CHAPTER-V

RESULTS AND DISCUSSION

5.1 Introduction

The present chapter outlines the key findings of the study as per the research objectives. It also critically discusses these findings with reference to existing literature to assess their significance in relation to the research objectives.

5.2 Findings and Discussion

Objective no 1: To study the level of Academic Resilience among the Pre-service teachers of Assam

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.

Similar to the findings Zada.P.R. R (2021) found the majority of higher secondary school students of Kashmir division (41.4%) possess high level of Academic Resilience. Conversely, Jan and Praveen (2023) discovered that the majority of higher secondary school pupils in Srinagar exhibited an average level of academic resilience. Habeeb (2021) in Aurangabad discovered that secondary students had an average level of Academic Resilience. A possible explanation might be Teacher preparation programs frequently aim to foster resilience in Pre-service teachers. Different programs include practical field experiences, including classroom observations and student teaching, enabling potential educators to apply their academic knowledge in real-world contexts. Reflective practice is essential, as it prompts educators to critically assess their experiences, adjust to evolving situations, and pursue ongoing enhancement. The integration of practical and reflective components helps foster the emotional and professional resilience essential for success in the classroom.

5.3 Findings and Discussion

Objective 2(i) To find out over all significant difference in Academic Resilience of the Pre-service teachers of Assam teachers based on Gender

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

Some of the similar related research meet the findings of this study i.e. male and female had same level of Academic Resilience (Rao & Krishnamurthy, 2018, Karabiyik ,2020), there are other studies that contradict our finding (Martin & Marsh, 2006, 2008; Mwangi et al.,2018; Mwangi & Ireri, 2017; Sarwar et al., 2010; Wasonga, 2002; Yavuz & Kutlu, 2016) The result corroborates with the outcomes of the following research investigations described in terms of different factors. Various studies related to Resilience have forwarded different factors that enhance Resilience. Gang, Disney, Midford and Buckworth (2023) discovered that both female and male pre-service teachers possessed comparable awareness of, and access to, the support offered by the University and its School of Education. Male and female pre-service teachers possess comparable support structures, resources, and educational opportunities, which may foster equivalent levels of Academic Resilience. If both genders receive equivalent mentorship, counselling, and training, their resilience levels may be similar. Calagues (2011) discovered that males and females experience same amounts of academic pressure, resulting in similar coping techniques and resilience levels. Watson (2002) identified no substantial disparity in perceived stress levels between male and female pupils. Both genders develop effective methods to manage academic stress. Students of all genders learn to adapt to academic stress over time. As they gain experience, they become better at managing stress and overcoming challenges, leading to similar levels of resilience. M.J. Brooks and E. L. Kelly (2019) explores gender equity in educational settings influences students' Academic Resilience and Achievement. Implementing gender equity policies in schools can significantly improve academic resilience among students, helping them to better cope with challenges and setbacks. Teachers play a crucial role in fostering an equitable learning environment. Their attitudes and behaviours towards gender can either reinforce stereotypes or promote inclusivity.

Objective 2(ii) To find out over all significant difference in Academic Resilience of the Pre-service teachers of Assam teachers based on locality

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.

The findings align with the research by Mallick and Kaur (2016), which demonstrates no significant difference in Academic Resilience between Rural and Urban high school pupils. This conclusion contradicts the findings of Lee (2009) and Vasimalairaja and Gowri (2016), which showed that urban B. Ed trainees and at-risk high school students exhibited slightly greater resilience than their rural counterparts. Pinki; Duhan (2020) discovered a large disparity in Academic Resilience between Urban and Rural secondary level students. Researchers have found that in today's world, it is no longer unusual that Pre-service teachers from Urban and Rural area have same Academic Resilience. Both Urban and Rural Pre-service teachers might have strong personal motivations and commitment to their chosen profession, contributing to similar levels of resilience (Ramirez 2020). Pre-service teachers in both settings may develop similar adaptive strategies to handle academic challenges effectively. Studies found that there is no significant difference between teachers teaching ability in urban and rural areas (Kusin 2022). If the curricula and support systems are designed to be equitable across different settings, Pre-service teachers in both urban and rural areas might receive similar levels of support and resources. De La Fuente (2021) and Vindigni (2023a) emphasize flexible curriculum adapting to diverse learner needs. Parents in rural areas acknowledge the significance of their active participation in their children's education and anticipate that schools will facilitate their engagement. They demand transparent communication with the schools' visions and the expectations established for both themselves and their children (Myende and Nhlumayo, 2020). Students residing in metropolitan areas and attending schools in these environments see numerous discrepancies that may lead to an at-risk classification (Akin, Radford, 2018).

Objective 2(iii) To find out over all significant difference in Academic Resilience of the Pre-service teachers of Assam teachers based on stream

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.

Pai.M, Sekhar. (2023) highlighted the same level of Academic Resilience among the Pre- service teachers from Arts, Science and Commarce streams. These findings align with those of Rao (2012), who evaluated Academic Stress and Resilience levels among students in the Arts and Science disciplines. They identified significant differences in academic resilience across students in the different programs offered. However, some of the study indicated that Arts and Science do not significantly differ in their academic resilience (S.V Surekha & Kalpana.D,2022). Duhan (2020) found that Science stream respondents had more Academic Resilience than students from Arts stream. The possible explanation might be the teaching approaches used in various teaching learning process. Teaching methods and pedagogical approaches used in different streams might influence how an individual cope with academic stress and challenges (Bila& Martincova 2023). Students' intrinsic interest in their chosen stream can impact their resilience. Those passionate about their field may be more motivated to overcome obstacles. In the study (Kim and Lee, 2014) indicated that demotivated EFL learners had lower resilience levels compared to their motivated counterparts. Regardless of varying components, motivation serves as a mediator in the resilience process (Resnick et al., 2018). Factors such as previous academic experiences, family support, and socioeconomic status can shape resilience across streams. Family, friends, and other significant aspects positively correlated with Academic Resilience (Mastrokoukou, Longobardi, Bozzato, P. (2024).

