DEVELOPMENT AND ASSESSMENT OF INSTRUCTIONAL MODULES FOR DEVELOPING CONCEPTS OF GIFTED EDUCATION IN B.ED. STUDENT-TEACHERS

THESIS
SUBMITTED TO NAGALAND UNIVERSITY, KOHIMA CAMPUS, MERIEMA
FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

EDUCATION

By

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2024

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Paper/Submission ID	1994880
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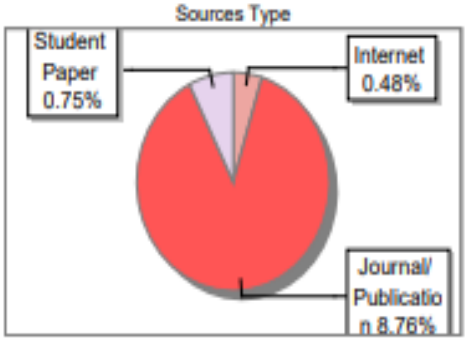

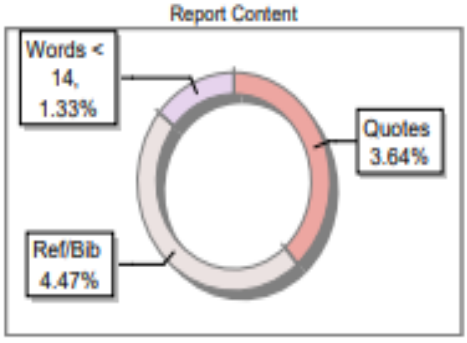

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ACKNOWLEDGEMENTS

First and foremost, I would like to praise and thank Lord Jagannath, the Almighty, who has granted me countless blessings, knowledge, and opportunity so that I have finally been able to fulfill my research.

Words are inadequate to express my indebtedness, deep sense of gratitude, and heartfelt thanks to my esteemed teacher and Supervisor Dr. Neha Rawat, Assistant Professor, Department of Teacher Education, Nagaland University without whose keen interest, encouragement, constructive comments, and highly inspiring guidance with valuable suggestions, this study would not have been possible at all. Her expertise and dedication were instrumental in the successful completion of this thesis.

I am highly grateful to Head Prof. G. N. Tiwari sir, RAC Members, Dr. Surendra Yadav, Dr. T. Yolila Sangtam and all the faculty members of the Department of Teacher Education, Nagaland University, for their constant inspiration and timely support of my work.

I am also thankful to the Head of, the Department of Education, Nagaland University, and their faculty members for their constant, validated, and expert Suggestions throughout my Research.

I express my gratitude to all the International and National subject and language experts, academicians, and educationists who helped me throughout my research work.

I am obliged to the Heads of the Institution especially the MODERN INSTITUTE OF TEACHER EDUCATION and STATE COLLEGE OF TEACHER EDUCATION, Kohima who readily extended their cooperation for my data collection and tool validation. I am also grateful to my young friends who sincerely and patiently sat for the tests.

I would like to thank all the principals and faculty members of B.Ed. Colleges of Nagaland for their support and cooperation.

I am obliged to all my friends, especially Kavani, Asale, Thronlem, Keneivi, and Suhela for their timely help and unconditional cooperation.

My sincere thanks are also to the library staff of Nagaland University and all the supporting staff for their kind cooperation.

Literary words can't depict my immense adoration for my devoted Parents, brother, and sister-in-law, parents-in-law whose ever-blooming blessing and affection accompanied by everlasting inspiration always encouraged me to get this work completed patiently.

A special and heartfelt thank goes to my husband, who has been the pillar of my work. His unwavering support, patience, and belief in me have been a constant source of strength and motivation. His sacrifices and encouragement have made this journey possible, and for that, I am eternally grateful. Special thanks to my two loving daughters, who contributed a lot in various ways to this research.

Finally, a very big thank you to all my friends, relatives, and well-wishers whom I have not mentioned above. Their love, blessings, and timely help contributed directly or indirectly to transform this dream into reality!

Last but not least, I am thankful to NV Printing Press, Kohima for printing the thesis.

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INTRODUCTION

1.1Conceptual Background

Education is a process of instruction and training designed to preserve, transmit, and advance knowledge. In our general classrooms, there are different types of learners studying together, like slow learners, average-ability students, and gifted students. Teaching is a vast process, and gifted students are known for offering teachers a challenge. Every child has unique strengths and talents. It is the prime duty of the teacher to identify these strengths within the students and nurture them accordingly. In the area of education for the gifted, if teachers have specialized training, then the students will benefit more. Teachers must be prepared to create a restorative environment of potential and talents. To improve the skills and to develop a learning domain that supports the requirements of gifted children, teachers need regular professional development. In this study, we are involved with talented and gifted students. As these students are the future hope of society, it is an important responsibility of teachers to nourish their talents properly. Society must inculcate these students' creative power and intellectual ability and encourage them to nourish their abilities. A prospering society should create possibilities and prospects for them to develop and use their abilities in ways that those students find satisfying ends towards the society. The present educational system is barely equipped to provide such opportunity to the gifted; as a result of this, the most remarkable child performs like an average mental ability child in terms of academic excellence. Therefore, it becomes imperative for society and teachers specifically to understand giftedness and identify the forms and requirements of gifted education programmes for facilitating the learning of gifted students. Teacher education in the Indian scenario has suffered a huge lag in general, and various National Educational Policies emphasize the need for better teacher education opportunities. In this regard, let us first understand the concept of giftedness in depth in the following section.

1.2 Concept of Giftedness

The term giftedness is generally used for people who are intellectually, academically, creatively, or otherwise superior to a comparison group of peers or older age mates. The term "gifted children" was first used by Sir Francis Galton in 1869, who described “gifted children” as children who had inherited the potential to become gifted adults running in the family. Lewis Terman added high IQ to Galton's definition of gifted youngsters. Giftedness refers to the quality of an individual who possesses above-average ability, task commitment, and creativity.

Any child who naturally possesses a high degree of general mental ability or some extraordinary ability in some specific area of activity or knowledge can be gifted. In this regard, let us discuss some definitions of giftedness.

1.2.1Definitions of Giftedness

During the early twentieth century, the criterion of being gifted was high intellectual ability. The earliest and narrower definition of giftedness was given by Terman (1925), who defined giftedness as the top 1% of general mental ability. Later, Hollingworth (1926) added the view that the gifted child, who is more educable than a general child, may be gifted in arts, mechanics, or literature. Intelligence has remained the primary criterion to describe giftedness, which is still used in many countries. A person with an IQ of 130 or above is classified as" Gifted".

The term "giftedness" is the most comprehensive in nature. Generally, gifted students are defined as those students who have an intelligence score above 130 or the top 2.5%. The definitions of giftedness vary a lot. Most of the definitions have been derived from psychological and educational backgrounds. Let us review them as follows:

- Marland Report (1972) states that children who possess exceptional abilities and can perform at a high level are classified as gifted or talented by individuals with professional qualifications. These children require differentiated educational programs and/ or services beyond those normally provided by regular school programs to realize their full potential for themselves and society. It adds that the children who exhibit potential or have achieved success in any of the following areas, either separately or in combination, are capable of performing at a high level (Marland, 1972, pp. 13-14)
    - ✓ General Intellectual capability
    - ✓ Creative or Productive thinking
    - ✓ Leadership skills
    - ✓ Visual and performing arts
    - ✓ Specific academic aptitude
    - ✓ Psychomotor skills
- Robert Sternberg (1985) suggested that giftedness has three aspects. The first is cognitive and internal to the individual. The second is experiential, relating thinking to personal experience to solve problems. Third, a gifted individual may be superior in

adapting to, shaping, and selecting experiences. For Sternberg, giftedness comes in several varieties. "Some gifted individuals may be particularly adept at applying the components of intelligence, but only to academic kinds of situations. They may thus be "test smart," but little more. Other gifted individuals may be particularly adept at dealing with novelty, but in a synthetic rather than analytic sense: Their creativity is not matched by analytic power; still, other gifted individuals may be "Street Smart" in external contexts but at a loss in academic contexts. Thus, giftedness is plural rather than singular in nature."

- According to Joseph Renzulli (1979), giftedness is represented by the intersection of three basic characteristics of human traits: above-average general ability, high levels of creativity, and high levels of task commitment. Youngsters who demonstrate or have the potential to develop an interconnection between the three clusters need access to a variety of educational opportunities and services that are typically provided by regular instructional programs. Renzulli presented a definition that became very popular. “Renzulli (1986)” said that “gifted behavior indicates an inter-connection among three primary collections of human characteristics:

  1. Above-average ability
  2. High level of creativity
  3. High level of task commitment”

Figure 1.1: Renzulli’s three primary human characteristics of giftedness

- The other definition of US Department of Education (1993) explains giftedness as; “Children and youth with outstanding talent who perform or show the potential for performing at a remarkably high level of accomplishment compared with others of their

age, experience or environment". The 'talented' in the definition refers to all areas of a child's academic, artistic, athletic, and social life.

- The "National Association for Gifted Children (NAGC) defines gifted as those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in the top 10% of rarer) in one or more domains. Domains include any structured area of activity with its symbol system (e.g., mathematics, music, language) and/or set of sensory-motor skills (e.g., painting, dance, and sports)".

A scrutiny of writings and studies from Galton to Guilford, and Terman to Torrance would reveal that the concept of gifted and talented has undergone a significant change. Over time, the changes in the definitions of giftedness are easily evident. From old times, the greatest, if not the sole, emphasis, has been placed on innate capacity in defining giftedness and talent. Traditionally, giftedness or talent has been defined in terms of high I.Q. points of 140 or above. But broader and modern definitions of giftedness emphasize the demonstration of ability as well as inherent capacity. Thus, the concept of giftedness has been defined on a developmental basis. It is a dynamic and continuously unfolding concept.

To sum up, there is no absolute definition of giftedness. Several cultural, social, emotional, and political factors have influenced the conception of giftedness. After the advancement of thought, the concept of giftedness has been broadened, and it reflects elements from definitions and models of giftedness. In short, we can say that giftedness is a wider term that is based on individual differences, which are the outcomes of a person's innate as well as environmental constitutions.

1.2.2Meaning and Levels of Giftedness

Renowned creative and talented people have been found to have a capacity for extraordinary assimilation and synthesis of ideas. They have used their treasure of ideas and understandings to make original contributions to the world. Besides having characteristic personal attributes, talented people require some special interaction with the environment to facilitate the emergence of talent. Studies made in this area have concluded that giftedness or talent springs from the meshing up of the following five factors:

- ✓ General ability,
- ✓ special ability,
- ✓ non-intellectual factors,

- ✓ environmental factors, and
- ✓ Chance factors

From the above discussion, it is evident that we should define and describe giftedness or talent with the broadest possible scope so we don't miss out on students and young people whose great potential might be practically hidden from view based on various other non-academic areas.

