CHAPTER-VI

SUMMARY AND CONCLUSION

6.1 Introduction

Education is the most powerful tool for changing the world. It is an essential part of our daily life. Nobody can be successful without an education. Education entails learning about our surroundings. However, basic information does not equal knowledge. Education helps the transformation of information into knowledge. Education cultivates a person's uniqueness in all aspects, including physical, intellectual, social, emotional, cultural, and spiritual, raising them out of poverty and suffering. As a result, he grows into a resourceful and intellectual citizen capable of contributing to society and the nation. An effective educational system assists students in realizing their full potential, broadening their competencies, and shifting their interests, attitudes, and behaviors. Education is critical for human development and advancement, and it has a wide-ranging impact on society. Without education, the world would have been in intellectual darkness.

Quality education is essential for national prosperity, and educators are pivotal in delivering it. NEP 2020 underscores that educators will significantly influence the future of our children and, thus, the future of our nation, indicating that teachers will be pivotal in nation-building by cultivating high-quality human resources within their classrooms. The educator is the cornerstone of authentic, holistic education. The endeavors of proficient educators result in efficacious education. The Kothari Commission (1964–1966) asserted that among the various elements affecting educational quality and its impact on national development, the quality, ability, and character of teachers are unequivocally the most crucial. Each teacher must possess the required competences, knowledge, and desire to teach effectively. Strengthening teachers' professional development and quality should be the first step in any substantial educational change. A thorough examination of the teacher's ability is the most important prerequisite for the development of teaching competency. When given the flexibility to perform the bulk of their obligations in the community and in the classroom in a standard, professional manner, a competent and dedicated teacher will automatically set off the chain reaction, resulting in high-quality learning. As a result,

the competence of passionate teachers is the most important aspect in the success of any educational system. According to UNESCO (2008), a good teacher in the twenty-first century should have a thorough understanding of his or her subject's curriculum and be able to incorporate technology into it.

The Teacher Education program is an important part that aims to instill in student-teachers the knowledge, skills, critical thinking, morale, values, and everything else required to become a good teacher, allowing them to develop qualitatively. The National Council for Teacher Education (NCFTE, 1993) defines Teacher education encompasses educational programs, research, and training designed to prepare individuals for teaching at pre-primary, secondary, and senior secondary levels in schools. It also covers non-formal education, part-time education, adult education, and distance learning through correspondence. (NCFTE, 1993).The teacher education curriculum instills various desired skills and values in student-teachers / instructors, allowing them to effectively fulfill their obligations and responsibilities to the teaching profession and society as a whole. Teachers were trained as mechanics or technicians, focusing on mechanical skills. The scope of teacher training was extremely limited. The emphasis in teacher training was solely on skill development. Training institutes are vital for producing future educators who are imaginative, adaptable, and capable of changing the lives of their pupils.

Pre-service teachers are change agents who strive to preserve and improve educational quality in order to better prepare future generations for change. It equips aspiring teachers with the knowledge, skills, and competencies they need to succeed in their vocation. It provides a systematic and comprehensive curriculum that includes many facets of education, including as pedagogy, topic knowledge, classroom management, assessment methodologies, and educational psychology. Pre-service education provides prospective teachers with a firm foundation that equips them to tackle the demands and challenges of the teaching profession. Pre-service teachers encounter numerous challenges as they work to develop their abilities, adaptability, and emotional fortitude. Although these challenges are an essential part of their professional development, they can also be overwhelming without the proper support. Becoming a teacher is both physically and emotionally demanding. Throughout this process, one must learn how to deal with two types of demands: those of the teacher

education program and those of the schools. This may cause stress and impair their participation in the process, influencing their decision to complete the program or even begin working as a teacher Some of the concerns are substantial, resulting in failure or dropping out of school, and they show early signs of student anxiety while dealing with minor issues. Effective teacher training helps trainee teachers develop resilience by equipping them with the necessary skills, knowledge, and mindset to confront the challenges of the teaching profession. It comprises not only recovering from tough or negative situations, but also growing professionally and emotionally, which can lead to enhanced job satisfaction, better well-being, and greater commitment to the teaching profession. Mansfield et al., 2016. The training plan teaches how to maintain discipline and build a healthy learning environment. It enables them to personalize training to the specific needs of each student, decreasing frustration and improving confidence. It helps people stay engaged and motivated in their careers. It can develop a growth mindset in teachers, who perceive issues as chances for learning and improvement, leading to long-term involvement with their employment. It gradually improves outcomes for both teachers and students, resulting in a positive and dynamic learning environment. Mansfield et al. (2016) recommended that teacher education include subjects such as relationship development, self-care and motivation, learning to take initiative, and emotional management.

6.2 Rationale of the Study

Teachers have an important role in shaping India's future. The National Education Plan 2020 emphasizes teacher empowerment as crucial to the country's development. In addition, the success of the teaching-learning process is determined by the teacher's skill. Teachers frequently engage students in the learning process despite the complex and often uncertain context of resource constraints, academic integrity issues, systemic inequities, mental health struggles, and changing expectations from students, parents, alumni, employers, administrators, and government agencies. John Adams stated that the teacher is the "Maker of Man." As director of the academy society, the instructor assists the pupils in moving forward in a positive manner. Teaching as a career extends beyond formal characteristics/criteria. It also involves the emotions that lie at the heart of education. The mix of formal and informal criteria, as well as

changing student learning demands, has resulted in the evolution of the teaching profession and the teacher's role. (NPST,2001)

