure. The achievement motivation as the drive to work with diligence and vitality, to constantly steer toward targets, to obtain dominance in challenging and difficult tasks and create sense of achievement as a result. This definition consists of three elements: the stimulation of personal capabilities, constant efforts with drive and obtaining of sense of satisfaction.

Achievement Motivation can, therefore, be defined as the striving to increase or to keep as high as possible, one’s own capabilities in all activities in which a standard of excellence is thought to apply and where the execution of such activities can, therefore either succeed or fail. (Heckhausen, 1967).

Therefore, Academic Achievement motivation can be understood simply as the tendency to strive for success or the attainment of a desired goal. The importance of Achievement Motivation in the learning and achievement process has been given a great goal of attention in the recent researches. Motivation plays a dynamic role in the life and it refers to the behaviour of an individual who strives to accomplish something to do this best and to excel others performance. This includes competition with a particular standard of quality performance.

Importance of Academic Achievement Motivation

Academic Achievement Motivation is the basic requirement for success or the fulfilment of excellence. Achievement Motivation forms to be the basis for a good life. All students were influenced by a need to succeed. It causes them a want to be successful at what they attempt. Students with high motivation for achievement have the ability to persevere, achieve, and be competent in the academic realm, and as a result, students have a high self-concept as they are very mobile and have a constant desire to develop and grow in order to obtain high grades in various subjects, and they also have the ability to withstand pressure and its consistency. Erhuvwu and Adeyemi, (2019) discovered from the study that Achievement Motivation significantly predicts academic achievement of senior secondary school students. From the result, it is observed that Achievement Motivation proved to have a stronger relationship of students' academic achievement in mathematics. It was also seen that students' achievement motivation displayed significantly more perseverance and effort, achievement drive, as well as reported better social and motivational relationship with academic achievement in mathematics. The high school students of class X belonging to high academic achievement group were found to have higher Achievement Motivation in comparison to low academic achievement group students. (Singh, 2018, p.216).

The significance of Academic Motivation for Achievement can also be seen in the fact that it fosters a variety of characteristics in students, the most important of which are: the constant pursuit of excellence and mastery, the ability to threaten the goal, the ability to explore and adapt to the surrounding environment, the ability to assume responsibility, the ability to deal with oneself, and adjust the environment.

The components of students' achievement motivation

Mavis (2001) pointed out three components of Achievement Motivation:

1. **Cognitive motivation**: It refers to attempt to satisfy the student's needs to know, understand and be aware of what the curriculum contains, which leads him to perform the required tasks more efficiently.

2. **Self-direction:** It is the student's desire to excel and gain a prominent position among his fellow students, which enhances his sense of competence and self-respect.

3. **Belonging motive**: It refers to the students ’desire to obtain the satisfaction of their teachers, their parents and all those who mix with them in the family and school environment, and to achieve such gratification, as students use their success and achievements in school subjects as a tool to obtain recognition and appreciation from those people who live with them and interact with them continuously.

Therefore Individuals with high Academic Achievement Motivation are realistic by nature and take advantage of opportunities that are presented to them, and they excel at taking risks in a variety of situations, in contrast to those with low Academic Achievement Motivation, who tend to accept simple reality without any mention of ambition. Kaur (2013) stated that the students having high Achievement Motivation were better in academic achievement than the students having low achievement motivation.

So it is also critical for parents and educators to understand why encouraging and promoting Academic Achievement Motivation from a young age is so crucial. It is an individual's constant effort to attain achievement at a specific level of excellence in a competitive setting. At an early age, kids establish their self-concept, values, and ideas about their talents at school. The formation of early academic achievement drive has far-reaching ramifications for academic careers later in life. . A great deal of research has found that students with high achievement motivation are more expected to have improved levels of academic success and have lower dropout rates

The Academic Achievement Motivation of an individual or a group of individuals can be affected by a variety of variables. These factors could include uncertainty or fear of unknowns, lack of clarity of purpose, complexity of tasks in hand, dislike in performing an action or pursuing a curriculum due to perceptions or even based on an informed inference, mismatch in the skill set available versus the required skill set to perform a job or to pursue an academic curriculum, and lack of proper training to perform a job. There are psychological pressures that come from family conditions, peer group pressures, and unfavourable social influences etc.

In everyday life, it is widely acknowledged that Achievement Motivation plays an essential role in human learning. The term Motivation refers to the springs of activity, whether they are natural or learned. It literally means to cause or induce movement. It may also refer to the stimulation of a learner's desire to master a topic or

respond to a particular circumstance. Motivation is the driving force behind a person's desire to learn or do anything. Spinath et al., (2006) stated that Achievement Motivation is considered a prerequisite for success, not only in academic, but also in sports- and job related situations. In academic settings, the interest in Motivation is partly inspired by the notion that Students' motivation, operationalized, such as their competency beliefs and value beliefs, could be more malleable than their cognitive ability, and as such could prove to be a potential lead for the educational system for improving learning and achievement processes in students. Learning's effectiveness is influenced by the strength of the demands as well as the satisfaction that learning provides. The strength of the Motivation can be considered to influence the speed of learning. The learning process revolves around motivation. The learner must be motivated in such a way that his attention is oriented toward a specific goal that will lead him far beyond the experiences that are used as motivators for future learning.

Motivation in Learning

1. Motivation encourages students to think, concentrate, and learn more efficiently. Bakar (2014) stated that motivation increases the performance of learning. Learning is an active process demanding a participative role. It influences the speed of learning, the retention of information, and the desire to learn.

2. The motivation of learning activities allows the learner to focus on what he or she is doing and thereby gain satisfaction. Continuous motivation is required to assist learners to focus on the lessons to be learnt. When a person feels motivated, he or she will express some level of satisfaction. This promotes the learner's self-development.

3. Motivation guides learners' behaviour toward certain goals. It establishes the precise goals for which pupils strive, and so influences the decisions they make. For example, whether to enrol in an art class or a science class, whether to attend a school football game during the week or complete an assignment due the next day.

4. Motivation enhances the beginning and perseverance of learning activities. It extends students' time on task and has a significant influence on student achievement and performance. Motivation improves cognitive processing. It has an influence on what and how information is processed since motivated students are more inclined to listen and strive to comprehend the subject rather than just going through the motions of learning in a shallow manner.

5. Motivation enhances the amount of effort a learner puts into achieving a goal. Unmotivated learners struggle to learn because they do not see the point in learning. As a result, motivation gives the effort and energy that a student needs to complete a task successfully.

Determinants of Academic Achievement Motivation:

Every person has some level of Academic Achievement Motivation that drives them to achieve more and more in life. Different people have varying levels of Academic Achievement Motivation. Individuals who establish high expectations for themselves, work extremely hard to achieve them, and respond with great emotion to their success or failure in meeting those standards could be found in any society. Whereas another group of people has very low standards, makes little or no effort, is unconcerned about their successes, and is indifferent. When someone is achievement, they start with a simple or intermediate task and work their way up to more challenging ones as they gain experience.

Achievement Motivation begins from early childhood. Child care techniques, family sociocultural and economic conditions, parental aspirations for their children, the conditions in which a specific group lives, and societal culture always have an impact on a person's motivation to succeed. The degree to which one develops an achievement motive is also influenced by one's social origins and culture.

One of the main essential key to success of the student is Motivation. It is made up of various aspects that keep them interested in a particular subject, job, role, or goal achievement. Extrinsic and intrinsic elements, as well as both, may be present. Extrinsic motivation is distinguished by its external reward for meeting expectations. Extrinsic motivation has the advantage of being successful even when students are not intrinsically driven; nevertheless, excessive use of reward can weaken intrinsic motivation and make students reliant on instructor approval. Achievement Motivation refers to the expectation of achieving fulfilment by mastery of difficult and challenging tasks, and it specifically refers to the desire of excellence in education. As a result, goal attainment and Achievement Motivation are linked. The urge for success is also known as Academic Achievement Motivation. When a person expects his work to be assessed in reference to some standard of excellence, it is a significant driver of desire, effort, and perseverance. Achievement Goal setting and achievement are related with

motivation. Achievement Motivated people are always looking for ways to improve and do things better.

Achievement Motivation is one of the crucial psychological factors determining future academic and occupational success. Achievement Motivation may be described as the desire to improve or maintain one's own skills in any activities where a standard of excellence is assumed to apply and where the execution of such activities might therefore succeed or fail.

1.4 RATIONALE OF THE STUDY

Problem Solving Ability is one of the quintessential skills and the keys to success in academic and real life. Dealing with challenges and problems is a huge effort; it needs skills and a systematic plan of action. Hence, Problem Solving Ability plays a major role in the confrontation of issues and challenges. It is necessary to develop the skills of problem solving among students.

Many students nowadays do not recognise the importance of problem solving skills and are far more focused on reproducing what they have learned. They do not know how to deal with a major challenge related to their studies and cannot figure out how to confront those issues and challenges when it arises. If this is the case, pupils must be taught the value of problem solving and their ability to solve problem is necessary to be enhanced**.**

In Mizoram, many pupils have abandoned their studies and have deserted the institutions. According to research conducted by Sridevi & Nagpal (2020) on “Trend in School Dropout Rate in India and the secondary school dropout rate in Mizoram” the secondary school dropout rate in Mizoram was 30.67 percent, which was higher than the national average. One of the causes of this dropout was a lack of ability to deal with challenges that arose in their everyday lives and in their learning. A small difficulty might become a major one if they do not have strong Problem Solving Ability. As a result, it is important to assess students' problem solving skills on a regular basis and to give them opportunities to improve their Problem Solving Ability.

Motivation is one of the essential instruments to push students to move forward in their studies. If students are motivated and an interest is inculcated in their studies, the understanding, thinking power, and curiosity of the students would be enlightened

and it helps them discover a new idea, strategy, or method for solving any challenges and difficulties before them. Thus, Problem Solving Ability and Motivation can go hand in hand. If one has the ability to solve problems, but he or she does not have any motivation to do so, the skills that he or she possesses would be unworkable. The relationship between Problem Solving Ability and Academic Achievement Motivation are crucial for building up students thought and performances. Even Stanly (2014) found significant relationship between Achievement Motivation and Problem Solving Ability. Yunus et al. (2021) conducted a study on "The relationship between Achievement Motivation, metacognitive, attitudes and Problem Solving Abilities in students" and also found that Problem Solving Ability had a positive relationship with Achievement Motivation.

Even in this study, the researcher intends to look into Secondary School Students' Problem Solving Ability and Academic Achievement Motivation of Lai Autonomous District Council and Chakma Autonomous District Council. According to the 2011 Census, the literacy percentage of Lawngtlai district was just 66.41 percent, the lowest among the eight districts of Mizoram (only eight districts existed at this time). This literacy rate plainly demonstrates that the district is trailing behind in education when compared to neighbouring districts, where the Lai and Chakma tribes make up majority of the population. These people are minorities in terms of language, customs, and tradition compared to the larger groups. Therefore, the Indian Government had given Autonomous District Councils for minorities such as the Lai and Chakma tribes, which were known as the Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC), respectively. (Dougel, 2010).

The inhabitants of the western part of LADC and CADC are generally assumed to be economically and socially backward. The major difficulties and obstacles remain communication, transportation, and medical care. Most parents come from a poor financial and educational background, which is why many children cannot afford a proper education. In terms of quality, infrastructure, access, problem-solving, motivation, and technology, the secondary school students of LADC and CADC jurisdiction lag behind compared to other districts in Mizoram. Simultaneously, many students in the above-mentioned are expected to have hidden abilities, talents, and inborn characteristics. As a result, a comprehensive investigation is required to uncover the truth about pupils in this region. As previously said, one of the most

important factors used to evaluate a student's quality how much capability or ability they have to solve problems. Moreover, having a stronger problem-solving skills allows students to confront obstacles in real life. As a result, it is critical to understand students' problem-solving abilities. At the same time, motivation is an integral element of learning; it affects students' interest, attention, and curiosity. The pupils' motivation level determines their drive for achievement. It also has a significant influence on the completion of the work at hand. Therefore, motivation strengthens problem-solving abilities, thinking skills and also enhancing academic performance of the students. Spinath et al., (2006) stated that Achievement Motivation is considered a prerequisite for success, not only in academic, but also in sports- and job related situations. In academic settings, the interest in motivation is partly inspired by the notion that Students' motivation, operationalized, such as as their competency beliefs and value beliefs, could be more malleable than their cognitive ability, and as such could prove to be a potential lead for the educational system for improving learning and achievement processes in students.

Therefore, the researcher have conducted the most successful and astonishing research regarding the Problem Solving Ability and Academic Achievement Motivation of the Secondary School Students of LADC and CADC in Mizoram. In terms of reviews of the related literature, research on Problem Solving Ability and Achievement Motivation has never been done in this area previously, with the majority of studies taking place in the northern part of Mizoram. Therefore the present study had been taken up in southern Mizoram, exclusively in LADC and CADC area.

Thus keeping in view and describing the importance of the present problem, the researcher therefore carried out a study on Problem Solving Ability and Academic Achievement Motivation of the Secondary School students of Lai Autonomous and Chakma Autonomous District Councils and it explicitly highlighted the Problem Solving Skills and their Academic Achievement Motivation of the Secondary School students of this region. This study was expected to have a significant influence on teachers and educational officials in LADC and CADC. Furthermore, it would be beneficial for the Department of School Education to have a better understanding of the situation in these Autonomous Regions and to take steps to improve the Problem Solving Ability and Academic Achievement Motivation of this area the students.

1.5 STATEMENT OF THE PROBLEM

Problem Solving and Achievement Motivation are deeply intertwined variables (Simon, 1967). The present study focused on the levels of Problem Solving Ability and Academic Achievement Motivation of Secondary Students. The main purpose of the study is to compare the Problem Solving Abilities of Secondary School Students from LADC and CADC. It also focuses on comparing their Academic Achievement Motivation. On this ground, the present study is entitled *"A Comparative Study on Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC) in Mizoram"*

1.6 OPERATIONAL DEFINITIONS OF THE TERMS USED

The operational definitions of the words used in this research were listed below.

Problem Solving Ability: For the present study Problem solving ability refers to the ability to solve problems in an effective and timely manner without any impediments. It involves being able to identify and define the problem, generating alternative solutions, evaluating and selecting the best alternative, and implementing the selected solution. (Manoj, 2006) said that Problem Solving Ability is the cognitive capability of the problem solver to perform physical or mental operations based upon his knowledge so as to achieve the goal of solving a problem. This is measured as the score of the Problem Solving Ability with three components namely, comprehending the Problem, Clarifying the Problem and Finding Solution to the Problem

Academic Achievement Motivation: Academic Achievement Motivation for the present study is a disposition to strive for success in competition with others with some standard of excellence, set by the students or individual. Achievement motivation can, therefore, be defined as the striving to increase or to keep as high as possible, one's own capabilities in all activities in which a standard of excellence is thought to apply and where the execution of such activities can, therefore either succeed or fail. Colman (2001) has defined Achievement Motivation as a social form of motivation involving a competitive desire to meet standards of excellence.

Secondary school: Secondary school here means all Secondary Schools in LADC and CADC area offering class IX and Class X courses.

Students: Students here means all class IX and X Secondary school students in LADC and CADC area.

Lai Autonomous District Council: Lai Autonomous District Council in this study refers to one of the three district councils in Mizoram. It is also called as LADC. It was constituted on 29th April 1972 under the sixth scheduled of the Indian Constitution. It is an autonomous council for Lai people. It has the power to make law as provided under sixth schedule of the Indian constitutions. The LADC has its headquarters at Lawngtlai, which is the capital of Lawngtlai District.

Chakma Autonomous District Council: Chakma Autonomous District Council in this study refers to an Autonomous Council for Chakma people living in the South-west part of Mizoram. It was constituted on 29th April 1972 under the sixth scheduled of the Indian Constitution. It covers Tuichawng Sub-Division of Lawngtlai District and its headquarters is at Kamalanagar, Mizoram. It has the power to make law as provided under sixth schedule of the Indian constitutions.

1.7 RESEARCH QUESTIONS

1. What are Problem Solving Ability of LADC and CADC Secondary School Students
2. Is there any difference between Problem Solving Ability of LADC and CADC Secondary School Students?
3. Is there any difference between Problem Solving Ability of LADC and CADC Secondary School Students In Relation To Gender?
4. What are the Academic Achievement Motivation of LADC and CADC Secondary School Students?
5. Is there any difference between Academic Achievement Motivation of LADC and CADC Secondary School Students?
6. Is there any difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender?
7. What is the relationship between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students?
8. What is the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students?

1.8 OBJECTIVES

1. To study Problem Solving Ability of LADC and CADC Secondary School Students.

2. To compare Problem Solving Ability of LADC and CADC Secondary School Students.

3. To compare Problem Solving Ability of LADC and CADC Secondary School Students In Relation To Gender.

4. To examine Academic Achievement Motivation of LADC and CADC Secondary School Students.

5. To compare Academic Achievement Motivation of LADC and CADC Secondary School Students.

6. To compare Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

7. To find out the relationship between Problem Solving Ability and Academic Achievement Motivation of

a) LADC Secondary School Students.

b) CADC Secondary School Students.

1.9 NULL HYPOTHESES

The following Null Hypotheses were listed down below:

1. There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students.

2. There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender.

3. There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students.

4. There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

CHAPTER-II

REVIEW OF RELATED LITERATURE

A literature review is one of the sections of a report. It provides detailed information on the study topic and the numerous studies that have been done in the field over the years. The researcher gathers these resources from a variety of sources, including journals, books, and papers. The review of such material could be a factual presentation of the data or a synthesis of a huge amount of data organized by subject for the goal of understanding. It can simply be a summary of the sources, but it typically follows a pattern and includes summary and synthesis. .

A literature review surveys books, scholarly articles, and any other sources relevant to a particular issue, area of research, or theory, and by so doing, provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated. Literature reviews are designed to provide an overview of sources you have explored while researching a particular topic and to demonstrate to your readers how your research fits within a larger field of study (Fink, 2013). In summary, all of the information has been synthesized and present in the form of a capsule. It organizes and synthesizes all of the data according to its relevance and applicability to the study subject

As a result, examining related literature or materials aids the researcher in gathering useful facts and ideas for his own research. It helps the reader better absorb and comprehend the study's notions by giving him a bird's eye perspective of the quality of the readings and the work that the researcher has done in support of his research. It also demonstrates the research's uniqueness and significance.

As a result, a literature review can assist in understanding the progression and growth of knowledge. As prior research on a subject is reviewed, it becomes easier to discover areas that have yet to be explored. These can be used to generate ideas for future research initiatives, as well as a specific emphasis or line of thought for the present research problem. The investigator has divided the work under the following heads:

2.1 Studies conducted Outside India

2.2 Studies conducted inside India

2.1 STUDIES CONDUCTED OUTSIDE INDIA

Problem Solving Ability:

Lin et al (2002) conducted a study on "Using the history of science to promote students' problem-solving ability". The purpose of this study was to investigate the efficacy of promoting students' problem-solving ability through the history of science teaching. Two classes of 8th graders (n = 74) participated in this study. The experimental group was taught with the historical-rich supplementary materials, which include descriptions of previous scientists' experiments, debates, and discussions of their ideas. The control group was taught as usual, using a regular physical science textbook. After one year of teaching, with the statistical procedure of the analysis of covariance, it was found that the experimental group students outperformed their counterparts in the chemistry conceptual problem-solving ability, the initial results revealing that the students benefited from the introduction of the development of scientific concepts.

Salami and Aremu (2006) studied "Relationship between problem-solving ability and study behaviour among school-going adolescents in south western Nigeria" and revealed that the results of the regression analysis in the present study revealed that problem-solving ability was significantly predictive of study behaviour of the secondary school students the observed F-ratio was significant at the .05 level.

Terzioglu (2006) conducted a study to "Determine the perceived problem-solving ability and values of student nurses and midwives". Problem-solving is defined as a response given in an important and difficult situation, where critical thinking is required for a solution. Problem-solving skills determine a person's ability to relate productively. This research was to determine the perceived problem-solving ability and values of student nurses and midwives. It was planned as a descriptive research project in the University of Kocaeli's, School of Health (Nursing and Midwifery School) in order to find out how students perceive them owns problem-solving skills, and to examine the relationship between problem-solving skills and personal values. The data were collected from 218 students by using a questionnaire to determine the characteristics of the students and the "problem-solving Inventory" developed by Heppner and Petersen. Whose reliability and validity for our country had been tested by Şahin et al. (1993). Scores of the subjects were evaluated and analysed. Students who describe themselves in accordance with the values of truth (14.2%) and human dignity (19.3%) were also found to evaluate themselves successful in problem-

solving. Students who expressed that they act systematically (44.5%) and decisively (74.3%) in problem-solving were also found to evaluate themselves as successful (47.8%) in problem-solving. The results of the study have shown that education in professional ethics should provide the development of professional values (especially of truth and human dignity). Concerning value-laden issues education should help students to reach the desired levels of problem-solving skills by allowing them to acquire abilities such as self-awareness and being inquisitive.

Arıkan and ÜNal (2015) conducted a study on "Investigation of Problem-Solving and Problem-Posing Abilities of Seventh-Grade Students" and they have founded that the relationship between multiple problem-solving skills and giftedness was investigated, and a strong correlation between problem solving in multiple ways and problem-posing abilities was observed in both the gifted and non-gifted students. Moreover, problem solving in multiple ways was observed in both the gifted and non-gifted students. Metaphorical images were based on the participants' experiences with problem posing, and they associated their positive or negative metaphors depending on their problem-posing performance.

Kim et al. (2015) conducted a study on "An Analysis on secondary school students' problem-solving ability and problem-solving process through algebraic reasoning" and found that the students with high problem-solving abilities tended to utilize conceptual strategies as well as procedural strategies, whereas those with low problem-solving abilities were keener on utilizing procedural strategies. All the subject groups mentioned above frequently utilized equations in solving the questions, and when that utilization failed they were left with the unanswered questions. When solving algebraic reasoning questions, students need to be guided to utilize both strategies based on the questions.

Simamora et al (2019) conducted a study to examine "Improving students' mathematical problem solving ability and self-efficacy through guided discovery learning in local culture context" and concluded that problem solving ability and Mathematical self-efficacy of students have increased after learning using the GDL-BTCC materials. This research shows that the integration of local culture in mathematics learning is an important matter to be considered in an effort to maximize students' mathematics learning achievements.

Jimenez (2020) conducted a study on "Problem Solving Ability of First Year High School Students in Mathematics as Affected by Cognitive Development Levels

and Teaching Strategies" and found that all groups have no significant difference in performance which may imply that no teaching method is better than the other. Lastly, cognitive domains of the students in knowledge, comprehension, application and evaluation were found to be significant determinants of students' problem solving ability. The study results can be a springboard to improve problem solving abilities of high school students. Cognitive development could be considered as a basis for grouping high school students in all curriculum levels and can be evaluated by future researchers for effectiveness.

Mutange (2020) conducted a study on "Influence of Problem Solving Approach on Secondary School Students' Mathematics Achievement by School Type in Vihiga County, Kenya" found that increased students' learning occurred among students in the three types of schools and more significantly in the County schools in comparison to the National and Sub-county schools when Problem Solving Approach was used. The study concluded that Problem Solving Approach is a more effective teaching approach to the students in the County schools in comparison to those in the National and Sub-county schools.

Wahyuni and Dahlan (2020) conducted a study on "Senior high school students' problem-solving ability in completing sine rule problems" and discovered that the results showed that least students had been written the solution, but the methods that they used could not be understood (problem number1) and indicates that they were unskilled in understanding and planning problem-solving. Then there were only four students who were able to solve the problem solving correctly (problem number 2).Thus students had been able to implement the four steps of Polya's problem-solving strategy properly.

Sabir (2021) conducted a study on "The ability of problem solving among high school students (A comparative study between the gifted and the ordinary)" and found that the students' level - in general - for problem solving is below average. There are statistical significant differences in the total for the research sample (gifted and ordinary) in their ability to solve problems according to a variable. There are no statistical significant differences in the scores of both groups of the research sample (gifted and ordinary) in their ability to solve problems according to the gender variable. There are no statistical significant differences in the scores of both groups of the research sample (gifted and ordinary) in their ability to solve problems according to the variable of the educational stage.