In this regard, Gross (2000) has precisely classified the categories of intellectually gifted as "mildly, moderately, highly, exceptionally, and profoundly gifted based on their IQ scores."

S.N.	Level of Giftedness	IQ Scores range	Proportion of population
1.	Mildly gifted	115-129	(1:6 – 1:40)
2.	Moderately gifted	130-144	(1:40 – 1:1000)
3.	Highly gifted	145-159	(1:1000 – 1:10,000)
4.	Exceptionally gifted	160-179	(1: 10,000 – 1:1 million)
5.	Profoundly gifted	180+	Fewer than 1:1 million

Table 1.1. Levels of Giftedness based on IQ range"

His classification includes a range of IQ scores, from which emerges the levels of giftedness. Table 1.1 presents Gross's levels of giftedness, their related IQ ranges, and the proportion of such children in the general population (Gross, 2000).

Apart from the evolutionary definition of giftedness, the understanding of gifted children is also vague and not based on scientific facts. There are various popular myths attached to gifted children, which makes it difficult to develop the right educational programs for their educational needs. In this regard following section discusses the popular myths about the giftedness and characteristics of gifted learners.

1.2.3 Common *Myths about Gifted Children*

Gifted children often face several myths that can lead to misunderstandings and misconceptions about their abilities, needs, and experiences. These myths are common among teachers, and hence, they may negatively affect their understanding of gifted children and their individual learning needs. Here are some common myths about gifted children:

(i) Gifted Children are Gifted in All Areas:

- ❖ Myth: If a child is gifted, they excel in all subjects.
- ❖ Reality: Giftedness can be domain-specific. A child may excel in math but struggle with writing or vice versa. S/he may be getting poor scores in some subjects and

exceptionally high scores in some other subjects. Also, here, it is noteworthy that even differently abled children can be gifted.

(ii) Gifted Children Do Not Need Help:

- Myth: Gifted children are self-sufficient and do not require additional support.
- Reality: They need guidance, enrichment, and emotional support to develop their potential fully.

(iii) Gifted Children Will Do Fine on Their Own:

- Myth: These children will thrive without any special intervention or attention
- Reality: Without appropriate challenges and support, gifted children may become bored, disengaged, or even underachieve

(iv) Gifted Children are Always Motivated and High Achievers:

- Myth: All gifted children are driven and perform at the top of their class
- Reality: Many gifted children may lack motivation or struggle with perfectionism, leading to inconsistent academic performance.

(v) Gifted Children are Socially Awkward or Loners:

- Myth: Gifted children do not fit in socially and prefer to be alone
- Reality: While some may face social challenges, many gifted children have strong social skills and enjoy interacting with peers.

(vi) Gifted Children are Emotionally Immature:

- Myth: High intellectual ability comes with emotional immaturity.
- Reality: Emotional development can vary. Some gifted children may exhibit heightened sensitivity or asynchronous development.

(vii) Gifted Education Programs are Elitist:

- Myth: Programs for gifted children are unnecessary and promote elitism.
- Reality: These programs address specific educational needs, ensuring that gifted children are adequately challenged and supported, and such programs can be implemented with the available resources and proper teacher education in gifted education.

(ix) Gifted Children Always Get Good Grades:

- Myth: High intelligence guarantees high grades.
- Reality: Grades depend on many factors, including interest, teaching methods, and personal circumstances. Gifted children may not always perform well in a traditional classroom setting.

(x) Gifted Children will Outgrow their Giftedness:

- Myth: Giftedness is a phase that children will eventually outgrow.
- Reality: Giftedness is typically a lifelong trait, although its expression may change over time.

(xi) Gifted Children Do Not Have Learning Disabilities:

- Myth: A child cannot be both gifted and have a learning disability simultaneously.
- Reality: Many gifted children are "twice-exceptional," meaning they have both high abilities and learning disabilities.

Addressing these myths is crucial for creating supportive environments that nurture the talents and well-being of gifted children. Teachers have the greatest onus to continue their efforts to prove myths about gifted learners wrong, clear doubts, present successful models and practices, and enhance various gifted education programs for such students. To conclude, there are and will be a lot of myths about gifted students as well as gifted education. Most of the time, gifted students are understood wrongly due to deviations in their mental and other special abilities. They undoubtedly have a very high level of cognitive and other abilities, but they are not superhuman. Therefore, the whole concept of gifted education must be described comprehensively to make appropriate adaptations in curriculum, teaching methods, and school environment for facilitating the learning of gifted and talented. Let us now understand the gifted education in the context of the above discussion.

1.3 Perspectives on the Evolution of Gifted Education

1.3.1 Global Perspectives

Gifted and talented education is a very old concept. Plato advocated identifying the gifted and providing specialized education for them. Giftedness was first correctly defined for practical purposes by its relationship to IQ. The earliest definition of giftedness was given by “Lewis

Terman". He modified "Alfred Binet's Binet-Simon intelligence" test into the "Stanford-Binet test" and launched the "intelligence quotient (IQ)". In the USA, "Leta Hollingworth (1922)" was the first to study how appropriately to work for students who showed evidence of high performance on tests. In 1925, "Terman "published "Genetic Studies of Genius", which stated that "gifted students were qualitatively different and slightly better physically and emotionally in comparison to regular students". In 1926, Hollingworth published the first textbook on gifted education named "Gifted Children: their nature and nurture. In 1988, the American Congress passed the" Jacob Javits Gifted and Talented Students Education Act. NAGC (1998)" published Pre-K-Grade 12 gifted program standards to guide seven critical areas for programs serving gifted and talented students. The US federal education program was also signed into law in 2002 with the prime objective of "No Child Left Behind (NCLB)" to improve the quality of education in the United States. The National Association for Gifted Children (NAGC), founded in 1954, is also a creditable U.S.-based organization dedicated to supporting the needs of gifted and talented children. It focuses on the following key areas in the area of gifted education, namely (i) Advocacy, (ii) Professional Development, (iii) Research, (iv) Standards for gifted education, and (v) Resources and Support. In other parts of the world also, gifted education has garnered a lot of attention, and there have been recorded extensive attempts to fortify the gifted education programmes. Some of the notable international initiatives in this direction are as follows:

- A prominent international non-profit organization in Jerusalem, Israel, called the "World Council for Brilliant and Talented Children," was devoted to supporting and advocating for brilliant children. It was established in the year 1974 with a promise to offer a forum for academics, parents, researchers, educators, and other stakeholders for the education and growth of talented and gifted children. Among its endeavors are conference planning, research publication, and resource provision for professional development.
- A well-known non-profit organization in the US dedicated to the upbringing and education of gifted and talented kids is the "National Association of Gifted Children (NAGC)" has been established in 1954. To enhance the educational practices for talented students, NAGC offers materials to professionals, parents, educators, and teachers. It focuses on promoting high-quality education and advocating for policies that support the development of gifted children.

- The “Johns Hopkins University's Johns Hopkins Centre for Talented Youth (CTY)” program, which is located in the United States, aims to find and develop the abilities of academically gifted pre-college students. For students worldwide, CTY provides family academic programs, online courses, and summer programs. Through challenging education, CTY's programs are meant to push students to their limits and allow them to realize their greatest potential.

1.3.2 Indian Developments of Gifted Education

In India, the concept of gifted education has historical roots in ancient education systems like the Gurukul system of ancient times, where students with exceptional abilities received specialized education tailored to their strengths. However, modern initiatives in gifted education began to take shape in the middle of the 20th century only. In the context of the Indian knowledge system, gifted education is deeply intertwined with the rich cultural and philosophical traditions of the country. Historically, India has recognized and revered intellectual prowess, as evidenced by the ancient Gurukul system, where gifted students received personalized education from learned gurus. The Indian knowledge system, encompassing disciplines such as mathematics, astronomy, philosophy, medicine, and literature, has provided fertile ground for nurturing gifted individuals. For example, ancient texts like the Vedas, Upanishads, and various treatises on subjects like mathematics (such as the Sulba Sutras) served as sources of knowledge and inspiration for generations.

Post-independence, “Jnana Prabodhini Prashala” started in 1968 and was probably the first school for gifted education in India. The slogan of this school was "motivating intelligence for social change." The school, situated in Pune, admits 80 students per year. Jnana Prabodhini works on J. P. Guilford's model of intelligence.

The contemporary efforts in gifted education within the Indian knowledge system are based upon both traditional wisdom and modern pedagogical practices. There is recognition of the need to identify and support gifted learners across diverse domains, including “STEM (Science, Technology, Engineering, and Mathematics)”, humanities, arts, and sports. Now, National Education Policy 2020 aims to provide a holistic approach to nurturing giftedness through efforts to integrate traditional knowledge systems into modern education, bringing in various initiatives. These initiatives emphasize the importance of incorporating indigenous knowledge, critical thinking skills, and creativity into educational practices, thereby enriching the educational experiences of gifted students within the Indian context. Some notable Indian initiatives in the direction of gifted education are as follows:

- India's Jawahar Navodaya Vidyalaya (JNV) network of central schools was founded to offer gifted students, primarily from rural areas, a top-notch education. It is an independent institution under the "Department of School Education and Literacy, Ministry of Education, Government of India".
- The Jagadish Bose National Science Talent Search (JBNSTS) is a distinguished scholarship program in India designed to find and support gifted science students.
- The goal of the Tribal Mensa Nurturing Program (TMNP) is to find and raise talented youngsters from India's tribal populations. Since its founding in 2002, it has made great progress in helping tribal children from disadvantaged backgrounds.
- DHRUV is one of the Indian government's projects launched in October 2019. The main goal is to find gifted students and develop them so that they can become more knowledgeable and skilled in diverse subjects, such as science, the arts, and the performing arts. The Government of India is making a major effort with this program to cultivate young talent and give them chances to grow into their full potential in a resource-rich and supportive environment.
- The National Talent Search Examination (NTSE) is an Indian scholarship examination that is administered at the national level with the goal of locating and developing gifted students all over the nation. "The National Council of Educational Research and Training (NCERT)" is in charge of it.
- KVPY stands for Kishore Vaigyanik Protsahan Yojana. The Indian government's Department of Science and Technology is the sponsor of this national scholarship program. Its goal is to inspire young people to get into science and research as their careers. This program is essential to the advancement of quality in scientific instruction.
- Implemented by the "Department of Scientific & Technology (DST), Government of India", the INSPIRE Award MANAK (Million Minds Augmenting National Aspirations and Knowledge) is an initiative within the INSPIRE (Innovation in Scientific Pursuit for Inspired Research) scheme. Through participation in creative projects and contests, it seeks to encourage children in grades 6 through 10 who are between the ages of 10 and 15 to develop a culture of creativity and inventive thinking in preparation for a career in "science, technology, engineering, and mathematics (STEM)".