Objective 2(iv) To find out over all significant difference in Academic Resilience of the Pre-service teachers of Assam teachers based on types of institution

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

Numerous researches have likewise empirically supported the idea. Ranee and Menu (2022) found that Resilience of Private school students was higher than Government school students. Chaudhary and Sharma (2019) found that children from Government schools have higher level of Resilience than children from Private school. Duhan (2020) revealed that significant differences were discovered in terms of Academic Resilience among respondents from the Public and Private sectors. In contrast Monika and Shikha (2021) found no significant difference among students from between Private and Government schools in terms of Academic Resilience. A possible

explanation for these results might be that the culture of Private institutions may prioritize academic achievement, personal development and have more acceptance level than some government institutions, influencing student Resilience. those in private schools report a greater level of acceptance from their teachers compared to those in government institutions. They are allowed to communicate their view points, opinions at any time (Rasool.R,2018). The level of academic pressure among the institution can vary Academic Resilience significantly (Thenmozhi, Poornima,2020). Different educational philosophies may influence how resilience is cultivated. Different schools may emphasize growth mindset and resilience-building activities. Jalala, Latifoglu and Uzunboylu (2020) reported that supportive school environment, resilience topics in the curriculum, resilience workshop, etc. acts as strength factors in building resilience among school children.

5.4 Findings and discussion

Objective 3: To find out dimension wise significant difference in Academic Resilience of the Pre-service teachers of Assam teachers based on Gender, Locality, Stream, and types of institution

The present study found 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.

Students from Private institution have higher Self-efficacy than students from Government institution. Similarly, Garg and Singh (2016), Meenu.R (2022) found that children's from Private schools had a higher level of Self-efficacy than public school children's. Bhagat & Pooja (2017) revealed that Self-efficacy in secondary schools did not differ significantly depending on their Types of school. A possible explanation might be there may be societal views regarding the quality of education in Private versus Public institutions. Pre-service instructors at private institutions may feel more confident because of their perceived better status. Matud.M. P (2003) found significant difference in Social support and Social competence in terms of gender.

Private institutions often attract students from diverse or more affluent backgrounds, potentially creating a network of peers with varied experiences and resources.

5.5. Findings and discussion

Objective4: To study the level of Classroom Engagement of the Pre-service teachers of Assam.

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.

These findings diverse with the research outcomes presented by Parveen-Jones (2023). However, the findings align with the results reported by Hodge (2018) who revealed 74% students reporting high level of Engagement in the school. It might be because of the active learning opportunities (hands of practice, discussion, peer teaching) get by Pre-service teachers in the classroom setting.

5.6: Findings and discussion

Objective 5(i) To find out over all significant difference in Classroom Engagement of the Pre-service teachers of Assam teachers based on Gender

In terms of gender, the study found no significant difference in Classroom Engagement of the Pre-service teachers of Assam.

Laurie Murphy, Nina B. Eduljee, Suzanne Parkman, and Karen Croteau (2018) discovered no notable gender disparities in classroom engagement activities. Conversely, previous studies indicate that gender disparities exist in classroom involvement, with over fifty percent of students seldom or never engaging in class discussions, and women contributing less than males (Crombie, Pyke, Silverthorn, Jones, & Piccinin, 2003). In a comparison of traditional and virtual classrooms, it was shown that males exhibited greater engagement in face-to-face communication, but

females contributed a higher volume of messages in the online classroom environment (Caspi, Chajut, & Saporta, 2006). Various factors can affect the kind and extent of student engagement in class, many of which are within the professor's control, such as emphasizing the importance of participation (Rocca, 2010). Professors design and implement the curriculum, choosing classroom activities that necessitate active student participation. Moreover, pedagogical elements such as course content, subject matter, instructor, and teaching methodology may influence student engagement (Fawzia, 2010). A meta-analysis conducted by Jones and Dindia (2004) encompassing 127 empirical research regarding the influence of student gender on teacher-initiated interactions demonstrated that male and female students received comparable levels of positive interactions, including praise and acceptance.

Objective 5(ii) To find out over all significant difference in Classroom Engagement of the Pre-service teachers of Assam teachers based on locality

Classroom Engagement in regards to locality, the study revealed significant difference among the Pre-service teachers from Urban and Rural area.

A study conducted by Ahmad Fauzi Mohd Ayub, Aida Suraya Md. Yunus, Rosnaini Mahmud, Nur Raidah Salim, and Tajularipin Sulaiman (2016) investigated student involvement by geographic location, indicating that secondary school pupils in urban regions had higher levels of interest in mathematics compared to their rural counterparts. This might be attributed to urban schools typically having superior access to resources, including technology, extracurricular activities, and professional development, which can affect the manner in which pre-service teachers create interesting classes. Conversely, rural schools frequently encounter resource limitations, which may hinder the efficacy of engagement techniques.

Samane-Cutipa et al. (2022) examined the impact of digital disparities on online education in rural schools, revealing that rural pupils generally exhibit lower digital literacy compared to their urban counterparts and face restricted access to technology and the internet. Nawab and Bissaker (2021) discovered that professional development programs did not enhance classroom practices in rural schools, as these programs neglected to consider the unique setting of those institutions. Pre-service teachers in metropolitan environments frequently interact with a more

heterogeneous student demographic, thereby augmenting their capacity to connect with children from diverse cultural backgrounds. Conversely, rural pre-service teachers may possess more uniform experiences, influencing their methods of engagement. Additionally, individuals in rural and remote practicums may encounter obstacles including restricted interaction with university personnel, elevated expenses for communication with colleagues or professors, insufficient support from supervising educators, and issues in organizing multi-age classrooms (Lock, 2008; Sharplin, 2002, 2009).