Academic Achievement Motivation:

Muola (2010) conducted a study on " A Study of the Relationship between Academic Achievement Motivation and Home Environment among Standard Eight Pupils" and he found that a significant (p less than 0.05) positive relationship was found between six of the home environmental factors, that is fathers' occupation (r = 0.22), mothers' occupation (r = 0.26), fathers' education (r = 0.15), mothers' education (r = 0.14), family size (r = 0.26) and learning facilities at home (r = 0.23) and academic achievement motivation. Parental encouragement was the only factor that was not significantly (r = 0.03) related to academic achievement motivation. Although these correlations are low, they showed that pupils' motivation to do well in academic work is to some extend dependent on the nature of their home environment. It was recommended that parents need to be aware of the importance of their role in their children's academic achievement motivation so that they can provide the necessary facilities at home

Aydın and Coşkun (2011) conducted a study on "Secondary School Students' "Achievement Motivation" towards Geography Lessons" and found that the arithmetic mean of the views of students about the scale of achievement motivation has been determined to be 3.74. The views of students about the scale of geography lesson achievement motivation has shown significant difference according to "class level", but did not show any significant difference according to "gender", "mother's education level", "father's education level" and "family income status". Based on the findings of the study, suggestions for increasing the achievement motivations of the students towards geography curriculum have been developed.

Awan et al. (2011) conducted a study on "A Study of Relationship between Achievement Motivation, Academic Self Concept and Achievement in English and Mathematics at Secondary Level" and they found that the results revealed that achievement motivation and self-concept are significantly related to academic achievement. Significant gender differences were discovered which were in favour of girls. It was suggested that teachers must use motivational strategies to involve students in academic activities for improving their grades.

Odeh AlZboon (2013) conducted a study on "Social Adaptation and Its Relationship to Achievement Motivation among High School Students in Jordan" and found that many results, including: that the level of social adaptation and achievement motivation among secondary school students in the province of Jerash were high, and

also showed the presence of a statistically significant positive relationship between the social adaptation and the achievement motivation among the secondary school students in the province of Jerash too; therefore and in light of these results, the researcher recommends conducting further studies exploring the social adaptation relationship to other variables.

Soltanzadeh et al. (2013) conducted a study on "The effect of active learning on academic achievement motivation in high schools students" and they found that the differences between two groups were significant at the level of P>0.05 and active learning group obtained higher scores than traditional group in achievement motivation. Based on our results, the use of active learning method in classroom is vital to have a positive impact on the quality of the students learning process and achievement motivation.

Ukoro and Udoh (2014) conducted a study on "Academic achievement motivation and attitude of senior secondary school students towards examination malpractice in uyo metropolis, Akwa ibom state, Nigeria" and found that no significant difference between the academic achievement motivation of male and that of female senior secondary school students in Uyo metropolis. This implies that both male and female students in senior secondary schools in the study area are on a level playing ground in terms of their academic achievement motivation. Neither are males significantly more motivated than females nor are females significantly more motivated than males.

Emmanuel et al. (2014) studied on "Achievement motivation, academic self-concept and academic achievement among high school students" and found that the level of motivation of the high school students. Out of 120 students, 12 (10%) had low motivation and 108 (90%) had high motivation. These findings show that majority of the students were highly motivated. Out of a total of 78 males, 7 (9.0%) had low motivation and 71 (91.0%) were highly motivated. Out of a total of 42 females, 5 (11.9%) had low motivation and 37 (88.1%) were highly motivated. The results showed that, 71 (91%) male students were highly motivated as compared to 5 (11.9%) female students who had low motivation. This result shows that male students were highly motivated.

Obiero (2018) conducted study on "The Relationship between Achievement Motivation and Mathematic Performance Amongst Female Learners and in Selected Urban Girls Secondary Schools in Kenya" he found a positive but weak and none

significant relationship between Achievement Motivation and Mathematics performance in the area of study.

Mauki et al. (2018) conducted a study on "Effects of Inter-Parental Conflict on Academic Achievement Motivation of form Three Students in Ruiru Sub-County Kenya and Data collected was analysed using both descriptive and inferential statistics. The findings disclosed that there was a significant relationship between inter-parental conflict and students' academic achievement motivation in qualitative data.

Abu-Alkeshek (2021) conducted a study on "Achievement Motivation among Public School Students and its Impact on Academic Achievement in Light of some Variables" and found that Achievement Motivation among students, in general, is average, while the study showed that there is a continuous correlation between achievement motivation and achievement, and the study also found that there are differences in the level of achievement motivation attributable to both the place of residence and the extent of the availability of the Internet among students, and the study continued the need to search for reasons The potential behind the low achievement motivation of students.

Problem Solving Ability and Academic Achievement Motivation:

Yunus et al. (2021) conducted a study on "The relationship between achievement motivation, metacognitive, attitudes and problem-solving abilities in students" and found that problem solving ability had a positive relationship with achievement motivation.

2.2 STUDIES CONDUCTED INSIDE INDIA

Problem Solving Ability:

Ganandevan (2006) conducted a study on "A study of problem-solving ability of higher secondary students" found out that the problem solving ability of higher secondary students is low. The male and female students and the students residing at rural and urban area differ significantly in their problem solving ability

Nataraj and Manjula (2012) conducted a study on "A study of problem solving ability among the matriculation school students" and found the problem solving ability of matriculation students is low. The male and female students and the students residing at rural and urban area differ significantly in their problem solving ability.

Kishor (2013) carried a study on "Academic achievement of high school students having different levels of problem solving ability" and concluded that there is a significant difference in the academic achievement of High school students and female students are having different levels of problem solving ability.

Kumari and Pujar (2014) in their study on "Problem solving and creative thinking ability of high school children" and they concluded that most of the children had medium level of general and mathematical problem solving ability whereas in case of creative thinking, majority of the children had high level of creative thinking ability. Gender has significant influence on problem solving ability however girls performed better in general problem solving ability than boys.

Bhat (2014) conducted a study on "Effect of problem solving ability on the achievement in mathematics of high school students" and the findings of the study revealed that 79% variance contributed by the predicted variable (problem solving ability) to the criterion variable (achievement in mathematics) among high school students. The study also depicted that 78.3% in case of (boys) and 78.2% in case (girls) variance contributed by the predicted variable to the criterion variable.

Mahalakshmi and Pugalenthy (2015) conducted a study on "Problem solving ability and academic achievement in science of secondary school students in Coimbatore District" found that study that there is significant relationship between problem solving ability and academic achievement in science of Secondary school students based on Gender, Locality, and Medium of instruction, Type of Family and Parents educational qualification. There is significant difference between secondary school students towards problem solving ability with respect to their Gender.

Agnihotri (2015) did a research on "Problem solving ability among senior secondary school students of Himachal Pradesh" and found in this study that there is no significant difference between two groups of S.S. School Students Boys and Girls of Science stream on scores of problem solving ability. There is no significant difference between two groups of S.S. School Students Boys and Girls of Commerce stream on scores of problem solving ability and also found that a significant difference between two groups of S.S. School Students Boys and Girls of Arts stream on scores of problem solving ability.

Senthamarai et al (2016) studied on "A study on problem solving ability in mathematics of IX standard students in Dindigul district" and found that the level of problem solving ability in mathematics of IX standard students is average. There is a

significant difference in problem solving ability of IX standard students with respect to gender. There is a significant difference in problem solving ability of IX standard students with respect to locality of students.

Chadha and Sidhu (2016) conducted a study on "Problem solving ability in relation to academic achievement of IX grade students" and concluded that No significant difference is found between mean scores of problem solving ability of IX grade male and female students. This indicates that problem solving ability of IX grade students does not differ on the basis of their gender. No significant difference is found between mean scores of problem solving ability of IX grade urban area and rural area students. This indicates that problem solving ability of IX grade students does not differ on the basis of their locale. No significant difference is found between mean scores of problem solving ability of IX grade PSEB and CBSE students. This indicates that problem solving ability of IX grade students does not differ on the basis of nature of school.

Sutha and Vanitha (2017) carried out a study on "Problem solving ability and achievement in physics of higher secondary students in Coimbatore District" and found that Majority of the problem solving ability is Low and Majority of the level of achievement in physics is 'Moderate' only. There is no significant mean score difference towards problem solving ability with respect to gender ,medium of institution, location of the school, type of school, educational qualification of father, educational qualification of mother, occupation of father, occupation of mother among higher secondary students.

Singaravelu (2017) conducted a study on "Problem solving ability of higher secondary chemistry students" and found that the entire samples of the higher secondary chemistry students have low level of problem solving ability. There is a significant difference in problem solving ability between male and female higher secondary chemistry students. Moreover male higher secondary chemistry students are found to be better than the female higher secondary students in respect of their problem solving ability.

Kanmani and Nagarathinam (2017) investigated on "Problem solving ability and academic achievement of higher secondary students" and found 65.5 percentage of higher secondary students had an average level of problem solving ability. Boys and girls higher secondary students do not differ significantly in problem solving ability

and Fathers' and mothers' educational qualification of higher secondary students did not associate significantly in problem solving ability.

Hooda and Devi (2018) conducted a study on "Effect of problem solving ability on mathematics achievement among secondary school students: an empirical study" found that there exist significant differences between the mathematics achievement of secondary school students on the basis of problem solving abilities. Thus, efforts should be made to help them to improve the problem solving ability which will help them in improving the mathematics achievement of the secondary school students. It was found that female secondary school students are having low mathematics achievement than their counterparts.

Singh and Veer (2019) studied "A comparison of problem solving ability of male and female senior secondary scheduled caste school students belonging to Kullu and Mandi districts of Himachal Pradesh" and found that groups of boys and girls did not differ significantly on their problem solving ability. It can be interpreted that the gender did not affect the problem loving ability of senior secondary scheduled caste school students and also revealed that the senior secondary scheduled caste school students of Kullu and Mandi districts did not differ significantly on their problem solving ability. It means that the district they belong to did not affect the problem solving ability of senior secondary scheduled caste school students.

Dawngliani et al (2019) conducted a study on "A study on problem solving ability of government secondary school students in Aizawl city with reference to gender" and found that Average score on problem solving ability test of government secondary school students in Aizawl is 14.38 which is lie on the High-level ability Meanwhile Most of the students were under the level of very high ability of problem-solving ability. 63 out of 90 number of students, that is 70% lie on above average. Therefore, students of secondary school in Aizawl City were good in problem-solving ability. In respect to gender, there is no difference in the level of problem-solving ability between male and female students of government secondary schools of Aizawl City.

Ramzan (2020) conducted a study on "A comparative study of problem solving ability of high school students of CBSE and state board schools of Aurangabad city" and found a significant difference between problem solving ability of male students of VIII standard of CBSE and State Board Schools and also found that there

is significant difference in the problem solving ability of the students of VIII standard of CBSE and State Board Schools of Aurangabad city.

Kumar (2020) studied on "A study of problem solving ability and creativity among the higher secondary students". The results of the study indicate that the level of problem-solving ability among the higher secondary students is high. The results of the study indicate that the level of creativity among the higher secondary students is moderate. There is no correlation between creativity and problem-solving ability among the higher secondary students, there is no significant difference between boys and girls concerning their problem-solving ability, and there is no significant difference between higher secondary boys and girls in their creativity.

Dawngliani et al (2020) studied on "A study on problem-solving ability among students of government higher secondary school of Aizawl city in relation to their academic achievement" and the study reveal that the level of problem-solving ability is high among Government secondary school students in Aizawl city. Gender wise analysis of the results reveals that there is no significant difference between male and female students in problem-solving ability.

Ahuja (2020) conducted study on "A study of problem-solving abilities and scientific attitude among secondary school students" and his study revealed and it was found out that girl students had significantly higher problem-solving abilities and better scientific attitude than boy students. Problem-solving abilities & scientific attitude had significantly positive correlation with each other. The study also had educational implications for different stakeholders.

Prema and Sathiskumar (2021) conducted a study on "Problem solving ability and academic achievement on mathematics among IX standard students" and found that the government school students have low level of problem-solving ability. There is no significant difference between boy's students and girls students in their problem solving ability.

Academic Achievement Motivation:

Kaur (2013) conducted a study on "Academic achievement in relation to achievement motivation of high school students" and found that no significant difference between boys and girls exists on achievement motivation. This result implied that boys and girls student have almost equally level of an achievement motivation.

Veena and Shastri (2013) conducted a study on "Achievement motivation among students" and found that the findings of the present study indicate that pure science and applied science course students differ significantly on achievement motivation. Boys and girls differed significantly on achievement motivation and girls had a better achievement motivation. There is no significant difference between high and low academic performers in achievement motivation.

Lawrence and Vimal (2013) conducted a study on "Self-concept and achievement motivation of high school students" found that the girls (M=21.01) are better than the boys (M=19.46) in their achievement motivation. There is significant difference between high school boys and girls in their achievement motivation. This is due to the fact that females are hardworking, interested in studies, having less distraction due to the technological exposure than the males. So, they have more achievement motivation.

Chetri (2014) conducted a study on "Achievement motivation of adolescents and its relationship with academic achievement" it was found that no significant difference in achievement motivation with regard to gender and locale variation but significant differences in relation to management variation. Another finding of the study was the significant difference in the academic achievement of the students with regard to locale and management variation. The relationship between achievement motivation and academic achievement also yielded a significant relationship at 0.05 level and 0.01 level.

Vijayakumari and Rekha (2014) studied on "Achievement motivation among secondary school students" revealed that the level of achievement motivation among secondary school students in Kerala is not at all satisfactory; locale and type of management interact together to influence achievement motivation and the three-way interaction of gender, local and type of management on achievement motivation is significant.

Kumar and Yadav (2015) studied "A comparative study of academic achievement motivation of senior secondary students" found that Girls students had more academic achievement motivation than boys at senior secondary level. It was also found that Private school students had more academic achievement motivation than government school students at senior secondary level.

Pukhan (2015) studied "Academic achievement motivation of students studying in the secondary schools of the Dibrugarh district" and found that there is significant difference between male and female students studying in the secondary schools of Dibrugarh district as far as their academic motivation is concerned. The study also revealed that there is significant difference between male students studying in the private and govt. secondary schools of Dibrugarh district as far their academic motivation is concerned. In the same way female students who are studying in the private and govt. secondary schools are also significantly different in this respect.

Ramandeep (2015) studied "Achievement motivation among secondary school students in relation to parental encouragement" and found that the girl students differed significantly from boy students with respect to their achievement motivation. Higher mean scores of girl students indicate that girl students have better achievement motivation then boys students.

Pushparaj and Dhanasakaran (2016) studied "A study of personality, and achievement motivation of the students at standard IXth level" and found that there is no significant difference between the boys and girls students on their level of achievement motivation.

Mishra (2017) conducted a study on "Achievement motivation of secondary school students in Murshidabad district of West Bengal" The study was confined to 200 students studying in class X of different schools of Murshidabad district by using stratified random sampling techniques from government schools within the age range of 16-17 years, from urban and rural areas. The finding of the study revealed that 16% boys and 15% girls irrespective of their locality were in high category whereas 9% boys and 8 % girls were in low category. Similarly, among total urban and total rural students 18% and 13% were under high category achievement motivation respectively and 7% urban students and 10% rural students were under low category. No significant difference was found between in the achievement motivation of secondary school boys and girls.

Pawar (2017) studied on "A study of academic achievement motivation among secondary school students" and found that Male and female secondary school students were found to have same level of academic achievement motivation and also found that general caste students were found to have higher level of academic achievement motivation and other castes students were found to have lower level of academic achievement motivation.

Bana et al (2019) conducted a study on "A Comparative Study of Achievement Motivation of Secondary School Students of Sirsa District" and found that Achievement Motivation of Female of Government Secondary School are better than Male of Government secondary school students of Sirsa District of Haryana, It is also evident from result that the Achievement Motivation of Private secondary school students are better than Government secondary school students of Sirsa District of Haryana.

Mahato & Barman (2019) conducted a study on "Academic Achievement Motivation and Academic Performance of SC, ST Community Students in the District of Purulia" and found that SC community students have moderate level of Academic Achievement Motivation. It is also found that ST community students have moderate level of Academic Achievement Motivation and no significant difference was found between SC and ST Community Students in respect to their Academic Achievement Motivation

Santhi & Suthanthiradevi (2019) conducted a study on "Achievement motivation of secondary students of government schools in Tiruvanamalai district" and found that 44.00 per cent of secondary students of Government schools perceived that the level of achievement motivation is at moderate level following by low level (33.67 per cent) and high level (22.33 per cent). It can be concluded that majority of the students are having moderate Achievement Motivation.

Kumar and Tankha (2020) studied on "Influence of achievement motivation and psychological adjustment on academic achievement: a cross-sectional study of school students" and concluded that a significant association of achievement motivation and educational adjustment with the academic performance of the students. However, there was no significant association between emotional and social adjustment with academic performance. It was also found that urban male students were found to have higher level of academic achievement motivation and rural male students were found to have lower level of academic achievement motivation. Academic achievement motivation of urban female students was found to be higher in comparison to rural female students. Male and female secondary school students were found to have same level of academic achievement motivation

Kurian (2021) conducted a study on "A study on the achievement motivation among tribal and non-tribal students in relation to their academic achievement with special reference to Purnia, Bihar" and found that there are two levels of gender,

namely, male and females. The data were analysed with the help of t-test. The computed value of t is 1.453 which is not significant at 0.01 level. It shows that the mean scores of Achievement Motivation of male and female students did not differ significantly. It may, therefore, be said that the male and female students were found to possess the same achievement motivation.

Problem Solving Ability and Academic Achievement Motivation:

Stanly (2014) conducted a study on "Achievement motivation and problem solving in Mathematics of class IX standard students in relation to their sex and type of school" and found that the level of achievement motivation of class IX students is above average in addition to that boys and girls have equal achievement motivation and the problem solving ability of class IX students is low. Boys and Girls have nearly eqaul problem solving ability. He also found that the correlation co-efficient which was calculated to be 0.718 is greater than that of the table value at 0.05 level and it signifies that there is a significant relationship between achievement motivation and problem solving ability

Praveen (2018) in his research "Problem solving ability and achievement motivation among secondary school students" and revealed that 76.92% have average level of the ability this study it is clearly evident that students have average level of Problem solving ability and also found that Problem solving ability of secondary school students do not differ on the Gender, Locale and Type of institution base and their level of motivation is also in an average and level Result explains that 16.92% of the students have low level of Achievement Motivation, 68.46% have average level of Achievement Motivation. And only 14.62% have high level of Achievement Motivation. It is also seen that there exists no significant difference (at 0.05 level) in the problem solving ability of secondary students based on gender, local, type of institution. Other relevant finding is that the Female, urban and government school students have high achievement motivation than boys, rural and aided school students.

2.3 OVERVIEW OF RELATED LITERATURE REVIEW

In the present study, fifty (59) reviews had been collected by the researcher and the reviews covered from 2002 to 2020, which was a span of 18 years. From that 59 reviews, Twenty one (21) reviews were collected which was conducted Outside India, thirty-eight (38) reviews were collected which was conducted inside. Reviews on the

relationship between Problem Solving Ability and Academic Achievement Motivation were hard to come by both inside and outside of India. As a result, the researchers had only collected three (3) reviews out of the 59 total reviews.

From the studies Cited above with regard to Level of Problem Solving Ability Ganandevan (2006) found out that the problem solving ability of secondary students is low. This finding is also supported by the finding of Nataraj and Manjula (2012) conducted a study on "A study of problem solving ability among the matriculation school students" and they have also found that the problem solving ability of matriculation students is low. But Kanmani and Nagarathinam (2017) investigated on "Problem solving ability and academic achievement of higher secondary students" and found 65.5 percentage of higher secondary students had an average level of problem solving ability. Praveen (2018) also found that students have average level of Problem solving ability. Whereas Dawngliani et al (2019) found the opposite that students of secondary school in Aizawl City were good in problem-solving ability. Kumar (2020) also found a high of problem-solving ability among the higher secondary students.

Regarding Problem Solving Ability in relation to Gender Nataraj and Manjula (2012) found that the male and female students and the students residing at rural and urban area differ significantly in their problem solving ability this finding is similar to the finding of Senthamarai et al (2016) and found that a significant difference in problem solving ability of IX standard students with respect to gender. Ahuja (2020) found the similar result and his study revealed that girl students had significantly higher problem-solving abilities. It means significant difference was found in respect to gender. Whereas those findings are in contradict to the findings of Dawngliani et al (2019) also found in no difference in the level of problem-solving ability between male and female students of government secondary schools of Aizawl City in respect to Gender. Which means that neither male nor female students had a better problem solving ability. Singh and Veer (2019) also found that groups of boys and girls did not differ significantly on their problem solving ability. It can be interpreted that the gender did not affect the problem loving ability of senior secondary students. Praveen (2018) did research on "Problem solving ability and achievement motivation among secondary school students" and found that problem solving ability of secondary school students do not differ on the Gender. Chadha and Sidhu (2016) also concluded that No significant difference is found between mean scores of problem solving ability of IX grade male and female students. Agnihotri (2015) also found that there is no significant

difference between two groups of S.S. School Students Boys and Girls scores of problem solving ability. Kanmani and Nagarathinam (2017) found that boys and girls higher secondary students do not differ significantly in problem solving ability. Sutha and Vanitha (2017) found the same result that no significant mean score difference towards problem solving ability with respect to gender. So, the present study also revealed that the majority of the secondary students in LADC and CADC had extremely low problem-solving ability.

As far as the level of Academic Achievement Motivation is concerned Vijayakumari and Rekha (2014) discovered that the level of achievement motivation among secondary school students in Kerala is not at all satisfactory, it means that the level of achievement motivation among secondary school students is low. This finding is in opposite to the finding of Praveen (2018) who found an average level of Achievement Motivation and Santhi & Suthanthiradevi (2019) also found that 44.00 per cent of secondary students of Government schools perceived that moderate level achievement motivation. But Stanly (2014) conducted a study on "Achievement motivation and problem solving in Mathematics of class IX standard students in relation to their sex and type of school" and found that the level of achievement motivation of class IX students is above average. Whereas Emmanuel et al. (2014) studied on "Achievement motivation, academic self-concept and academic achievement among high school students" and their findings show that majority of the students were highly motivated.

In respect to Comparison of Academic Achievement Motivation, Mahato & Barman (2019) found no significant difference between SC and ST Community Students in respect to their Academic Achievement Motivation.

Regarding Academic Achievement Motivation in relation to gender Kaur (2013) reported that there is no significant difference between boys and girls in their achievement motivation. Chetri (2014) agreed to the above finding and found that no significant difference in achievement motivation with regard to gender. Stanly (2014) also found that boys and girls have equal achievement motivation. It means that no singnificant difference was found between Academic Achievement Motivation of secondary school students in respect to gender. Pushparaj and Dhanasakaran (2016) discovered that no significant difference between the boys and girls students on their level of achievement motivation. Mishra (2017) even found no significant difference

between in the achievement motivation of secondary school boys and girls and Pawar (2017) found that Male and female secondary school students were found to have same level of academic achievement motivation. Kumar and Tankha (2020) also supported those findings and found that male and female secondary school students have the same level of academic achievement motivation. But these findings are disagreed with the finding of Ramandeep (2015) found that the girl students differed significantly from boy students with respect to their achievement motivation. Higher mean scores of girl students indicate that girl students have better achievement motivation then boys students. Pukhan (2015) also found that there is significant difference between male and female students studying in the secondary schools of Dibrugarh district as far as their academic motivation is concerned. The study also revealed that there is significant difference between male students studying in the private and govt. secondary schools of Dibrugarh district as far their academic motivation is concerned. Kumar and Yadav (2015) who have also found that Girls students had more academic achievement motivation than boys at senior secondary level. Vijayakumari and Rekha (2014) discovered achievement motivation is significant based on gender. Veena and Shastri (2013) revealed in their findings that boys and girls differed significantly on achievement motivation and girls had a better achievement motivation.

In respect to the relationship between Problem Solving Ability and Academic Achievement Motivation, Stanly (2014) found that the correlation co-efficient which was calculated to be 0.718 is greater than that of the table value at 0.05 level and it signifies that there is a significant relationship between achievement motivation and problem solving ability. Yunus et al. (2021) agreed to the finding of Stanly and also found that problem solving ability had a positive relationship with achievement motivation.

Despite the effort given by the investigator, only a few reviews were found in relation to problem-solving ability and academic achievement motivation. As a corollary, problem solving is an important skill that allows students to think and express themselves in a number of ways. It also inspires students to learn by encouraging them to face obstacles in their daily lives. Academic achievement motivation, on the other hand, is concerned with people's capacity to confront and solve various problems in their study with enthusiasm. The current research focuses

on the Problem Solving Ability of LADC and CADC Secondary School Students. It also indicates their drive for academic success and Academic Achievement Motivation.

An Overview of Related Literature Studied

Problem Solving Ability		**Academic Achievement Motivation**		**Reviews on Relationship between Problem Solving Ability & Academic Achievement Motivation**	
Studies conducted Outside India	**Studies conducted inside India**	**Studies conducted Outside India**	**Studies conducted inside India**	**Studies conducted Outside India**	**Studies conducted inside India**
10	**20**	**10**	**16**	**1**	**2**
Period of Review 2002-2021	**Period of Review 2006-2021**	**Period of Review 2010-2021**	**Period of Review 2013-2021**	**2021**	**Period of Review 2014-2018**

The above table shows the period of review as well as the number of reviews that were conducted outside India and inside India.