Teacher training institutes significantly influence the views of potential educators, who in turn guide the future of education. The classroom setting and techniques of the teacher education course have undergone substantial changes in comparison to previous courses. The learning needs have become increasingly severe. Transitioning from student to teacher trainee needs a considerable mental and emotional shift. They must engage in both theoretical and practical activity. These changes have caused many teacher trainees to struggle with adaption and lose interest in learning. These changes may also result in emotional instability and a loss of self-confidence, both of which have a negative impact on academic achievement. In higher education, students must be able to complete their academic tasks correctly. Students require assistance in avoiding academic-related problems and challenges. Students who regularly face challenges in problem-solving experience negative emotions and tend to think in shorthand, increasing the likelihood of tension in stressful situations. Consequently, students must acknowledge their intrinsic potential and seek answers by tackling their academic responsibilities and embracing personal accountability (Sangma, Jasmine. B.A., 2017). Considering the complicated nature and importance of teaching as a professional endeavour, it is imperative to elevate the entire teacher education enterprise to the university level and to suitably enhance the duration and intensity of the programs. Pre-service training must be enhanced and distinctly regulated in both public and commercial institutions, but in-service training systems require extension and substantial adjustment to offer greater flexibility. Teacher education must encompass both theoretical and practical experiences to enable trainees to perceive knowledge as actively generated during the learning process rather than as an external entity. (NCFTE, 2009). Pre-service teachers who engage actively and exhibit enthusiasm for their academics and practical experiences establish a more robust connection to the teaching profession, motivating them to persist despite challenges.

The growth of teacher trainees globally is endangered by various issues. Throughout their learning, socialization, maturation, and adaptation, kids encounter a spectrum of emotions, friendships, relationships, physical development, and intellectual advancement. These daily obstacles and problems have an impact not only on their

social, psychological, mental, and physical well-being, but also on their academic performance. Despite these dreadful conditions and unfavorable scenarios, pre-service teachers cope admirably with setbacks, stress, and expectations in the academic setting. However, some students fall behind and are unable to fully engage with the process. They are unable to react to changing situations and struggle to cope successfully with setbacks, stress, or difficulties in academic contexts. It poses several questions, such as why certain kids perform well while others do not. How much do resilience and engagement influence students' academic achievement? Is there a relationship between academic resilience and classroom engagement? What are some of the most prevalent issues that pre-service instructors face? To answer these questions, a research study on this topic is required. Although numerous research studies have been undertaken on Academic Resilience, no such study has been conducted on pre-service teachers in Assam in connection to the variables Academic Resilience, Classroom Engagement, and Academic Achievement. As a result, it was thought necessary to investigate Academic Resilience and Classroom Engagement among Assam pre-service teachers in relation to their academic achievement. In the face of challenges, an integrated and global resilience scenario based on evidence-based research is critical for informing government and international policymakers about how to decrease risks and promote resilience in children.

Pre-service trainees frequently struggle to bridge the gap between academic learning and practical teaching, especially when faced with a wide range of classroom dynamics and student demands. New instructors may find it difficult to manage their time effectively, create appealing lesson ideas, and maintain classroom discipline. Furthermore, the pressure of evaluations, a lack of hands-on experience, and balancing academic and practical tasks can all contribute to stress. Despite these challenges, they are essential for building resilience, adaptability, and the skills required to thrive in the teaching profession, making pre-service training a transformative yet demanding experience. It is also critical to undertake study into the challenges that pre-service teachers face during their training. This research will also assist researchers and policymakers in identifying elements that promote or hinder effective pre-service training, allowing best practices to be scaled up and problem areas addressed through training or law enforcement.

6.3 Statement of the Problem

The problem of the study is stated as:

Academic Resilience and Classroom Engagement among Pre-service teachers of Assam in relation to Academic Achievement.

6.4 Operational Definitions

Academic Resilience- Resilience is the ability to cope and manage negative affective reactions to challenges. Academic Resilience means the capability own by them to conquers the academic issues.

In the present study, Academic Resilience of Pre-service teachers means the ability to deal with unfavourable conditions effectively and handle and manage the stress and pressure in an academic setting. It is measured through mean score obtained on the Academic Resilience scale which is developed by M. D'Souza and S. Pandya (2018) based on the dimensions related to Self-Efficacy, Social Support and Social Competence.

Classroom Engagement- Engagement means willingness and quality of effort, focus and enthusiasm towards particular task. Classroom Engagement is the degree of curiosity, attention, passion shown by the student in the process of learning and being taught.

By Classroom Engagement of pre-service teachers, the present study refers to reflective and critical engagement which involves different dimensions i.e., Behavioral engagement, Emotional engagement, Cognitive engagement, and teaching skills Engagement. Further it is measured through the mean score obtained on the self-developed Classroom Engagement Scale for Pre-service teachers.

Academic Achievement - In the present study Academic Achievement is defined as scores obtained by Pre-service teachers' students in the previous year end examinations.

Pre-Service Teacher- Pre-service teacher refers to an individual in a teacher - education programme receiving training and supervision. They are supposed to acquire different kinds of knowledge and skills related to teaching. They are the people who pursue relevant degree in order to become a teacher in the future.

In the present study, Pre-Service teachers are student pursuing "two years Bachelor of Education (B. Ed.)" from different Teachers Training Institute of Assam.

Classroom Transaction: In the present study, Classroom Transaction means the effective and desirable implementation of B. Ed curriculum content on the basis of aims and objective listed in the curriculum.