Objective 5(iii) To find out over all significant difference in Classroom Engagement of the Pre-service teachers of Assam teachers based on stream

Regarding Stream, the present study reveals no significant difference in terms of Pre-service teachers from Arts and Science stream in terms of Classroom Engagement.

Similarly, a meta-analysis conducted by Parsons and Taylor (2011) found several educational methods that improve student engagement. The primary factors identified as enhancing student engagement include interactive and respectful relationships, assignments that facilitate open-ended exploration, real-life scenarios, multimedia instruction, an environment that permits students to question teachers' assertions, and formative assessment of learning. Practical experience may fulfil a desire for innovative, direct engagement with the world, or for proficiency within it (Piaget & Inhelder, 1973); child-directed activities provide gratification of the need for autonomy (Ryan & Deci, 2000); and incentives may meet a need for accomplishment or improve self and societal perceptions. Hughes et al. (2008) discovered that teacher-student relationships, student engagement, academic achievement, and the frequency of instructors' academic contacts correlate with elevated levels of student engagement. The interaction styles of teachers have been associated with various aspects of classroom performance, including students' academic engagement and achievements (Jennings & Greenberg, 2009). The course type can influence student participation.

Objective 5(iv) To find out over all significant difference in Classroom Engagement of the Pre-service teachers of Assam teachers based on stream

In the context of types of institution, the analysis indicates a no significant difference in Classroom Engagement among Pre-service teachers of Assam.

In contrast, Mishra, P. (2019) found that significant difference between Private and Public universities with reference to student engagement. In similar to the findings of the study, Swathi.M and Ranjani.C.V. V (2024) found that both government college students and private college students were deemed to be extremely engaged. Korobova (2012) confirmed that the campus environment and the educational experiences differed significantly. According to Lotkowski et al. (2004), student participation is significantly correlated with the sort of institution or university. Furthermore, Lotkowski et al. (2004) elaborated that students' levels of consistency serve as markers of their involvement, social support, and commitment to school and university. The rules, policies, and programs that make up an institution's culture can either aid or hamper students' capacity to succeed in extracurricular activities and adjust, according to Arroyo & Gasman (2014). Overall, the research indicates that institutional culture can have an impact on student involvement on campus. Uprety and Chhetri (2014) found that the quality of relationships followed the order of participation, flexibility, and reliability, and that the three aspects of college culture—involvement, adaptability, and consistency—are essentially related to college student satisfaction. One rationale is class size; students exhibit reduced anxiety regarding participation (Smith, 1992) and demonstrate increased willingness to engage (Berdine, 1986; Howard & Henney, 1998; Hyde & Ruth, 2002; Myers et al., 2009; Neer, 1987; Smith, 1992) in smaller classes compared to larger ones; larger class sizes typically hinder communication (Gleason, 1986). Engaging students who have not volunteered (Dallimore et al., 2004) and enforcing forced engagement (Dallimore, Hertenstein, & Platt, 2004) can both effectively enhance involvement.

5.7: Findings and discussion

Objective no 6: To find out dimension wise significant difference in Classroom Engagement of the Pre-service teachers of Assam teachers based on Gender, Locality, Stream and Types of institution

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.

The possible explanation might be urban setting typically offer more resources such as access to technology, libraries, extra-curricular programmes which can enhance the Cognitive Engagement of the students (Davis.k,2018). It also helps to develop Emotional Engagement by creating a stimulating and supportive learning environment. The facility of diverse teaching methods, mentors and peer support foster high Emotional Engagement and to adapt creative pedagogical techniques.

5.8 Findings and discussion

Objective no 7: To study the level of Academic achievement of the Pre-service teachers of Assam

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.

The findings supported by the study conducted by Siahi.A.E. E and Maiyo.J.K. K (2015). A possible explanation might be the level of motivation of the Pre-service teacher. Many of the Pre-service teacher enter the profession with extrinsic motivation (job security, social status, or family pressure) which might affect their achievement. High workload can limit the Academic Achievement of the Pre-service teachers.

5.9: Findings and discussion

Objective no 8(i): To find out significant difference in Academic Achievement of the Pre-service teachers of Assam teachers based on Gender (Male and Female)

In terms of Academic Achievement, the study revealed no significant difference in Academic Achievement between the male and female Pre-service teachers

Pate. R. S (2019) similarly discovered no substantial disparity in Academic Achievement between male and female pupils. Conversely, Jackman, W.M., and Morrain-Webb, M.J. (2019) identified the disparity in Academic Achievement between males and females. Secreto & Percia Villaflor (2015) identified gender differences between males and females. Barry A. (2019) identified a considerable disparity in academic achievement between males and females. Gutierrez, M. O., Agudo, L. A. L. L., & García, R. A. M. (2017) discovered that adolescents exhibit gender disparities in academic achievement. Kalhotra (2016) determined that there is no substantial difference in Academic Achievement between male and female students of Higher Secondary Schools. Contemporary educational methodologies emphasize inclusion, catering to all learning styles, so benefiting all pupils. The analogous teaching and learning tactics employed in educational institutions may impact the prediction of student accomplishment outcomes (Hattie, 2012). The support received by both genders from their families fosters academic excellence in both boys and girls. The home significantly impacts pupils' psychological, emotional, social, and economic well-being. According to Ajila and Olutola (2000), the condition of the home influences the individual, as parents serve as the primary socializing agents in a person's life. Most pre-service teachers, regardless of gender, aspire to pursue a career in teaching. The degree and nature of an individual's engagement in education and learning may indicate a significant aspect of personality. The attribute of interest can profoundly influence educational and occupational achievement, interpersonal relationships, and other essential facets of daily life. The current findings are consistent with the studies of Harackiewicz, Durik, Barron, Linnenbrink-Garcia, and Tauer (2008) about the influence of interest on academic and professional performance; Loewenstein (1994) on interest and curiosity in learning; and Alamieyeseigha and Kpolovie (2013).