CHAPTER-III

METHODOLOGY AND PROCEDURE

This chapter provides an outline of the research techniques used in the study. It contains information on the participants and the criteria for inclusion in the research, who the population were, and how it were sampled. The researcher discusses the research design that was adopted for the present study, as well as the reasons behind that choice. The instrument used for data collection is also explained, and so are the techniques employed to carry out this investigation. The researcher also presents the procedure utilised to analyse the data. Hence, the present study on methodology and procedure addresses the following:

3.1 METHOD OF STUDY

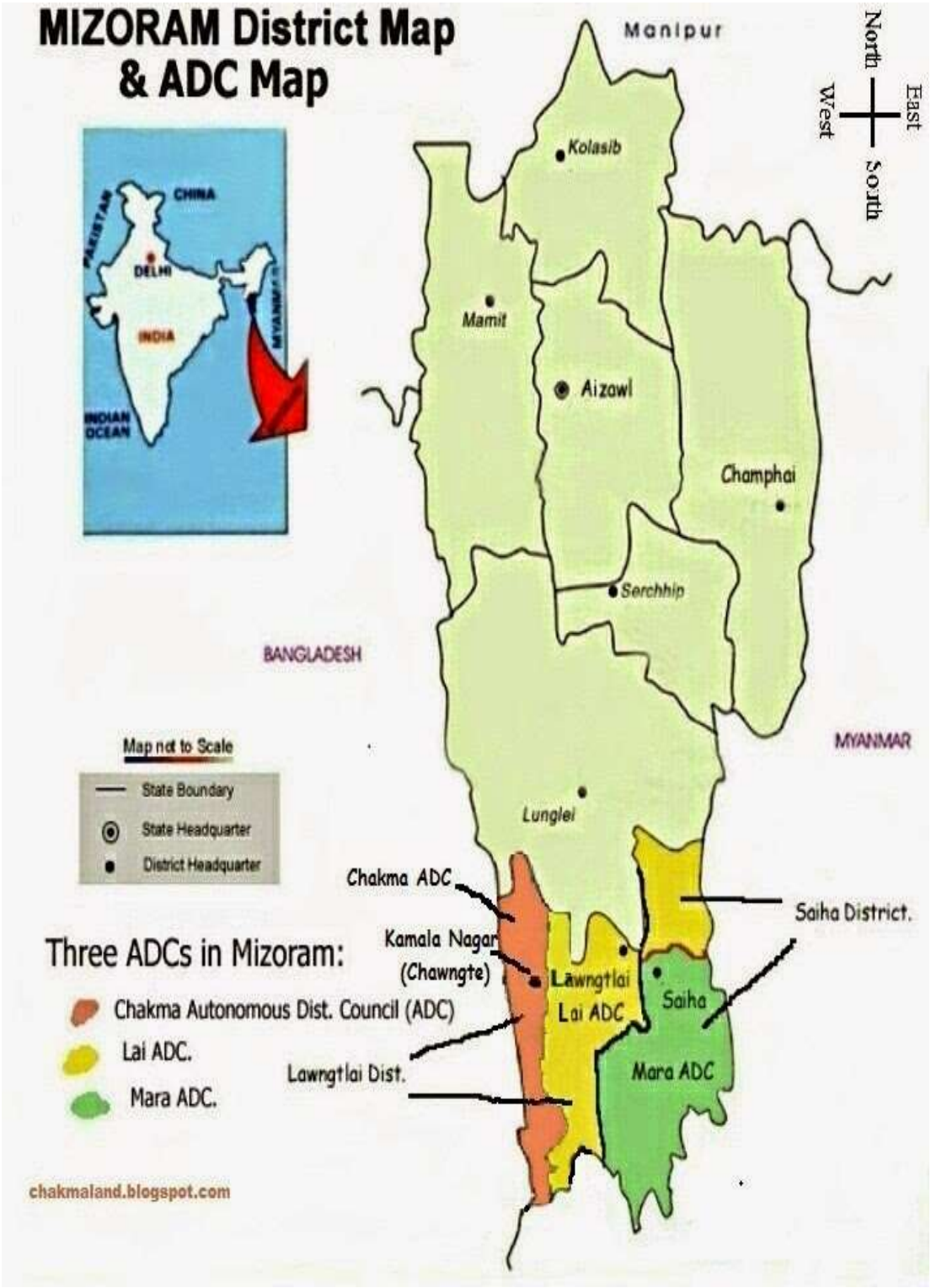
The descriptive research method was used for this research. In education, the descriptive approach has been the most widely used research method. The approach necessitates the use of sample and a related research instrument for data collection and conducting the study.

The purpose of the present study was to look into Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC). Choosing a representative sample from secondary school students was necessary in order to meet the study's goals and achieve its conclusions.

3.2 POPULATION AND SAMPLE

A population refers to any collection of human beings or non-human entities such as objects, educational institutions, time units, Geographical areas, prices of wheat or salaries drawn by individuals. Some statisticians call it universe. (Koul, 2009, p.206). The population of the present study consist of secondary school students of LADC and CADC area.

The representative portion of the population is called a sample. (Koul, 2009, p.206) The sample consists of 400 Secondary School Students, out of which 199 Secondary School Students of LADC and 201 Secondary School Students of CADC were selected through random cluster sampling technique.



3.3 PROCEDURE OF SAMPLE AND SAMPLING TECHNIQUE

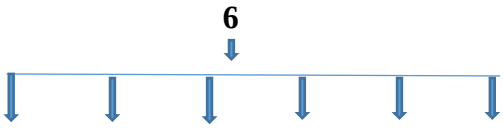
Sample: A total 400 Secondary School Students were sampled from Six Secondary Schools in LADC and CADC area. The researcher collected a sample through random cluster sampling and selected a sample of 199 Secondary School Students of LADC and 201 Secondary School students of CADC

A random cluster sampling techniques was employed for the purpose of sampling secondary school students of LADC and CADC.

Sample Distribution

LADC			CADC			Grand Total	
Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
71	**128**	**199**	**113**	**88**	**201**	**184**	**216**

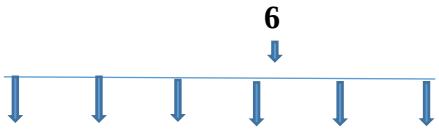
LADC 35 Schools



1st	2nd	3rd	4th	5th	6th
25	47	53	23	26	25

199 Students

CADC 16 Schools



1st	2nd	3rd	4th	5th	6th
40	48	35	29	23	26

201 Students in

There are a total 36 secondary schools in LADC cluster, Six Secondary Schools had been selected randomly. 25 Secondary School Students were selected from the first six schools, 47 Secondary School Students were selected from the 2nd six schools, and 53 Secondary School Students were selected from the 3rd six schools, 23 Secondary School Students were selected from the 4th six schools, 26 Secondary School Students were selected from the 5th six schools and 25 Secondary School Students were selected from the 6th six schools.

There are a total of 16 secondary schools in LADC cluster, Six Secondary Schools had been selected randomly. 40 Secondary School Students were selected from the first six schools, 48 Secondary School Students were selected from the 2nd six schools, and 35 Secondary School Students were selected from the 3rd six schools, 29 Secondary School Students were selected from the 4th six schools, 23 Secondary School Students were selected from the 5th six schools and 26 Secondary School Students were selected from the 6th six schools. The total sample consist of 400 Secondary School Students of LADC and CADC.

3.4 TOOL USED

The researcher used the Problem Solving Ability Test developed by L.N. Dubey, 2011 and the Academic Achievement Motivation Test developed by Dr. T.R. Sharma, 1984 published by National Psychological Corporation 4/230 Kacheri Ghat, Agra, India as a tool for the present study. The reliability and the validity of the test were not checked by the researcher, it was taken from the test manual itself.

Problem Solving Ability Test

Scoring: Each of the 20 statement has four alternative answers, out of which only one is correct. The correct answer is awarded 1 score. The minimum and maximum possible score is 00 to 20.

Reliability: The reliability of the Problem solving test was calculated by split-Half (odd-even) method by Kuder-Richardson Formula Rational Equivalence Method.

Table No-1: Reliability Result

Sr. No.	Method	'r'	N	Significance Level
I	Split Half	0.78	1640	.01
II	Kuder-Richardson	0.76	1640	.01

Validity: The problem solving test has the content validity, since it was tested vide the item Analysis and only those items were selected which had distinguishing value. Its validity was tested by way of correlation its scores on parallel form or test, and it was tested against two tests, viz., R.K. Tandon's Group Intelligence Test, and Test of reasoning Ability. Results are given in Table No-2

Table No-2: Validity Results

Sr. No	Parallel Tests	N	R	Level of Significance
I	R.K Tandon's Group Intelligence Test	100	0.68	.01
II	Test of Reasoning Ability	100	0.85	.01

Academic Achievement Motivation

Reliability: Three methods were tried to determine the reliability of the test. The results have been calculated below:

(a) Split Half

N	Score on odd items	Score on even items	Reliability of half test	Reliability of the whole test
100	**1355**	**1400**	**0.53**	**0.697**

(b) Rational Equivalence

N	N of Items	S.D of Test Scores	∑pq	r 11
100	**38**	**4.86**	**6.368**	**0.7506**

(II)

N	N of subjects	No of Items	Mean of test score	S.D.	r 11
100	**310**	**38**			

(c) Test-Retest

Sex	N	Mean original score	Mean retest scores	S.D (I)	S.D (II)	R
Boys	**298**	**28.015**	**28. 25**	**4.5**	**4.2**	**0.795**
Girls	**301**	**29.695**	**28.31**	**4.5**	**4.4**	**0.807**

Validity: Three types of validities – content, criterion and construct, were established. The items of the test were selected on the basis of pooled judgement of nearly 40 judges (Experts) in the field of testing. The suffice for content validity, on the basis of considered judgements of class teachers twenty students, ten low on achievement motivation and ten high on achievement motivation were administered this test under standardization. Significant differences were found in the mean test scores of the two groups. Data are given below:

Group	N	Mean score	S.D.	T	P
High Motivated	10	33.1	2.60	6.30	<0.01
Low Motivated	10	20.7	4.18		

And mentioned previously each item was correlated with total test and items showing not significant *r* were deleted from the test. This establishes the construct validity of the test.

The value of SK and KU are given below

SK: (a) Boys = -0.431
(b) Girls = -0.4189

KU: (a) Boys = 0.2280
(b) Girls = 03612

This shows that scores are nearly normally distributed.

3.5 PROCEDURE OF DATA COLLECTION

The researcher approached a randomly selected Secondary Schools in the LADC and CADC areas. After obtaining permission from school authorities, the investigator developed a good rapport with the students and explained the aim of the research as well as they were given clear instructions about Problem Solving Ability test and Academic Achievement Motivation test and requesting them to participate wholeheartedly and honestly while answering to the test. The students were given two sets of questionnaires and answers one after the other, and they were promised that their answers would be kept completely confidential and utilised exclusively for research purposes. After they finished the test the questionnaires were collected by the researcher.

3.6 STATISTICAL TECHNIQUES USED

The Following Statistical techniques were for analysing the data were as follows:

Percentage was used to calculate the students' total score for Problem Solving Ability and Academic Achievement Motivation. To compare the means of Male and Female, LADC and CADC Secondary School Students ’t’ test was employed. The Pearson product-moment correlation was used to identify the relationship between Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of LADC and CADC. Excel was used for calculating the data.

CHAPTER-IV

ANALYSIS AND INTERPRETATION OF THE DATA

This chapter is devoted for the Analysis and Interpretation of the present study and the details were presented in the following:

4.1 (a) Overall Problem Solving Ability of LADC Secondary School Students.

Objective No 1- To study Problem Solving Ability of LADC and CADC Secondary School Students.

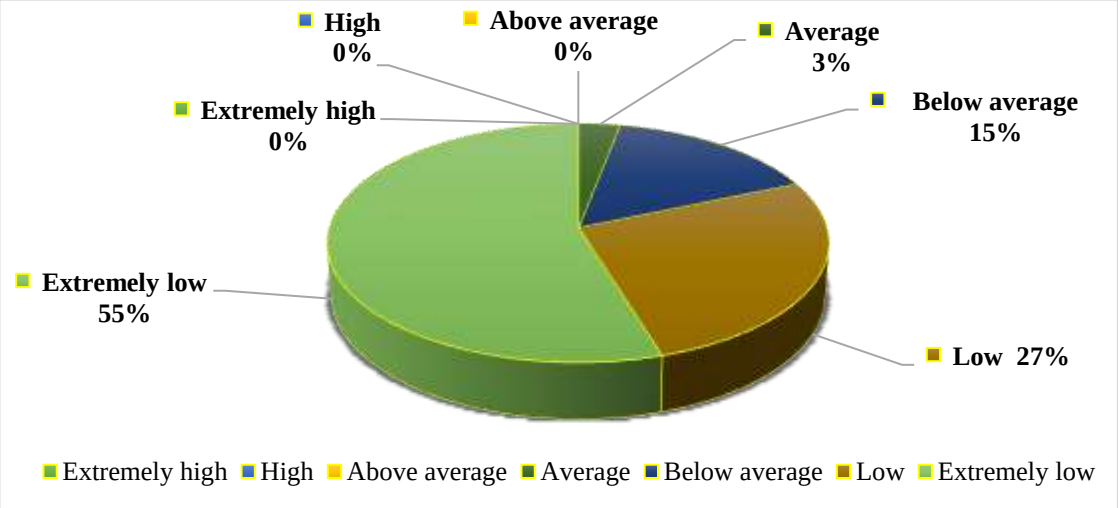
To determine the overall Problem Solving Ability of LADC Secondary School Students, the scores obtained from the students Problem Solving Ability scale were analysed and interpreted. The findings were presented in the following table.

TABLE 4.1 (a)

Category	No. of students	Percentage	Male	Percentage	Female	Percentage
Extremely high	0	0	0	0	0	0
High	0	0	0	0	0	0
Above average	0	0	0	0	0	0
Average	6	3.01	1	1.41	5	3.91
Below average	31	15.58	3	4.23	28	21.88
Low	53	26.63	20	28.17	33	25.78
Extremely low	109	54.77	47	66.20	62	48.44
Total	199		71		128	

Figure 4.1(a)

Overall Problem Solving Ability of LADC Secondary School Students.



The Analysis of Data vide table and figure 4.1 (a) revealed that the overall Problem Solving Ability of LADC Secondary School Students. Out of 199 Secondary School Students, **109 (54.77%)** students had Extremely Low Problem Solving Ability, **53 (26.63%)** students had Low Problem Solving Ability, **31 (15.58**%**)** students had Below Average Problem Solving Ability, and **6 (3.01%)** students had Average Problem Solving Ability. None of the students scored Above Average, High or Extremely High.

Among male Secondary School Students, **47 (66.20%)** students fell under Extremely Low Problem Solving Ability, **20 (28.17**%**)** students had Low Problem Solving Ability, **4.2**% had Below Average Problem Solving Ability and **3 (1.41%)** students had Average Problem Solving Ability.

Among female Secondary School Students, **62 (48.44%)** students fell under Extremely Low Problem Solving Ability, **33 (25.78%)** students had Low Problem Solving Ability, **28** (**21.85%)** students had Below Average Problem Solving Ability and **5 (3.91%)** had Average Problem Solving Ability. Neither male nor female students had Above Average, High or Extremely High Problem Solving Ability.

4.1 (b) Overall Problem Solving Ability of CADC Secondary School Students.

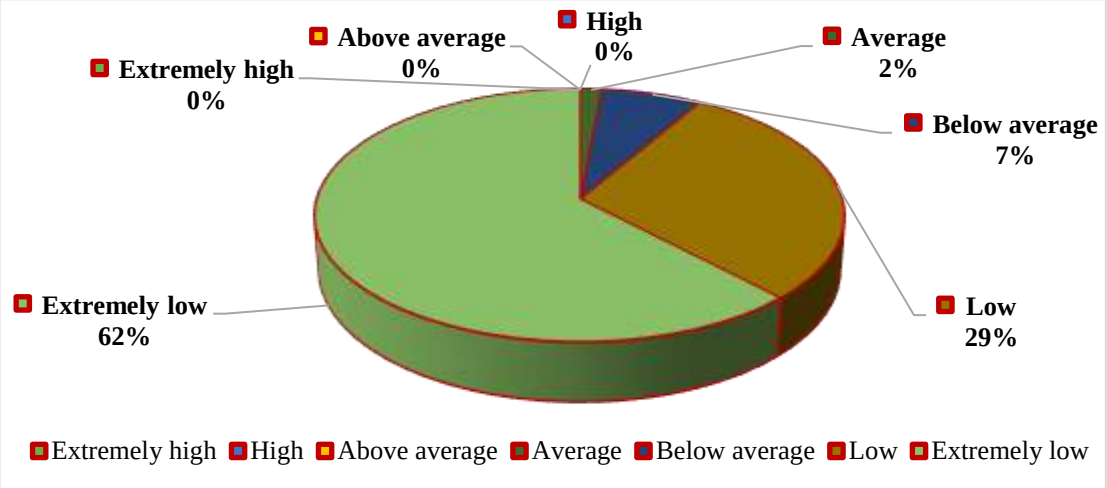
To determine the overall Problem Solving Ability of CADC Secondary School Students, the scores obtained from the students Problem Solving Ability scale were analysed and interpreted. The findings were presented in the following table.

TABLE 4.1 (b)

Category	No. of Students	Percentage	Male	Percentage	Female	Percentage
Extremely high	**0**	**0**	**0**	**0**	**0**	**0**
High	**0**	**0**	**0**	**0**	**0**	**0**
Above average	**0**	**0**	**0**	**0**	**0**	**0**
Average	**3**	**1.49**	**3**	**2.65**	**0**	**0**
Below average	**14**	**6.97**	**5**	**4.42**	**9**	**10.23**
Low	**59**	**29.35**	**37**	**32.74**	**22**	**25**
Extremely low	**125**	**62.19**	**68**	**60.18**	**57**	**64.77**
TOTAL	**201**		**113**		**88**	

Figure 4.1 (b)

Overall of Problem Solving Ability of CADC Secondary School Students.



At a cursory glance Data vide table 4.1(b) and Figure 4.1 (b) showed that the overall Problem Solving Ability of CADC Secondary School Students. Out of 201 Secondary School Students, **125 (62.19%)** students fell under Extremely Low Problem Solving Ability, **59 (29.35%)** students had Low Problem Solving Ability, **14 (6.97%)** students had Below Average Problem Solving Ability, and **3 (1.49%)** students had Average Problem Solving Ability. None of the students fell under Above Average, High and Extremely High Problem Solving Ability.

Among male Secondary School Students, **68 (60.18%)** students had Extremely Low Problem solving Ability, **37 (32.74%)** students had Low Problem Solving Ability, and **5 (4. 42%)** students had Below Average Problem Solving Ability, only **3 (2.65%)** students had Average Problem Solving Ability.

Among female Secondary School Students **57 (64.77%)** students scored Extremely Low Problem Solving Ability**, 22 (25%)** students obtained Low Problem Solving Ability and **9 (10. 23%)** students had Below Average Problem Solving Ability and none of the female students scored Average Problem Solving Ability. Therefore neither male nor female students had Above Average, High and Extremely High Problem Solving Ability.

It could be concluded that most of LADC Secondary School Students fell under Extremely Low Problem solving Ability.

4.2 Comparison of Problem Solving Ability between LADC and CADC Secondary School Students.

Objective No 2- To compare Problem Solving Ability of LADC and CADC Secondary School Students.

Hypothesis No-1: There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students.

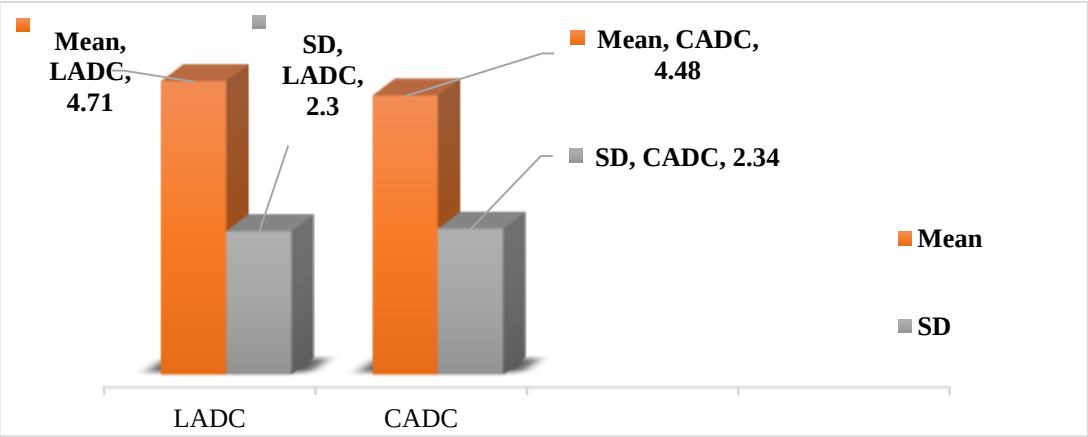
LADC and CADC Secondary Schools Students were computed and compared to a sample of 199 LADC and 201 CADC Secondary School Students. The mean, standard deviation (SD) of the scores were obtained and the mean difference was tested by employing a t-test and details were presented in Table 4.2.

Table 4.2

Variables	N	Mean	SD	df	T-Value	Significant Level
LADC	199	4.71	2.3			
CADC	201	4.48	2.34	398	1.01	Not Significant

Figure 4.2

Comparison of Problem Solving Ability of LADC and CADC Secondary School Students.



It was inferred from table and figure no 4.2 that the Mean score and SD of Problem Solving Ability of LADC and CADC Secondary School Students were ***4.71, 4.48*** and ***2.3, 2.34*** respectively. The 't' value was ***1.01*** with **df 398**, which was smaller than the critical value at the required level of significance, this finding indicates that there is no significant difference between LADC and CADC Secondary School

Students in regards to Problem Solving Ability. Hence it can be concluded that the null hypothesis '*there is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students'* is accepted.

4.3 (a) Comparison of Problem Solving Ability of LADC Male and LADC Female Secondary School Students.

Objective No 3- To compare Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender.

Hypothesis No-2: There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender.

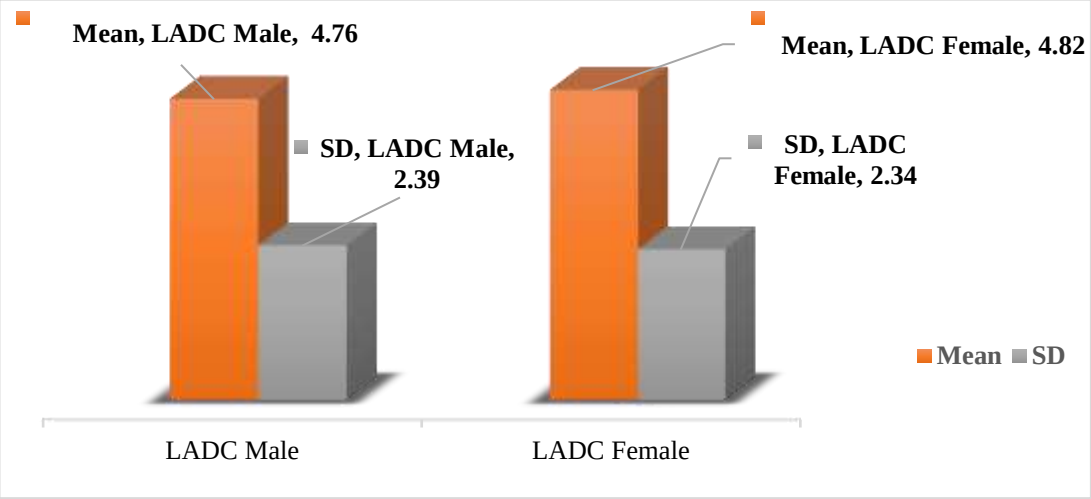
The Problem Solving Ability of LADC and CADC Secondary School Students in relation to gender were computed and compared on a sample of 71 LADC male and 128 LADC female Secondary School Students. The mean, standard deviation (SD) of the scores were obtained and the mean difference was tested by employing a t-test and details were presented in Table 4.3(a)

Table 4.3 (a)

Gender	N	Mean	SD	df	T-Value	Significant Level
Male	71	4.76	2.39			
Female	128	4.82	2.35	209	0.16	Not Significant

Figure 4.3 (a)

Comparison of Problem Solving Ability of LADC male and LADC female Secondary School Students.



As per table and figure 4.3 (a) reflected that the Mean score and SD of Problem Solving Ability of LADC male and LADC female secondary students were ***4.76, 4.82*** and ***2.39, 2.35*** respectively. The 't' value was ***0.16*** with **df 209,** which was smaller than the critical value at the required level of significance, it shows that no significant difference was found between LADC male and LADC female Secondary School Students in regards to Problem Solving Ability. Therefore the null hypothesis *'there is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender* is accepted.