- Programs and initiatives for gifted education are provided at Delhi University's Cluster Innovation Center (CIC). Here, giftedness in India has been a regular topic of study for the researchers.
- The mission of Pune, India's Kaveri Gifted Education & Research Centre (KGERC), a member of the Kaveri Group of Institutes, is dedicated to nurturing and developing gifted children's abilities. Additionally, it actively participates in giftedness-related research projects, offering insightful analysis and publications that advance the subject of gifted education.
- "Education for the Gifted and Talented (NIAS-EGT)" is a well-known program offered by the "National Institute of Advanced Studies (NIAS)" in Bengaluru. The goal of this program is to find and support talented children throughout India, especially those from a range of socio-economic situations.

Apart from specific initiatives on gifted education, there have been three major Education policies in India post-independence. It is important to mention that they all emphasized inclusive education as equal and unbiased educational opportunities for all learners. Let us quickly overview them to explore the gifted education perspectives evident in them.

1.4 Gifted Education in Indian Education Policies

Post-independence India has to face many challenges to become an independent nation. Education and employment for all the youth have been the major ones among all others. In this direction, major Education policies have been formulated and implemented, but except for NEP-2020, none exclusively talks about gifted education. Let us quickly glance through them one by one:

(i) National Policy on Education 1968

National Policy on Education 1968 was a landmark document that outlined the vision and objectives for developing the Indian education system under the ble direction of then Prime Minister Indira Gandhi. The policy set the groundwork for further educational changes in the nation while attempting to solve several problems and concerns in the education system. The goal of the policy was to give all children up to the age of 14 free and required schooling. This strategy outlined the guiding ideals and paths for the nation's educational advancement, emphasizing *equity, relevance, quality, and accessibility*.

The NPE 1968 did not give a dedicated section specifically for gifted education as it is understood today. However, it did recognize the importance of identifying and nurturing talent. There was an acknowledgment of the need to promote excellence in education and to recognize and nurture the talent of children who show exceptional abilities. The policy suggested the implementation of special programs and facilities for gifted and talented children to ensure they reach their full potential. Emphasis was placed on improving the quality of teacher training to better identify and support gifted children.

(ii) National Education Policy 1986

National Education Policy- 1986 was developed by the Indian government, led by Prime Minister Rajiv Gandhi, and it sought to address several problems and difficulties in the field of education while providing a thorough vision for the nation's educational future. The 1986 policy placed a greater emphasis on inclusive education and also made more explicit provisions for the education of gifted children. It suggested a national education system built around the well-recognized 10+2+3 framework. *The NPE 1986 recognized the importance of identifying gifted children and providing them with appropriate educational opportunities to nurture their talents. Navodaya Vidyalaya's establishment marked yet another milestone in the history of education*. The policy also suggested the creation of *District Institutes of Education and Training (DIET) to provide elementary school teachers with preliminary as well as ongoing training. Enough resources and capacity should be made available to the National Council for Teacher Education (NCTE)* so that it can accredit teacher education institutes. It also directs curriculum and methodology.

In 1992, the policy was revised to take into account the shifting objectives and needs of the Government of India. They constructed a committee under the chairmanship of Acharya Ramamurthy in 1989 to examine the effectiveness of NPE 1986. The Report of the Ramamurthy Committee put up in 1990 was named “Towards an Enlightened and Humane Society”. It suggested that there should be some major policies for SCs, STs, Women, and educationally backward people of India to make the education system completely inclusive.

(iii) Program of Action Revision (1992)

Regarding Indian education policy, the 1992 Revised Program of Action (RPOA) is a crucial document. It was created as a follow-up to the National Policy on

Education (NPE) of 1986 to offer a thorough implementation roadmap and solutions for the NPE's aims and objectives. With an emphasis on guaranteeing fair, inclusive, and high-quality education for all Indians, the Revised Program of Action 1992 offered a thorough framework and action plan for carrying out the more general objectives and methods stated in the 1986 Educational policy.

- **National Education Policy (2020):** After a gap of nearly three decades, the nation got its New Education Policy 2020 under the government led by Prime Minister Narendra Modi. The NEP 2020 aims to address the evolving needs of the Indian education system, promote holistic development, and align education with the demands of the 21st century. It represents an important step towards transforming the educational landscape in India. Some major initiatives are:
- Providing universal access to education at all levels, from pre-kindergarten to Grade 12;
- Providing high-quality early childhood care and education to every child aged three to six;
- A new pedagogical and curriculum structure (5+3+3+4).

Among various other things, the policy exclusively mentionsf the need for the identification and nurture of gifted talents. The Indian Education Policy 2020 proposes the following milestones for the gifted and the talented in key areas like development of scientific temper, innovative teaching and pedagogical practices, Artificial Intelligence (AI), setting up norms, standards & guidelines for assessments & evaluation, project-based clubs, & Olympiads, ICT base initiatives, emphasis on organizing and conducting Olympiads and various competitions across the country and academic enrichment programs in rural areas in regional languages. In this regard, the following excerpts of NEP 2020 for extending support for gifted and talented students are noteworthy:

"4.43. There are innate talents in every student, which must be discovered, nurtured, fostered, and developed. These talents may express themselves in the form of varying interests, dispositions, and capacities. Those students that show particularly strong interests and capacities in a given realm must be encouraged to pursue that realm beyond the general school curriculum. Teacher education will include methods for the recognition and fostering of such student talents and interests. The NCERT and NCTE will develop guidelines for the education of gifted children. B.Ed. programmes may also allow a specialization in the education of gifted children

4.45. Olympiads and competitions in various subjects will be conducted across the country, with clear coordination and progression from school to local to state to national levels, to ensure that all students may participate at all levels for which they qualify. Efforts will be made to make these available in rural areas and in regional languages to ensure widespread participation. Public and private universities, including premier institutions like the IITs and NITs, would be encouraged to use merit-based results from National, and International Olympiads, and results from other relevant national programmes, as part of the criteria for admissions into their undergraduate programmes (NEP-2020, Page 19-20)."

NEP-2020 specifically recognizes that it is essential for the teachers of the 21st century to remain prepared to create a restorative environment for nurturing the potential and talents of learners. The gifted and talented students are the future hope of society. For this, teachers need regular professional development to know and understand the concepts and skills that support the requirements of gifted children. In this regard, para 5.24 and 4.44 of NEP 2020 (2020, Pg 19-23) put the onus on teacher education programmes stating it exclusively as follows;

"All B.Ed. programmes will include training in time-tested as well as the most recent techniques in pedagogy, including pedagogy with respect to foundational literacy and numeracy, multi-level teaching and evaluation, teaching children with disabilities, teaching children with special interests or talents, use of educational technology, and learner-centered and collaborative learning (NEP 2020, Pg 23)."

"4.44. Teachers will aim to encourage students with singular interests and/or talents in the classroom by giving them supplementary enrichment material and guidance and encouragement. Topic-centered and Project-based Clubs and Circles will be encouraged and supported at the levels of schools, school complexes, districts, and beyond… (NEP 2020, Pg 19)"

It is evident from the above discussion that teacher education in India needs to be fortified to fulfil the needs of gifted learners. It is even more challenging in the special context of Nagaland being a distant and disadvantaged state due to its special geographical location and unique cultural identity. Let us understand its uniqueness in the following sections.

1.5 Nagaland: A Unique State of North-East India

Nagaland state is in the northeastern part of India. It was inaugurated on 1st December 1963 as the 16th state of India. It is known for its diverse tribal culture, scenic landscapes, and vibrant

festivals. Myanmar borders the eastern part of Nagaland, Assam lies to the west, while Arunachal Pradesh and part of Assam lies to the north, and the south is Manipur. The region has a rich history with various tribal cultures. Nagaland is a land of numerous resources like forests, minerals, hydropower potential, fertile soil, and significant amounts of rainfall. Kohima is the capital of Nagaland. With the creation of four new districts on 18th December 2021 and 19th January 2022, the State at present has 16 administrative districts named, "Dimapur, Chumoukedima, Kiphire, Kohima, Longleng, Mokokchung, Mon, Niuland, Noklak, Peren, Phek, Shamator, Tuensang. Tseminyü, Wokha and Zunheboto". Nagaland is known for its rich cultural diversity, being home to several tribes, each with its distinct traditions, customs, and languages. Each of the Naga tribes has their own distinct cultural identity and language. The primary tribes of Nagaland are "Angami, Ao, Chakhesang, Chang, Dimasa Kachari, Khiamniungan, Konyak, Kuki, Lotha, Phom, Pochury, Rengma, Sangtam, Sumi, Tikhir, Yimkhiung and Zeliang". Nagamese is the main communicating language between the tribes. English is the main language of Nagaland and also the medium of instruction in schools and colleges. Nagaland is also called the "land of festivals."

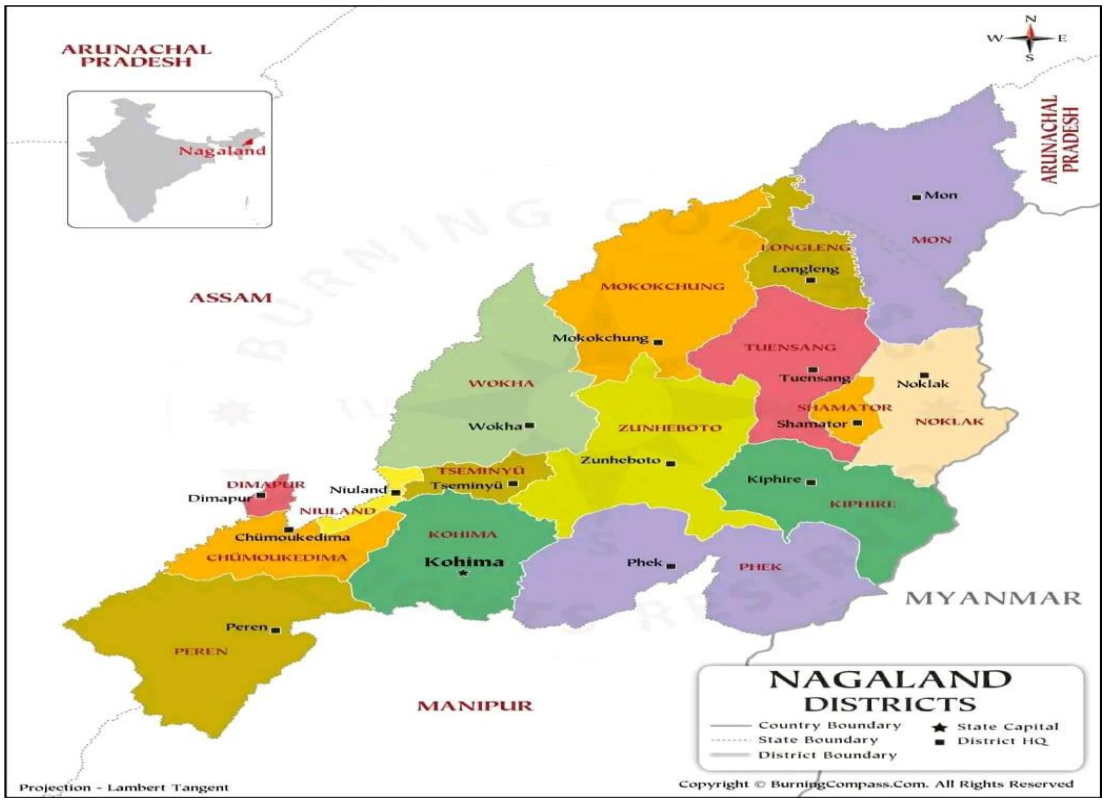

Figure 1.2 Detailed Map of districts of Nagaland and its geological position on Indian Map