Objective no 8(ii): To find out significant difference in Academic Achievement of the Pre-service teachers of Assam teachers based on locality (Urban and Rural)

In regards to locality, the analysis found no significant difference in Academic Achievement between the Pre-service teachers from Urban and Rural area.

The findings of this study correspond with the research results conducted by Alwyn Pinto and Bajpai (2022) who observed no significant difference in academic

achievement between boys/students of secondary level from urban and rural areas. Conversely, a compilation of evidence by Guiffrida (2008) reveals that many rural students are cognitively, socially, and culturally ill-equipped to negotiate college life at metropolitan institutions. Urban institutions exhibit substantial differences in life and cultural practices compared to rural environments (Xiulan, 2015). The potential explanation may be the comparable teaching efficacy of educators from both rural and urban regions, which impacts student outcomes (Kusin.M.S, 2022). The government must augment health, education, and physical infrastructure to strengthen the capabilities of rural residents. Various initiatives facilitate the reconciliation of disparities in urban and rural schooling through the provision of supplementary financing and resources. If curricula and support systems are equitably developed across various contexts, pre-service teachers in both urban and rural locations may receive comparable levels of support and resources. It facilitates the development of student outcomes.

Objective no 8(iii): To find out significant difference in Academic Achievement of the Pre-service teachers of Assam teachers based on stream (Arts and Science)

In the context of streams, the analysis indicates no significant difference in Academic Achievement between Pre-service teachers.

The findings of the study align with the research outcomes presented by Bhati. K, Baral. R, Meher. V (2022) who found no significant difference in Academic Achievement between Pre-service teacher s from Arts, Science and Commarce stream. In contrast, Ahmad.N.B. B (2018) found significant difference between Science and Arts University Students on Academic Achievement. Kalhotra (2016) found Science students of Higher Secondary School exhibit higher Academic Achievement than their counterparts in Humanities stream. Institutions often provide resources, mentorship, and peer support that help all students succeed, mitigating differences in academic achievement based on their previous streams. A collaborative learning environment where students share insights from their diverse backgrounds can enhance understanding and achievement for all. (Harinarayanan.S & G. Pazhanivelu.G ,2018). Equal education resources received by the Pre-service teachers influence on Academic Achievement in educational institution. Availability of

libraries, technology, and educational materials benefits all students equally, supporting their academic success (Adebayo.A. K, Grace.Z.N.N. N,2020).

Objective no 8(iv): To find out significant difference in Academic Achievement of the Pre-service teachers of Assam teachers based on Types of institution (Private and Government)

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

The finding of the study is similar with one of the findings of Pandey, J.(1985), Barcinas,J. D.T. (1991). Chinzah.V.D, Lalrinpuii.R, Ramhlupuii, Lalthanpuii.V, C.Lalsangpuii(2023) found significant difference among students Private and Government in terms of Academic Achievement. Chudgar & Quin (2012) found Students at private schools demonstrate superior test performance after controlling for variables in both rural and urban India. Shanoji, Gulshan W. (2018) analysed the disparities in academic performance between pupils attending private and government secondary schools. Conversely, Frenette and Chan (2015) discovered that pupils in public sector schools typically underperform compared to their counterparts in private sector schools. Ehteshamuddin S. and Ali S.A. (2019) identified notable disparities in academic performance between pupils from private and government schools. Students in private schools generally emphasize their academic pursuits more than their counterparts in government schools by consistently attending classes, submitting homework punctually, and focusing intently during lectures. They additionally compile notes and engage in pre-examination study, which enhances their academic performance relative to kids in government institutions.

5.10: Findings and discussion

Objective no 9: To find out the relationship between Academic Resilience and Academic Achievement of the Pre-service teachers of Assam

From the study, the researcher found no significant relationship between Academic Resilience and Academic Achievement.

The findings of the study align with the research outcomes presented by Omana.et.al(2007),Sarwar(2010),Cheng and Catling(2015).These findings are in

consonant with Catterall, 1998; Wasonga, Christmand & Kilmar, 2003; Dass-Brailsford, 2005; Martin and Marsh, 2006; Gizir and Aydin, 2009; Fallon, 2010; Sarwar et al., 2010; Allan, McKenna & Dominey, 2014; Celik, Celik & Tutkun, 2014; Esteban and Marti, 2014. While resilient students can overcome setbacks, their academic progress may still be highly influenced by extrinsic factors such as social support, instructional quality, and accessible resources. (Mulaudzi.I.C,2-23) Without these, resilience may not result into achievement. Students who have access to better opportunities (quality education, extra-curricular support) may perform well without high levels of resilience. They may not encounter significant setbacks in their academic journey.

5.11: Findings and discussion

Objective no 10: To find out the relationship between Classroom Engagement and Academic Achievement of the Pre-service teachers of Assam

Findings and discussion

From the study the researcher found significant relationship between Classroom Engagement and Academic Achievement.

This study aligns with Chase et al. (2014), who emphasized the correlation between involvement and academic success, determining that school engagement predicts achievement, with variations between grade levels. Dotterer and Lowe (2011) similarly concluded that participation mediated both academic performance and the classroom atmosphere. Additional research, including that conducted by Pietarinen et al. (2014), similarly identified a favorable association between participation and academic achievement. These findings correspond with Astin's Student Involvement Theory (1984), which posits that the degree of learning and personal development in an educational program is directly proportionate to the level of student engagement. Conversely, research conducted by Shernoff and Schmidt (2008), Shernoff (2010) revealed no substantial association between student engagement and academic performance. Appleton et al. (2006) similarly demonstrated a tenuous link between cognitive involvement and academic achievement.