6.5 Objectives of the study

1. To study the level of Academic Resilience of the Pre-service teachers of Assam
2. To find out over all significant difference in Academic Resilience of the Pre-service teachers of Assam based on:

    i. Gender (Male and Female)
    ii. Locality (Urban and rural)
    iii. Stream (Arts, Science)
    iv. Types of institution (Private and Govt. TEIs)

3. To find out dimension wise significant difference in Academic Resilience of the Pre-service teachers of Assam on:

    v. Gender (Male and Female)
    vi. Locality (Urban and rural)
    vii. Stream (Arts, Science)
    viii. Types of institution (Private and Govt. TEIs)

4. To study the level of Classroom Engagement of the Pre-service teachers of Assam.
5. To find out over all significant difference in Classroom Engagement of the Pre - service teachers of Assam based on

i. Gender (Male and Female)
ii. Locality (Urban and rural)
iii. Stream (Arts, Science)
iv. Types of institution (Private and Govt. TEIs)

6. To find out dimension wise significant difference in Classroom Engagement of the Pre-service teachers of Assam based on

v. Gender (Male and Female)
vi. Locality (Urban and rural)
vii. Stream (Arts, Science)
viii. Types of institution (Private and Govt. TEIs)

7. To study the level of Academic achievement of the Pre-service teachers of Assam
8. To find out over all significant difference in Academic Achievement of the Pre-service teachers of Assam based on:

ix. Gender (Male and Female)
x. Locality (Urban and rural)
xi. Stream (Arts, Science)
xii. Types of institution (Private and Govt. TEIs)

9. To find out the relationship between Academic Resilience and Academic Achievement of the Pre-service teachers of Assam
10. To find out relationship between Classroom Engagement and Academic Achievement of the Pre-service teachers of Assam
11. To analyse the effect of Academic Resilience and Classroom Engagement on Academic Achievement of the Pre-service teachers of Assam
12. To find out different barriers and underlying factors faced by Pre-service teachers of Assam during Classroom transaction
13. To study different suggestive measures suggested by Pre-service teachers regarding barriers during classroom transaction

6.6 Hypotheses of the study

For Objective 2, the following hypotheses are formulated:

H $_0$1. There is no significant mean difference in Academic Resilience of Pre-service teachers of Assam in regards to gender (Male and Female)

H $_0$2. There is no significant mean difference in Academic Resilience of Pre-service teachers of Assam in regards to locality (Urban and Rural)

$H_0$3 There is no significant mean difference in Academic Resilience of Pre-service teachers of Assam in regards to stream (Arts and Science)

$H_0$4 There is no significant mean difference in Academic Resilience of Pre-service teachers of Assam in regards to types of institution (Private and Govt)

For Objective 3, the following hypotheses are formulated:

$H_0$5There is no significant mean difference in i) Self-efficacy ii) Social support and social competence of Pre-service teachers of Assam in regards to gender

$H_0$6There is no significant mean difference in i) Self-efficacy ii) Social support and social competence of Pre-service teachers of Assam in regards to locality

$H_0$7 There is no significant mean difference in i) Self-efficacy ii) Social support and social competence of Pre-service teachers of Assam in regards to stream

$H_0$8 There is no significant mean difference in i) Self-efficacy ii) Social support and Social competence of Pre-service teachers of Assam in regards to Types of institution

For Objective 5, the following hypotheses are formulated:

$H_0$9 There is no significant mean difference in Classroom Engagement of Pre-service teachers of Assam in regards to gender

$H_0$10 There is no significant mean difference in Classroom Engagement of Pre-service teachers of Assam in regards to locality

$H_0$11There is no significant mean difference in Classroom Engagement of Pre-service teachers of Assam in regards to Stream

$H_0$12 There is no significant mean difference in Classroom Engagement of Pre-service teachers of Assam in regards to types of institution

For Objective 6, the following hypotheses are formulated:

$H_0$13 There is no significant mean difference in i) Cognitive Engagement ii) Emotional Engagement iii) Behavioural Engagement iv) Teaching skills Engagement of Pre-service teachers of Assam in regards to gender

$H_0$14 There is no significant mean difference in i) Cognitive Engagement ii) Emotional Engagement iii) Behavioural Engagement iv) Teaching skills Engagement of Pre-service teachers of Assam in regards to Locality

$H_0$15 There is no significant mean difference in i) Cognitive Engagement ii) Emotional Engagement iii) Behavioural Engagement iv) Teaching skills Engagement of Pre-service teachers of Assam in regards to Stream

$H_0$16 There is no significant mean difference in i) Cognitive Engagement ii) Emotional Engagement iii) Behavioural Engagement iv) Teaching skills Engagement of Pre-service teachers of Assam in regards to Types of institution

For Objective 8, the following hypotheses are formulated:

$H_0$17 There is no significant mean difference in Academic Achievement of Pre-service teachers of Assam in regards to gender

$H_0$18 There is no significant mean difference in Academic Achievement of Pre-service teachers of Assam in regards to locality

$H_0$19 There is no significant mean difference in Academic Achievement of Pre-service teachers of Assam in regards to Stream

$H_0$20 There is no significant mean difference in Academic Achievement of Pre-service teachers of Assam in regards to types of institution

For Objective 9, the following hypotheses are formulated:

$H_{0}21$ There is no significant relationship between Academic Resilience and Academic Achievement of Pre-service teachers of Assam

For Objective 10, the following hypotheses are formulated:

$H_{0}22$ There is no significant relationship between Classroom Engagement and Academic Achievement of Pre-service teachers of Assam

For Objective 11, the following hypotheses are formulated:

$H_{0}23$ There is no significant effect of Academic Resilience and Classroom Engagement on Academic Achievement of Pre-service teachers of Assam.

6.7 Delimitations of the study

1. The study is delimited to only Pre-service teachers of Assam
2. The study is confined only to a two-year B.Ed. Programme.
3. This study confined to only Arts and Science stream.