4.3 (b) Comparison of Problem Solving Ability between CADC Male and CADC Female Secondary School Students.

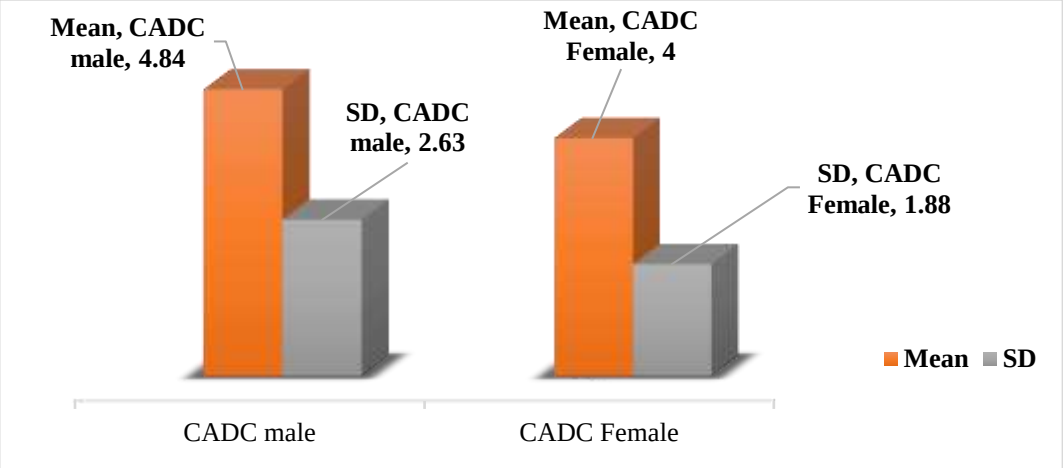
The Problem Solving Ability of LADC and CADC Secondary School Students in relation to gender were computed and compared on a sample of 113 CADC male and 88 CADC female students. The mean, standard deviation (SD) of the scores were obtained and the mean difference was tested by employing a t-test and details were presented in Table 4.3 (b).

Table 4.3 (b)

Gender	N	Mean	SD	df	T-Value	Significant Level
Male	**113**	**4.84**	**2.63**			
Female	**88**	**4**	**1.88**	**163**	**2.64**	**Significant Level 0.05**

Figure 4.3 (b)

Comparison of Problem solving ability of CADC male and CADC female Secondary School Students.



From table and figure 4.3 (b), it could be observed that the mean scores and S.D. scores of Problem Solving Ability of CADC male and CADC female students were ***4.84, 4*** and ***2.63, 1.88*** respectively. The 't' value was ***2.64,*** with **df 163,** which was greater than the critical value at the required level of significance, and it indicates that a significant difference was found between CADC male and CADC female Secondary School Students in their Problem Solving Ability.

Hence, the null hypothesis '*there is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students in relation to gender*' is rejected at a 0.05 level of confidence. Since the mean score of CADC male (M=4.82) is higher than that of CADC female (M=4), it could be concluded that the Problem Solving Ability of CADC male is better than CADC female.

4.4 (a) Overall Academic Achievement Motivation LADC Secondary School Students.

Objective No 4- To examine Academic Achievement Motivation of LADC and CADC Secondary School Students**.**

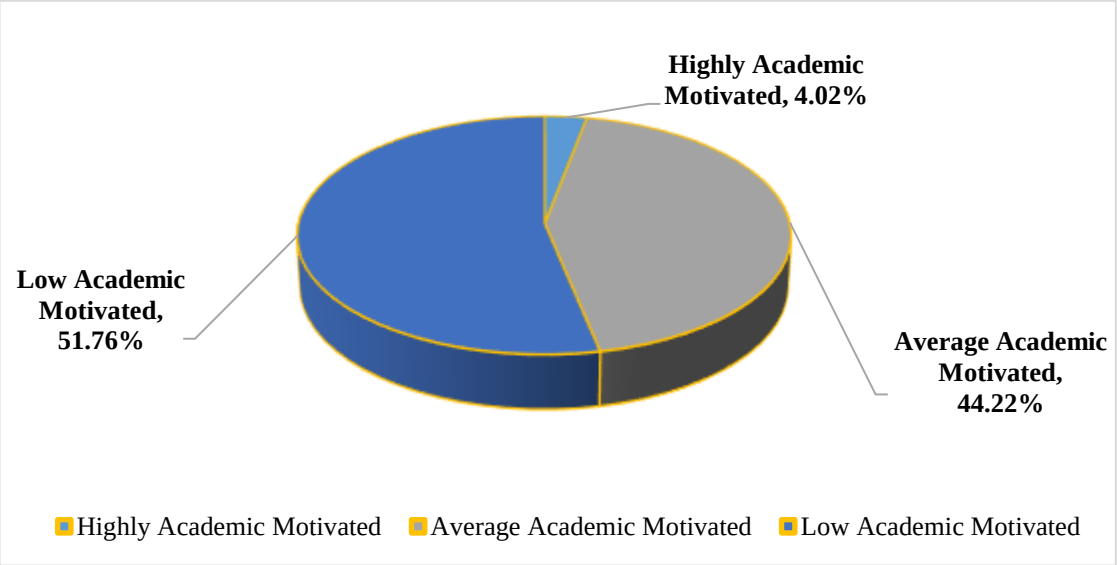
To determine the overall Academic Achievement Motivation of LADC Secondary School Students, the scores obtained from the students' Academic Achievement Motivation scale were analysed and interpreted. The findings were presented in the following table.

Table 4.4 (a)

Category	No Of Students	Percentage	Male	Percentage	Female	Percentage
Highly Academic Motivated	**8**	**4.02**	**5**	**7.04**	**3**	**2.34**
Average Academic Motivated	**88**	**44.22**	**33**	**46.48**	**55**	**42.97**
Low Academic Motivated	**103**	**51.76**	**33**	**46.48**	**70**	**54.69**
Total	**199**		**71**		**128**	

Figure 4.4 (a)

Overall Academic Achievement Motivation of LADC Secondary School Students.



The perusal of data vide table and figure 4.4 (a) showed the overall Academic Achievement Motivation of LADC Secondary School Students. So, **8 *(4.02%)*** Secondary School Students had High Academic Achievement Motivation, **88 (*44.22*)** students had Average Academic Achievement Motivation and **103 (*51.76%*)** fell under Low Academic Achievement Motivation.

Among male Secondary School Students, **5 (7.04%)** had High Academic Achievement Motivation, **33 (*46.48%*)** had Average Academic Achievement Motivation and **33 (*46.48%*)** had Low Academic Achievement Motivation.

Among female Secondary School Students, **3 (2.34%)** students had High Academic Achievement Motivation, **55 (42.97%)** students had Average Academic Achievement Motivation and **70 (54.69%)** students had Low Academic Achievement Motivation. It could be said that majority of the students had Low Academic Achievement Motivation.

4.4 (b) Overall Academic Achievement Motivation CADC Secondary School Students.

To determine the overall Academic Achievement Motivation of LADC Secondary School Students, the scores obtained from the students' Academic

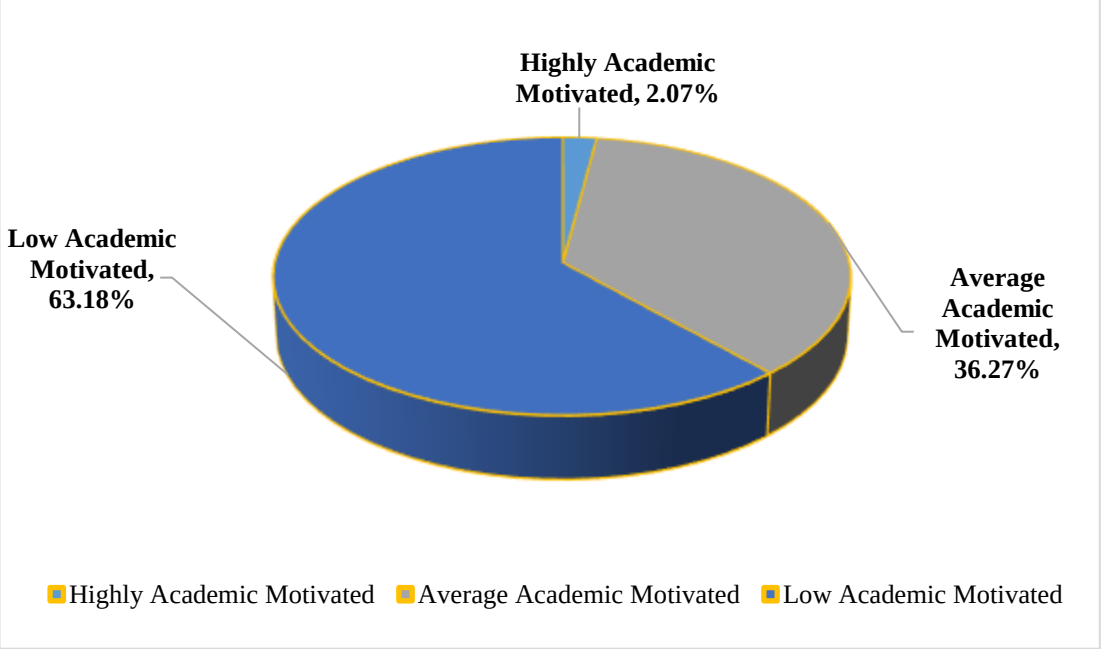
Achievement Motivation scale were analysed and interpreted. The findings were presented in the following table.

Table 4.4 (b)

Category	No Of Students	Percentage	Male	Percentage	Female	Percentage
Highly Academic Motivated	4	2.07	2	1.77	2	2.27
Average Academic Motivated	70	36.27	40	35.40	30	34.09
Low Academic Motivated	127	63.18	71	62.83	56	63.64
Total	201		113		88	

Figure 4.4(b)

Overall Academic Achievement Motivation CADC Secondary School Students.



As per table and figure 4.4 (b), it reflects the overall Academic Achievement Motivation of CADC Secondary School Students. So **4** (**2.07%)** Secondary School Students had High Academic Achievement Motivation, **70 (36.27%)** students had Average Academic Achievement Motivation and **127** (**63.18%)** students had Low Academic Achievement Motivation.

Among male Secondary School Students, **2 (1.77%)** had High Academic Achievement Motivation, **40 (35.40%)** students had Average Academic Achievement Motivation and **71 (62.83%)** students were having Low Academic Achievement Motivation.

Among female Secondary School Students, **2** (**2.27%)** students had High Academic Achievement Motivation, **30 (34.09%)** students were having Average Academic Achievement Motivation and **56 (63.64%)** students had Low Academic Achievement Motivation.

4.5 Comparison of Academic Achievement Motivation of LADC and CADC Secondary School Students.

Objective No 5- To compare Academic Achievement Motivation of LADC and CADC Secondary School Students.

Hypthesis-3: There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students.

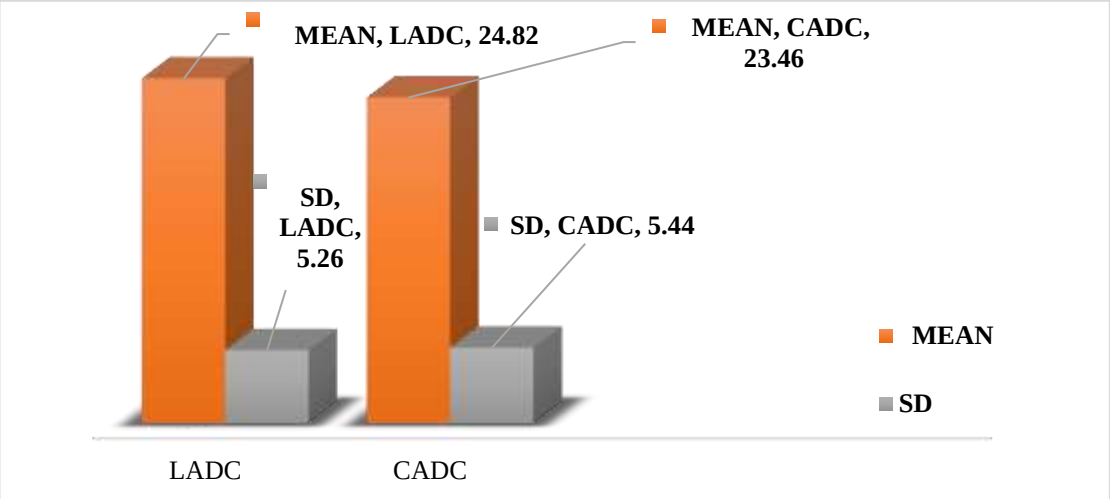
Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to gender was computed and compared on a sample of 199 LADC Secondary School Students and 201 CADC Secondary School Students. The mean, standard deviation (SD) of the scores were obtained and the mean difference was tested by employing a t-test and details were presented in Table 4.5.

Table 4.5

Variables	N	Mean	SD	df	T-Value	Level of Significant
LADC	**199**	**24.82**	**5.26**			
CADC	**201**	**23.46**	**5.44**	**398**	**2.57**	**Significant Level 0.05**

Figure 4.5

Comparison Academic Achievement Motivation of LADC and CADC Secondary Schools Students.



It was inferred from table and figure 4.5 that the mean score and SD of Academic Achievement Motivation of LADC and CADC Secondary School Students were **24.82, 23.46** and **5.26, 5.44,** respectively. The 't' value was **2.57,** with **df 398,** which was greater than the critical value at the required level of significance. It indicates that a significant difference was found between LADC and CADC Secondary School Students in their Academic Achievement Motivation.

Therefore, the null hypothesis '*there is no significant difference between the academic achievement motivation of LADC and CADC Secondary School students'* is rejected at a 0.05 level of confidence. Since the mean score of LADC (M=24.82) is higher than that of CADC (M=23.46), it could be determined that the Academic Achievement Motivation of LADC students is better than CADC students.

4.6 (a) Comparison of Academic Achievement Motivation of LADC Male and LADC Female Secondary School Students.

Objective No 6- To compare Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

Hypothesis 4: There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

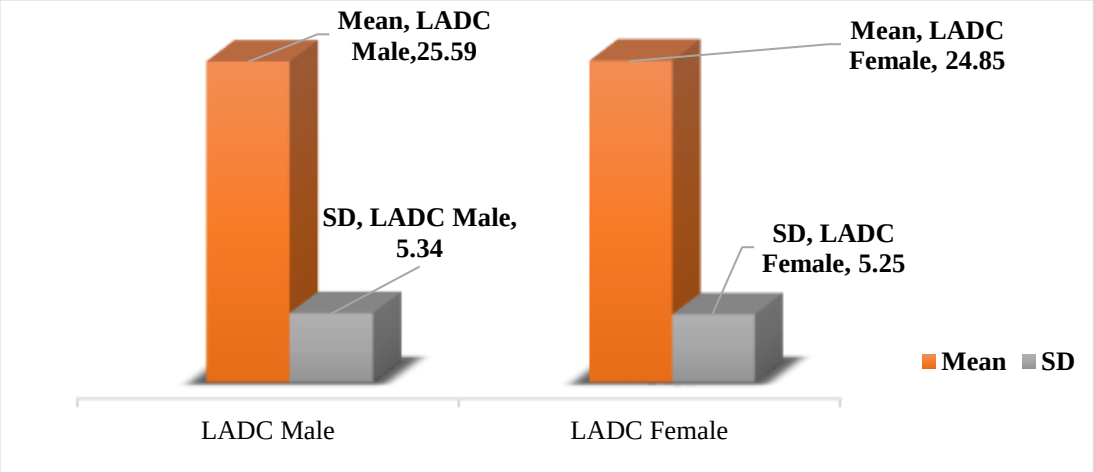
Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to gender was computed and compared on a sample of 71 LADC male and 128 LADC female Secondary School Students. The mean, standard deviation (SD) of the scores were obtained and the mean difference was tested by employing a t-test and details were presented in Table 4.6 (a).

Table 4.6 (a)

Gender	N	Mean	SD	df	T-Value	Level of Significant
LADC Male	**71**	**25.59**	**5.34**	**148**	**0.94**	**Not Significant**
LADC Female	**128**	**24.85**	**5.28**			

Figure 4.6 (a)

Comparison of Academic Achievement Motivation of LADC Male and LADC Female Secondary School Students.



Looking at data vide table and figure 4.6(a) it observes that the Mean score and SD of Academic achievement motivation of LADC male and LADC female secondary students are **25.59*,*** ***24.85*** and ***5.34, 5.28*** respectively. The 't' value is ***0.94*** with **df 148,** which is smaller than the critical value at the required level of significance, it signifies that there is no significant difference between Academic Achievement Motivation of LADC male and LADC female Secondary School Students. Hence the Null hypothesis '*there is no significant difference between Academic Achievement*

Motivation of LADC and CADC Secondary School Students in relation to Gender' is accepted.

4.6 (b) Comparison of Academic Achievement Motivation of CADC Male and CADC Female Secondary School Students.

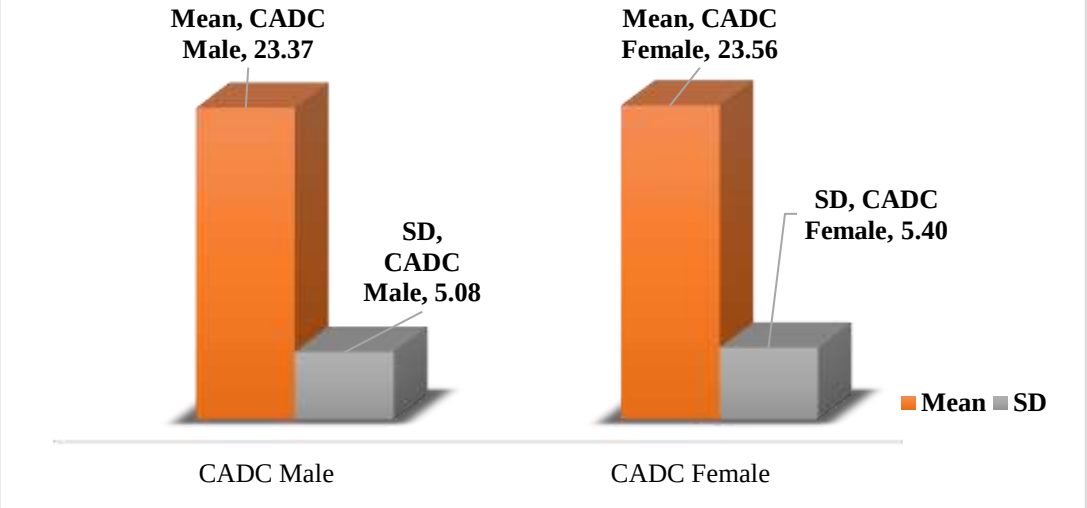
Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to gender is computed and compared on a sample of 113 CADC male and 88 LADC female students. The mean, standard deviation (SD) of the scores were obtained and the mean difference was tested by employing a t-test and details were presented in Table 4.6(b)

Table 4.6 (b)

Gender	N	Mean	SD	df	T-Value	Level of Significant
CADC Male	113	23.37	5.08			
CADC Female	88	23.56	5.40	173	0.23	Not Significant

Figure 4.6 (b)

Comparison of Academic Achievement Motivation of CADC Male and CADC Female Secondary School Students.



From table and figure No 4.6 (b) revealed that the Mean score and SD of Academic Achievement Motivation of CADC male and CADC female Secondary School Students were ***23.37, 23.56*** and ***5.08, 5.40*** respectively. The 't' value is ***0.23*** with **df 173,** which was smaller than the critical value at the required level of

significance, it indicates that no significant difference between was found between Academic CADC Male and CADC Female Secondary School Students in relation to their Achievement Motivation. So the Null hypothesis '*there is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender'* is accepted.

4.7 Relationship between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students.

Objective No 7-To find out the relationship between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students.

The relationship between Problem Solving Ability and Academic Achievement Motivation of LADC secondary school students were presented in table 4.7

Table 4.7

Variable	N	Correlation
Problem solving ability of LADC	**199**	**0.13**
Academic achievement motivation of LADC	**199**	

Table 4.7 presents the relationship between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students, and it was found that the correlation co-efficient was calculated was 0.13, which means that there was a low positive correlation between Problem Solving Ability and Academic Achievement Motivation among LADC students.

4.8 Relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students.

Objective No 8-To find out the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students.

The correlation between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students were presented in table 4.8

Table 4.8

Variable	N	Correlation
Problem solving ability of CADC	**201**	**0.13**
Academic achievement motivation of CADC	**201**	

Table 4.8 signifies the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students, and it was found that the correlation co-efficient was calculated 0.13. Which means that there was a low positive correlation between Problem Solving Ability and Academic Achievement Motivation among CADC Secondary School Students.

CHAPTER-V

MAJOR FINDINGS, DISCUSSION, RECOMMENDATION, CONCLUSION AND SUGGESTIONS FOR FURTHER STUDIES.

This chapter present the major findings, discussion, recommendations and suggestions of further research based on the data analysed in the previous chapter.

5.1 MAJOR FINDINGS

The following are the major findings of the present study are as follows:

5.2 FINDINGS RELATED TO PROBLEM SOLVING ABILITY OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

a) Findings on overall Problem Solving Ability of LADC Secondary School Students:

1. Out of 199 LADC Secondary School students, **54.77%** of the students had Extremely Low Problem Solving Ability.

2. **26.63%** per cent of LADC Secondary School Students were having Low Problem Solving Ability.

3. **15.5**8**%** of LADC Secondary School Students fell under the category of Below Average Problem Solving Ability

4. **3.01%** of LADC Secondary School Students had Average Problem Solving Ability.

5**.** Among LADC Male Secondary School Students, **66.20%** of LADC Secondary School Students fell under Extremely Low Problem Solving Ability, **28.17%** had Low Problem Solving Ability, **4.2%** had Below Average Problem Solving Ability and only **1.41%** had an Average Problem Solving Ability.

6**.** Regarding Problem Solving Ability of Female Secondary School Students of LADC, **48.44%** fell under Extremely Low Problem Solving Ability, **25.78%** were having Low Problem Solving Ability, **21.85** per cent had Below Average Problem Solving Ability and **3.91%** had an Average Problem Solving Ability.

None of the LADC Secondary School Students of fell under Above Average, High or Extremely High Problem Solving Ability. The present study revealed that the overall Problem Solving Ability of LADC Secondary School Students were Extremely Low.

b) Findings on overall Problem Solving Ability of CADC Secondary School Students:

1. Out of 201CADC Secondary School Students, **62.19%** of the students fell under Extremely Low Problem Solving Ability.

2. **29.35%** of CADC Secondary School Students scored Low Problem Solving Ability,

3. **6.97%** of CADC Secondary School Students were having Below Average Problem Solving Ability.

4. Only **1.49%** of CADC Secondary School Students had an Average Problem Solving Ability.

5. In respect to CADC Male Secondary School Students, **60.18%** had Extremely Low Problem solving Ability, **32.74** per cent of the students had Low Problem Solving Ability, and **4. 42%** of the students fell under the category of Below Average. Only **2.65%** of CADC Male Secondary School Students had an Average Problem Solving Ability.

6. Regarding Problem Solving Ability of CADC Female Secondary School Students, **64.77%** had Extremely Low Problem Solving Ability**, 25%** of the students obtained Low Problem Solving Ability and **10.23%** had Below Average Problem Solving Ability and no CADC Female Secondary School Students scored Average Problem Solving Ability.

The present study revealed that no Secondary School Students of CADC fell under Above Average, High and Extremely High Problem Solving Ability. It could be concluded that majority of CADC Secondary School Students fell under Extremely Low Problem solving Ability.

5.3 FINDING ON COMPARISON OF PROBLEM SOLVING ABILITY OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

1. No significant difference was found between LADC and CADC Secondary School Students in respect to their Problem Solving Ability. It could be concluded that neither LADC Secondary School Students nor CADC Secondary School Students had a better Problem Solving Ability.

5.4 FINDINGS RELATED TO COMPARISON OF PROBLEM SOLVING ABILITY OF LADC AND CADC SECONDARY SCHOOL STUDENTS IN RELATION TO GENDER.

1. No significant difference was found between LADC Male and LADC Female Secondary School Students in regards to Problem Solving Ability.

2. Significant difference was found between CADC Male and CADC Female Secondary School Students in their Problem Solving Ability. Since the mean score of CADC male (M=4.82) was higher than that of CADC female (M=4), it was concluded that the Problem Solving Ability of CADC Male is better than CADC Female.