A potential reason for these variations is that active student participation fosters a sense of responsibility, motivating students to organize, monitor, and assess their

learning. Engaged students effectively apply concepts, enhancing their learning and thereby attaining superior academic outcomes (Almulla, 2022). Student engagement is considered a crucial driver of academic success (Astin, 1984; Pascarella & Terenzini, 1991; Robinson & Hullinger, 2008; Tinto, 2012; Kuh et al., 2009). Intrinsic drive and subject interest frequently enhance engagement, leading to increased effort and enhanced academic success. Elevated levels of interest correlate with improved academic performance, study practices, and reading comprehension (Silvia, 2012). Engaged students are more inclined to solicit feedback, utilize it to pinpoint areas for enhancement, and consequently improve their academic performance.

5.12 Findings and discussion

Objective no 11: To analyse the effect of Academic Resilience and Classroom Engagement on Academic Achievement of the Pre-service teachers of Assam

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

This aligns with Gomez's (2016) findings, which indicated that academic devotion did not contribute to students' learning outcomes. Marie et al. (2021) identified a non-significant correlation between pharmacy students' mathematical performance and their academic resilience. The findings contradict those of Abolmaali and Mahmudi (2013), who determined that academic resilience predicts academic accomplishment, indicating that students with high academic resilience scores are more likely to excel in several academic outcome measures compared to their peers. An explanation may lie in teacher preparation programs, where practical teaching skills or peer support could be more significant than conventional academic assessments, rendering the direct impact of accomplishment less evident. Pre-service teachers must reconcile the disparity between theory and practice, as this can profoundly impact their professional development, potential benefits, and challenges, hence enhancing more effective and comprehensive teaching-learning processes for all (Ramirez.I.A. L, 2020).

5.13 Findings and discussion

Objective no 12: To find out different barriers and underlying factors regarding classroom transactions faced by Pre-service teachers of Assam

Different barriers and underlying factors regarding classroom transactions faced by Pre-service teachers of Assam

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.

The significant finding revealed that limitations related to technical proficiency arise from inadequate training in technology. Pre-service teacher education insufficiently prepares educators with the requisite ICT knowledge for technology-based instruction and does not adequately demonstrate appropriate methods for integrating technology into the curriculum (Further, Brush, Glazewski, and Hew, 2008). Pre-service teachers voiced apprehensions on the insufficient opportunities for studying, practicing, and incorporating technology into their pedagogical approaches within their teacher education programs. Pre-service teachers' curricula should include enhanced training, and ICT skills must be employed in the classroom to effectively integrate technology strategies (Supon and Ruffini 2009). The survey findings reveal that, concerning barriers to maintaining alignment with technological innovation, most pre-service teachers identify time constraints as a significant impediment. Numerous educators fail to utilize technology successfully during instruction due to inadequate technological infrastructure or insufficient proficiency in its application (Yildiz Durak, 2020). As a result, some individuals refrain from utilizing technology in education despite the presence of a technical infrastructure (Orhan et al., 2014). Regarding obstacles to critical thinking and problem-solving skills, most pre-service teachers indicated that over dependence on digital resources is a significant disadvantage. Excessive dependence on AI dialogue systems may hinder essential cognitive abilities, including critical thinking (Dergaa et al., 2023), decision-making (Duhaylungsod & Chavez, 2023), and analytical reasoning (Grassini, 2023).

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 lead disruptive classroom environment.

Pre-service teachers claim that technological distractions are a significant impediment to classroom involvement. The academic performance of students who utilized laptops and often accessed the Internet for non-academic activities was adversely impacted (Ravizza et al., 2017). Students frequently utilized technology for various non-academic purposes, with text messaging and email being the most prevalent applications (Kornhauser, 2016). Concerning classroom collaboration, the majority of pre-service teachers believed that a lack of communication creates issues. In the educational context, communication barriers arise from several pedagogical deficiencies in the teaching-learning framework (Gokalp, 2021). The survey results indicate that Pre-service teachers encounter emotional and behavioural responses owing to classroom atmosphere. Adverse cultures are typically characterized by diminished engagement, reduced emotional support, heightened insensitivity, increased chaos (Jennings and Greenberg 2009), and a greater frequency of student misconduct (Rimm-Kaufman et al. 2005; Werthamer-Larsson et al. 1991). In terms of disruptive classroom environment, Inadequate resource reported as a main factor. Students may feel frustrated or disengaged if they do not have access to the materials, they need for learning. This frustration can manifest as disruptive behaviour.

b) 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.

The survey result revealed that, rigid curriculum is the main leading factor affecting professional development of Pre-service teacher. A rigorous curriculum frequently stresses pre-defined content, leaving little flexibility for Pre-service teachers to experiment with different teaching methods or create individualised pedagogical styles. It may emphasise theoretical knowledge above application, leading in a lack of preparedness for real-world teaching situations. In terms of maintaining up to date subject knowledge, Pre-service teacher not get sufficient time. Pre-service teachers have to deal with multiple responsibilities, including attending classes, completing assignments, engaging in fieldwork, and developing teaching portfolios. Majority of Pre-service teachers viewed that due to limited experience in actual classroom setting, they have lack of confidence in the teaching abilities. Eliciting prior knowledge,

working on students' misconception and connecting content to the daily lives of the students were found to be difficult for beginner teacher (Mahmood & Iqbal, 2018).In terms of barriers linked with self-refection, Academic pressure is one of leading factor. Academic pressure engenders fear of failure, apprehensions over the future, persistent stress related to workload and examinations, anxieties about parental expectations, and rivalry with peers for academic performance (Shahmohammadi, 2011; Sun et al., 2011).

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.

Most of the Pre-service teachers (31.78%) viewed about lack of familiarity with new pedagogical approach create barriers in adapting for shifts in curriculum and subject matter. Innovative pedagogical approach frequently necessitates particular tools, materials, or technologies that may not be easily accessible in every teacher training institution. Insufficient resources can obstruct the seamless implementation of new teaching strategies, preventing educators from effectively delivering the curriculum as planned.