Sources: https://www.facebook.com/share/TBqfbJAtxfdw5nsm/?mibextid=xfxF2i

1.5.1 Population and Density

According to the 2011 Census of India, Nagaland has a total population of 1,978,502 of which male and female are 1,024,649 and 953,853 respectively, and a density of 119 per sq. Km. The following table shows the district-wise Area, Population, and Density of the population as per 2011 Census of India. The last census of Nagaland was done in 2011 and the next census of 2021 is postponed until 2024.

“

S.No.	State/District	Area in sq. km	2011		
			Population	Density of population per sq. km	Percentage share to total geographical area (%)
	Nagaland	**16579**	**1978502**	**119**	**100**
1.	**Kohima**	**1463**	**267988**	**183**	**8.82**
2.	**Peren**	**1651**	**95219**	**58**	**9.95**
3.	**Dimapur**	**927**	**378811**	**409**	**5.59**
4.	**Phek**	**2026**	**163418**	**81**	**12.22**
5.	**Mokokchung**	**1615**	**194622**	**121**	**9.74**
6.	**Zunheboto**	**1255**	**140757**	**112**	**7.56**
7.	**Wokha**	**1628**	**166343**	**102**	**9.81**
8.	**Tuensang**	**2536**	**196596**	**78**	**15.29**
9.	**Kiphire**	**1130**	**74004**	**65**	**6.81**
10.	**Longleng**	**562**	**50484**	**90**	**3.38**
11.	**Mon**	**1786**	**250260**	**140**	**10.77**

Table 1.2: District-wise Area, Population, and density of population of Nagaland according to the 2011 census of India, **Source- Directorate of census operation”**

1.5.2 Status of Education and Literacy Rate in Nagaland

Education in Nagaland began to formalize during the British colonial period, but significant developments and formal initiatives took place post-independence. The foundation of formal education in Nagaland can be traced back to the mid-19th century when Christian missionaries arrived in the region. The American Baptist Mission started schools as part of their missionary efforts, focusing on literacy and basic education. Rev. Dr. E. W. Clark, an American missionary, played a pivotal role in establishing the first school in Molungyimsen in 1872. (Aier,1996; Temjen,2009) After Nagaland attained statehood in 1963, the government took proactive steps to develop the educational infrastructure. The formation of the Department of

School Education and the introduction of various policies aimed at expanding educational access marked this period. The establishment of Nagaland University in 1994 was a significant milestone, providing higher education opportunities within the state and fostering academic growth. As per the 2011 census, Nagaland has a literacy rate of 79.55%. The literacy rate of males stands at 82.75% percent, while female literacy is at 76.11%, respectively. The following table shows the district-wise Literate Population and Literacy Rate in Nagaland as per the 2011 Census of India.**"**

S.No.	State/District	Total population		Literate population		Literacy rate (%)	
		Male	Female	Male	Female	Male	Female
	Nagaland	**1024649**	**953853**	**723957**	**618477**	**82.75**	**76.11**
1	**Kohima**	**138966**	**129022**	**107038**	**90451**	**88.69**	**81.48**
2	**Dimapur**	**197394**	**181417**	**150142**	**127895**	**87.54**	**81.77**
3	**Phek**	**83743**	**79675**	**57926**	**47967**	**83.66**	**72.21**
4	**Mokokchung**	**101092**	**93530**	**83479**	**76015**	**92.18**	**91.01**
5	**Wokha**	**84505**	**81838**	**67385**	**60823**	**90.81**	**84.48**
6	**Zunheboto**	**71217**	**69540**	**53504**	**49377**	**87.85**	**82.62**
7	**Tuensang**	**101933**	**94663**	**63653**	**53858**	**76.31**	**69.59**
8	**Mon**	**131753**	**118507**	**67432**	**52194**	**60.94**	**52.58**
9	**Peren**	**49714**	**45505**	**34584**	**27620**	**82.84**	**72.58**
10	**Kiphire**	**37830**	**36174**	**22675**	**18557**	**74.88**	**63.97**
11	**Longleng**	**26502**	**23982**	**16139**	**13720**	**74.48**	**69.63**

Table 1.3: District-wise literate population and literacy rate in Nagaland according to 2011 census **Source- Directorate of Census Operation"**

1.5.3 Nagaland Government Initiatives towards Quality Education

Nagaland, as a state, has a strong emphasis on education, with a literacy rate of around 80%, higher than the national average. The state has implemented numerous initiatives to improve education indicators. In 2021, it launched an initiative known as the Nagaland Education Project - The Lighthouse - Nagaland Enhancing Classroom Teaching and Resources (NECTAR) which has been developed to enhance academic quality and improve learning results in government schools throughout Nagaland. This project is funded by the World Bank. Its primary focus is to uplift and empower the education system in Nagaland, ultimately

benefiting students and educators. The government of Nagaland has also implemented multiple policies and initiatives to promote girls' education and increase their enrolment and retention rates in schools. For example, the state government provides scholarships and incentives for girls from marginalized communities, as well as for those who perform well academically.

1.6 Teacher Education in Nagaland

Teacher Education occupies a pre-dominant place in the field of education. Teacher education in Nagaland is a critical component of the educational framework aimed at improving the quality of education across the region. With the ever-increasing number of schools in Nagaland, more teachers have had to be recruited. These teachers are mostly untrained, and due to this, the quality of education is very poor. Hence, the need to train these teachers has been felt. Nagaland College of Education was the first teacher education institution established in 1975 at Kohima. Later on, it was called Nagaland College of Teacher Education and was affiliated with North Eastern Hill University. It offered B.Ed. as well as Undergraduate Teacher Training (UGTT) courses. In the year 1995, the affiliation was transferred to Nagaland University, and in 1996, it was recognised by NCTE and was upgraded to the College of Teacher Education. In the year 2013, it was renamed as State College of Teacher Education. The first private B.Ed. college in Nagaland was Salt Christian College of Teacher Education, established in Dimapur in 1995. After that, some other private colleges were established, and all are affiliated to Nagaland University. At present, there are 2 Government B.Ed. colleges and 6 private B.Ed. colleges in Nagaland. The following table presents the details of colleges for teacher education in Nagaland.

Sl. No.	Name of the College	Year of Establishment	Strength of the College
1	*State College of Teacher Education, Kohima	1975	50
2	**Salt Christian College of Teacher Education, Dimapur	1995	100
3	**Bosco College of Teacher Education, Dimapur	2003	100
4	**Modern Institute of Teacher Education, Kohima	2009	100
5	**Sazolie College of Teacher Education, Kohima	2010	50
6	*Mokokchung College of Teacher Education, Mokokchung	2012	50
7	**Unity College of Teacher Education, Dimapur	2012	100
8	**Mount Mary College of Teacher Education, Dimapur	2016	100
	*Government B.Ed. college, **Private B.Ed. college	**Total**	**650**

Table 1.4: Details of total B.Ed. colleges in Nagaland

(Source: Annual Administrative Report 2020-2021, Government of Nagaland, Department of Higher Education, Nagaland, Kohima)

1.6.1 Status of Gifted Education in Nagaland

Most teacher education programs in India provide general training on pedagogy, classroom management, and curriculum development, but they may not address the unique needs of gifted learners. Similar is the case of gifted education in Nagaland. Awareness and attitudes about gifted education in Nagaland are in their developmental stages and face numerous challenges. While there is growing awareness about the need to cater to gifted students, specific programs and initiatives tailored for gifted education are limited. Here is an overview of the status and key aspects of gifted education in Nagaland:

- Lack of specific Gifted education programmes
- Lack of specialized Teacher training
- Identification of Gifted students
- Limited resources
- Poor awareness among people

1.7 Requirements of Gifted Education

Gifted education encompasses various concepts and approaches aimed at meeting the unique needs of intellectually advanced or talented individuals. In general, teachers who teach gifted and talented students must pay attention to the pace at which these students learn, the depth at which they are allowed to explore topics and the extent to which the student's interests are incorporated into lessons and learning activities.

There is no fixed formula for deciding where these effective teaching practices are implemented. Everything written about teaching learners who are talented and gifted stresses the importance of modifying the curricular content beyond the presentation of simple facts, rules, and details to the identification of complex generalizations, issues, and solutions to problems.

Classroom teachers of students who are gifted and talented generally gain time for extension activities by modifying regular classroom assignments, involving students in independent or group activities, and structuring assignments to allow content enrichment. For this, some others educational reforms can also be embraced by the schools, teachers and policymakers for effective teaching and learning of gifted students (Educational Research and Improvement, 1993):

- ✓ First, *challenging curriculum* standards must be established, and the responsibility for challenging students who are gifted and talented to achieve them must be shared by teachers and other members of society.
- ✓ Second, opportunities that meet the *requirements of children who are talented and gifted* must be available.
- ✓ Third, teachers, parents, and other professionals must look for *strengths and potential in every child*. Everybody wins in such schools. All students have similar opportunities for developing skills and demonstrating performance. All teachers are expected to nurture and support learning, and they are rewarded for doing so. All parents see growth in their children as a result of the training and learning that goes on in their schools. That is how education should be, and society would benefit from it.
- ✓ Fourth, *opportunities for children from minority* cultures and families experiencing economic disadvantage must be expanded.
- ✓ Finally, schools of the future must adopt a *vision that fosters an inclusive curriculum for all students*, supports each student's potential and individual learning needs, and encourages teachers to develop their talents and those of every student.