6.8 Research Methodology

The present study focused on providing a detailed description of the Academic Resilience and Classroom Engagement among Pre-service teachers of Assam in relation to Academic Achievement based on Gender, Stream, locality, and Types of institution and ascertain the level and relationship among Academic Resilience, Classroom Engagement and Academic Achievement. Furthermore, the study sought to investigate different underlying factors and barriers faced by Pre-service teachers and suggestive measures prepared by the investigator on the basis of suggestions given by Pre -service teachers for Overcoming barrier during classroom transaction. Therefore, the researcher adopted a Descriptive Survey Research Design to conduct the research study.

6.8.1 Population

In the present study the population consists of all the Pre-service teachers studying in different teacher training institutions of Assam. It includes both Government and private teacher training institutions. There are total of 72 Teacher Education Institutions in Assam as per the official website of NCTE, approximately 7650 Pre-service teachers studying in all these Teacher Education Institutions. So, the Population consists of approximately 7650 individuals.

6.8.2 Sample and Sampling Technique

As per the NCTE data (2019), 72 B.Ed. colleges are there, from which 50 private teacher education institute, 22 government teacher education institute are offering B.Ed. course. As a result, a sample is chosen from each of these strata. Stratified Random sampling is the method used for sampling. It is very difficult, to reach each and every element of a population if it is large in size and time consuming. In this situation, a sample of the desired population is carefully taken. For the current study, a sample of 895 Pre-service teachers from selected district of Assam chosen using a stratified random sampling technique, considering the cost, time, utility, and suitability.

6.8.3 Tools used for the study

i. Academic Resilience Scale developed by Meghali D'Souza and Shefali Pandya (2017)

   The purpose of the tool was to measure Academic Resilience of preservice teachers. The tool consists of two dimesons: Self efficacy and Social support & Social competence having total 32 items.

ii. **Classroom Engagement Scale** developed by the researcher

The researcher had developed 5point Likert scale to measure the Classroom Engagement of the Pre-service teachers of Assam. Classroom Engagement in this study shall be measured as a combination of Cognitive, Emotional, Behavioral, and Teaching skills engagement of the Pre-service teacher. It consists total 28 items.

iii. **Observation schedule** developed by the researcher

The researcher prepared an Observation Schedule in the interest of capturing authentic and reliable Classroom Practices. It primarily focuses on Professionalism, Active learning, learning environment, critical and creative thinking. It consists of total of 20 items.

6.8.4 Analysis Techniques of the Data

Quantitative data analysis

1. The mean score for Academic Resilience, Classroom Engagement, and Academic Achievement was calculated for the total group as well as for each subgroup.

2. The t-test was used to examine the significance difference in the mean score of overall and dimension-wise Academic Resilience of pre-service teachers based on gender, location, stream, and institution type. Again, a t-test was used to determine the difference in mean scores for overall and dimension-specific Classroom Engagement and Academic Achievement based on gender, location, stream, and type of institution.

3. Pearson's correlation approach was utilized to determine the link between the variables.

4. A regression analysis was performed to investigate the association between two or more variables of interest.

5. To analyse the challenges faced by pre-service instructors, the percentage is used.

Qualitative Data Analysis

In the current study, the data acquired from the questionnaires was categorized according to the numerous pre-determined aspects after evaluating its rationality. In this study, the six-step parts of Krippendorff (2004) content analysis paradigm are applied. These components do not need to be grouped linearly (Krippendorff, 2004).

6.9 Major Findings of the Study

Findings of the Objective no- 1:

i. With regards to Academic Resilience out of 895 Pre-service teacher, i. e 50.38% high levels of Academic Resilience.37.98% have above average level of Academic Resilience. 8.85% have extremely high levels of Academic Resilience.1.88% Pre-service teachers have average Academic Resilience. It is observed that the highest number of Pre-service teachers i. 50.83%, i.e. falls in the high Academic Resilience category and only 8.85% have extremely high Academic Resilience

Findings of the Objective no- 2:

i) In regards to gender, it is found no significant mean difference among male and female Pre-service teachers in terms of Academic Resilience.

ii) In regards to locality, it is found no significant mean difference among Pre- service teachers from Urban and Rural area in terms of Academic Resilience.

iii) In regards to stream, it is found no significant mean difference among Pre - service teachers from Arts and Science stream in terms of Academic Resilience.

iv) In terms of types of institution, the study found that Pre-service teachers from Private and Government institution have different level of Academic Resilience.

Findings of the Objective no- 3:

i. It is fond that there is no significant difference in terms of Gender, Locality, Stream in the dimensions of Academic Resilience i.e. Self-efficacy and Social support and Social competence but it is found that in regards to types of institution, Pre-service teachers from Private and Government institution have different level of Self efficacy and Social support and Social competence.

Findings of the Objective no- 4:

i. Out of 895 Pre-service teachers ,62 Pre-service teachers have very high Classroom Engagement. 505 Pre-service teachers exhibit a high level of Classroom Engagement. Further analysis of the data reveals 328 Pre-service teachers report average level of Classroom Engagement. Overall, the findings from the analysis shows that 6.86% have very high level of Classroom Engagement .55.92% Pre-service teachers have high levels of Classroom Engagement.36.62% have average level of Classroom Engagement. So, the Classroom Engagement of the Pre-service teachers is high.

Findings of the Objective no- 5:

i. In terms of gender, the study found no significant difference in Classroom Engagement of the Pre-service teachers of Assam.
ii. Classroom Engagement in regards to locality, the study revealed significant difference among the Pre-service teachers from Urban and Rural area.
iii. Regarding the classification by Stream, the present study reveals no significant difference in terms of Pre-service teachers from Arts and Science stream in terms of Classroom Engagement.
iv. In the context of types of institution, the analysis indicates a no significant difference in Classroom Engagement among Pre-service teachers of Assam.