5.5 FINDINGS RELATED TO ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

a) Findings on overall Academic Achievement Motivation of LADC Secondary School Students:

1. Out of 199 LADC Secondary School Students, **4.02%** of the students had High Academic Achievement Motivation,

2.**44.22%** of LADC Secondary School Students fell under the category of Average Academic Achievement Motivation.

3. **51.76%** of LADC Secondary School Students fell under the category of Low Academic Achievement Motivation.

4. Among Male LADC Secondary School Students, **7.04%** of the students had High Academic Achievement Motivation, **46.48%** had Average Academic

Achievement Motivation and majority of LADC Secondary School Students which was **46.48%** had Low Academic Achievement Motivation.

5. Regarding the Academic Achievement Motivation of LADC Female Secondary School Students, **2.34%** had High Academic Achievement Motivation, **42.97%** of Female students were having Average Academic Achievement Motivation and **54.69%** fell under the category of Low Academic Achievement Motivation.

It could be concluded that majority of LADC Secondary School Students had Low Academic Achievement Motivation.

b) Findings on overall Academic Achievement Motivation of CADC Secondary School Students:

1. Out of 201 students, **2.07%** of CADC Secondary School Students have High Academic Achievement Motivation,

2. **36.27%** of CADC Secondary School Students an Average Academic Achievement Motivation and

3. **63.18%** of Secondary School Students of CADC are having Low Academic Achievement Motivation.

4. Among Male students, **2 (1.77%)** have High Academic Achievement Motivation, **40 (35.40%)** students have Average Academic Achievement Motivation and **71 (62.83%)** students were having Low Academic Achievement Motivation.

5. Out of 88 Female students, **2.27%** of the students have High Academic Achievement Motivation, **34.09%** of the student are having Average Academic Achievement Motivation and **63.64%** of the Female students fall under the category of Low Academic Achievement Motivation.

The present finding indicated that majority of CADC Secondary School Students were having Low Academic Achievement Motivation.

5.6 FINDINGS RELATED TO COMPARISON OF ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

1. Significant difference was found between LADC and CADC Secondary School Students in their Academic Achievement Motivation. Since the mean score of LADC (M= 24.82) was higher than that of CADC (M=23.46) and it was concluded that the Academic Achievement Motivation of LADC is better than CADC students.

5.7 FINDINGS ON COMPARISON OF ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS IN RELATION TO GENDER.

1. No significant difference was found between LADC Male and LADC Female Secondary School Students in respect to their Academic Achievement Motivation.

2. No significant difference was found between CADC Male and CADC Female Secondary School Students in relation to their Academic Achievement Motivation.

5.8 FINDINGS ON THE RELATIONSHIP BETWEEN PROBLEM SOLVING ABILITY AND ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

1. It is found that there was a Low Positive relationship between Problem Solving Ability and Academic Achievement Motivation among LADC Secondary School Students.

2. In this study it is found that there is a Low Positive correlation between Problem Solving Ability and Academic Achievement Motivation among CADC Secondary School Students.

5.9 DISCUSSION ON THE FINDINGS OF THE PRESENT STUDY

The main findings of the present study and its probable causes were discussed as follows:

a) Discussion on the findings related to overall Problem Solving Ability of LADC and CADC:

The findings showed that majority of LADC and CADC students had extremely low Problem Solving Ability.

Discussion: The present study found that majority of LADC and CADC Secondary School Students had extremely low Problem Solving Ability. This findings were in consonance with the findings of Dawngliani et.al (2020). They also found that Problem Solving Ability among Students of Government Higher Secondary School of Aizawl city were under the level of very low ability in Problem Solving Ability, which signifies that the majority of the students had a very low Problem Solving Ability. None of the students were at the level of very high and high ability. Nataraj and Manjula (2012) also found that the Problem Solving Ability of matriculation students were low. It was also found in the present study that none of the students scored very high or high in Problem Solving Ability.

But it was contradictory to the finding of Kumar (2020) and Dawngliani et al (2019) who found that the overall Problem Solving Ability of secondary students fell under the category of high level.

Whereas Praveen (2018) found that students had an average level of Problem Solving Ability. According to the findings of the present study, it was depicted that LADC and CADC Secondary School Students need to develop and enhance their problem-solving skills. There might be a variety of explanations for both LADC and CADC students had extremely low Problem Solving Ability. According to the 2011 census, it was stated these areas were one of the most remote localities in Mizoram, with the lowest literacy rate. Children's schooling was hampered by their home environment. Some parents were uneducated and impoverished. They were unable to meet their children's educational demands. As a result, children were unmotivated to excel in school. The scarcity of teacher was another problem. As previously stated, the LADC and CADC were a remote areas from the capital of Mizoram, in which most teachers are hesitant to live and prefer not to be assigned. Thus, every topic could not be adequately handled due to the lack of teachers. Students become inept at addressing issues and challenges in their academic and real life. In addition to that one of the possible reason of extremely low Problem Solving Ability among LADC and CADC

Secondary School Students would be still practicing of rote memorization as the basic method of teaching rather than comprehension.

In order to improve Problem Solving Ability of the students, school authorities need to take steps to diagnose the crucial difficulty areas in basic education. For this purpose, the high school teachers are required to be trained for making use of diagnostic and criterion based evaluation procedures to make teaching-learning process more effective as well as child centre learning to enhance the level of Problem Solving Ability. Teaching methodology and strategies may need to be reviewed to surge Problem Solving Ability. It is the obligation of the teachers to detect such students who have low Problem Solving abilities and try to adjust their learning and thinking power through various audio-visual aids.

b) Discussion on the findings related to Comparison of Problem Solving Ability of LADC and CADC Secondary School Students:

This finding showed that there is no significant difference between LADC and CADC Secondary School Students in regards to their Problem Solving Ability.

Discussion: So this finding was similar to the finding of Singh and Veer (2019) studied "Problem Solving Ability in relation to academic achievement of IX grade students" who conducted Problem Solving Ability tests on scheduled caste students at two districts in Himachal Pradesh and found that Secondary Scheduled Caste School Students in Kullu and Mandi districts, they found that the students did not differ significantly in their Problem Solving Ability. It indicates that the district in which they live had no impact on their ability to solve problem. But it is contradictory to the finding of Senthamarai et al (2016) who found locality and area influence Problem Solving Ability of Secondary School students.

It was observed from the present finding that area of studies did not influence on the ability of the students. But it has been stated earlier, the students of both Autonomous District Council had a very low Problem Solving Ability and hence, it is required to assess their academic performance carefully, better to provide more resources, use suitable teaching strategy to elevate their Problem Solving Ability.

Students from these two Autonomous District Councils lagged behind in every spheres in comparing to other district Secondary School Students in Mizoram. To improve their Problem Solving Ability, a better atmosphere, better facilities, and

greater parental support would also be required. Furthermore, teachers' passion, commitment, and quality of teaching would be crucial for encouraging and enhancing the students' rational thinking and creativity. Community involvement would also be helpful for the institution and the students, community participation like organising awareness on mental health, providing career guidance, frequent medical check- up, free tuition for economic backward children would be boost a heathy learning environment of among the student and this will encourage them to face any challenges related to their academics and every day's life.

In addition to that the School Education Department of Mizoram and the District Council Authority required to pay more attention to this area and provide more funds as well. So there could be more opportunity for the student to enhance not only their learning skills but also their problem solving skills. More initiative from higher authority is highly suggested to promote quality education to this area.

c) Discussion of Findings on Comparison of Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender:

1. This finding showed that there is no significant difference between LADC Male and LADC Female Secondary School Students in their Problem Solving Ability.

Discussion: This finding was in consonance with the findings of Chadha and Sidhu (2016), Kanmani and Nagarathinam (2017), Sutha and Vanitha (2017), Dawngliani et al (2019), Dawngliani et al (2020), Prema and Sathiskumar (2021) did not find any significant difference between male and female Secondary School Students in relation to their Problem Solving Ability.

In contrast, Senthamarai et al (2016) found a significant difference in Problem Solving Ability of class IX standard students with respect to gender. Kumari and Pujar (2014) reported that Gender had significant influence on Problem Solving Ability, however girls performed better in general Problem Solving Ability than boys. Mahalakshmi and Pugalenthy (2015) also found a significant difference between Secondary School Students towards Problem Solving Ability with respect to their Gender. Singaravelu (2017) revealed that male students were found to be better than the female in respect to their Problem Solving Ability. Ahuja (2020) found girls had a better Problem Solving Ability.

It was observed that gender does not have any influence on Problem Solving Ability of LADC secondary school students. The probable reasons would be parents treated every child equally, they have provided equal opportunity and freedom among their child. LADC area is where parents were more educated than CADC area, this has a huge impact on children education, they do not discriminate their child in regards to education, and they have been provided the same education among boys and girls. Community perception between boys and girls did not differ significantly as well, they have given the same treatment in the society to pursue their dreams and goals. Students of LADC have received the same amount of teaching, treatment and equal opportunity perform every task related to their academic inside the classroom therefore the ability of among boys and girls did not differ significantly. On the other hand it is still required to provide better facilities to perform more activities inside the classroom, constructivist approach learning is preferable to use as teaching method rather than rote memorization to enhance their problem solving skills. Teacher commitment and quality of teaching would be the main keys to strengthen problem solving skills of the students, besides proper guidance and counselling would be required to provide to the students for helping them to challenge any task related to academic, personal and career.

2. The finding showed that significant difference was found between CADC Male and CADC Female Secondary School Students in their Problem Solving Ability. The finding indicated that CADC male was better than CADC female in their Problem solving Ability.

Discussion: This finding was in agreed with the findings of Senthamarai et al (2016) and found that there was a significant difference in Problem Solving Ability of class IX standard students with respect to gender. The mean of boys was higher than the mean of girls. Therefore, boys had better Problem Solving Ability. Singaravelu (2017) also supported the present finding and his study revealed that male students were found to be better than the female students in respect of their Problem Solving Ability. Ganandevan (2006), Nataraj and Manjula (2012), Agnihotri (2015), Mahalakshmi and Pugalenthy (2015) who also reported that there was a significant difference between Problem Solving Ability with respect to Gender.

Whereas Kumari and Pujar (2014) found the opposite that girls were performed better in general Problem Solving Ability than boys. Ahuja (2020) stated that girl students had significantly higher Problem Solving Ability than boys.

It could be assume that CADC area is one of the most backward area in terms of economic, social and educationally. Particularly most parents are uneducated and economically backward, therefore they could not provide a good education to their children. They have a distinct culture and practices compare to others community in Mizoram due to that male domination was still prevalent in the community and women have less opportunity in the society. Even in school, girls enrolment is outnumber by boys, it seems that boys have more opportunity than girls. Lacking self-confidence and inferiority complex among girl's students were the factors that can affect their Problem Solving Ability. Therefore girl's education is still required to encourage and empower in CADC area.

Parents should be given awareness on the importance of girl education, even community must be require to educate for giving more freedom and opportunity to girl child. However if they have more chance to learn at the institution and more participation in community, it would have been increase their ability to solve problems at any circumstances.

d) Discussion on findings related to Academic Achievement Motivation of LADC and CADC Secondary School Students.

The findings showed that majority of LADC and CADC Secondary School Students had Low Academic Achievement Motivation:

Discussion: This findings were in accordance with Sanrangi (2015), found that a large number of tribal students had very low Academic Achievement Motivation. Vijayakumari and Rekha (2014) also reported that the level of Achievement Motivation among Secondary School Students in Kerala was not at all satisfactory, it indicates that the students had low level of Academic Achievement Motivation. Whereas, according to Praveen (2018) found that 72% of the students had an average level of Academic Achievement Motivation. Santhi & Suthanthiradevi (2019) found that majority of the students were having moderate Achievement Motivation. Anandharaja and Balakhrishnan (2018) also reported that students had a Moderate

Academic Achievement Motivation. But Emmanuel et al. (2014) revealed that majority of the students had high Academic Achievement Motivation.

It had been observed from the present finding that Secondary School Students of LADC and CADC had low Academic Achievement Motivation. There could have been many reasons and some of the reasons were lack of resources, did not received the best support from parents economically and psychologically besides quality of teaching could another factors that affect students motivation. As it has been mentioned earlier that the people who dwell within the territory of LADC and CADC were economically backward, most parents could not provide best support to their children; due of this they have been learning under a stressful environment. They did not have a chance to discover or innovative learning due limited of resources and traditional method of learning like rote memorization was still practising as the best method of learning that hampers children interest and curiosity in addition to that they did not get proper guidance and counselling to motivate them to pursue their dreams and goals. Therefore students of the said area were not academically motivated. Providing moral encouragement from both teachers and parents would be the essential factor that can elevate the student Academic Achievement Motivation. Teaching strategy must be enhanced and more resources are also require to provide them to perform a certain activities inside the classroom.

Community involvement should also be one of the essential factor that can motivate and help students in many aspects like donating funds for the institutions, collecting funds for economically challenge students etc. Interaction with Community leaders and others dignitaries in the community could be helpful for them to pursue their dreams and goals, community support can encourage them to try a new things and to achieve a bigger goals.

e) Discussion on comparison of Academic Achievement Motivation of LADC and CADC Secondary School Students.

The finding showed that a significant difference was found between LADC and CADC Secondary School Students in respect to their Academic Achievement Motivation. It signifies that LADC students were better than CADC students in their Academic Achievement Motivation

Discussion: This finding was supported by the finding of Pawar (2017) found that general and other caste secondary school students vary significantly in their Academic Achievement Motivation scores. General caste students have secured a greater mean value (30.50) than other caste students (21.82). Which means that general caste students were found to have a higher level of Academic Achievement Motivation and other caste students were found to have a lower level of Academic Achievement Motivation.

Whereas the present finding was contradict by the study conducted by Mahato & Barman (2019) and reported that there was no significant difference between SC and ST Community Students in respect to their Academic Achievement Motivation.

It is evident from the present finding that LADC student had a better Academic Achievement Motivation than CADC Secondary School Students and one of the possible reason was the area of LADC had an advantages in terms of infrastructure and access of technology. On the other hand most parents were literate and they were more concerned about education, they are morally, financially supportive, given more commitment to their child education, therefore it was assume that the students of LADC had a better chance to motivate themselves in their learning. In addition to that the students of LADC had a better chance to access more resources to enjoy their studies as well. On the other hand CADC Secondary School Students were lagging behind in all aspects, most parents were illiterate, economically backward, therefore they could not be supportive academically and this could be the reason that CADC Secondary School Students scored a very low level of Academic Achievement Motivation.

f) Discussion findings on comparison of Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

1. The finding showed that no significant difference between LADC Male and LADC Female Secondary School Students in respect to Academic Achievement Motivation.

Discussion: This finding was in conformity with the finding of Kaur (2013) and found that no significant difference between boys and girls exists on Academic Achievement Motivation. Chetri (2014) agreed to the above finding and found that no significant difference in Achievement Motivation with regard to Gender. Stanly (2014) also found

that boys and girls had equal Academic Achievement Motivation. It means that no singnificant difference was found between Academic Achievement Motivation of secondary school students in respect to Gender. Pushparaj and Dhanasakaran (2016) discovered that no significant difference between the boys and girls students in their level of Academic Achievement Motivation. Mishra (2017) also found that there was no significant difference between in the Academic Achievement Motivation of Secondary school boys and girls. Pawar (2017) found that Male and female Secondary School Students were found to have the same level of Academic Achievement Motivation. Kumar and Tankha (2020) also supported those findings and found that male and female Secondary School Students have the same level of Academic Achievement Motivation. Kurian (2021) reported that that the male and female students possess the same Achievement Motivation.

Whereas the present finding was in contrast to Ramandeep (2015) and found that the girl students differed significantly from boy students with respect to their Academic Achievement Motivation and girl students had better Academic Achievement Motivation then boys students. Pukhan (2015) also found that there was a significant difference between male and female students studying in the secondary schools of Dibrugarh district in respect to Academic Achievement Motivation. Kumar and Yadav (2015) who also found that Girls students had more Academic Achievement Motivation than boys at senior secondary level. Vijayakumari and Rekha (2014) discovered Academic Achievement Motivation was significant based on Gender. Veena and Shastri (2013) revealed in their findings that boys and girls differed significantly on Academic Achievement Motivation and girls had a better Academic Achievement Motivation. Bana et al., (2019) also revealed that Academic Achievement Motivation of female Government Secondary School were better than Male of Government Secondary School Students.

The Academic Achievement Motivation of LADC male and female Secondary School Students did not differ significantly in the present study. It could be observed from the present finding that Gender did not influence the Academic Achievement Motivation of Secondary School Students of LADC. In the LADC area, male and female students were given equal treatment and equal opportunities in school and at home. Parents were very supportive academically, morally, and financially. This support had encouraged and motivated students to achieve bigger goals in their studies and benefited them by allowing them to access whatever they want related to their

studies through the internet and to study on their own to solve their academic problems. It also helps the students to understand the concept of their learning. As a result, they can enthusiastically accomplish an academic task which was laid before them. Therefore it is believed that male and female students of LADC had the same level of Academic Achievement Motivation.

2. The finding showed that no significant difference was found between CADC Male and Female Secondary School Students in respect to Academic Achievement Motivation.

Discussion: The present finding was similar to finding of Kaur (2013) and found that no significant difference between boys and girls exists on Academic Achievement Motivation. Chetri (2014) agreed to the above finding and found that no significant difference in Academic Achievement Motivation with regard to Gender. Stanly (2014) also found that boys and girls had equal Academic Achievement Motivation. It means that no singnificant difference was found between Academic Achievement Motivation of Secondary School Students in respect to Gender. Pushparaj and Dhanasakaran (2016) discovered that no significant difference was found between the boys and girls students on their level of Academic Achievement Motivation. Mishra (2017) even found no significant difference between in the Academic Achievement Motivation of secondary school boys and girls and Pawar (2017) found that Male and female Secondary School Students were found to have same level of Academic Achievement Motivation. Kumar and Tankha (2020) also supported those findings and found that male and female Secondary School Students have the same level of Academic Achievement Motivation. Kurian (2021) reported that that the male and female students possess the same Academic Achievement Motivation

But the present finding was in contrast to Ramandeep (2015) and found that the girl students differed significantly from boy students with respect to their Academic Achievement Motivation and girl students had a better Academic Achievement Motivation than boy students. Pukhan (2015) also found that there was a significant difference between male and female students studying in the secondary schools of Dibrugarh district in respect to Academic Achievement Motivation. Kumar and Yadav (2015) who also found that Girls students had more Academic Achievement Motivation than boys at senior secondary level. Vijayakumari and Rekha

(2014) discovered Academic Achievement Motivation was significant based on Gender. Veena and Shastri (2013) revealed in their findings that boys and girls differed significantly in their Academic Achievement Motivation and girls had a better Academic Achievement Motivation. Bana et al., (2019) also revealed that Academic Achievement Motivation of female Government Secondary School were better than Male of Government Secondary School Students.

The present study revealed that no significant difference was found between the CADC male and female Secondary School Students in respect to Academic Achievement Motivation. It was confidently believed that both Genders of CADC secondary students had received the same treatment in teaching and learning, besides being brought up in the same environment as well as enjoying the same facilities. Therefore, male and female students had the same level of Academic Achievement Motivation.

g) Discussion on the relationship between Problem Solving Ability and Academic Achievement Motivation of LADC:

The finding showed that a low positive correlation was found between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students. It indicates that there was a low positive correlation between Problem Solving Ability and Academic Achievement Motivation.

Discussion: The present finding was agreed to the finding of Stanly (2014) who conducted a study on "Academic Achievement Motivation and Problem Solving Ability in Mathematics of Class IX Standard Students in Relation to their Sex And Type of School" found that the correlation co-efficient which was calculated to be 0.718 which was greater than the table value at 0.05 level and it substantiates that there was a significant relationship between Academic Achievement Motivation and Problem Solving Ability. Yunus et al. (2021) agreed to the finding of Stanly and contradict to the present finding and also found that Problem Solving Ability had a positive relationship with Academic Achievement Motivation. But it was also contradictory to the finding of Khan (2010) and reported that there was a negative relationship between Problem Solving and Academic Achievement Motivation in school-aged children.

The correlation co-efficient, which was calculated at 0.13 in the present study confirmed there was a low positive relationship between Problem Solving Ability and Academic Achievement Motivation. So it could be be said that the relationship between Problem Solving Ability and Academic Achievement Motivation LADC Secondary Students were not strong. If the bond between Problem Solving and Academic Achievement Motivation were not highly positive, it would have an impact on students' creativity, originality, and participation. To have a better correlation between Problem Solving and Academic Achievement Motivation, it requires to provide better quality of teaching and more opportunity to express one's ideas. In addition to that learning with joy and activity should encourage inside the class.

h) Discussion on finding of the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC:

The present finding showed that the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students revealed there was a Low Positive correlation between Problem Solving Ability and Academic Achievement Motivation among CADC students.

Discussion: The present finding was similar to the finding of Stanly (2014) who conducted a study on "Academic Achievement Motivation and Problem Solving Ability in Mathematics of Class IX Standard Students in Relation to their Sex And Type of School" found that the correlation co-efficient which was calculated to be 0.718 which was greater than the table value at 0.05 level and it substantiates that there was a significant relationship between Academic Achievement Motivation and Problem Solving Ability. Yunus et al. (2021) agreed to the finding of Stanly and contradict to the present finding and also found that Problem Solving Ability had a positive relationship with Academic Achievement Motivation. But it was contradictory to the finding of Khan (2010) and reported that there was a negative relationship between Problem Solving and Academic Achievement Motivation in school-aged children.

So it could be said that the relationship between Problem Solving Ability and Academic Achievement Motivation CADC Secondary Students was not strong. If the bond between Problem Solving and Academic Achievement Motivation were not highly positive, it would have an impact on students' creativity, originality, and

participation. To have a better correlation between Problem Solving and Academic Achievement Motivation, it requires to provide greater quality of teaching and more opportunity to express one's ideas. In addition to that learning with joy and activity should encourage inside the class.

For creating a favourable and significant link between Problem Solving Ability and Academic Achievement motivation among CADC secondary students, it needs to improved facilities, excellent quality teaching, teacher effectiveness, dedication, and a better family environment was necessary.

5.10 RECOMMENDATIONS

The following recommendations can be cited and inferred according to the findings of the present findings:

1. In order to improve Problem Solving Ability of the students, school authorities need to take steps to diagnose the crucial difficulty areas in basic education. For this purpose, the high school teachers are required to be trained for making use of diagnostic and criterion based evaluation procedures to make teaching-learning process more effective as well as child centre learning to enhance the level of Problem Solving Ability. Teaching methodology and strategies may need to be reviewed to surge Problem Solving Ability. It is the obligation of the teachers to detect such students who have low Problem Solving abilities and try to adjust their learning and thinking power through various audio-visual aids.

2. Students from these two Autonomous District Councils lagged behind in every spheres in comparing to other district Secondary School Students in Mizoram. To improve their Problem Solving Ability, a better atmosphere, better facilities, and greater parental support would also be required. Furthermore, teachers' passion, commitment, and quality of teaching would be crucial for encouraging and enhancing the students' rational thinking and creativity. Community involvement would also be helpful for the institution and the students, community participation like organising awareness on mental health, providing career guidance, frequent medical check- up, free tuition for economic backward children would be boost a heathy learning environment of among the student and this will encourage them to face any challenges related to their academics and every day's life.

3. Teacher commitment and quality of teaching would be the main keys to strengthen problem solving skills of the students, besides proper guidance and counselling would be required to provide to the students for helping them to challenge any task related to academic, personal and career.

4. Parents should be given awareness on the importance of girl education, even community must be require to educate for giving more freedom and opportunity to girl child. However if they have more chance to learn at the institution and more participation in community, it would have been increase their ability to solve problems at any circumstances.

5. Providing moral encouragement from both teachers and parents would be the essential factor that can elevate the student Academic Achievement Motivation. Teaching strategy must be enhanced and more resources are also require to provide them to perform a certain activities inside the classroom.

6. It was recommended that Community involvement should also be one of the essential factor that can motivate and help students in many aspects like donating funds for the institutions, collecting funds for economically challenge students etc. Interaction with Community leaders and others dignitaries in the community could be helpful for them to pursue their dreams and goals, community support can encourage them to try a new things and to achieve a bigger goals.

6. To have a better correlation between Problem Solving and Academic Achievement Motivation, it requires to provide better quality of teaching and more opportunity to express one's ideas. In addition to that learning with joy and activity should encourage inside the class.

7. For creating a favourable and significant link between Problem Solving Ability and Academic Achievement motivation among CADC secondary students, it needs to improved facilities, excellent quality teaching, teacher effectiveness, dedication, and a better family environment would be necessary.

8. One of the most important components of assisting students in these areas was strengthening of a proper communication network. Many students in this location do not have good internet connection, therefore they are unable to access extra learning

materials through the internet. Therefore strengthening of communication and providing network connectivity are also recommended.