Regarding to barriers of over emphasize content over pedagogy, lack of emphasize on students centered approach is one of the leading factor. The possible explanation

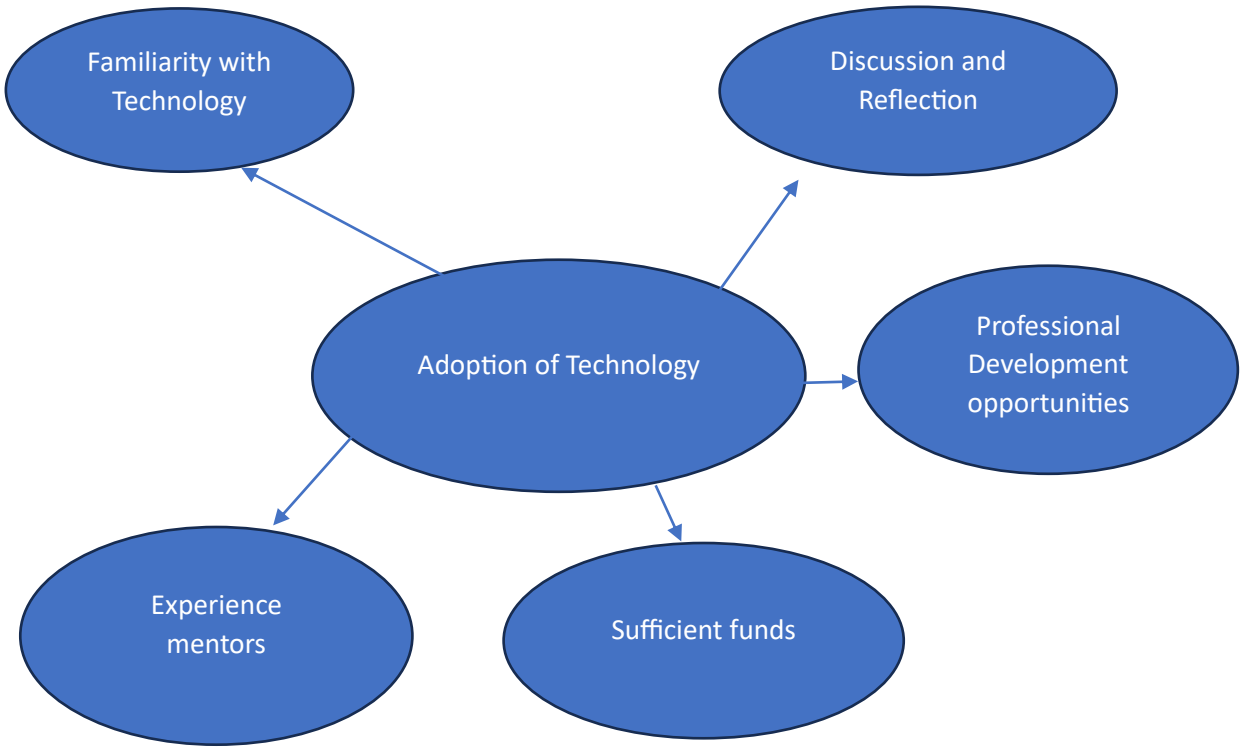
might be the strong focus on content can overwhelm students, particularly when they are expected to memorize large amounts of information without the opportunity to engage with or apply that knowledge actively.

5.14 Findings and discussion

Objective no 13: To study different suggestive measures suggested by Pre-service teachers regarding barriers faced during classroom transaction

This study revealed that Pre-service teachers suggested different remedial measures regarding the different barriers that they faced during classroom transaction. Pre-service training. These suggestions were classified into several sub-themes,

a) Adoption of Technology



Familiarity with Technology: According to study, the majority of Pre-service teacher expect to have access to necessary tools for lesson planning and research, such as Google Suite, Microsoft Office, and particular educational apps. It makes learning more effective and entertaining by facilitating interactive lessons. Technology proficiency fosters a culture of ongoing learning and flexibility, which benefits their

future pupils. Pre-service teachers should be encouraged by teacher educators to look for materials, online courses, or tutorials so they may master new tools on their own. Offering opportunities for autonomous technology projects fosters a proactive, self-driven learning style that they can serve as role models for their future pupils.

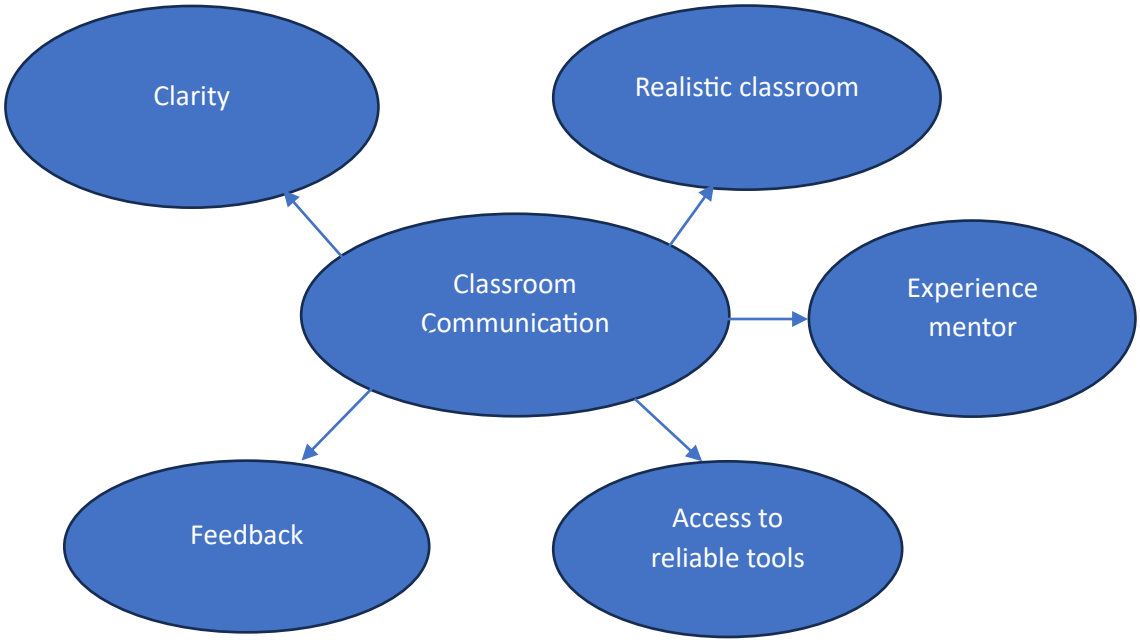
Discussion and Reflection: From the survey result, it has been found that fixed classroom arrangement and routine may hamper the effectiveness of the classroom. Pre-service teachers suggested that teacher educator must facilitate discussions and reflections, asking guiding questions about their learning journey and tech integration