Findings of the Objective no- 6:

i. The present study also revealed no significant difference in various dimensions such as Cognitive, Behavioural, Emotional and Teaching skills Engagement in terms of gender, stream and types of institution. But the researcher found significant difference between the Rural and Urban Pre-service teachers in terms of Cognitive and Emotional Engagement.

Findings of the Objective no- 7:

i. Out of 895 Pre-service teachers,545 exhibit a medium level of Academic Achievement. Further analysis of the data reveals175 Pre-service teachers' report a high level of Academic Achievement. Again, 175 Pre-service teachers reported lower level of Academic Achievement.

   Overall, the findings from this analysis shows 19.37% of Pre-service teachers have high level of Academic Achievement. 60.35% of Pre-service teachers have average level of Academic Achievement. 19.37% have lower level of Academic Achievement. It becomes apparent that the majority of the Pre-service teachers Academic Achievement in this study fall within the average category, indicating medium level of Academic Achievement**.**

Findings of the Objective no- 8:

i. In terms of Academic Achievement, the study revealed no significant difference in Academic Achievement between the male and female Pre- service teachers
ii. In regards to locality, the analysis found no significant difference in Academic Achievement between the Pre-service teachers from Urban and Rural area.
iii. In the context of streams, the analysis indicates no significant difference in Academic Achievement between Pre-service teachers.
iv. In the context of Types of institution, the analysis indicates significant difference among the Pre-service teachers from Private and Government institution in terms of Academic Achievement

Findings of the Objective no- 9:

i. It is found no significant relationship between Academic Resilience and Academic Achievement.

Findings of the Objective no- 10

i. It is found significant relationship between Classroom Engagement and Academic Achievement.

Findings of the objective no -11

i) The study found that Academic Resilience and Classroom Engagement have been found no effect on Academic Achievement of Pre-service teachers of Assam.

Findings of the objective no -12

Challenges faced by the Pre-service teachers in Classroom transaction

a) Adoption of Technology

1. Most of the Pre-service teachers (58.16%) responded on lack of training as a factor of the problem related to technical profiency. Lack of prior experience (18.34%) with using advanced educational technology make challenging for them to fully utilize these tools in the classroom, leading to frustration or inefficiency in regard to technical profiency. Lack of material resources (9.39%) create barrier towards technical profiency. When trying to effectively integrate technology into their teaching practices.12.97% Pre-service teachers responded that lack of confidence can significantly hinder one's ability to engage in technology-related activities. So, it has been found that lack of inadequate training creates the issue of technical proficiency is a barrier towards technology-based activities.
2. Regarding the point Integration of Technology,46% Pre-service teachers viewed Limited Exposure During Training create hinders. It has been found that 26.1% pre -service teachers feel that time constraint is one of challenges towards integration of technology.15% Pre-service teachers think rigidity of curriculum one of the challenges towards incorporate technology. A smaller percentage of Pre-service teachers (13%) do face problems of lack of support infrastructure regarding integration of technology. However, it has been found

that diverse educational standards in the major challenge regarding integration of technology.

3. The study showed that 40.5% Pre-service teacher showed their concerns on Time Constraints is one of the causes behind the barrier of keeping up with technological advancement. 20% Pre-service teachers viewed lack of institutional support as one of the factors affecting keeping up with technological advancement. Rapid pace of technological substitution (33.3%) create hinders in this regard. A minimum portion of (5.2%) Pre-service teacher perceive curriculum rigidity create issue on keeping up with technological advancement.
4. 55.3% Pre-service teachers viewed Over reliance to Digital tools crate problem on developing critical thinking and problem-solving skills.25% Pre-service teachers used to say overload information is one of the major factors decreased the ability of critical thinking and problem-solving skill.10.4% Pre-service teachers responded automation of simple tasks leads to the problems of developing critical thinking and problem-solving skills. A minimum number of Pre-service teachers (8%) viewed that Access to tools and resources may hinder in the development of critical thinking and problem-solving skills among the Pre-service teachers. From the data it has been found that Over-reliance on digital tools can indeed pose challenges to the development of critical thinking and problem-solving skills.

b) Classroom Communication

1. In the study,35% Pre-service teachers viewed technological distraction creates problems in classroom participation. It has been depicting that significant portions of respondents,27.4% show concern to the social anxiety in terms of classroom participation.21.5% Pre-service teachers viewed inadequate classroom management leads to towards lack of classroom participation. A minimum portion of respondents (16.1%) states about teacher centred pedagogy in terms of the above said issue. Thus, Pre-service teachers state technological distraction in the major issue that create hinders classroom participation.

2. From the survey result, it has been found that majority of respondents (38.3) face the problem in classroom collaboration because of lack of communication.28% respondents feel standardized curriculum create the issue in classroom collaboration. 20.7% Pre-service teachers believe that language barriers in one of the factors affecting classroom collaboration. A minor portion of 14% respondents remain viewed inadequate practicing leads to the issue. Thus, Pre-service teachers state lack of communication is the main factor regarding the barriers of classroom collaboration.
3. It has been found that major portion of (69%) Pre-service teachers face the issue of Emotional and behavioural responses due to classroom climate.13.5% pre -service teachers states about the issue of inconsistent discipline.11% Pre-service teachers face the issue of lack of empathy as one factor of Emotional and behavioural responses. A minor portion of Pre-service teachers (7%) viewed about peer pressure leads to the issue. Thus, Classroom climate is the main factor regarding Emotional and behavioural response.
4. The result showed that 35% Pre-service teacher faced the issue of disruptive classroom environment due to inadequate resource.30.4% Pre-service teachers faced the issue of disruptive classroom environment because of over use of technology.17% Pre-service teachers believe that stress create disruptive classroom environment. Minor portion respondent (16.4%) viewed about the language barriers is one of the factors of disruptive classroom environment. Thus, Inadequate resources leads disruptive classroom environment.