1.8 Key pedagogical approaches for gifted education

As discussed above, there are various pedagogical approaches to an effective gifted education curriculum. The various research also confirms the new approaches to gifted education. Let us learn the key approaches that are implemented effectively for gifted education:

(i) Acceleration Approach: It is an old approach for gifted education. Gifted students are supported by acceleration or advancement, sometimes characterized by double promotion, skipping grades, or advanced enrolment in higher-level coursework. The acceleration approach refers to strategies and programs designed to advance gifted students through educational material at a pace that matches their abilities and learning speed.

(ii) Enrichment Approach: The term enrichment is used when the teachers provide experiences or activities that are beyond the standard curriculum. The enrichment of the curriculum must be both qualitative and quantitative. Unlike acceleration, which advances students through the curriculum at a faster pace, enrichment enhances and broadens the learning experience at the current grade level. It is a process of expanding the proficiency and talents of gifted students with their classmates in the regular classroom.

(iii) Special Teaching Methods: Some unique methods of teaching gifted students can be:

- Group oriental method
- Individual enrichment method
- Stimulating individual research
- Establishing higher goals for gifted students
- Special project for gifted students
- Flexibility in teaching units
- Providing awareness to the gifted students about the programs and their potentialities
- Establishing objectives and selecting appropriate techniques etc.

(iv) Special Group approach: according to this approach, there should be special schools for gifted students. In the schools, separate groups should be formed for the different types of gifted students.

1.9 Concept of Instructional Design

Instructional design refers to a methodical approach to creating reliable and consistent training and education materials. Analysing learning needs and methodically creating learning experiences are essential to ensuring that knowledge and skills are acquired effectively and efficiently. The main objective is to "ensure instructional quality, effectiveness, efficiency, and

enjoyment," which is to maximize the learner's time and the value of instruction ("ADDIE," 2003).

1.9.1 History of Instructional Design

The development of educational psychology, military training, and technological advancements are the foundations of instructional design history. The initial contributions of "Plato, Aristotle, and Socrates" to instructional design can be attributed to their management of the cognitive foundation of learning. The idea was then developed further by the 13th-century philosopher "St. Thomas Aquinas." John Lock expanded on Aristotle's theory of humans' original mental blankness by asserting that almost all knowledge and reason come from experience. John Dewey developed the theory of active learning in the 20th century, arguing that learning happens most effectively when it happens in tandem with doing. Together with constructivism and cognitivism, instructional design was founded on the stimulus-response (S-R) model of behavioral psychology, which was created by Thorndike during the 20th century. Hull, who created the first motivational model of behavior that emphasized the needs, activities, and attention of the learner, expanded on Thorndike's theory. Due to its application by the U.S. Army for effective military training, the Second World War emerged as a pivotal moment in the history of instructional design. Over the next half-century, instructional design has established itself as the gold standard for creating excellent training and learning initiatives in corporate, military, and academic contexts (Leigh, n.d.). Concerning the present era, instructional design has its roots in the interplay of multiple theories, including "Bloom's taxonomy, Mager's learning objectives, Glaser's testing, and Gagne's instructional design," as well as Skinner's behaviourism and programmed instruction.

1.9.2 Role of instructional modules for teacher education

Module-based learning is one of the most approved and effective knowledge acquisition techniques. This type of teaching improves the qualities that will make the student an independent learner, self-directed learner, and learning at their own rate. Here both the teachers and students participate actively and effectively. With the use of modules in teaching, students actively participate in the teaching process, and learning becomes more effective. Sadiq and Zamir (2014) in their study established that modular teaching motivates students' participation in the classroom. It is more influential in the teaching-learning process in comparison to ordinary teaching. Here, the learners are comfortable learning in their own style and pace. Another study by Nardo (2017) also confirms that modular teaching enhances the language learning needs of students. Its use increases self-confidence among students. Instructional modules in teacher education play a pivotal role in preparing competent, reflective, and

adaptable educators who can meet the diverse needs of students and contribute positively to the field of education.

By addressing these needs, teacher education in the area of gifted education in India can be strengthened, leading to better support and educational outcomes for gifted learners.

1.10 Significance of the Study

The review of related literature revealed various research gaps as follows:

- NEP2020 and NKC (2005) recommended that gifted education at school levels should be improved, and it is only possible through teacher education, which is the backbone of the country. So, in light of NEP-2020 recommendations, the study was aimed to educate B.Ed. Student teachers with the instructional modules on the concepts of gifted education.
- The various national and international studies were focused on various traits of gifted learners or perceptions of pre-service teachers, but sparse studies are there focusing on programs/modules for pre-service teachers' preparation for gifted education.
- In India and the particular context of Nagaland, education for gifted and talented students has not been given much attention. Further, the teacher education program needs to be strengthened concerning concepts of gifted education by educating prospective teachers about them. Not much work seems to have been done on teachers' preparedness towards gifted children in India, especially in the northeast (Malsawmi,1997). Concerning the limited studies done in this area, the researcher has conducted the study.

1.11 Statement of the Problem

It is clear from the review of the issues that training of teachers for gifted education despite the attention given to the education of gifted learners, the education of prospective teachers about gifted education in terms of understanding concepts of gifted education and developing their teaching competencies has been neglected. Therefore, the study aimed to prepare instructional modules for B.Ed. student-teachers and assess their effectiveness through experimental research design. In this regard, the study's problem statement is;

"Development and Assessment of Instructional Modules for Developing Concepts of Gifted Education in B.Ed. Student-Teachers"

1.12 Operational Definitions

- **B.Ed. student-teachers:** In the context of the present study B.Ed. student-teachers are teachers and students who are taking B.Ed. courses in B.Ed. colleges/universities of teacher education to become a teacher.
- **Gifted Education**: - Gifted education is specific education meant to fulfill the learning needs of gifted students, those who are naturally brilliant and demonstrate exceptional abilities, and talents in areas such as intellectual, creative, artistic, leadership, or specific academic domains. For the study, concepts of gifted education are explored, ranging from its meaning to development, methods of identification of gifted learners, instructional strategies and models of gifted education, etc., for the establishment of instructional modules.
- **Instructional module:** - In the context of the present study, an instructional module is a self-sufficient unit of instruction for the learners to achieve a set of specific learning objectives developed under the appropriate Instructional System Design Model with online and offline content on concepts of gifted education.

1.13 Objectives of the Study

The objectives of the study have been achieved in two phases as follows:

1. To analyze and select an appropriate *instructional system design model* for the development of instructional modules for B.Ed. student-teachers on concepts of gifted education.
2. To develop and validate instructional modules for B.Ed. student-teachers on concepts of gifted education.
3. To assess the effectiveness of instructional modules for B.Ed. student-teachers on concepts of gifted education.

    3.1 To compare the performance level of the control group and experimental groups before and after the administration of the intervention.

    3.2 To compare experimental and control groups' pre-test and post-test scores to establish any significant influence of instructional modules on the experimental group.

4. To analyze the impact of the instructional module on the scores of the experimental group dimension-wise.

1.14 Hypotheses of the Study

The hypotheses 5 to 8 are about course- 1 which is about basic concepts of gifted education (GE) comprising of scores of modules 1 to 4. The hypotheses 9 to 12 are about course- 2 which is about applicability of gifted education (GE) in teacher education comprising of scores of modules 5 to 8.

1. There is no significant difference between the pre-test mean scores of the control group and experimental groups for overall scores.
2. There is no significant difference between the post-test mean scores of the control group and the experimental group for overall scores.
3. There is no significant difference between the pre-test and post-test mean scores of the control group for overall scores.
4. There is no significant difference between the pre-test and post-test mean scores of the experimental group for overall scores.
5. There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 1 on concepts of GE.
6. There is no significant difference between the post-test mean scores of the control group and experimental groups for the scores of course 1 on concepts of GE.
7. There is no significant difference between the pre and post-test mean scores of the control group for the scores of course 1 on concepts of GE.
8. There is no significant difference between the pre and post-test mean scores of the experimental group for the scores of course 1 on concepts of GE.
9. There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 2 on gifted education in teacher education.
10. There is no significant difference between the post-test mean scores of the control group and experimental groups for the scores of course 2 on gifted education in teacher education.
11. There is no significant difference between the pre and post-test mean scores of the control group for the scores of course 2 on gifted education in teacher education.

12. There is no significant difference between the pre and post-test mean scores of the experimental group for the scores of course 2 on gifted education in teacher education.

1.15 Delimitations of the Study

1. The study is delimited to B.Ed. student-teachers of one college in Kohima district only due to its true experimental design and strict control requirements.
2. The study is delimited to and specifically focused on the development of concepts of gifted education in B.Ed. student-teachers only.

CHAPTER- II

REVIEW RELATED LITERATURE

Chapter-II

Review related literature

'The literature in any field forms the foundation upon which all future work will be built. If we fail to build this foundation of knowledge provided by the review of the literature, our work is likely to be shallow and will often duplicate work that has already been done better by someone else.' BORG, W.R(1983)

A collection of works done by earlier researchers is technically called literature (Singh, A.K). Any scientific research starts with a review of the literature. A literature review not only serves the purpose of acquainting a researcher with current knowledge in the area in which s/he is going to conduct her/his research, but it also works as a guidepost about the quantum of work done in that area, enabling her/him to judge the gaps and lacuna in the concerned field of research. A review of the literature is a comprehensive and systematic analysis of books, scholarly articles, and other sources relevant to a particular topic that provides some basic knowledge. It is designed to identify and critique the existing literature on a topic to justify one's research by exposing gaps in current research. It also provides an analytical review of the current research topic, and that analysis should direct the research objectives. The main objectives of reviewing the literature are:

1. Determining key variables relevant to research.

2. Summarisation of prior works.

3. Avoidance of repetition.

4. Determination of the relationship among variables and their significance.

Hence this chapter critically evaluates the different research studies and other related literature to formulate the appropriate approach for investigating the research problem.

2.1 Organization of the Chapter

Sub-areas for the literature review cover all the areas of the problem as evident from the title of the problem, which is *"Development and Assessment of Instructional Modules for Developing Concepts of Gifted Education in B.Ed. Student-teachers"*. Related literature for the

study has been divided into the following significant sub-areas based on variables involved in the study to find answers to research problems;

2.2 Studies associated with gifted education

2.3 Studies Associated with Instructional Design

2.4 Studies associated with Enrichment programs for gifted in Teacher education

2.2 Studies associated with Gifted education

As discussed in Chapter One, gifted students play a vital role in forming a developed society, and special techniques and teaching methods are required for them. So, this section contains studies on gifted education.