9. CADC female students differ significantly than male in respect to problem solving ability and it is recommended to make efforts at home and school to take away any kind of gender discrimination in terms of their academic and personal growth.

10. The Achievement motivation can be established in the school by designing special curricula and this deserves attention in view of the educational needs of the students of the two Autonomous district council. In this way the learners will increase in their achievement motivation score.

11. Achievement Motivation and Problem Solving Ability can also be enhanced by appropriately strategic training programme. Workshop training, refresher courses, should be provided for the teachers of this area to support them to prepare with necessary skills and capabilities to enrich student's Achievement Motivation and Problem Solving Ability.

12. Secondary School Students belongs to LADC and CADC should be motivated at school and inside the classroom for higher academic achievement through counselling, diagnostic and remedial work and maintaining of proper health check-up is also recommended for them.

5.11 CONCLUSION

Problem Solving is a skill which comprises logical inquiry of the facts and drawing conclusions in consistent with the data and evidences. Problem-solving is an individual phenomenon that requires the use of higher-order cognitive abilities, as well as constant and persistent struggle on both conscious and unconscious levels in order to be successful. Some people can manage a situation, while others cannot. Problem solving is the process of determining solutions to problems through an ordered cognitive process. This is a process in which creative and critical thinking is used to solve or reason out difficulties presented by students in groups or individually. It is a mental process that provides effective problem-solving strategies for resolving and overcoming problems that appear to be impeding the accomplishment of a solution.

On the other hand Achievement motivation is basically the tendency or inner desire or feeling of a person to accomplish something important and exclusive to attain

a spirits of self-accomplishment and contentment. It is a driving force to improve or maintain one's talents in all actions where a high standard of excellence is upheld. Achievement is a responsibility-oriented activity that allows people' performance to be evaluated based on externally or internally set standards, which forces the individual to compete with others or with the standard. Achievement Motivation is the inner force that help a person to achieve certain task, and it is defined by desire, a high level of energy, the need for independence, and the satisfaction that comes from exceeding one's own expectations.

The present study enquires into the problem-solving ability and academic achievement motivation of LADC and CADC secondary students in a comparative way. It was found that the secondary students of LADC and CADC have extremely low problem-solving ability. The fact that students neither score an average level nor a high level of problem-solving ability is very unsatisfactory, and it can be assumed that unhealthy home environments, shortages of teachers, being unable to provide better facilities at school, lack of parental support, and practising of traditional methods of teaching could be some of the reasons for the very low problem-solving ability among LADC and CADC secondary students. In respect to problem solving ability between LADC and CADC secondary students, they do not differ significantly, it signifies that area of studies do not influence on their problem solving ability of both students.

Gender do not influence problem solving ability among LADC secondary students whereas a significant difference was found between problem solving ability of male and female students of CADC it means that gender has affect problem solving ability among CADC secondary students and it also indicates male has a better problem solving skills than female.

The present study also revealed that there is low Academic achievement motivation among LADC and CADC secondary students. As a result providing moral encouragement from both teachers and parents are the essential factor that can elevate the student achievement motivation. Teaching strategy must be enhanced and more resources are also require to provide them to perform a certain activities inside the classroom. It is evident from the present finding that LADC student have a better academic achievement motivation than CADC secondary school students and one of the possible reason is that the area of LADC has an advantages in terms of infrastructure and access of technology. On the other hand most parents are literate

and they are more concerned about education, they are morally, financially supportive, given more commitment to their child education, therefore the students of LADC have a better chance motivate themselves in their learning. In addition to that the students of LADC have a better chance to access more resources to enjoy their studies as well. On the other hand CADC area lagging behind in all aspects, most parents are illiterate, economically backward, therefore they could not be supportive academically and this could be the reason of CADC students who are scoring very low level of achievement motivation. But gender do not influence Academic achievement motivation among LADC and CADC secondary students. It was also found that there is a low positive correlation between Problem solving ability and Academic achievement motivation.

Everyone's life has been impacted by their ability to solve problems. It assists individuals in developing a better strategy for dealing with problems and obstacles that have been placed in front of them. It is particularly essential in the lives of students because it gives an opportunity to expand their creativity, and creativity generates drive and interest. Motivation and interest resulted in determination and success. As a result, improved problem-solving abilities are necessary and vital for students.

It can also be said that problem solving and academic achievement motivation are interrelated. It was mostly believed that those who had better problem solving abilities would have better academic achievement motivation. Having better problem-solving skills with motivation are necessary for students' achievement. Without motivation, there may not be curiosity to create ideas. So, motivation makes them more progressive towards achieving certain skills too.

It is important for teachers to educate in a manner that enhances students' problem-solving skills. Teachers must view teaching as a process of helping students develop a thorough knowledge of mathematical ideas and processes by engaging them in mathematics and other disciplines. Teachers must be a facilitator in a classroom instead of functioning as the ultimate authority and information distributor, adopting innovative ideas is essential to enhances student motivation as well.

A number of educational approaches can be used to improve pupils' problem-solving abilities. The conceptual change technique, the learning cycle, and the generative learning model are examples of educational tactics for constructivist teaching methods. All of these techniques seek to increase problem-solving abilities by emphasising the process rather than the outcome. Teachers should be familiar with three types of knowledge in order to provide effective instruction to improve cognitive

skills: conceptual knowledge, procedural knowledge, and pedagogical knowledge for promoting problem solving skills and achievement motivation of the students.

Teachers have to be well prepared to address students' requirements. Teachers and parents should make an effort to get to know the children and help them develop their strength. The content presented must aid in the development of competency, creative and critical thinking skills of the students. School activities must be varied in order to maintain student interest. Activities that are innovative, appropriate, and pertinent to real life must be integrated into classroom teaching. It is necessary to recommend and to follow experiential learning in that a student processes knowledge, skills and attitudes cognitively, affectively in the classroom as well and that knowledge is formed through the transformation of experience. Teachers must use more attractive and effective techniques that include technology to inspire students to study and to keep them interested. In order to make the educational system more purposeful, successful, and contribute to national development, students, teachers, and parents must work together wholeheartedly.

Teaching methodology and method may need to be reviewed to surge the problem solving ability. It is the obligation of the teachers to detect such students who have low problem solving abilities and try to adjust their learning and thinking power through various audio-visual aids. Teachers must embolden students to adopt a sensible risk-taking attitude while solving problems. Risk-taking attitude leads the students to overcome mental fixation while solving problems in skill tests, such as, reasoning skills test, problem solving ability test, personality test, and so on

However, in the present complex world, a certain educational qualification does not assure success in life. To be a successful human being, everyone needs a conducive atmosphere with a human touch for continuous growth and achievement. Therefore, the role of Achievement motivation and Problem-solving skills for greater academic success is not only essential for LADC and CADC secondary students, it is a must for one and all for effective and worthwhile living.

5.12 SUGGESTION FOT FURTHER STUDIES

Based on the findings of the present research, the researchers have offered a certain suggestion for further investigation. Despite the fact that the outcomes of the present investigation are enthralling, in any case, any venture can be made to

additionally look into these aspects. A portion of the recommendations are as per the following:

1. The present research was carried out in two Autonomous District Councils: Lai Autonomous District Council and Chakma Autonomous District Council. As a result, the Mara Autonomous District Council can be included for future research. It indicates that the field of study can be expanded for future research.

2. LADC and CADC Secondary School Students can also be compared on the basis of gender. For instances LADC Male and LADC female, CADC Male and LADC Female etc. The present study compares male and female secondary school students from LADC and CADC.

3. Problem solving and Academic Achievement Motivation are studied in the present study, however, Academic Achievement of secondary students can be added.

4. The present study was conducted with secondary school students, but similar studies may be undertaken with elementary, senior secondary, college, and pre-service training students as well.

5. This kind of research can be done not just inside an autonomous region, but also between two districts or among other districts. It has the potential to deliver a broader and better result inside the state.

6. It would be preferable to investigate the link between problem solving, secondary students' academic success, and teachers' professional commitment.

7. Efforts should be undertaken to create and standardise problem-solving and academic achievement motivation tools in Mizo and Chakma. It may have dynamic result in the study. Students will also be more committed to their replies.

8. Due to covid-19, the present study was unable to examine with bigger samples. So that it may be studied with more samples while broadening the scope of the investigation.

CHAPTER-VI
SUMMARY

6.1 SUMMARY

All aspects of life require the ability to solve issues, and classroom problem solving exercises are a fantastic approach to get students ready for real-world situations. The capacity to critically evaluate an issue, map out all of its components, and then develop a feasible solution is one of the most useful talents one can gain in life, whether in school, job, or social interactions. Classroom problem solving activities can help students to learn problem solving Abilities from an early age in school. Such activities promote both cognitive and social development, and they can provide children with the tools they need to address and solve challenges for the rest of their lives.

Problem Solving Ability is the cognitive capability of the problem solver to perform physical or mental operations based upon his knowledge so as to achieve the goal of solving a problem. This is measured as the score of the Problem Solving Ability with three components namely, comprehending the Problem, Clarifying the Problem and Finding Solution to the Problem (Manoj, 2006). Problem Solving Ability is the prediction of achievement in the school environment. The Ability of Problem Solving has a fundamental role in students' academic performance and their construction of the concepts (Adesoji, 2008).

Gupta et al. (2015) concluded that Problem Solving Ability of the students help them building strong cognitive ability, which should be in a better position to reap the benefits of high academic achievement, enrolled in reliable future career choice and job availability. Once the Problem Solving Ability is acquired by the student, the elimination of error and putting correct discrimination for the practical work is achieved. Problem Solving Ability brings out the individual differences among the students. Problem Solving Ability becomes a necessary and important skill, when the students go for their further studies.

ACADEMIC ACHIEVEMENT MOTIVATION

The term Achievement Motivation may be defined by independently considering the words Achievement and Motivation. Achievement refers to

competence (a condition or quality of effectiveness, ability, sufficiency, or success). Motivation refers to the energization (instigation) and direction (aim) of behaviour. Thus, achievement motivation may be defined as the energization and direction of competence-relevant behaviour or why and how people strive toward competence (success) and away from incompetence (failure). (*Achievement Motivation - IResearchNet*, 2016).

Colman (2001) also defined Achievement Motivation as a social form of motivation involving a competitive desire to meet standards of excellence.

Achievement Motivation is the need for excellence and significant accomplishment, despite what rewards may be offered after the achievement has been met. (Hsieh, 2011)

Bigge and Hunt (1980) defined Achievement Motivation as the drive to work with diligence and vitality, to constantly steer toward targets, to obtain dominance in challenging and difficult tasks and create sense of achievement as a result. This definition consists of three elements: the stimulation of personal capabilities, constant efforts with drive and obtaining of sense of satisfaction. Academic Achievement Motivation has been widely characterised as an academic drive, learning attitude, and passion for Academic Achievement.

Academic drive involves measuring items such as work habits and scholastic expectations, and attitude toward learning involves student's opinion of classroom environment and self-efficacy in learning (Entwistle, 1968).

RATIONALE OF THE STUDY

The relationship between Problem Solving Ability and Academic Achievement Motivation are crucial for building up students thought and performances. Even Stanly (2014) found significant relationship between Achievement Motivation and Problem Solving Ability. Yunus et al. (2021) conducted a study on "The relationship between Achievement Motivation, metacognitive, attitudes and Problem Solving Abilities in students" and also found that Problem Solving Ability had a positive relationship with Achievement Motivation.

Even in this study, the researcher intends to look into Secondary School Students' Problem Solving Ability and Academic Achievement Motivation of Lai Autonomous District Council and Chakma Autonomous District Council. According

to the 2011 Census, the literacy percentage of Lawngtlai district was just 66.41 percent, the lowest among the eight districts of Mizoram (only eight districts existed at this time). This literacy rate plainly demonstrates that the district is trailing behind in education when compared to neighbouring districts, where the Lai and Chakma tribes make up majority of the population. These people are minorities in terms of language, customs, and tradition compared to the larger groups. Therefore, the Indian Government had given Autonomous District Councils for minorities such as the Lai and Chakma tribes, which were known as the Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC), respectively. (Dougel, 2010).

The inhabitants of the western part of LADC and CADC are generally assumed to be economically and socially backward. The major difficulties and obstacles remain communication, transportation, and medical care. Most parents come from a poor financial and educational background, which is why many children cannot afford a proper education. In terms of quality, infrastructure, access, problem-solving, motivation, and technology, the secondary school students of LADC and CADC jurisdiction lag behind compared to other districts in Mizoram. Simultaneously, many students in the above-mentioned are expected to have hidden abilities, talents, and inborn characteristics. As a result, a comprehensive investigation is required to uncover the truth about pupils in this region. As previously said, one of the most important factors used to evaluate a student's quality how much capability or ability they have to solve problems. Moreover, having a stronger problem-solving skills allows students to confront obstacles in real life. As a result, it is critical to understand students' problem-solving abilities. At the same time, motivation is an integral element of learning; it affects students' interest, attention, and curiosity. The pupils' motivation level determines their drive for achievement. It also has a significant influence on the completion of the work at hand. Therefore, motivation strengthens problem-solving abilities, thinking skills and also enhancing academic performance of the students. Spinath et al., (2006) stated that Achievement Motivation is considered a prerequisite for success, not only in academic, but also in sports- and job related situations. In academic settings, the interest in motivation is partly inspired by the notion that Students' motivation, operationalized, such as as their competency beliefs and value beliefs, could be more malleable than their cognitive ability, and as such could prove

to be a potential lead for the educational system for improving learning and achievement processes in students.

Therefore, the researcher have conducted the most successful and astonishing research regarding the Problem Solving Ability and Academic Achievement Motivation of the Secondary School Students of LADC and CADC in Mizoram. In terms of reviews of the related literature, research on Problem Solving Ability and Achievement Motivation has never been done in this area previously, with the majority of studies taking place in the northern part of Mizoram. Therefore the present study had been taken up in southern Mizoram, exclusively in LADC and CADC area.

STATEMENT OF THE PROBLEM

Problem Solving and Achievement Motivation are deeply intertwined variables (Simon, 1967). The present study focused on the levels of Problem Solving Ability and Academic Achievement Motivation of Secondary Students. The main purpose of the study is to compare the Problem Solving Abilities of Secondary School Students from LADC and CADC. It also focuses on comparing their Academic Achievement Motivation. On this ground, the present study is entitled *"A Comparative Study on Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC) in Mizoram"*

RESEARCH QUESTIONS

1. What are Problem Solving Ability of LADC and CADC Secondary School Students
2. Is there any difference between Problem Solving Ability of LADC and CADC Secondary School Students?
3. Is there any difference between Problem Solving Ability of LADC and CADC Secondary School Students In Relation To Gender?
4. What are the Academic Achievement Motivation of LADC and CADC Secondary School Students?
5. Is there any difference between Academic Achievement Motivation of LADC and CADC Secondary School Students?
6. Is there any difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender?

7. What is the relationship between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students?
8. What is the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students?

OBJECTIVES

1. To study Problem Solving Ability of LADC and CADC Secondary School Students.

2. To compare Problem Solving Ability of LADC and CADC Secondary School Students.

3. To compare Problem Solving Ability of LADC and CADC Secondary School Students In Relation To Gender.

4. To examine Academic Achievement Motivation of LADC and CADC Secondary School Students.

5. To compare Academic Achievement Motivation of LADC and CADC Secondary School Students.

6. To compare Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

7. To find out the relationship between Problem Solving Ability and Academic Achievement Motivation of

a) LADC Secondary School Students.

b) CADC Secondary School Students.

NULL HYPOTHESES

The following Null Hypotheses were listed down below:

1. There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students.

2. There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender.

3. There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students.

4. There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

AN OVERVIEW OF RELATED LITERATURE STUDIED

Problem Solving Ability		Academic Achievement Motivation		Reviews on Relationship between Problem Solving Ability & Academic Achievement Motivation	
Studies conducted Outside India	**Studies conducted inside India**	**Studies conducted Outside India**	**Studies conducted inside India**	**Studies conducted Outside India**	**Studies conducted inside India**
10	**20**	**10**	**16**	**1**	**2**
Period of Review 2002-2021	**Period of Review 2006-2021**	**Period of Review 2010-2021**	**Period of Review 2013-2021**	**2021**	**Period of Review 2014-2018**

The above table shows the period of review as well as the number of reviews that were conducted outside India and inside India.

METHOD OF STUDY

The descriptive research method was used for this research. In education, the descriptive approach has been the most widely used research method. The approach necessitates the use of sample and a related research instrument for data collection and conducting the study.

The purpose of the present study was to look into Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC). Choosing a representative sample from secondary school students was necessary in order to meet the study's goals and achieve its conclusions.

POPULATION AND SAMPLE

A population refers to any collection of human beings or non-human entities such as objects, educational institutions, time units, Geographical areas, prices of

wheat or salaries drawn by individuals. Some statisticians call it universe. (Koul, 2009, p.206). The population of the present study consist of secondary school students of LADC and CADC area.

The representative portion of the population is called a sample. (Koul, 2009, p.206) The sample consists of 400 Secondary School Students, out of which 199 Secondary School Students of LADC and 201 Secondary School Students of CADC were selected through random cluster sampling technique.

TOOL USED

The researcher used the Problem Solving Ability Test developed by L.N. Dubey, 2011 and the Academic Achievement Motivation Test developed by Dr. T.R. Sharma, 1984 published by National Psychological Corporation 4/230 Kacheri Ghat, Agra, India as a tool for the present study. The reliability and the validity of the test were not checked by the researcher, it was taken from the test manual itself.

STATISTICAL TECHNIQUES USED

The Following Statistical techniques were for analysing the data were as follows:

Percentage was used to calculate the students' total score for Problem Solving Ability and Academic Achievement Motivation. To compare the means of Male and Female, LADC and CADC Secondary School Students ’t’ test was employed. The Pearson product-moment correlation was used to identify the relationship between Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of LADC and CADC. Excel was used for calculating the data.

MAJOR FINDINGS

1. Out of 199 LADC Secondary School students, **54.77%** of the students had Extremely Low Problem Solving Ability.

2. Out of 201CADC Secondary School Students, **62.19%** of the students fell under Extremely Low Problem Solving Ability.

3. No significant difference was found between LADC and CADC Secondary School Students in respect to their Problem Solving Ability. It could be concluded that neither LADC Secondary School Students nor CADC Secondary School Students had a better Problem Solving Ability.

4. No significant difference was found between LADC Male and LADC Female Secondary School Students in regards to Problem Solving Ability.

5. Significant difference was found between CADC Male and CADC Female Secondary School Students in their Problem Solving Ability. Since the mean score of CADC Male (M=4.82) was higher than that of CADC Female (M=4), it was concluded that the Problem Solving Ability of CADC Male is better than CADC Female.

6**.** Out of 199 **51.76%** of LADC Secondary School Students fell under the category of Low Academic Achievement Motivation.

7. Out of 201 students, **63.18%** of Secondary School Students of CADC are having Low Academic Achievement Motivation.

8. Significant difference was found between LADC and CADC Secondary School Students in their Academic Achievement Motivation.

9. No significant difference was found between LADC Male and LADC Female Secondary School Students in respect to their Academic Achievement Motivation.

10. No significant difference was found between CADC Male and CADC Female Secondary School Students in relation to their Academic Achievement Motivation.

11. It is found that there was a Low Positive relationship between Problem Solving Ability and Academic Achievement Motivation among LADC Secondary School Students.

12. In this study it is found that there is a Low Positive correlation between Problem Solving Ability and Academic Achievement Motivation among CADC Secondary School Students.

CONCLUSION

Problem Solving is a skill which comprises logical inquiry of the facts and drawing conclusions in consistent with the data and evidences. Problem-solving is an individual phenomenon that requires the use of higher-order cognitive abilities, as well as constant and persistent struggle on both conscious and unconscious levels in order to be successful. Some people can manage a situation, while others cannot. Problem solving is the process of determining solutions to problems through an ordered cognitive process. This is a process in which creative and critical thinking is used to solve or reason out difficulties presented by students in groups or individually.

It is a mental process that provides effective problem-solving strategies for resolving and overcoming problems that appear to be impeding the accomplishment of a solution.

On the other hand Achievement motivation is basically the tendency or inner desire or feeling of a person to accomplish something important and exclusive to attain a spirits of self-accomplishment and contentment. It is a driving force to improve or maintain one's talents in all actions where a high standard of excellence is upheld. Achievement is a responsibility-oriented activity that allows people' performance to be evaluated based on externally or internally set standards, which forces the individual to compete with others or with the standard. Achievement Motivation is the inner force that help a person to achieve certain task, and it is defined by desire, a high level of energy, the need for independence, and the satisfaction that comes from exceeding one's own expectations.

The present study enquires into the problem-solving ability and academic achievement motivation of LADC and CADC secondary students in a comparative way. It was found that the secondary students of LADC and CADC have extremely low problem-solving ability. The fact that students neither score an average level nor a high level of problem-solving ability is very unsatisfactory, and it can be assumed that unhealthy home environments, shortages of teachers, being unable to provide better facilities at school, lack of parental support, and practising of traditional methods of teaching could be some of the reasons for the very low problem-solving ability among LADC and CADC secondary students. In respect to problem solving ability between LADC and CADC secondary students, they do not differ significantly, it signifies that area of studies do not influence on their problem solving ability of both students.

The present study also revealed that there is low Academic achievement motivation among LADC and CADC secondary students. As a result providing moral encouragement from both teachers and parents are the essential factor that can elevate the student achievement motivation. Teaching strategy must be enhanced and more resources are also require to provide them to perform a certain activities inside the classroom. It is evident from the present finding that LADC student have a better academic achievement motivation than CADC secondary school students and one of the possible reason is that the area of LADC has an advantages in terms of infrastructure and access of technology. On the other hand most parents are literate

and they are more concerned about education, they are morally, financially supportive, given more commitment to their child education, therefore the students of LADC have a better chance motivate themselves in their learning. In addition to that the students of LADC have a better chance to access more resources to enjoy their studies as well. On the other hand CADC area lagging behind in all aspects, most parents are illiterate, economically backward, therefore they could not be supportive academically and this could be the reason of CADC students who are scoring very low level of achievement motivation. But gender do not influence Academic achievement motivation among LADC and CADC secondary students. It was also found that there is a low positive correlation between Problem solving ability and Academic achievement motivation.

Everyone's life has been impacted by their ability to solve problems. It assists individuals in developing a better strategy for dealing with problems and obstacles that have been placed in front of them. It is particularly essential in the lives of students because it gives an opportunity to expand their creativity, and creativity generates drive and interest. Motivation and interest resulted in determination and success. As a result, improved problem-solving abilities are necessary and vital for students.

It is important for teachers to educate in a manner that enhances students' problem-solving skills. Teachers must view teaching as a process of helping students develop a thorough knowledge of mathematical ideas and processes by engaging them in mathematics and other disciplines. Teachers must be a facilitator in a classroom instead of functioning as the ultimate authority and information distributor, adopting innovative ideas is essential to enhances student motivation as well. .

However, in the present complex world, a certain educational qualification does not assure success in life. To be a successful human being, everyone needs a conducive atmosphere with a human touch for continuous growth and achievement. Therefore, the role of Achievement motivation and Problem-solving skills for greater academic success is not only essential for LADC and CADC secondary students, it is a must for one and all for effective and worthwhile living.

Appendices

Appendix-1

L. M. Regd. No. 504838
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L. N. Dubey *(Jabalpur)*

Consumable Booklet
of
PSAT-D
(English Version)

Please fill in the following entries : ***Date*** ☐☐☐☐☐☐☐☐

Name ________________ Father's Name ________________

Date of Birth __________ Age ____ Yrs. ____ Month ____ Sex : Male ☐ Female ☐

Class ________ Faculty : Arts ☐ Commerce ☐ Science ☐ Tech. ☐

Institute ________________ Place ________________

Area : Urban ☐ Semi-urban ☐ Rural ☐

INSTRUCTIONS

On the following pages 20 problem based statements have been given & for each of the problem statement Four alternative answers have been given.

Kindly carefully study each problem statement and corresponding Four alternative answer and the answer alternative which you think is correct, put a tick ☑ mark in the cell meant for it.

Please do try to answer all the 20 questions.

This is not an examination and the result on this scale is not going to affect your academic examination.

Be rest assured your answers will be kept confidential.

The Time for Attempting this scale is 20 minutes. So work fast.