c) Pedagogical Practices

1. In terms of barriers of insufficient Professional development, 39.64% Pre -service teachers responded rigid curriculum is one factors related to the problem of Professional development. Due to ineffective mentorship 27.02% Pre-service teachers views that they faced problem in Professional development. 15.72% Pre-service teachers responded towards Poor integration of theory and practice professional development become insufficient. It has been found that due to time constraints 17.60% create issue in terms of Professional development

of the Pre-service teacher. Thus Rigid curriculum is the leading factor of insufficient Professional development.

2. Regarding maintaining up to date subject knowledge, it has been found that most of the Pre-service teacher (40.42%) not get sufficient time for their self-development. Approximately 31.78% Pre-service teachers responded about the inadequate resources creates problem in the context of maintain up to date subject knowledge. Pressure of standardized testing (14.83%) creates hinders on the issue. Additionally, 12.92% feel the problem of lack of collaboration with peers one the minor challenges regarding up-to-date subject knowledge.
3. In terms of factors related to confidence in the teaching abilities, majority of Pre-service teachers (32.77%) show their concern about limited experience in the actual classroom setting. The result indicates that 30.38% express their fear of making mistakes that hinders their confidence.21.04% responded inadequacy with diverse learners is one point that hinder in the confidence of the Pre-service teacher in the teaching abilities.15.39 views that lack of experience in handling the unexpected situation leads to decrease the confidence of the Pre-service teacher regarding teaching abilities.
4. In the barriers related to self-reflection, Majority of Pre-service teachers (32.77%) viewed that Academic Pressure is one of major issue that they face in this regard. Due to lack of time (27.79%) Pre-service teacher get little room for their self-reflection. Additionally, 25.24% Pre-service teachers face the problem of lack of structured support hinders to find time for self-reflection. A minor portion of Pre-service teachers (17.60%) viewed regarding classroom challenges in terms to find time for self-reflection.

d) Curriculum and Subject Matter

1. Regarding factors affecting adapting for shifts in curriculum and discipline, most of the Pre-service teachers (31.78%) viewed about lack of familiarity with new pedagogical approach.27.68% responded

that limited support of resources in one of the points which leads to challenge on adapting for shifts in curriculum and discipline. 22.36% viewed about over emphasize on standardized testing leads to major issue.18.49% Pre-service teachers show their concern on lack of time to reflect new curriculum change.

2. Regarding to factors of over emphasize content over pedagogy,17.05% views about time constrainst.23.58% Pre-service teachers responded that lack of professional development in pedagogy create the problem of over emphasize content over pedagogy. Lack of student centric approach (38.31%) is the leading factor towards over emphasize content over pedagogy. Rigid curriculum (21.04%) is one of the drawbacks towards the issue of over emphasize content over pedagogy.

Findings of the objective no 13

Pre-service teachers' suggestions regarding Adoption of Technology

1) **Familiarity with Technology**: The analysis indicates that most pre-service teachers expect to access lesson preparation and research resources, including Google Suite, Microsoft Office, and specialized educational applications. It facilitates interactive lessons, which improves learning effectiveness and entertainment value. Technology proficiency promotes an environment of continuous learning and flexibility, which helps future students. Teacher educators should encourage pre-service teachers to seek out materials, online courses, or tutorials to help them learn new skills on their own. Offering opportunities for autonomous technology projects promotes a proactive, self-driven learning style in which teachers can serve as role models for their future students.
2) **Discussion and reflection**: According to the survey results, fixed classroom arrangements and routines can reduce classroom effectiveness. Pre-service teachers stated that teacher educators could foster discussions and reflections by asking guided questions regarding their learning path and tech integration.
3) **Professional Development opportunities**: Pre-service instructors proposed providing opportunities for professional development. Because technology is constantly developing, pre-service teachers require ongoing support and

opportunities for professional development in order to keep current on new resources and methodologies. This may include opportunities to attend conferences and workshops, ongoing training and mentoring, and access to internet resources (Liu & Song, 2019).

4) **Experience mentor**: Pre-service instructors are regarded to provide an opportunity to observe how more experienced educators use technology. The administration can locate experienced educators in the district or school who are eager to train aspiring teachers and are proficient with technology. A more tailored mentoring experience can be created by matching them based on grade level interests or subject areas. This provides them the opportunity to learn personally from someone who has used technology in the classroom. They can see in real time how technology enhances testing, student engagement, and lesson planning.
5) **Sufficient funds**: Pre-service teachers recommended that policymakers and the government set aside enough funds to update schools' digital infrastructure, which includes internet connectivity, software, hardware, and technical support services. Many schools, particularly those in rural or disadvantaged areas, may lack enough technological resources. When the necessary infrastructure is in place, all teachers and students have equal access.

Pre-service teachers' suggestions regarding Classroom Communication

1. **Clarity**: Most pre-service teachers believe that well-prepared instructional materials and clear lesson plans are crucial for effective teaching and learning. According to research, students who are uninformed or confused during class teaching may remain confused because they do not ask clarifying questions. Pre-service teachers can follow and modify the model provided by teacher educators for writing well-structured and organized lesson plans.
2. **Realistic classroom**: Reflective communication strategies are critical for pre-service teachers to improve their abilities and effectiveness in the classroom. Teacher educators could design realistic role-playing settings, such as parent-teacher conferences, student conversations, or conflict resolution situations. This enables pre-service instructors to practice in a low-stakes setting. Regular

reflection enables continual improvement of verbal and nonverbal communication skills, resulting in clearer and more successful interactions in class. It provides pre-service teachers with methods for managing disagreements and tough conversations more successfully, resulting in a more positive classroom climate.