Benjamin (2008) carried out a study comparing gifted schooling in the US and India. He evaluated the advantages and disadvantages of this scheme by contrasting it with the Jacob K. Javits initiative and the Navodaya Vidyalaya Scheme. He claimed that neither of the programs was a suitable means of identifying gifted students. The NVS program places more emphasis on helping people develop their personalities and boost their self-confidence than the Jacob K. Javits program does on helping gifted people advance professionally. Through the utilization of IT infrastructure for the gifted, both programs improved educational quality by utilizing technology.

Rinn, et al. (2010) conducted a study on gifted students. To understand the academic self-concepts of gifted students, this study was carried out. Since academic achievement and aspirations are linked to academic self-concepts, educators and counselors need to be aware of the challenges that gifted students may encounter. There is discussion of recommendations for educators and counselors. It has been discovered that a teacher with extensive training in differentiation is more likely to offer the right amount of challenge and assistance to foster the intellectual and affective growth of gifted students.

Kaur (2011) Significant variations were observed in the various components and elements of emotional intelligence between gifted and regular kids in her study. Comparing talented children to non-gifted pupils, the study results also showed that gifted individuals have higher levels of emotional intelligence. There was no discernible gender difference in the various emotional intelligence components; however, there were variances between emotional intelligence components in rural and urban areas. Furthermore, because the three student

groups with high, medium, and low locus of control differed from one another and the high group had higher emotional intelligence (EI) and the low group had lower EI, the findings indicated a strong and positive correlation between locus of control and emotional intelligence. It suggests that pupils who are internally oriented are highly emotionally intelligent, while those who are outwardly oriented have low emotional intelligence.

Sak (2011) conducted a study regarding the Turkish education system for the gifted. This study was carried out to learn about the misconceptions and beliefs about gifted children in Turkey. The educational needs of gifted children are significantly less. They thought not need any special attention as they had higher abilities than their peers. They can be winners in any situation. This study proved the errors regarding the above myth with suitable examples.

Bharaj (2013) conducted a study regarding intellectually gifted children's intellectual and non-intellectual attributes. The study showed that in comparison to normal children, gifted children were more talented. These children also had superior reasoning abilities, higher self-esteem, and were more imaginative and curious. At the same time, it was also found that such types of children were more anxious, somehow frustrated, casual about social rules and emotionally weak.

Velišek (2013) conducted exclusive research on the rights of gifted learners. The study highlighted the need for inclusion and quality education for all classroom students, not just children with disabilities. He further emphasized the democratic ways of educational teaching where the diversity of students is openly accepted.

Jayanti & Sujatha Malini (2014) researched the effectiveness of teaching competency-based self-instructional modular packages to handle gifted children. Their study found that it is possible to maximize the knowledge of giftedness and teaching competency of prospective teachers.

Kaya (2015) carried out a study where ten teachers who worked in the public schools of the USA were interviewed to find out their views on giftedness. The complete analysis is divided into five groups: giftedness, problems, strategies, context, and responsibility. Giftedness was the leading category that emerged according to the relationships among the other five types. The relationships between these five categories are presented. From the study, it was found that the views of giftedness changed from teacher to teacher.

Kotek and Ozcan (2015) examined teachers' opinions about gifted children. This was a qualitative study. Ten teachers were used for the analysis. Data was collected through a qualitative data collection tool. Teachers' opinion towards gifted students was examined. It has been discovered that because they process information quickly and become bored with repetition, gifted students believe that others do not understand them. These kids are lively and have a strong interest in visual materials, but they also have a quick attention span.

Chaudhari &Khirwadkar (2016) conducted a study on creating and implementing multimedia learning packages to enhance student teachers' ICT skills at the secondary level. It was found that the multimedia approach was beneficial for both teachers and students.

Kiran & Murthy (2016) conducted a review study about educating gifted children. This study mainly discussed the importance of various models of giftedness and, also the same time, assessed giftedness. Here, the researchers proposed a number of academic task commitment components that were based on Renzulli's "Three Three-ring model". Gifted programs in India, identified gaps and an agenda for future gifted education programs also discussed in this review-based study.

Reid & Horváthová (2016) examined qualifications for teachers of intellectually gifted students in Slovakia, Belgium, Austria, and Finland, as well as gifted education and teacher training programs. This research found that though there are courses on giftedness and principles for working with the gifted, but gifted are often neglected. These children require special care and attention, so the teachers need to change their teaching strategy from a traditional approach to a more constructivist approach.

Roy and Kurup (2016) proposed that the Indian Government should constitute a committee for the education of the gifted. In this committee, the members should be chosen from all over the regional levels as stakeholders. The function of this committee is to construct a draft national policy on gifted education and create an environment for genuine concerns of all stakeholders about giftedness.

Roy, et al. (2016) studied myths about giftedness in India. The study's findings showed that the people of India mostly believed that all their children were talented. The crucial part is to support the children in realizing their abilities. Most Indians thought talent was progressive and understood talent is not more than school grades and impressive performance.

Sharma (2016) studied the relationship of certain variables, i.e., academic achievement, gender, socio-economic status, and location, with gifted students' intelligence. She concluded that gifted children need the proper care and attention of teachers and parents. The study suggested that there is a need for programs beneficial for gifted students, and a proper educational environment should be provided to these students to nurture their potential.

Roy (2017) attempted to provide India's views on giftedness, its challenges, and education for gifted programs as a part of national educational policy. Numerous individuals and organizations who contributed to gifted education in India were also discussed. The study revealed a lack of valid policies and funding for gifted education in India.

Bildiren (2018) attempted to study the issues related to the interests of gifted children. The study was carried out to know whether the answers to three wishes questions of the gifted and talented and developing children differ. The sample of the study comprised 54 gifted, 46 normal growing children, and 28 talented children. In this research, two types of research methods, i.e., qualitative and quantitative, have been used together. "What would you wish if you had three wishes" was the primary research question. Received responses were analysed by the chi-square test. The study found that the gifted, talented, and usually developing children to the three good wishes differed in the answers given.

Sayi (2018) carried out a study to highlight the opinions of teachers regarding the benefits and drawbacks of the teacher training program for gifted education. Most teachers are ill-equipped to instruct gifted students because they have not received enough training. As a result, talented students end up performing below expectations or dropping out. The researcher in this study recommended a training course for educators to give them experience using gifted education. In a semi-experimental design, the study involved 71 teachers and one signal group from the experimental models. A total of twenty questions, sixteen of which were Likert-type and four of which were quasi-structured, were used to collect the data. The results of the study demonstrated how successful the gifted teacher preparation program was; the participants had an optimistic view of the training program.

Bayraktar, et al (2019) The purpose of the study was to determine whether primary school teachers' perceptions of gifted education and their self-efficacy beliefs are significantly correlated. "The Attitude Scale Towards Gifted Education (ASTGS)" and "The Self-Efficacy Scale Towards Gifted Education (SESTGS)" were the two scales used in this study. According to the sub-dimensions of academic efficacy, mentorship efficacy, and responsibility efficacy,

the study found that primary school teachers' self-efficacy beliefs in gifted education are at a medium level. On the other hand, general averages and the sub-dimensions of personality traits efficaciousness, encouraging creativity efficaciousness, and instruction planning efficacy showed that primary school teachers' beliefs in gifted education are at a high level. Regarding gifted education, primary school teachers' attitudes are medium regarding creating classrooms for gifted students and general averages, low regarding opposing special services, and high regarding need-support. Regarding gifted education, primary school teachers' perceptions of their own efficacy differ significantly.

Alamiri (2020) conducted a systematic review in Saudi Arabia to identify the pattern of giftedness among Saudi educational research and practices. The findings of the study indicate that gifted education in Saudi Arabia evolves around three integrated areas: Gifted child, talent development, and differentiated instructions. The study indicated that differentiated instruction is very important through which gifted students are identified and instructed in a separate class. The result of the study showed that talent development and differentiation in pullout programs were the two important aspects especially associated with gifted education in Saudi Arabia.

Hamza, et al (2020) conducted a study to know different definitions of giftedness and issues related to talent and giftedness. In this review-based study, different definitions of giftedness are summarised. The main attributes of gifted individuals are analysed here. From the study, it was found that there are gifted low socio-economic students, but the system needs to identify them as well, as some gifted students do not show giftedness.

Ninkov (2020) conducted a study on education policies for gifted children. The study proposes a suitable system of education for gifted students. A system where gifted students enhance their knowledge and creativity without hampering their everyday lives. Comparative methods focusing on different countries and their educational system were used. It was found that inclusive education was the best education system for gifted students, and there is no difficulty in applying inclusive education. The study found that it is vital to upgrade existing educational policies to provide inclusive education for the gifted. Including gifted students positively impacts the individual and the other students in the classroom.

Kurup (2021) carried out studies to find gifted kids. The need to identify and support gifted and talented children outside of the classroom has been highlighted in the NEP 2020. The National Institute of Advanced Studies, Bangalore, has created several protocols for identifying and providing multi-level, multi-stage mentoring for gifted children through methodical

analysis and research. This study suggests that giftedness needs to be identified. Psychometric assessments that capture the real data points of gifted children in the portfolio are crucial in a developing nation such as India. This study made it abundantly evident that identifying gifted children at an early age has additional developmental benefits.

2.3 Studies Associated with Instructional Design

Following are the studies discussed to create a picture of the instructional design model:

Alzand (2010) conducted a study on research efforts in the learning and instruction design field in several Arab countries. A total of ten years of research have been studied. The relationship between the usage of instructional design and the quality of education was studied here. The researcher found that instructional design models were very helpful for students. Through the use of this, students' thinking levels increased, and also, they had a very positive attitude toward specific subjects.

Sezer, et al (2013) carried out a study titled "Learner-centered Instructional Design: Integrating Technology into the Classroom." Here, the researchers attempted to provide an instructional model by taking into account the characteristics of technology-based education in conjunction with earlier models of instructional design (ARCS, ADDIE, ASSURE, Dick and Carey, Seels and Glasgow, Smith and Ragan, etc.). An analysis of the document was conducted for this study. As a result, any grade level and lesson can use the two sample lesson plans. Plans are expected to operate efficiently when they use these examples.

Thakur (2014) carried out a study on the efficacy and training of multimedia e-content for class IX students based on the ADDIE model, which was created by the student teachers of Economics. The results showed that e-content outperformed the conventional approach in terms of its influence on students' success. The post-test scores of the experimental and control groups differed significantly at the 0.01 level. To be more precise, the experimental group outperformed the control group in terms of mean score.