Professional Development opportunities: Pre-service teachers suggested offering opportunities for professional development. Since technology is always changing, pre-service teachers require continual assistance and chances for professional growth in order to stay abreast of new resources and methods. This can involve opportunities to attend conferences and workshops, continual training and mentoring, and access to internet resources (Liu & Song, 2019).

Experience mentor: Pre-service instructors are thought to provide opportunity to watch how more seasoned educators integrate technology. The administration can find seasoned educators in the district or school who are ready to train aspiring teachers and are skilled with technology. A more specialized mentoring experience can be produced by matching them according to grade level interests or subject areas. This gives them the opportunity to get firsthand knowledge from someone who has used technology in the classroom. In real time, they can see how technology improves assessments, student engagement, and lesson planning.

Sufficient funds: Pre-service teachers suggested that policy makers and the government should set aside enough money to update the digital infrastructure in schools, which includes internet access, software, hardware, and technical support services. Many schools may not have access to sufficient technology, especially those in rural or underdeveloped locations. All teachers and students have equitable access when appropriate infrastructure is provided.

b) Classroom Communication



Clarity: For effective teaching and learning, most of the Pre-service teachers said that having well-prepared instructional materials and clear lesson plans is essential. According to research, students who are misinformed or confused during class instruction may continue to be confused because they fail to ask questions about things they don't understand. Pre-service teachers can follow and modify the model that teacher educators provide on how to write well-structured and ordered lesson plans.

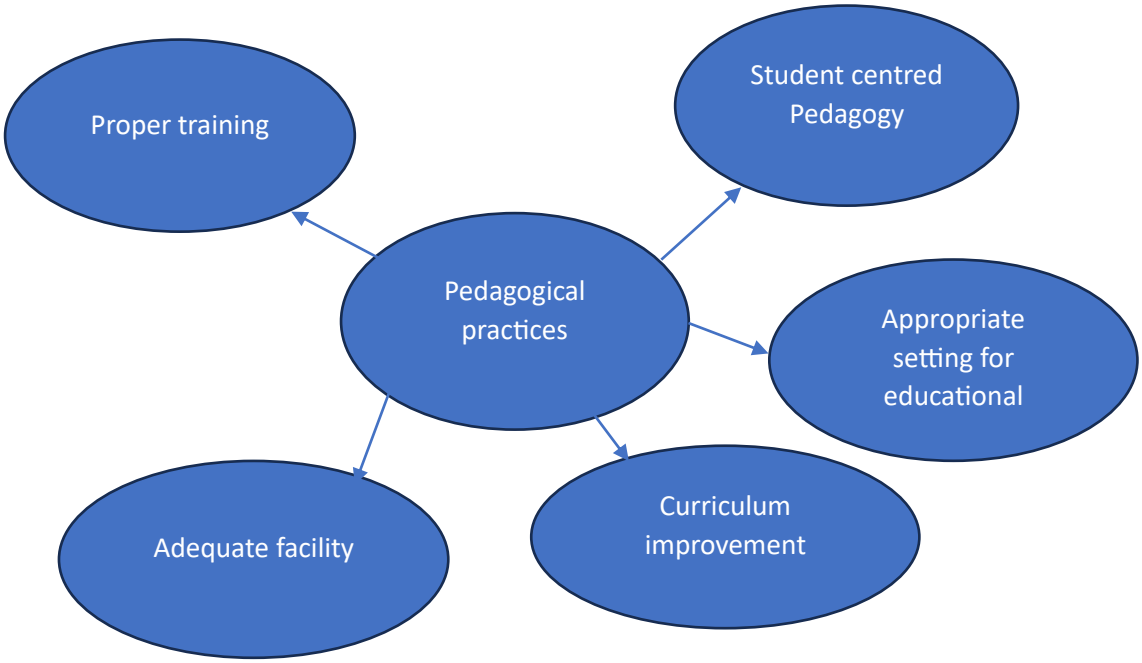
Realistic classroom: Reflective communication practices are essential for Pre-service teachers to develop their skills and enhance their effectiveness in the classroom. Teacher educators should create realistic classroom scenarios for role-playing, such as parent-teacher conferences, student discussions, or conflict resolution situations. This allows Pre-service teachers to practice in a low-stakes environment. Regular reflection allows for the continuous improvement of verbal and nonverbal communication skills, resulting in clearer and more effective interactions in the classroom. It equips Pre-service teachers with strategies to handle conflicts and difficult conversations more effectively, leading to a more positive classroom environment.

Feedback: Pre-service teachers recommended to offer feedback that encourages them to reflect on their teaching practice. Feedback serves as a guide to help people improve their communication skills, leading to a better knowledge of how effective communication affects classroom dynamics, student engagement, and professional relationships. Teacher educator must offer regular, constructive feedback on communication during teaching practice, group discussions, and presentations.

Access to reliable tools: Communication skills can be greatly impacted by physical barriers, particularly in educational or professional settings. Inadequate access to communication tools (such as projectors or video conferencing software) can hinder effective information sharing, particularly in remote or hybrid settings. To improve remote communication, pre-service teachers advised providing access to dependable communication tools, such as interactive displays, projectors, and video conferencing software. Administration should set aside funds to buy licenses or subscriptions for dependable communication tools.