3. **Feedback**: Pre-service teachers are advised to provide feedback that encourages them to reflect on their teaching approach. Feedback acts as a guide for individuals to develop their communication skills, resulting in a deeper understanding of how effective communication affects classroom dynamics, student engagement, and professional relationships. Teacher educators must provide regular, constructive feedback on communication skills throughout teaching practice, group debates, and presentations.
4. **Access to reliable tools**: Physical impediments have a significant impact on communication abilities, especially in educational or professional settings. Inadequate access to communication technologies (such as projectors or video conferencing software) might impede effective information sharing, especially in distant or hybrid environments. Pre-service teachers suggested that reliable communication equipment, such as interactive displays, projectors, and video conferencing software, be made available to students. The administration should put aside funds to purchase licenses or subscriptions for dependable communication technologies.
5. **Experience mentor**: In addition, suggestions have been made to give pre-service teachers with experienced mentors to assist them in improving their communication abilities. They give mentees thorough, relevant feedback on instructional tactics, which helps them improve their communication and solve challenges. Administrators are responsible for establishing a mentorship program's particular structure and framework.

Pre-service teachers' suggestions regarding Pedagogical practices

1. **Proper training**: Teacher educators frequently demonstrate how to develop a lesson plan by demonstrating the aspects and structure of an effective lesson, such as objectives, materials, activities, assessments, and reflection, and then train students on how to organize their own plans. The majority of pre-service

teachers recommended that appropriate training be offered for developing effective lesson plans. A well-designed lesson plan helps educators keep focused on learning objectives and instructional goals.

2. **Student centred Pedagogy**: The majority of pre-service teachers agreed that student-centred Pedagogy should be implemented in the classroom. It is clear that students generate meaning from what they learn in a classroom setting where they are encouraged to develop their capacity for critical and reflective thought, as well as their sense of accountability.
3. **Adequate facilities:** Pre-service instructors were supposed to ensure that the classroom was large enough to accommodate efficient teaching methods. Provide classrooms with the required technology to support a variety of instructional activities, such as computers, iPads, interactive whiteboards, and reliable internet connectivity. To foster a flexible and student-centred learning environment, provide opportunities for students to express feedback on courses or facilities. Administrators must provide basic classroom infrastructure, such as enough desks and chairs, proper lighting, ventilation, and temperature control.
4. **Improvement of Curriculum**: The majority of pre-service teachers and lawmakers should support curriculum changes that stress skills such as critical thinking, digital literacy, communication, and teamwork, which help children prepare for the modern world. More transdisciplinary curricula that reflect the intricate, linked character of global concerns are required.
5. **Appropriate setting for educational practices**: The majority of pre-service teachers stated that maintaining a pleasant and stimulating learning environment necessitated creating an appropriate atmosphere for instructional methods. An ideal setting promotes both teacher and student development in terms of knowledge, skills, and attitudes. Administrators should foster an environment that encourages instructors to experiment with cutting-edge teaching methods. This could include looking into inquiry-based learning, project-based learning, flipped classrooms, or personalized learning paths. Administrators should provide teachers with the time, resources, and encouragement they need to experiment with new ways.

Pre-service teachers' suggestions regarding Curriculum and Subject Matter

1. **Practical activity:** According to pre-service teachers, teacher educators should use performance tasks, portfolios, and project-based assessments that allow students to demonstrate their understanding in a number of ways. Instead than relying solely on high-stakes tests to track progress and provide feedback, administer frequent, low-stakes assessments. The majority of pre-service teachers proposed holding workshops to offer them the skills and strategies for various evaluation methodologies and creative teaching approaches.
2. **Inclusive curriculum**: According to pre-service teachers, students, and other stakeholders should actively participate in curriculum development to make it more inclusive. Throughout the curriculum preparation process, administrators should encourage collaboration among teachers, subject matter experts, and other stakeholders. This can include organizing a time and place for educators to meet, discuss, and exchange ideas on how to improve course content and teaching practices.
3. **Access to essential resources**: According to pre-service teachers, instructors must have access to the materials they need to construct and run programs effectively. Administrators should ensure that teachers have adequate resources, such as technology, instructional aids, textbooks, and learning materials, in order to administer the curriculum effectively. Budgetary allotments should be based on curriculum demands to ensure the availability and currency of teaching resources.
4. **Integration of technology**: The majority of pre-service teachers advocated that educational technology be included in the curriculum. More educational technology training is required, as well as guidance on how to successfully incorporate them into lesson planning and classroom activities. To ensure that every child has the opportunity to learn important tech skills, officials should establish a clear vision that prioritizes digital literacy and curriculum-wide technology integration.

6.10 Educational Implication of the study

The educational implications of this current research study are indicative of the potential for the insights and findings to be implemented to enhance academic policies, teaching, and learning.

Recommendations towards Policy makers

1.**Policy formulation**: This study would be helpful to the policymakers for providing guidelines regarding to provide access to essential software (e.g., Microsoft Office, Google Suite, specific educational apps) for lesson planning and research. It facilitates interactive lessons, making learning more engaging and effective. It will make the pre-service teachers become proficient in using various educational technologies, which is crucial for their careers.