Alsaleh (2020) carried out research to evaluate the effectiveness of programs for training instructors in instructional design in terms of their ability to solve problems in the classroom. This document proposes the ADDIE (analysis, design, development, implementation, and evaluation) training program. The quasi-experimental design of action research was used to assess the effectiveness of the training program. Four groups comprising 77 in-service teachers were formed. A pre- and post-self-assessment questionnaire was used to gather data. The

study's conclusions demonstrated how the ADDIE training program enhanced teachers' capacity to address issues in education from their perspective. Teachers suggested that all pre-service and in-service teachers participate in this kind of program.

Avcu & Er (2020) conducted a study to investigate the effects on the teaching process of creating an instructional design that focuses on programming teaching for gifted and talented students. The Morrison, Ross, and Kemp Instructional Design Model steps were followed in the development of the instructional design. Qualitative data was gathered using interview, observation, and design thinking forms. It was found that the instructional design employed with the experimental group improved their abilities in conceptual creative thinking and designing thinking. It did not, however, perform well when it came to programming students' self-efficacy.

Avcu and Yaman (2021) examined the efficacy of different instructional designs for the gifted's value education. Twenty-five gifted sixth-grade students—13 girls and 12 boys—were chosen for the study. A digital differentiation strategy was used in instructional design. Both visual and aural components aid in students' learning. Analysis was done on qualitative data. Every student took part in the reading and conversation. The growth of gifted students increased following the implementation of various instructional designs for value education. Therefore, it worked well in this circumstance.

2.4 Studies associated with Enrichment programs for gifted in Teacher education

Following are the studies discussed to create a picture of Enrichment programs for gifted in teacher education:

Malsawmy (1997) conducted a study on "Gifted and creative college students in Mizoram in relation to their personality and problem-solving ability." The aim is to understand how specific personality characteristics contribute to the problem-solving skills of gifted and creative students. The findings suggest that personality traits, particularly openness and conscientiousness, play a crucial role in enhancing the problem-solving abilities of gifted and creative students. This highlights the importance of fostering these traits through tailored educational programs.

Lee (2006) created a three-month enrichment program for grade 4 and 7 gifted, economically disadvantaged gifted, and non-gifted students. After three months of implementation, the aspiration level of gifted individuals from economically disadvantaged backgrounds has

increased. Grade 4 gifted students and gifted students from economically disadvantaged backgrounds reported higher levels of satisfaction, and the earlier the intervention programs were offered, the more beneficial the outcomes were. To optimize the program's effects and increase the gifted and economically disadvantaged gifted individuals' aspirations and benefits, it appears necessary to identify these individuals as soon as possible. Programs for enrichment were essential to the growth of talented pupils.

Sujala (2013) made a comparative study of persons, who studied in an enriched educational programme and a normal school programme. The findings of the study revealed the need for segregated education for gifted. Those who received the enriched educational programme were better in comparison to normal school programme.

Öztürk & Fıçıcı (2014) conducted a study with the goal of creating a scale to assess preschool through university in-service teachers' attitudes toward gifted education. 24 Likert-type items, six of which were designed to measure each of the construct's four dimensions, made up the scale's initial iteration. Throughout the 2011–2012 academic year, 421 preschools received the scale from university in-service educators (teachers, school counselors, administrators, etc.) who were employed at different schools or educational institutions in Istanbul, Turkey. The study's findings indicate that the developed scale has demonstrated efficacy in measuring four aspects of educators' attitudes regarding gifted education. At the very least, this study helped to clarify the views of educators regarding gifted education. The scale is a legitimate and trustworthy tool that can be implemented in many different global educational systems.

Bochkareva, et al. (2018) conducted a study on the problems of producing a system of training future teachers to work with gifted school children. The study aims to analyze the fundamental level of Bachelor's training for working with gifted children in mathematics. The researchers here have constructed and planned a structure of vocational training for students to work with gifted children who are mathematically strong.

Thatte (2020) conducted a study on "Development of an enhancement programme on higher order thinking skills based on futurological techniques for intellectually gifted school-going adolescents". The findings of the study highlighted the need for innovative educational approaches to meet the cognitive needs of gifted students and prepare them to face future challenges.

Sahin (2021) carried out research to determine the state of teacher preparation for gifted and talented education. This study is a meta-synthesis. After the literature was reviewed, it was discovered that the majority of the studies looked at participant opinions and viewpoints in relation to teacher education and gifted education. There don't appear to be many studies that look at participants' awareness levels. According to the study, teacher preparation is essential for gifted education, and it should take place over an extended period of time with real-world application. Both the amount and quality of teacher preparation should rise.

Cheung, et al (2022) conducted a research-based gifted education project (GIFT) in order to support Hong Kong students' holistic development. Teachers from elementary and secondary schools took part in the project. Before and after the program, they answered validated questionnaires about their knowledge and attitudes about gifted education, their traits and competencies, their teaching practices, and their overall well-being. The results showed that teachers' understanding of gifted education could be improved by this program. Gifted students also require specialized teaching techniques. Thus, it is a project that benefits from teachers' competency development in gifted education.

CONCLUSION: The researcher reviewed both Indian and foreign studies for the present research right from 2010 to 2022. Based on these, it could be observed that gifted students play a vital role in the progress of society. Every care must be taken for their progress. Specific techniques must be adopted to teach these children. Indian studies are very rare in giftedness. More studies are required to know comprehensively about giftedness.

CHAPTER- III

RESEARCH METHODOLOGY

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RESEARCH METHODOLOGY

A properly planned study gives more systematic results. So, after the selection of the problem and formulation of hypotheses, the researcher moves forward to regulate these plans into action. For this reason, the researcher plans to conduct research. This plan and procedure are called methodology. Research methodology involves the proper method of research design, adequate sample through appropriate sampling method, valid and reliable tools for data collection, and selection of suitable statistical technique to find out the result. In the current research, the purpose of the researcher was to develop and assess instructional modules for developing concepts of gifted education among B.Ed. Student teachers. For this purpose, the researcher has planned the methodology in the following manner:

3.1. Research methodology

3.2. Experimental research design

3.3. Variables

3.4. Population

3.5. Sample selection method and sample size

3.6. Explanation of the tools used

3.7. Data collection procedure

3.8. Procedure of data analysis

3.1. Research methodology

Research method is the particular procedure or technique used to select, identify, and analyze information about a particular topic. The current research involves the experimental method as it is the most scientific and structured method. The problems tackled with this method of research are concerned with studying the effect of one variable on some other variable, in an experiment, at least there are two variables -one which is manipulated and the other on which manipulation's effect is measured or observed. In this method, rigorous laboratory conditions

are to be maintained to obtain accurate results. The variable or variables whose effect is to be studied are known as independent variables and the variables which are affected by independent variables are called dependent variables. The researcher aims to develop and assess instructional modules for developing concepts of gifted education among B. Ed. Student teachers. The effectiveness of instructional modules in comparison to traditional methods of teaching was the main focus here. According to the need for the experimental method, student-teachers were split into two groups the control group and the experimental group.

3.2. Experimental research design

"Research design is the plan, structure, and strategy of investigation conceived to obtain answers to research questions and to control variance." (F. N. Kerlinger) The methods and procedures for gathering the necessary data are specified in a research design. It is a blueprint specifying which approach will be used for gathering and analyzing data. A design tells us what type of statistical analysis we use. There are various kinds of experimental designs. They vary in one another. The selection of the research design depends on the objectives of the research. The designs are broadly divided into the following types:

1. Pre-experimental design
2. True experimental design
3. Quasi- experimental design

For the research, the researcher has chosen a true experimental design as it is the most appropriate design to get valid and effective results. To keep that various internal and external validity threats have been also taken care of. So, the research design is pre and post-test true experimental research design.

We have used the symbol system developed by Campbell and Stanley to discuss experimental designs.

R random assignment of subjects to treatments or groups

X exposure of a group to a treatment variable

C exposure of a group to the control condition

O observation or test administered

True experimental design

In a true experimental design, the equivalence of the experimental and control group is provided by random assignment of subjects. Despite being difficult to arrange a true experimental design, particularly in a school setting, it is the strongest type of design.

1. Pretest- Posttest, Equivalent Groups Design

Experimental	**R**	**0_1X**	**0_3**
Control	**R0_2**	**C**	**0_4**

Pre-test **Post-test**

Figure 3.1

- Here pretests are conducted before the implementation of the experiment and control treatments and post-tests at the end of the treatment period.
- The test of the significance of the difference between means can be applied to gain scores and compared.
- Pretest scores can be utilized in the analysis of covariance to statistically control for any differences between the groups at the beginning of the study.
- Despite the strength of the design, there is a possibility that the experimental variable will interact with the testing effect.
- This design is a combination of the previous two designs.
- With the help of this design, we can evaluate,
  1. Effect of testing
  2. History and
  3. Maturation

Here in this research true experimental **re**search design was chosen for the study. According to the need of the research two equivalent groups of control and experimental type have been selected. Pre-test and post-test methods were adopted to compare the groups.

Table 3.1: Research design

Group	Pretest	Intervention	Post-test
Experimental group	01	(x)	02
Control group	01	(0)	02

01-Pretest 02- Post test

x -Intervention (Propaedeutic module) (0)-Routine Care

Independent variable: Propaedeutic module.

3.3. Variables

A variable is defined as anything that changes or varies in value. Variables are the characteristics or situations that are manipulated, controlled, or observed by the experimenter. (Singh, A.K) In every research, there are two types of variables i.e. dependent and independent variables. Independent variables here in the study are instructional modules on concepts of gifted education. The dependent variable is the achievement of B.Ed. student-teachers on concepts of gifted education. Extraneous variables are levels of educational needs for gifted education, and the type of semester.

3.4. Population

A population is, in general, a group or collection of people who share a common trait or characteristics. According to Check and Schutt (2012), the population is the total set of people or other entities to which the study's conclusions are to be applied. The target population for the current study is all of Nagaland's student teachers.

3.5. Sampling technique and sample size

The sample is a small part of the population that has been studied to find out the results. Sampling is the process by which the researcher selects a small portion of a large population

to find out something about the entire population. A good sample should be representative of the entire population. Simple random sampling technique has been used for the present study as in this technique each participant has an equal chance of being chosen.

There are a total of eight B.Ed. colleges in Nagaland. However, because of the true experimental research design system and to control the external threats to validity also the researcher has chosen one college in Kohima which has a maximum number of strengths and resources to support the smooth conduction of the experiment. The researcher has chosen the Modern Institute of Teacher Education because of its reputation and good results. Following is the list of total B.Ed. colleges in Nagaland.

Table 3.2: List of total B.Ed. colleges in Nagaland.