Experience mentor: Additionally, suggestions have been made to provide Pre-service teachers with experienced mentors to help them improve their communication skills. They provide mentees with detailed, useful feedback on instructional strategies, assisting them in improving their communication and resolving any problems. It is the duty of administrators to establish a mentorship program's precise structure and framework.

c) Pedagogical practices



Proper training: Teacher educators often show how to create a lesson plan by displaying the elements and structure of an effective lesson, such as objectives, materials, activities, assessments, and reflection, instructing them on how to organize their own plans. The majority of pre-service teachers suggested that adequate training be provided to create effective lesson plans. A well-crafted lesson plan ensures that educators stay focused on learning objectives and instructional goals.

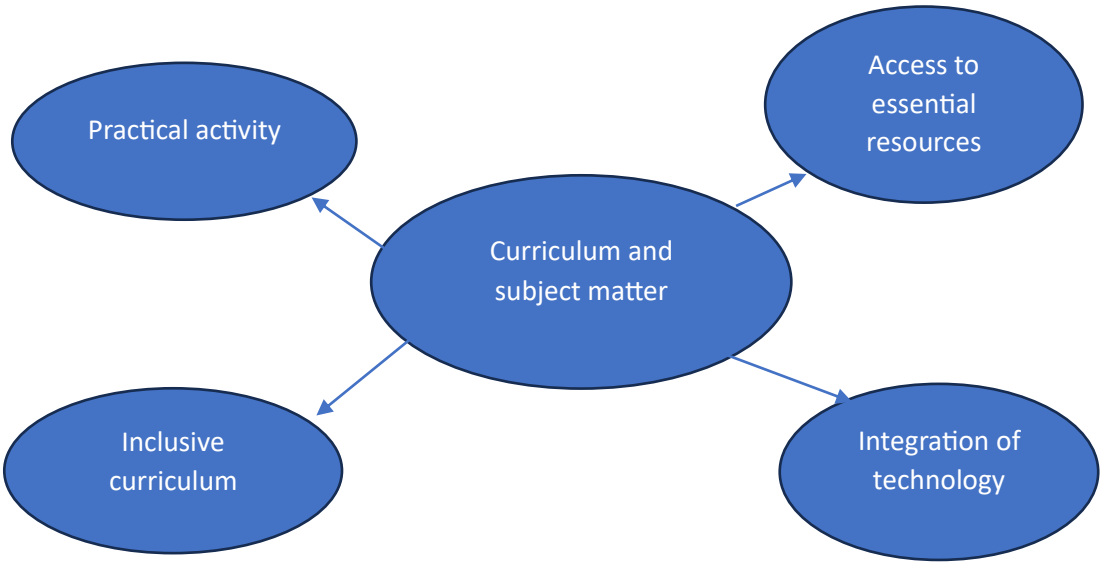
Student centred Pedagogy: Majority of Pre-service teachers said that student-centred pedagogy should be used in the classroom. It is clear that students interpret what they learn in a classroom environment where they are supported in developing their critical and reflective thinking skills and sense of responsibility.

Adequate facilities: Pre-service instructors were expected to make sure the classroom has enough space for efficient teaching methods. Provide classrooms with the necessary technology to facilitate a range of instructional activities, including laptops, iPads, interactive whiteboards, and dependable internet connectivity. To promote a flexible and student-centred learning environment, provide spaces for students to provide feedback on courses or facilities. Basic facilities including enough desks and chairs, adequate lighting, ventilation, and temperature control must be provided in classrooms by administrators.

Improvement of Curriculum: majority of pre-service teachers, policymakers ought to support curriculum enhancements that emphasize skills like critical thinking, digital literacy, communication, and teamwork that help kids get ready for the modern world. More multidisciplinary curricula that represent the complex, interconnected nature of global issues are needed.

Appropriate setting for educational practices: The majority of pre-service teachers believed that fostering a pleasant and stimulating learning environment required creating a suitable environment for instructional practices. An ideal environment supports teacher development as well as the growth of students' knowledge, skills, and attitudes. Administrators ought to create an atmosphere that inspires educators to experiment with cutting-edge teaching techniques. This can entail investigating inquiry-based learning, project-based learning, flipped classrooms, or personalized learning pathways. Teachers should be given the time, tools, and encouragement they need to experiment in new methods by administrators.

D) Curriculum and Subject Matter



Practical activity: According to Pre-service teachers, teacher educators need to use performance tasks, portfolios, and project-based assessments that let students show their comprehension in a variety of ways. Instead, then depending only on high-stakes exams to track progress and give feedback, use frequent, low-stakes assessments. The majority of Pre-service teachers suggested providing workshops that give them the skills and techniques for a variety of evaluation techniques and creative teaching approaches.

Inclusive curriculum: According to Pre-service teachers, students and other stakeholders should actively participate in the curriculum creation process, making it more inclusive. Throughout the curriculum planning process, administrators should promote cooperation between teachers, subject matter specialists, and other stakeholders. This can entail scheduling a time and location for educators to get together, discuss, and exchange ideas on how to enhance course content and instructional strategies.

Access to essential resources: According to Pre-service teachers, instructors need to have access to the necessary resources in order to properly create and administer curricula. In order to properly administer the curriculum, administrators should make sure that teachers have access to enough resources, including technology, instructional aids, textbooks, and learning materials. Budgetary allotments ought to be determined

by the demands of the curriculum, guaranteeing the availability and currency of teaching resources.

Integration of technology: The majority of Pre-service teachers recommended that educational technology be incorporated into the curriculum. More training on educational technologies is required, as is instruction on how to successfully integrate them into lesson planning and classroom activities. To guarantee that every child has the chance to acquire essential tech skills, policymakers should set a clear vision that places a high priority on digital literacy and curriculum-wide technology integration.