2.Funding and support: This study may give suggestions to government and policymakers should allocate sufficient government funds for updating schools' technology infrastructure, which includes hardware, software, internet connection, and technical support services. Many schools, particularly those in rural or impoverished areas, lack access to adequate technology. Providing suitable infrastructure promotes equal access for all students and teachers.

3.Professional Development programme: Professional Development is vital for instructors to stay current on evolving technology tools and successful teaching practices. Policymakers should Create a nationwide movement to support and provide access to regular professional development seminars, workshops, and online courses focused on educational technology. Encourage instructors to engage in certification programs that focus on technology use.

4.Development of communication skill: This study suggested that participating in communication-focused professional networks helps to promote peer learning and continuous development in communication techniques. Policy makers should encourage policies that promote continuing communication skill development for teachers at all levels of their careers

5.Inclusive curriculum: Policymakers should advocate for curriculum improvements that focus on preparing students for the modern world, such as critical thinking, digital literacy, communication, and collaboration. The curriculum should be more interdisciplinary and reflect the multifaceted, linked character of global concerns. NEP 2020 promotes flexible curriculum and learning environments which directly supports academic resilience among pre-service teachers.

Recommendations towards Teacher educator

1. Interactive technology: Teacher educators should model diverse and effective uses of technology during their own instruction. For instance, using interactive whiteboards, digital quizzes, and collaborative platforms like Google Classroom or Padlet can demonstrate how technology can facilitate engagement, organization, and feedback.

2. lesson plans and instructional materials: This study emphasizes the need of using clear lesson plans and well-prepared instructional materials is vital for effective teaching and learning. Teacher educators can develop a model and demonstrate how to create structured and well-organized lesson plans that pre-service teachers can replicate and adapt.

3. Reflective communication: It ascertains that reflective communication practices are essential for pre-service teachers to develop their skills and enhance their effectiveness in the classroom. Teacher educators should create realistic classroom scenarios for role-playing, such as parent-teacher conferences, student discussions, or conflict resolution situations.

4.Student centred Pedagogy: This study emphasises the need for student-cantered Pedagogy in the classroom teaching learning. Students comprehend their learning in a classroom setting that encourages the development of introspective and critical thinking, as well as a sense of responsibility. Teacher educators should instruct pre-service teachers in innovative teaching modalities that can augment their success in the classroom.

5.Innovative activities: It is advisable that teacher educator must implement project-based assessments, portfolios, and performance tasks that allow students to demonstrate their understanding in various ways. Use regular, low-stakes assessments to monitor progress and provide feedback, rather than relying solely on high-stakes tests. Most of the Pre-service teachers recommended to offer workshops that equip them with tools and strategies for varied assessment methods and innovative teaching practices.

Recommendation towards Administration

1.Experieced mentors: Attention should also be paid to identify experienced teachers within the school or district who are proficient in using technology and willing to mentor pre-service teachers. Pairing them based on subject area or grade level interests can create a more tailored mentoring experience. This allows them to learn directly from someone who has practical experience using technology in the classroom. They can observe how technology enhances lesson planning, student engagement, and assessments in real-time.

2.Workshop: It is advisable hat Administration should Conduct focused workshops on specific communication skills (such as active listening, giving feedback, and public speaking) to help the Pre-service teacher to practice and refine their skills in a supportive environment.

3.Infrastructure: There must provide access to reliable communication tools like video conferencing software, projectors, and interactive displays to enhance remote communication. Administration needs to allocate a budget to purchase licenses or subscriptions for reliable communication tools.

4.Access of resource and support: This study suggested that administrators ought to advocate for and assist instructors in differentiating instruction to address the distinct requirements of their pupils. This includes giving access to resources such as special education services, learning materials designed to accommodate varied learning styles, and professional development on differentiating instruction.

6.11 Recommendation for Further Study

The researcher indicated prospective areas for future investigation based on their findings from this study. After analysing the study's findings, the researcher discovered some prospective areas.

Similar research can be undertaken in future projects-

1. A similar study may be done in other States of India to gain the trend of Academic Resilience at Teacher training institutions of Assam.

2. A comparable study may be executed on a more extensive sample representative of the entire state of Assam.

3.The current study was performed on Pre-service teachers in Assam, and an equivalent investigation might potentially be undertaken with college and university students in Assam.

4. Longitudinal studies with interventions should be conducted on Pre-service teachers so that it can bring out some efficacy in improving the Academic Achievement.

5. The present study has been conducted only in six district of Assam, further study may be conducted by taking up other district of Assam.

6.12 Conclusion

Education is an essential instrument for global transformation, converting fundamental information into knowledge and fostering individuality across diverse domains. Educators are crucial in nation-building by cultivating high-quality human resources within their classrooms. The Teacher Education program seeks to impart information, skills, critical thinking, ethics, values, and other essential competencies to student-teachers, facilitating their qualitative development.

The National Council for Teacher Education characterizes teacher education as educational, research, and training programs designed to prepare persons for teaching at pre-primary, secondary, and senior secondary levels in schools. The curriculum

encompasses pedagogy, subject matter expertise, classroom management, assessment techniques, and educational psychology. Pre-service teachers are catalysts for change who endeavour to maintain and enhance educational quality, providing them with the knowledge, skills, and competences essential for success in their vocation.

Becoming an educator is both physically and emotionally taxing, requiring the management of two categories of demands: those imposed by the teacher education program and those from the educational institutions. Effective teacher training fosters resilience in trainee teachers, enhances job satisfaction, promotes well-being, and strengthens commitment to the teaching profession.

Teacher education ought to encompass topics such as relationship cultivation, self-care, motivation, initiative-taking, and emotional regulation. Teacher education prepares future educators with essential skills and a suitable attitude to address the challenges of the teaching profession through a systematic and comprehensive curriculum.