Scoring Table

	Raw Score			z-Score	Grade	Level of Problem Solving Ability
Page	2	3	4			
Score						
Total						

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NATIONAL PSYCHOLOGICAL CORPORATION

UG-1, Nirmal Heights, Near Mental Hospital, Agra-282 007

Sr. No.	STATEMENTS	Response	Score

1. Rajeev has 35 notes of 100 rupees denomination in serial. If 12965 is the number of first note, what will be number of last note ?
   (1) 13999
   (2) 13000
   (3) 12999
   (4) 13001

2. There are four married sons of an husband and wife in a family. Each son has 4 children. Then how many members are there in the family ?
   (1) 16
   (2) 20
   (3) 24
   (4) 26

3. Wirte two such numbers which are having their total as 30 and difference as 20 ?
   (1) 15 : 15
   (2) 28 : 10
   (3) 25 : 5
   (4) 28 : 2

4. One person is 4 years older than his wife. His wife is 10 times older than her daughter. Her daughter will be of 6 years old after 2 years, then what is the present age of the person ?
   (1) 40 years
   (2) 44 years
   (3) 48 years
   (4) 42 years

5. There are two taps in a tank. One tap fills that tank in 10 hours and the other tap empties it in 8 hours. If both the taps are opened simultaneously, then in how many hours the tank will be filled completely ?
   (1) In 10 hours
   (2) In 13 hours
   (3) In 18 hours
   (4) Will never fill

6. A soldier from his camp goes 5 km. straight in the north. Then after going 6 km. straight in the east goes 5 km. in the south. From there turning to right goes 5 km. Now how many km. away he is from his camp ?
   (1) 21 km.
   (2) 16 km.
   (3) 1 km.
   (4) 11 km.

7. There is a difference of 40 between 6 times and 8 times of a number then what is that number ?
   (1) 240
   (2) 320
   (3) 40
   (4) 20

Total Score Page 2

Sr. No.	STATEMENTS	Response	Score

8. Smt. Shakuntla said to her daughter Sudha that I were of your age when you were born. If the present age of Smt. Shakuntla is 40 years, what would have been the age of Sudha 4 years before ?
   (1) 14 years
   (2) 16 years
   (3) 20 years
   (4) 24 years

9. Adding twice of any number in that number and substracting half of that number comes 50, then what will be that number ?
   (1) 50
   (2) 40
   (3) 30
   (4) 20

10. A girl student answered three times wrong answers to the total of correctly answered question. If she had in all answered 24 questions, then tell the number of correctly answered questions ?
   (1) 4
   (2) 18
   (3) 8
   (4) 6

11. Age of Madhu is 18 years. Six years back she was twice the age of Sharad then what was the age of Sharad at that time ?
   (1) 6 years
   (2) 10 years
   (3) 12 years
   (4) 14 years

12. If a doctor gave 5 pills to a patient and directed to Swallow each pill with a gap of half an hour, then how much time the patient will take to Swallow those 5 pills ?
   (1) 3½ hours
   (2) 2 hours
   (3) 2½ hours
   (4) 1½ hours.

13. A number added with itself. Same number is substracted from the total, then the remaining total is multiplied with the same number. If the product is then 100 what is that number ?
   (1) 100
   (2) 50
   (3) 20
   (4) 10

Total Score Page 3

Sr. No.	STATEMENTS	Response	Score

14. 'A' gains 10% more profit than 'B' then what percent of loss occurs to 'B' than 'A' ?
(1) 10% loss
(2) Neither profit nor loss
(3) $9\frac{1}{11}$% loss
(4) can not say

15. In a line the position of 'A' from left is 21st and of 'B' is 7th from right. If the position of both is changed then the position of 'A' from left becomes 25th. Tell how many boys are these in that line ?
(1) 32
(2) 31
(3) 29
(4) 30

16. A student of psychology had to obtain 20% marks for passing. He got 20 marks and he failed by 20 marks then how many maximum marks in that paper ?
(1) 50
(2) 100
(3) 200
(4) 400

17. Think of a number. After dividing it by 4 add 9 in the quotient. If answer comes 15, that number will be ?
(1) 20
(2) 24
(3) 36
(4) 48

18. Three years back age of 'A' was three years more then 'B's age, then after three years, what will be the difference in both's age ?
(1) 6
(2) 3
(3) 9
(4) 0

19. In a meeting reaching 15 minutes before 8.15, 'A' came to know that he had reached 30 minutes before 'B', who himself had reached 45 minutes late. What is the time of start of the meeting ?
(1) 7.30
(2) 8.15
(3) 8.00
(4) 7.45

20. Every person shook hands with each other after the end of the party. How many persons were there in the party if 28 times in all hands were shaken ?
(1) 14
(2) 18
(3) 8
(4) 10

Total Score Page 4

Appendix-2

T.M. Regd. No. 584636
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Consumable Booklet
of
AAMT-ST
(English Version)

Dr. T. R. Sharma *(Patiala)*

Please fill in the following informations : **Date** | | | | | | | | |

Name _____

Age _____ **Class** _____

School _____

INSTRUCTIONS

This booklet consists of some statements having two options. Read both the options carefully and choose the one which is correct according to you. Alongwith each option a box is given in which you have to mark a tick ☑ against the option you have chosen. Two examples are given below :

1. **If I fail in an examination, then**
   - **(A)** I will quit my studies. ☐
   - **(B)** I will prepare again and sit in the next examination. ☑

If you think (B) is correct put a tick ☑ mark against option (B).

2. **If I score 56% in my middle school, then**
   - **(A)** In High School, I will be satisfied with 50% marks. ☑
   - **(B)** I will try to get more than 60% in High School. ☐

If you think (A) is correct put a tick ☑ mark against option (A).

Scoring Table

	Raw Score			Interpretation
Page	2	3	4	
Score				
Total Score				

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4/230, KACHERI GHAT, AGRA-282 004 (INDIA)

Sr. No.	STATEMENTS	ANSWERS
1.	**In the class, I like to sit with students who are**	
	(A) good in studies.	☐
	(B) my friends.	☐
2.	**During my vacations, I would like to.**	
	(A) visit different places with my friends.	☐
	(B) work on my weak areas of studies with my friends.	☐
3.	**I will be very happy if**	
	(A) I score more marks in an examination than before.	☐
	(B) I win 10,000 Rupees in lottery.	☐
4.	**If I fail in an examination, I will go to school because**	
	(A) I will work hard and get pass marks in the next examination.	☐
	(B) my parents will force me to go.	☐
5.	**I would like to**	
	(A) solve difficult questions instead of easy questions.	☐
	(B) solve easy questions instead of difficult questions.	☐
6.	**I am of the nature that**	
	(A) I do my studies regularly.	☐
	(B) somehow I manage to get good marks.	☐
7.	**I like to**	
	(A) visit different places with my friends.	☐
	(B) help my friends in their studies.	☐
8.	**In an examination, I try to**	
	(A) write answers are better compared to last examination.	☐
	(B) complete all the answers so that my parents may not scold me.	☐
9.	**I want to become a type of the student**	
	(A) who can tell interesting stories.	☐
	(B) who can answer all the questions asked by the teacher.	☐
10.	**I want that in any examination**	
	(A) I score high marks in all subjects	☐
	(B) my luck should favour me.	☐
11.	**I always try**	
	(A) not to make my classmates unhappy.	☐
	(B) not to repeat my mistakes.	☐
12.	**I like to answer those questions**	
	(A) which other students cannot.	☐
	(B) whose answers I know.	☐
13.	**I wish to.**	
	(A) find out my weaknesses so that I can improve myself.	☐
	(B) become centre of attraction in my friend circle.	☐

Total Score Page 2 ☐

Sr. No.	STATEMENTS	ANSWERS
14.	**Before starting any difficult job**	
	(A) I always take help from other people.	☐
	(B) I always plan the work myself.	☐
15.	**I often want to become a student**	
	(A) whose achievements are high.	☐
	(B) who is favourite among all teachers.	☐
16.	**I want to have such potential that**	
	(A) I am always the best in studies.	☐
	(B) I can make my parents happy.	☐
17.	**I am of that nature who**	
	(A) does his studies regularly.	☐
	(B) somehow manage to get good marks.	☐
18.	**My neighbour is very good because**	
	(A) he/she inspires me to do hard work.	☐
	(B) he/she gives me interesting books to read.	☐
19.	**I like my school because**	
	(A) it has a good building and playground.	☐
	(B) it has a good library.	☐
20.	**While lying on my bed**	
	(A) I think about my friends and time spent with them.	☐
	(B) I try to recall the questions which were asked in the classroom.	☐
21.	**On radio, I like to listen to**	
	(A) the lectures given by great/eminent persons.	☐
	(B) music.	☐
22.	**I go to school regularly**	
	(A) so that my teacher is not angry with me.	☐
	(B) so that my studies are not affected.	☐
23.	**I think we should go for a morning walk because**	
	(A) the weather is very nice in the morning.	☐
	(B) morning walk refreshes our mind.	☐
24.	**I wake-up early in the morning because**	
	(A) my parents force me to get-up early in the morning.	☐
	(B) morning-time is the best time to study.	☐
25.	**While reading a book, if I come across a difficult word then**	
	(A) I find out the meaning of the word from the dictionary.	☐
	(B) I do not read the book anymore.	☐
26.	**I go to school because**	
	(A) If I do not go to school, my parents will be angry with me.	☐
	(B) when we go to school, we gain knowledge.	☐

Total Score Page 3 ☐

Sr. No.	STATEMENTS	ANSWERS
27.	**When I grow up**	
	(A) I would like to do difficult jobs.	☐
	(B) I would like to live a happy and peaceful life.	☐
28.	**If I were rich**	
	(A) there was no need for me to study.	☐
	(B) I could have bought good books.	☐
29.	**I believe that success**	
	(A) depends on luck.	☐
	(B) depends on hardwork.	☐
30.	**I like those teachers**	
	(A) who solve all the questions for us.	☐
	(B) who teaches us how to solve the questions and gives homework.	☐
31.	**I get nervous when**	
	(A) I am not able to give answer to a particular question.	☐
	(B) I get punishment for being naughty.	☐
32.	**I want to become**	
	(A) an obedient student.	☐
	(B) a hard-working student.	☐
33.	**I appreciate those**	
	(A) who get rewards for their studies.	☐
	(B) who get reward for their behaviour.	☐
34.	**I want to secure high marks**	
	(A) by hook or crook.	☐
	(B) through hardwork.	☐
35.	**I like those places where**	
	(A) there is university.	☐
	(B) there are many cinema halls.	☐
36.	**I feel depressed when**	
	(A) I am unable to achieve high grades in my studies/examinations.	☐
	(B) someone gets higher grade than me.	☐
37.	**I want to do all those things which**	
	(A) other students are unable to do.	☐
	(B) will make my friends win.	☐
38.	**When my results come out**	
	(A) I run to my parents to tell them.	☐
	(B) I wait to know how others have done in the examination.	☐

Total Score Page 4 ☐

Appendix-3

MIZORAM EDUCATIONAL FOUNDATION

CERTIFICATE

This is to Certify that ***Mr.HC Lalzawmliana,*** Research Scholar, Institute of Advanced Studies in Education, Aizawl, presented a paper titled "***Problem Solving Ability of Secondary School Students of Lai Autonomous Council (LADC) in Mizoram***" in the One Day National Webinar on '***Contemporary Issues and Trends in Indian Education – III***', Organized by Mizoram Educational Foundation on 27th April, 2021.

(Dr.LALZARMAWII)
Gen. Secretary

(Prof. LALBIAKDIKI HNAMTE)
President

Appendix-4

MIZORAM EDUCATIONAL FOUNDATION

CERTIFICATE

This is to Certify that ***Mr.HC Laizawmliana,*** Research Scholar, Institute of Advanced Studies in Education, Aizawl, has presented a paper titled "***A Comparative study on Academic Achievement of Class X Students of Lai Autonomous District Council and Chakma Autonomous District Council***" in the Two Day National Webinar on '***Contemporary Issues and Trends in Indian Education – II***', Organized by Mizoram Educational Foundation on 18th and 19th November, 2020.

(Dr.LALZARMAWII)
Gen. Secretary

(Prof. LALBIAKDIKI HNAMTE)
President

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(**Commencement of first Sem)**	
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(From Conclusion of end semester exam)	
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Vide No. F.No.1-10/2020 (CPP-II)
Dated 01.12.2021 up to 30.06.2022

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Document Information

Analyzed document	HC Lalzawmliana Thesis.docx (D128104805)
Submitted	2022-02-17T09:34:00.0000000
Submitted by	Lokanath Mishra lm
Submitter email	MZUT087@mzu.edu.in
Similarity	8%
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Sources included in the report

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W	URL: https://www.researchgate.net/publication/331960742_PROBLEM_SOLVING_ABILITY_AND_ACHIEVEMENT_MOTIVATION_AMONG_SECONDARY_SCHOOL_STUDENTS Fetched: 2019-09-29T10:12:52.7470000	12
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INTRODUCTION

PROBLEM SOLVING ABILITY

All aspects of life require the ability to solve issues, and classroom problem solving exercises are a fantastic approach to get students ready for real-world situations. The capacity to critically evaluate an issue, map out all of its components, and then develop a feasible solution is one of the most useful talents one can gain in life, whether in school, job, or social interactions. Classroom problem solving activities can help students to learn problem solving Abilities from an early age in school. Such activities promote both cognitive and social development, and they can provide children with the tools they need to address and solve challenges for the rest of their lives.

Problem solving is a mental activity that takes place as part of a bigger problem solving process that includes problem identification and problem form. Problem solving is a higher-order cognitive function that requires regulation and control of more basic or routine talents. It is said to be one of the most difficult of all mental operations. Problem resolution is required when an organism or artificial intelligence system wishes to migrate from one state to another. Problems solving tasks enable students to use higher-order thinking skills, which makes them more involved in the learning process. Problem solving entails applying principles and facts to explain new phenomena or anticipate outcomes from known conditions. The task of problem solving necessitates prediction, analysis of data, and application of principles in order to create a cause and effect link in physical events. Problem Solving Ability is the framework or pattern within which creative thought takes occur is referred to as ability. It is the ability to think and reason on a certain level of complexity. People with stronger Problem Solving Ability are typically found to solve issues of greater complexity faster than more intelligent people. Therefore, educators and trainers must pay close attention to the Problem Solving Ability of young boys and girls.

Problem solving also involves applying logic and reasoning to a multiplicity of problems encountered in daily life. Problem solving is an important element of children's development since it allows them to practise what they have learned in the classroom by applying what they have learned in different situations. It is a method of overcoming obstacles that appear to be impeding the achievement of a goal. Despite

the fact that it is based on inference, it is also a procedure for making adjustments. Thus, problem solving is cognitive processing aimed at changing a problem from its current condition to its desired state when the problem solver is unaware of a solution technique. Thinking, reasoning, decision making, critical thinking, and creative thinking are all connected to problem solving. The capacity to solve problems has a critical influence in students' academic achievement and idea creation. Many studies have shown that problem solving skills is an important component in content learning and academic success. One of the primary responsibilities of education is to build problem solving skills. So, problem solving can be defined as "The capacity to engage in cognitive processing to understand and resolve problem situations where a method of solution is not immediately obvious" (Creative problem solving - PISA, n.d.)

Therefore, it is crucial that parents and instructors understand the psychology of problem resolution in order to help their children. Addressing problems at school allows students to gain knowledge that can be applied in many different situations, as well as the capacity to transfer that knowledge to solving difficulties in their personal and communal lives. Once the learner has mastered the capacity to solve problems, he or she will be able to eliminate errors and make the proper distinctions for practical work. When students move on to pursue their studies, problem solving becomes a required and vital skill. Enhancing Problem Solving Ability is a significant component of the learning content. The following definitions help to clarify the meaning and nature of problem solving:

According to Woodworth (1948), Problem solving behaviour happened in novel or challenging situations in which a solution is not attained by the habitual methods of applying perceptions and principles derived from past experience in very acquainted situations.

Problem Solving Ability is the cognitive capability of the problem solver to perform physical or mental operations based upon his knowledge so as to achieve the goal of solving a problem. This is measured as the score of the Problem Solving Ability with three components namely, comprehending the Problem, Clarifying the Problem and Finding Solution to the Problem (Manoj, 2006). Problem Solving Ability is the prediction of achievement in the school environment. The Ability of Problem Solving

has a fundamental role in students' academic performance and their construction of the concepts (Adesoji, 2008).

Gupta et al. (2015) concluded that Problem Solving Ability of the students help them building strong cognitive ability, which should be in a better position to reap the benefits of high academic achievement, enrolled in reliable future career choice and job availability. Once the Problem Solving Ability is acquired by the student, the elimination of error and putting correct discrimination for the practical work is achieved. Problem Solving Ability brings out the individual differences among the students. Problem Solving Ability becomes a necessary and important skill, when the students go for their further studies.

ACADEMIC ACHIEVEMENT MOTIVATION

The term Achievement Motivation may be defined by independently considering the words Achievement and Motivation. Achievement refers to competence (a condition or quality of effectiveness, ability, sufficiency, or success). Motivation refers to the energization (instigation) and direction (aim) of behaviour. Thus, achievement motivation may be defined as the energization and direction of competence-relevant behaviour or why and how people strive toward competence (success) and away from incompetence (failure). (*Achievement Motivation - IResearchNet*, 2016).

Colman (2001) also defined Achievement Motivation as a social form of motivation involving a competitive desire to meet standards of excellence.

Achievement Motivation is the need for excellence and significant accomplishment, despite what rewards may be offered after the achievement has been met. (Hsieh, 2011)

Bigge and Hunt (1980) defined Achievement Motivation as the drive to work with diligence and vitality, to constantly steer toward targets, to obtain dominance in challenging and difficult tasks and create sense of achievement as a result. This definition consists of three elements: the stimulation of personal capabilities, constant efforts with drive and obtaining of sense of satisfaction. Academic Achievement Motivation has been widely characterised as an academic drive, learning attitude, and passion for Academic Achievement.

Academic drive involves measuring items such as work habits and scholastic expectations, and attitude toward learning involves student's opinion of classroom environment and self-efficacy in learning (Entwistle, 1968).

Achievements Motivation is a psychological concept and it is the readiness of an individual to fulfil a deliberate objective, which is one of the most essential acquired inclinations for social needs. Achievement Motivation is a desire for or interest in accomplishment in general or in a particular field of activity. It is a desire to do well in a specific domain, together with a tendency to assess one's own performance spontaneously. Achievement Motivation is a key factor of academic achievement because it energises and focuses behaviour toward achievement.

Academic Achievement Motivation is basically the tendency or inner desire or feeling of a person to accomplish something important and exclusive to attain a spirits of self-accomplishment and contentment. It is a driving force to improve or maintain one's talents in all actions where a high standard of excellence is upheld. Achievement is a responsibility-oriented activity that allows people' performance to be evaluated based on externally or internally set standards, which forces the individual to compete with others or with the standard. Achievement Motivation is the inner force that help a person to achieve certain task, and it is defined by desire, a high level of energy, the need for independence, and the satisfaction that comes from exceeding one's own expectations.

Achievement Motivation can, therefore, be defined as the striving to increase or to keep as high as possible, one's own capabilities in all activities in which a standard of excellence is thought to apply and where the execution of such activities can, therefore either succeed or fail. (Heckhausen, 1967).

Therefore, Academic Achievement motivation can be understood simply as the tendency to strive for success or the attainment of a desired goal. The importance of Achievement Motivation in the learning and achievement process has been given a great goal of attention in the recent researches. Motivation plays a dynamic role in the life and it refers to the behaviour of an individual who strives to accomplish something to do this best and to excel others performance. This includes competition with a particular standard of quality performance. Achievement Motivation is one of the crucial psychological factors determining future academic and occupational success.

RATIONALE OF THE STUDY

Problem Solving Ability is one of the quintessential skills and the keys to success in academic and real life. Dealing with challenges and problems is a huge effort; it needs skills and a systematic plan of action. Hence, Problem Solving Ability plays a major role in the confrontation of issues and challenges. It is necessary to develop the skills of problem solving among students.

Many students nowadays do not recognise the importance of problem solving skills and are far more focused on reproducing what they have learned. They do not know how to deal with a major challenge related to their studies and cannot figure out how to confront those issues and challenges when it arises. If this is the case, pupils must be taught the value of problem solving and their ability to solve problem is necessary to be enhanced**.**

Motivation is one of the essential instruments to push students to move forward in their studies. If students are motivated and an interest is inculcated in their studies, the understanding, thinking power, and curiosity of the students would be enlightened and it helps them discover a new idea, strategy, or method for solving any challenges and difficulties before them. Thus, Problem Solving Ability and Motivation can go hand in hand. If one has the ability to solve problems, but he or she does not have any motivation to do so, the skills that he or she possesses would be unworkable. The relationship between Problem Solving Ability and Academic Achievement Motivation are crucial for building up students thought and performances. Even Stanly (2014) found significant relationship between Achievement Motivation and Problem Solving Ability. Yunus et al. (2021) conducted a study on "The relationship between Achievement Motivation, metacognitive, attitudes and Problem Solving Abilities in students" and also found that Problem Solving Ability had a positive relationship with Achievement Motivation.

Even in this study, the researcher intends to look into Secondary School Students' Problem Solving Ability and Academic Achievement Motivation of Lai Autonomous District Council and Chakma Autonomous District Council. According to the 2011 Census, the literacy percentage of Lawngtlai district was just 66.41 percent, the lowest among the eight districts of Mizoram (only eight districts existed at this time). This literacy rate plainly demonstrates that the district is trailing behind in

education when compared to neighbouring districts, where the Lai and Chakma tribes make up majority of the population. These people are minorities in terms of language, customs, and tradition compared to the larger groups. Therefore, the Indian Government had given Autonomous District Councils for minorities such as the Lai and Chakma tribes, which were known as the Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC), respectively. (Dougel, 2010).

The inhabitants of the western part of LADC and CADC are generally assumed to be economically and socially backward. The major difficulties and obstacles remain communication, transportation, and medical care. Most parents come from a poor financial and educational background, which is why many children cannot afford a proper education. In terms of quality, infrastructure, access, problem-solving, motivation, and technology, the secondary school students of LADC and CADC jurisdiction lag behind compared to other districts in Mizoram. Simultaneously, many students in the above-mentioned are expected to have hidden abilities, talents, and inborn characteristics. As a result, a comprehensive investigation is required to uncover the truth about pupils in this region. As previously said, one of the most important factors used to evaluate a student's quality how much capability or ability they have to solve problems. Moreover, having a stronger problem-solving skills allows students to confront obstacles in real life. As a result, it is critical to understand students' problem-solving abilities. At the same time, motivation is an integral element of learning; it affects students' interest, attention, and curiosity. The pupils' motivation level determines their drive for achievement. It also has a significant influence on the completion of the work at hand. Therefore, motivation strengthens problem-solving abilities, thinking skills and also enhancing academic performance of the students. Spinath et al., (2006) stated that Achievement Motivation is considered a prerequisite for success, not only in academic, but also in sports- and job related situations. In academic settings, the interest in motivation is partly inspired by the notion that Students' motivation, operationalized, such as their competency beliefs and value beliefs, could be more malleable than their cognitive ability, and as such could prove to be a potential lead for the educational system for improving learning and achievement processes in students.

Therefore, the researcher have conducted the most successful and astonishing research regarding the Problem Solving Ability and Academic Achievement

Motivation of the Secondary School Students of LADC and CADC in Mizoram. In terms of reviews of the related literature, research on Problem Solving Ability and Achievement Motivation has never been done in this area previously, with the majority of studies taking place in the northern part of Mizoram. Therefore the present study had been taken up in southern Mizoram, exclusively in LADC and CADC area.

This study was expected to have a significant influence on teachers and educational officials in LADC and CADC. Furthermore, it would be beneficial for the Department of School Education to have a better understanding of the situation in these Autonomous Regions and to take steps to improve the Problem Solving Ability and Academic Achievement Motivation of this area the students.

STATEMENT OF THE PROBLEM

Problem Solving and Achievement Motivation are deeply intertwined variables (Simon, 1967). The present study focused on the levels of Problem Solving Ability and Academic Achievement Motivation of Secondary Students. The main purpose of the study is to compare the Problem Solving Abilities of Secondary School Students from LADC and CADC. It also focuses on comparing their Academic Achievement Motivation. On this ground, the present study is entitled *"A Comparative Study on Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC) in Mizoram"*

OPERATIONAL DEFINITIONS OF THE TERMS USED

The operational definitions of the words used in this research were listed below.

Problem Solving Ability: For the present study Problem solving ability refers to the ability to solve problems in an effective and timely manner without any impediments. It involves being able to identify and define the problem, generating alternative solutions, evaluating and selecting the best alternative, and implementing the selected solution. (Manoj, 2006) said that Problem Solving Ability is the cognitive capability of the problem solver to perform physical or mental operations based upon his knowledge so as to achieve the goal of solving a problem. This is measured as the score of the Problem Solving Ability with three components namely, comprehending the Problem, Clarifying the Problem and Finding Solution to the Problem

Academic Achievement Motivation: Academic Achievement Motivation for the present study is a disposition to strive for success in competition with others with some standard of excellence, set by the students or individual. Achievement motivation can, therefore, be defined as the striving to increase or to keep as high as possible, one's own capabilities in all activities in which a standard of excellence is thought to apply and where the execution of such activities can, therefore either succeed or fail. Colman (2001) has defined Achievement Motivation as a social form of motivation involving a competitive desire to meet standards of excellence.

Secondary school: Secondary school here means all Secondary Schools in LADC and CADC area offering class IX and Class X courses.

Students: Students here means all class IX and X Secondary school students in LADC and CADC area.

Lai Autonomous District Council: Lai Autonomous District Council in this study refers to one of the three district councils in Mizoram. It is also called as LADC. It was constituted on 29th April 1972 under the sixth scheduled of the Indian Constitution. It is an autonomous council for Lai people. It has the power to make law as provided under sixth schedule of the Indian constitutions. The LADC has its headquarters at Lawngtlai, which is the capital of Lawngtlai District.

Chakma Autonomous District Council: Chakma Autonomous District Council in this study refers to an Autonomous Council for Chakma people living in the South-west part of Mizoram. It was constituted on 29th April 1972 under the sixth scheduled of the Indian Constitution. It covers Tuichawng Sub-Division of Lawngtlai District and its headquarters is at Kamalanagar, Mizoram. It has the power to make law as provided under sixth schedule of the Indian constitutions.

RESEARCH QUESTIONS

1. What are Problem Solving Ability of LADC and CADC Secondary School Students
2. Is there any difference between Problem Solving Ability of LADC and CADC Secondary School Students?

3. Is there any difference between Problem Solving Ability of LADC and CADC Secondary School Students In Relation To Gender?
4. What are the Academic Achievement Motivation of LADC and CADC Secondary School Students?
5. Is there any difference between Academic Achievement Motivation of LADC and CADC Secondary School Students?
6. Is there any difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender?
7. What is the relationship between Problem Solving Ability and Academic Achievement Motivation of LADC Secondary School Students?
8. What is the relationship between Problem Solving Ability and Academic Achievement Motivation of CADC Secondary School Students?

OBJECTIVES

1. To study Problem Solving Ability of LADC and CADC Secondary School Students.

2. To compare Problem Solving Ability of LADC and CADC Secondary School Students.

3. To compare Problem Solving Ability of LADC and CADC Secondary School Students In Relation To Gender.

4. To examine Academic Achievement Motivation of LADC and CADC Secondary School Students.

5. To compare Academic Achievement Motivation of LADC and CADC Secondary School Students.

6. To compare Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

7. To find out the relationship between Problem Solving Ability and Academic Achievement Motivation of

a) LADC Secondary School Students.

b) CADC Secondary School Students.

1.9 NULL HYPOTHESES

The following Null Hypotheses were listed down below:

1. There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students.

2. There is no significant difference between Problem Solving Ability of LADC and CADC Secondary School Students in relation to Gender.

3. There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students.

4. There is no significant difference between Academic Achievement Motivation of LADC and CADC Secondary School Students in relation to Gender.

RELATED LITERATURE REVIEW

In the present study, fifty (59) reviews had been collected by the researcher and the reviews covered from 2002 to 2020, which was a span of 18 years. From that 59 reviews, Twenty one (21) reviews were collected which was conducted Outside India, thirty-eight (38) reviews were collected which was conducted inside India.

An Overview of Related Literature Studied

Problem Solving Ability		**Academic Achievement Motivation**		**Reviews on Relationship between Problem Solving Ability & Academic Achievement Motivation**	
Studies conducted Outside India	**Studies conducted inside India**	**Studies conducted Outside India**	**Studies conducted inside India**	**Studies conducted Outside India**	**Studies conducted inside India**
10	**20**	**10**	**16**	**1**	**2**
Period of Review 2002-2021	**Period of Review 2006-2021**	**Period of Review 2010-2021**	**Period of Review 2013-2021**	**2021**	**Period of Review 2014-2018**

METHOD OF STUDY

The descriptive research method was used for this research. In education, the descriptive approach has been the most widely used research method. The approach necessitates the use of sample and a related research instrument for data collection and conducting the study. The purpose of the present study was to look into Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of Lai Autonomous District Council (LADC) and Chakma Autonomous District Council (CADC). Choosing a representative sample from secondary school students was necessary in order to meet the study's goals and achieve its conclusions.

POPULATION AND SAMPLE

A population refers to any collection of human beings or non-human entities such as objects, educational institutions, time units, Geographical areas, prices of wheat or salaries drawn by individuals. Some statisticians call it universe. (Koul, 2009, p.206). The population of the present study consist of secondary school students of LADC and CADC area.

The representative portion of the population is called a sample. (Koul, 2009, p.206) The sample consists of 400 Secondary School Students, out of which 199 Secondary School Students of LADC and 201 Secondary School Students of CADC were selected through random cluster sampling technique.

PROCEDURE OF SAMPLE AND SAMPLING TECHNIQUE

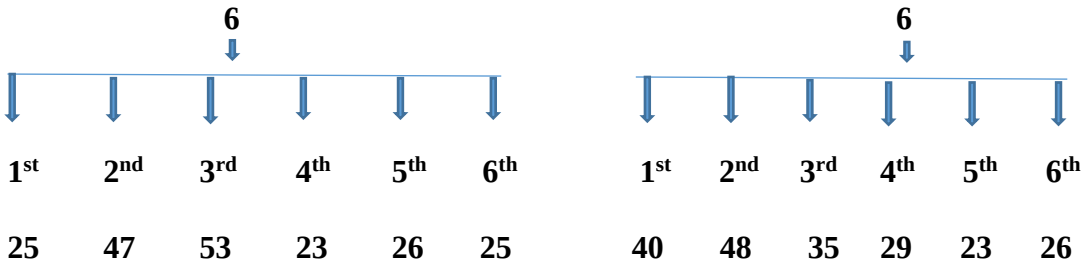
Sample: A total 400 Secondary School Students were sampled from Six Secondary Schools in LADC and CADC area. The researcher collected a sample through random cluster sampling and selected a sample of 199 Secondary School Students of LADC and 201 Secondary School students of CADC.

A random cluster sampling techniques was employed for the purpose of sampling Secondary School Students of LADC and CADC.

Sample Distribution

LADC			CADC			Grand Total	
Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
71	**128**	**199**	**113**	**88**	**201**	**184**	**216**

LADC 35 Schools **CADC 16 Schools**



199 Students **201 Students in**

There are a total 36 secondary schools in LADC cluster, Six Secondary Schools had been selected randomly. 25 Secondary School Students were selected from the first six schools, 47 Secondary School Students were selected from the 2nd six schools, and 53 Secondary School Students were selected from the 3rd six schools, 23 Secondary School Students were selected from the 4th six schools, 26 Secondary School Students were selected from the 5th six schools and 25 Secondary School Students were selected from the 6th six schools.

There are a total of 16 secondary schools in LADC cluster, Six Secondary Schools had been selected randomly. 40 Secondary School Students were selected from the first six schools, 48 Secondary School Students were selected from the 2nd six schools, and 35 Secondary School Students were selected from the 3rd six schools, 29 Secondary School Students were selected from the 4th six schools, 23 Secondary School Students were selected from the 5th six schools and 26 Secondary School Students were selected from the 6th six schools. The total sample consist of 400 Secondary School Students of LADC and CADC.

TOOL USED

The researcher used the Problem Solving Ability Test developed by L.N. Dubey, 2011 and the Academic Achievement Motivation Test developed by Dr. T.R. Sharma, 1984 published by National Psychological Corporation 4/230 Kacheri Ghat, Agra, India as a tool for the present study. The reliability and the validity of the test were not checked by the researcher, it was taken from the test manual itself.

Problem Solving Ability Test

Scoring: Each of the 20 statement has four alternative answers, out of which only one is correct. The correct answer is awarded 1 score. The minimum and maximum possible score is 00 to 20.

Reliability: The reliability of the Problem solving test was calculated by split-Half (odd-even) method by Kuder-Richardson Formula Rational Equivalence Method.

Validity: The problem solving test has the content validity, since it was tested vide the item Analysis and only those items were selected which had distinguishing value. Its validity was tested by way of correlation its scores on parallel form or test, and it was tested against two tests, viz., R.K. Tandon's Group Intelligence Test, and Test of reasoning Ability.

Academic Achievement Motivation Test:

Reliability: Three methods were tried to determine the reliability of the test. The results have been calculated below:

Split half method was .53, Rational Equivalence .75 and Test retest method for Boys was .79 and Girls for .80

Validity: Three types of validities – content, criterion and construct, were established. The items of the test were selected on the basis of pooled judgement of nearly 40 judges (Experts) in the field of testing. The suffice for content validity, on the basis of considered judgements of class teachers twenty students, ten low on achievement motivation and ten high on achievement motivation were administered this test under standardization. Significant differences were found in the mean test scores of the two groups

And mentioned previously each item was correlated with total test and items showing not significant *r* were deleted from the test. This establishes the construct validity of the test.

The value of SK and KU are given below

SK: (a) Boys = -0.431

(b) Girls = -0.4189

KU: (a) Boys = 0.2280

(b) Girls = 03612

This shows that scores are nearly normally distributed.

PROCEDURE OF DATA COLLECTION

The researcher approached a randomly selected Secondary Schools in the LADC and CADC areas. After obtaining permission from school authorities, the investigator developed a good rapport with the students and explained the aim of the research as well as they were given clear instructions about Problem Solving Ability test and Academic Achievement Motivation test and requesting them to participate wholeheartedly and honestly while answering to the test. The students were given two sets of questionnaires and answers one after the other, and they were promised that their answers would be kept completely confidential and utilised exclusively for research purposes. After they finished the test the questionnaires were collected by the researcher.

STATISTICAL TECHNIQUES USED

The Following Statistical techniques were for analysing the data were as follows:

Percentage was used to calculate the students' total score for Problem Solving Ability and Academic Achievement Motivation. To compare the means of Male and Female, LADC and CADC Secondary School Students 't' test was employed. The Pearson product-moment correlation was used to identify the relationship between Problem Solving Ability and Academic Achievement Motivation of Secondary School Students of LADC and CADC. Excel was used for calculating the data.

MAJOR FINDINGS

The following are the major findings of the present study are as follows:

FINDINGS RELATED TO PROBLEM SOLVING ABILITY OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

a) Findings on overall Problem Solving Ability of LADC Secondary School Students:

1. Out of 199 LADC Secondary School students, **54.77%** of the students had Extremely Low Problem Solving Ability.

2. **26.63%** per cent of LADC Secondary School Students were having Low Problem Solving Ability.

3. **15.5**8**%** of LADC Secondary School Students fell under the category of Below Average Problem Solving Ability

4. **3.01%** of LADC Secondary School Students had Average Problem Solving Ability.

5**.** Among LADC Male Secondary School Students, **66.20%** of LADC Secondary School Students fell under Extremely Low Problem Solving Ability, **28.17%** had Low Problem Solving Ability, **4.2%** had Below Average Problem Solving Ability and only **1.41%** had an Average Problem Solving Ability.

6**.** Regarding Problem Solving Ability of Female Secondary School Students of LADC, **48.44%** fell under Extremely Low Problem Solving Ability, **25.78%** were having Low Problem Solving Ability, **21.85** per cent had Below Average Problem Solving Ability and **3.91%** had an Average Problem Solving Ability.

None of the LADC Secondary School Students of fell under Above Average, High or Extremely High Problem Solving Ability. The present study revealed that the overall Problem Solving Ability of LADC Secondary School Students were Extremely Low.

b) Findings on overall Problem Solving Ability of CADC Secondary School Students:

1. Out of 201CADC Secondary School Students, **62.19%** of the students fell under Extremely Low Problem Solving Ability.

2. **29.35%** of CADC Secondary School Students scored Low Problem Solving Ability,

3. **6.97%** of CADC Secondary School Students were having Below Average Problem Solving Ability.

4. Only **1.49%** of CADC Secondary School Students had an Average Problem Solving Ability.

5. In respect to CADC Male Secondary School Students, **60.18%** had Extremely Low Problem solving Ability, **32.74** per cent of the students had Low Problem Solving Ability, and **4. 42%** of the students fell under the category of Below Average. Only **2.65%** of CADC Male Secondary School Students had an Average Problem Solving Ability.

6. Regarding Problem Solving Ability of CADC Female Secondary School Students, **64.77%** had Extremely Low Problem Solving Ability**, 25%** of the students obtained Low Problem Solving Ability and **10.23%** had Below Average Problem Solving Ability and no CADC Female Secondary School Students scored Average Problem Solving Ability.

The present study revealed that no Secondary School Students of CADC fell under Above Average, High and Extremely High Problem Solving Ability. It could be concluded that majority of CADC Secondary School Students fell under Extremely Low Problem solving Ability.

FINDING ON COMPARISON OF PROBLEM SOLVING ABILITY OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

1. No significant difference was found between LADC and CADC Secondary School Students in respect to their Problem Solving Ability. It could be concluded that neither LADC Secondary School Students nor CADC Secondary School Students had a better Problem Solving Ability.

FINDINGS RELATED TO COMPARISON OF PROBLEM SOLVING ABILITY OF LADC AND CADC SECONDARY SCHOOL STUDENTS IN RELATION TO GENDER.

1. No significant difference was found between LADC Male and LADC Female Secondary School Students in regards to Problem Solving Ability.

2. Significant difference was found between CADC Male and CADC Female Secondary School Students in their Problem Solving Ability. Since the mean score of CADC male (M=4.82) was higher than that of CADC female (M=4), it was concluded that the Problem Solving Ability of CADC Male is better than CADC Female.

FINDINGS RELATED TO ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

a) Findings on overall Academic Achievement Motivation of LADC Secondary School Students:

1. Out of 199 LADC Secondary School Students, **4.02%** of the students had High Academic Achievement Motivation,

2.**44.22%** of LADC Secondary School Students fell under the category of Average Academic Achievement Motivation.

3. **51.76%** of LADC Secondary School Students fell under the category of Low Academic Achievement Motivation.

4. Among Male LADC Secondary School Students, **7.04%** of the students had High Academic Achievement Motivation, **46.48%** had Average Academic Achievement Motivation and majority of LADC Secondary School Students which was **46.48%** had Low Academic Achievement Motivation.

5. Regarding the Academic Achievement Motivation of LADC Female Secondary School Students, **2.34%** had High Academic Achievement Motivation, **42.97%** of Female students were having Average Academic Achievement Motivation and **54.69%** fell under the category of Low Academic Achievement Motivation.

It could be concluded that majority of LADC Secondary School Students had Low Academic Achievement Motivation.

b) Findings on overall Academic Achievement Motivation of CADC Secondary School Students:

1. Out of 201 students, **2.07%** of CADC Secondary School Students have High Academic Achievement Motivation,

2. **36.27%** of CADC Secondary School Students an Average Academic Achievement Motivation and

3. **63.18%** of Secondary School Students of CADC are having Low Academic Achievement Motivation.

4. Among Male students, **2 (1.77%)** have High Academic Achievement Motivation, **40 (35.40%)** students have Average Academic Achievement Motivation and **71 (62.83%)** students were having Low Academic Achievement Motivation.

5. Out of 88 Female students, **2.27%** of the students have High Academic Achievement Motivation, **34.09%** of the student are having Average Academic Achievement Motivation and **63.64%** of the Female students fall under the category of Low Academic Achievement Motivation.

The present finding indicated that majority of CADC Secondary School Students were having Low Academic Achievement Motivation.

FINDINGS RELATED TO COMPARISON OF ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

1. Significant difference was found between LADC and CADC Secondary School Students in their Academic Achievement Motivation. Since the mean score of LADC (M= 24.82) was higher than that of CADC (M=23.46) and it was concluded that the Academic Achievement Motivation of LADC is better than CADC students.

FINDINGS ON COMPARISON OF ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS IN RELATION TO GENDER.

1. No significant difference was found between LADC Male and LADC Female Secondary School Students in respect to their Academic Achievement Motivation.

2. No significant difference was found between CADC Male and CADC Female Secondary School Students in relation to their Academic Achievement Motivation.

FINDINGS ON THE RELATIONSHIP BETWEEN PROBLEM SOLVING ABILITY AND ACADEMIC ACHIEVEMENT MOTIVATION OF LADC AND CADC SECONDARY SCHOOL STUDENTS.

1. It is found that there was a Low Positive relationship between Problem Solving Ability and Academic Achievement Motivation among LADC Secondary School Students.

2. In this study it is found that there is a Low Positive correlation between Problem Solving Ability and Academic Achievement Motivation among CADC Secondary School Students.

RECOMMENDATIONS

The following recommendations can be cited and inferred according to the findings of the present findings:

1. In order to improve Problem Solving Ability of the students, school authorities need to take steps to diagnose the crucial difficulty areas in basic education. For this purpose, the high school teachers are required to be trained for making use of diagnostic and criterion based evaluation procedures to make teaching-learning process more effective as well as child centre learning to enhance the level of Problem Solving Ability. Teaching methodology and strategies may need to be reviewed to surge Problem Solving Ability. It is the obligation of the teachers to detect such students who have low Problem Solving abilities and try to adjust their learning and thinking power through various audio-visual aids.

2. Students from these two Autonomous District Councils lagged behind in every spheres in comparing to other district Secondary School Students in Mizoram.

To improve their Problem Solving Ability, a better atmosphere, better facilities, and greater parental support would also be required. Furthermore, teachers' passion, commitment, and quality of teaching would be crucial for encouraging and enhancing the students' rational thinking and creativity. Community involvement would also be helpful for the institution and the students, community participation like organising awareness on mental health, providing career guidance, frequent medical check- up, free tuition for economic backward children would be boost a heathy learning environment of among the student and this will encourage them to face any challenges related to their academics and every day's life.

3. Teacher commitment and quality of teaching would be the main keys to strengthen problem solving skills of the students, besides proper guidance and counselling would be required to provide to the students for helping them to challenge any task related to academic, personal and career.

4. Parents should be given awareness on the importance of girl education, even community must be require to educate for giving more freedom and opportunity to girl child. However if they have more chance to learn at the institution and more participation in community, it would have been increase their ability to solve problems at any circumstances.

5. Providing moral encouragement from both teachers and parents would be the essential factor that can elevate the student Academic Achievement Motivation. Teaching strategy must be enhanced and more resources are also require to provide them to perform a certain activities inside the classroom.

6. It was recommended that Community involvement should also be one of the essential factor that can motivate and help students in many aspects like donating funds for the institutions, collecting funds for economically challenge students etc. Interaction with Community leaders and others dignitaries in the community could be helpful for them to pursue their dreams and goals, community support can encourage them to try a new things and to achieve a bigger goals.

6. To have a better correlation between Problem Solving and Academic Achievement Motivation, it requires to provide better quality of teaching and more opportunity to express one's ideas. In addition to that learning with joy and activity should encourage inside the class.

7. For creating a favourable and significant link between Problem Solving Ability and Academic Achievement motivation among CADC secondary students, it needs to improved facilities, excellent quality teaching, teacher effectiveness, dedication, and a better family environment would be necessary.

8. One of the most important components of assisting students in these areas was strengthening of a proper communication network. Many students in this location do not have good internet connection, therefore they are unable to access extra learning materials through the internet. Therefore strengthening of communication and providing network connectivity are also recommended.

9. CADC female students differ significantly than male in respect to problem solving ability and it is recommended to make efforts at home and school to take away any kind of gender discrimination in terms of their academic and personal growth.

10. The Achievement motivation can be established in the school by designing special curricula and this deserves attention in view of the educational needs of the students of the two Autonomous district council. In this way the learners will increase in their achievement motivation score.

11. Achievement Motivation and Problem Solving Ability can also be enhanced by appropriately strategic training programme. Workshop training, refresher courses, should be provided for the teachers of this area to support them to prepare with necessary skills and capabilities to enrich student's Achievement Motivation and Problem Solving Ability.

12. Secondary School Students belongs to LADC and CADC should be motivated at school and inside the classroom for higher academic achievement through counselling, diagnostic and remedial work and maintaining of proper health check-up is also recommended for them.

SUGGESTION FOT FURTHER STUDIES

Based on the findings of the present research, the researchers have offered a certain suggestion for further investigation. Despite the fact that the outcomes of the present investigation are enthralling, in any case, any venture can be made to

additionally look into these aspects. A portion of the recommendations are as per the following:

1. The present research was carried out in two Autonomous District Councils: Lai Autonomous District Council and Chakma Autonomous District Council. As a result, the Mara Autonomous District Council can be included for future research. It indicates that the field of study can be expanded for future research.

2. LADC and CADC Secondary School Students can also be compared on the basis of gender. For instances LADC Male and LADC female, CADC Male and LADC Female etc. The present study compares male and female secondary school students from LADC and CADC.

3. Problem solving and Academic Achievement Motivation are studied in the present study, however, Academic Achievement of secondary students can be added.

4. The present study was conducted with secondary school students, but similar studies may be undertaken with elementary, senior secondary, college, and pre-service training students as well.

5. This kind of research can be done not just inside an autonomous region, but also between two districts or among other districts. It has the potential to deliver a broader and better result inside the state.

6. It would be preferable to investigate the link between problem solving, secondary students' academic success, and teachers' professional commitment.

7. Efforts should be undertaken to create and standardise problem-solving and academic achievement motivation tools in Mizo and Chakma. It may have dynamic result in the study. Students will also be more committed to their replies.

8. Due to covid-19, the present study was unable to examine with bigger samples. So that it may be studied with more samples while broadening the scope of the investigation.

CONCLUSION

Problem Solving is a skill which comprises logical inquiry of the facts and drawing conclusions in consistent with the data and evidences. Problem-solving is an individual phenomenon that requires the use of higher-order cognitive abilities, as well as constant and persistent struggle on both conscious and unconscious levels in order to be successful. Some people can manage a situation, while others cannot. Problem solving is the process of determining solutions to problems through an ordered cognitive process. This is a process in which creative and critical thinking is used to solve or reason out difficulties presented by students in groups or individually. It is a mental process that provides effective problem-solving strategies for resolving and overcoming problems that appear to be impeding the accomplishment of a solution.

On the other hand Achievement motivation is basically the tendency or inner desire or feeling of a person to accomplish something important and exclusive to attain a spirits of self-accomplishment and contentment. It is a driving force to improve or maintain one's talents in all actions where a high standard of excellence is upheld. Achievement is a responsibility-oriented activity that allows people' performance to be evaluated based on externally or internally set standards, which forces the individual to compete with others or with the standard. Achievement Motivation is the inner force that help a person to achieve certain task, and it is defined by desire, a high level of energy, the need for independence, and the satisfaction that comes from exceeding one's own expectations.

The present study enquires into the problem-solving ability and academic achievement motivation of LADC and CADC secondary students in a comparative way. It was found that the secondary students of LADC and CADC have extremely low problem-solving ability. The fact that students neither score an average level nor a high level of problem-solving ability is very unsatisfactory, and it can be assumed that unhealthy home environments, shortages of teachers, being unable to provide better facilities at school, lack of parental support, and practising of traditional methods of teaching could be some of the reasons for the very low problem-solving ability among LADC and CADC secondary students. In respect to problem solving ability between LADC and CADC secondary students, they do not differ significantly, it signifies that area of studies do not influence on their problem solving ability of both students.

The present study also revealed that there is low Academic achievement motivation among LADC and CADC secondary students. As a result providing moral encouragement from both teachers and parents are the essential factor that can elevate the student achievement motivation. Teaching strategy must be enhanced and more resources are also require to provide them to perform a certain activities inside the classroom. It is evident from the present finding that LADC student have a better academic achievement motivation than CADC secondary school students and one of the possible reason is that the area of LADC has an advantages in terms of infrastructure and access of technology. On the other hand most parents are literate and they are more concerned about education, they are morally, financially supportive, given more commitment to their child education, therefore the students of LADC have a better chance motivate themselves in their learning. In addition to that the students of LADC have a better chance to access more resources to enjoy their studies as well. On the other hand CADC area lagging behind in all aspects, most parents are illiterate, economically backward, therefore they could not be supportive academically and this could be the reason of CADC students who are scoring very low level of achievement motivation. But gender do not influence Academic achievement motivation among LADC and CADC secondary students. It was also found that there is a low positive correlation between Problem solving ability and Academic achievement motivation.

It is important for teachers to educate in a manner that enhances students' problem-solving skills. Teachers must view teaching as a process of helping students develop a thorough knowledge of mathematical ideas and processes by engaging them in mathematics and other disciplines. Teachers must be a facilitator in a classroom instead of functioning as the ultimate authority and information distributor, adopting innovative ideas is essential to enhances student motivation as well. .

However, in the present complex world, a certain educational qualification does not assure success in life. To be a successful human being, everyone needs a conducive atmosphere with a human touch for continuous growth and achievement. Therefore, the role of Achievement motivation and Problem-solving skills for greater academic success is not only essential for LADC and CADC secondary students, it is a must for one and all for effective and worthwhile living.