Sl. No.	Name of the College	Strength of the College
1	*State College of Teacher Education, Kohima	50
2	**Sazolie College of Teacher Education, Kohima	50
3	**Modern Institute of Teacher Education, Kohima	100
4	**Unity College of Teacher Education, Dimapur	100
5	**Salt Christian College of Teacher Education, Dimapur	100
6	**Mount Mary College of Teacher Education, Dimapur	100
7	**Bosco College of Teacher Education, Dimapur	100
8	*Mokokchung College of Teacher Education, Mokokchung	50
	Total	650

*Government college

**Private college

Following is the detailed diagram showing a clear picture of the sampling process and sample size.

Random sampling and sample size

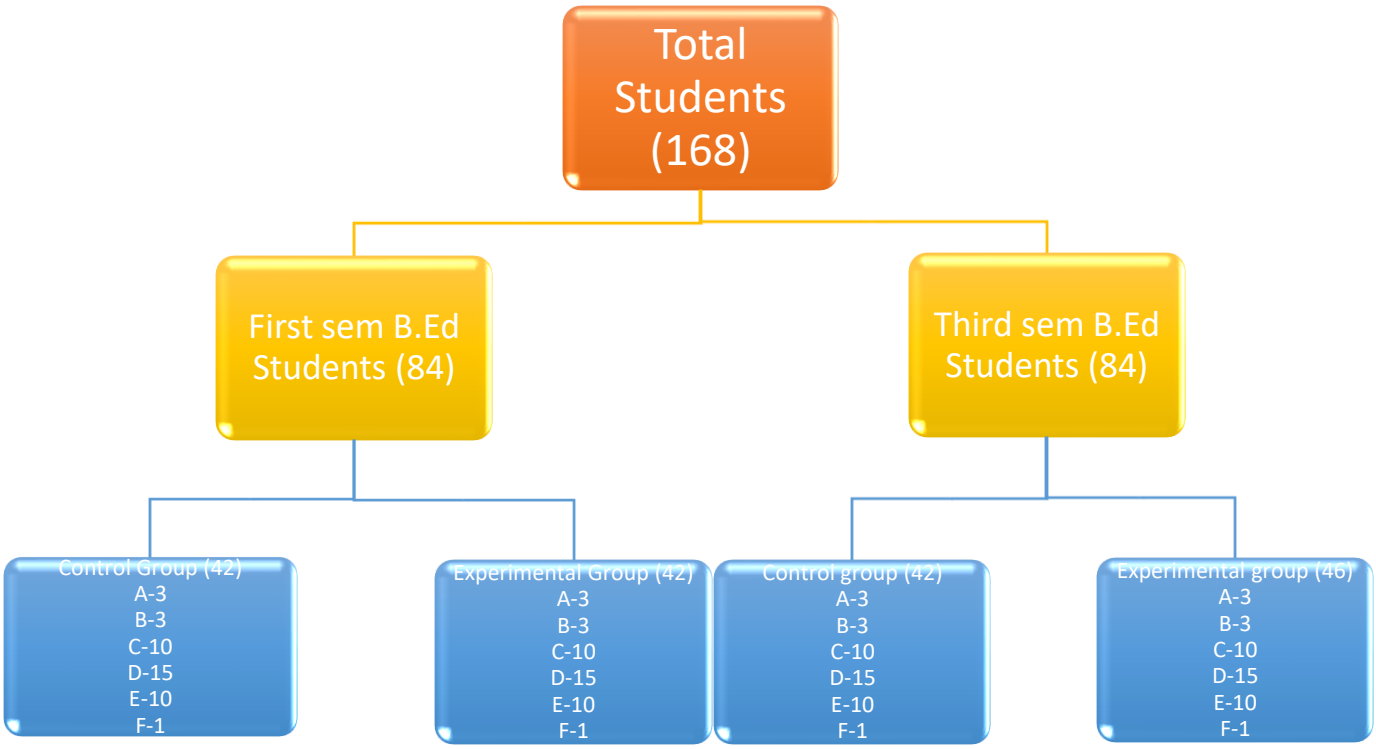

Figure 3.2: Randomized sampling and sample size

3.6. Description of the tools used

The selection of appropriate and good tools is very important for successful research. The result of the research depends on accurate and effective tool measurement. The word "tool" is defined as a means to collect evidence. In the present study, the researcher has used the following tools:

(1) Achievement test on concepts of Gifted Education have been developed and standardized by the researcher.

(2) Instructional modules on concepts of Gifted Education have been developed and validated by the researcher.

(3) Educational needs for gifted education Scale by Cavide Demirci and GUzin Igci- adapted by the researcher.

(1) Achievement test on concepts of Gifted Education

Since B.Ed. student teachers of Nagaland has to be tested for their knowledge and understanding of concepts of gifted education therefore an achievement test has been developed by the researcher. The achievement test on the concepts of gifted education was devised to test the three main behavioral levels of mental ability viz. knowledge, understanding and application of B.Ed. student teachers of Nagaland. The test was duly standardized before using for the pre and post-test for the experimental and control group. Following are the major steps followed for the development and standardization of the achievement test for the concepts of gifted education:

Description of the tool

Achievement test is generally used to find out the performance of learners about certain concepts. It is used to know their knowledge, understanding, and application of certain concepts. In the same way, the researcher has constructed an achievement test on the concept of gifted education to find out the level of knowledge, understanding, and application of learners about the concepts of gifted education. For the present study, the investigator prepared eight modules consisting of Course 1 and Course 2. The details about the modules are given below:

Course 1: - Understanding & Nurturing Giftedness

Module 1- Fundamental Concepts of Giftedness

Module 2- Understanding Giftedness

Module 3- The Nature of Giftedness

Module 4- Nurturing Giftedness

Course 2: - Teacher Education for Gifted Education

Module 1- Gifted Education for Teacher Education

Module 2- Identification and curriculum need for the gifted education

Module 3- Principles & Models of Gifted Education

Module 4- Characteristics of Gifted Education Teachers

These topics were chosen because these are the fundamentals of gifted education. The purpose of the modules has been to develop an in-depth understanding of the concepts.

(1. a) Item writing and selection for the Achievement test

Item writing and selection for achievement tests is a crucial process to ensure the test effectively measures what it intends to. The researcher takes suggestions from the supervisor as well as various experts from the field of education, special education as well as language before construction of the achievement test. Each test item is written clearly and concisely. Items have been reviewed by subject matter experts to ensure accuracy. The researcher takes every possible care that the test is well constructed, with clear instructions, appropriate timing, and a reliable scoring procedure.

(1. b) Blueprint formation

The researcher had constructed an achievement test and it intended to assess three parameters: knowledge, understanding, and application. All items of these three parameters carried 1 mark each for the right answer and 0 mark for each wrong answer. A detailed blueprint of the achievement test is given below:

Table 3.3: Blueprint for the Achievement Test

Blueprint for the Achievement test

Objectives		Knowledge (36 Marks)			Understanding (36 Marks)			Application (8 Marks)	Total Questions 80 Questions			Total Marks (80)
		TF	MC	MT	TF	MC	MT	MC	TF	MC	MT	
Topics	Weightage (12.5%)	20%	20%	5%	20%	20%	5%	10%	40%	50%	10%	100%
COURSE 1: UNDERSTANDING AND NURTURING GIFTEDNESS												
Module 1:	10	2	2	1	2	2	0	1	4	5	1	10
Module 2:	10	2	2	1	2	2	0	1	4	5	1	10
Module 3:	10	2	2	1	2	2	0	1	4	5	1	10
Module 4:	10	2	2	1	2	2	0	1	4	5	1	10
COURSE 2: TEACHER EDUCATION FOR GIFTED EDUCATION												
Module 5:	10	2	2	0	2	2	1	1	4	5	1	10
Module 6:	10	2	2	0	2	2	1	1	4	5	1	10
Module 7:	10	2	2	0	2	2	1	1	4	5	1	10
Module 8:	10	2	2	0	2	2	1	1	4	5	1	10
Total	80	16	16	4	16	16	4	8	32	40	8	80

Meaning of Abbreviations in Table --- (1) TF= True/False type, (2) MC=Multiple choice type and (3) MT= Match the given options type.

Based on Bloom's taxonomy, the blueprint was formed. The blueprint of the test was developed module-wise. A total of 80 items were developed for the construction of the achievement test. All the items were of objective type with true/false type, and multiple-choice types, and match the given options type assigned a weightage of 40%, 40%, and 10% to each respectively.

(1.c) First draft and try out

The first draft is an initial version to construct the test. It is necessary because it allows us to get our ideas down on paper and start organizing them into a coherent structure. Here the researcher prepared 80 new and original test items according to suitable difficulty level. The items were then edited along with instructions. One separate scoring sheet and key of the test were also developed. The first draft was then used for the process of validation. Tryouts were also conducted to assess the quality, difficulty level, and effectiveness of the items. The researcher conducted the tryout at the State College of Teacher Education, Kohima. During the tryout, items are typically administered to a sample of tests, and the results are analyzed to determine which items should be retained, revised, or discarded. The tryout was administered to 57 student teachers of the State College of Teacher Education. During the conduction of the test instructions were given to be followed properly by avoiding any guesswork-based responses and leaving any question unanswered. Before the administration of the first draft proper sitting arrangement was made, scoring was explained and the proper way of answering was demonstrated. After the tryout collected sheets were evaluated with each right answer awarded a '1' mark and each wrong answer awarded a '0' mark. After this item analysis was conducted.

(1.d) Validity of the tool

Validity is important to ensure that the test accurately assesses the knowledge, skills, or abilities it is designed to measure. It is one of the important characteristics of a standardized test. For the present study, item validity and content validity of the test was established.

(A) Item validity: It refers to the extent to which an individual test item (question) accurately measures the specific construct or skill it is intended to measure. Item validity is essential for ensuring that the test provides reliable and meaningful results. Item validity is assessed through various methods, such as item analysis, expert reviews and statistical analyses to ensure that each item contributes to the overall validity of the test.

Table 3.4: Item Analysis Table for achievement test on Gifted Education

Item number	Upper group (27%, N=15)	Lower group (27%, N=15)	Difficulty Index	Difficulty Value Decision	Discriminating Index	Discriminating value Decision	Final Decision
Item1	13	13	0.87	Easy	0.00	Low	Reject
Item2	14	14	0.93	Very Easy	0.00	Low	Reject
Item3	15	13	0.93	Very Easy	0.13	Low	Reject
Item4	14	14	0.93	Very Easy	0.00	Low	Reject
Item5	12	9	0.70	Moderate or Average	0.20	Moderate	Retain
Item6	10	6	0.53	Moderate or Average	0.27	Moderate	Retain
Item7	15	12	0.90	Easy	0.20	Moderate	Retain
Item8	8	6	0.47	Moderate or Average	0.13	Low	Revise
Item9	14	11	0.83	Easy	0.20	Moderate	Revise/Retain
Item10	6	3	0.30	Moderate or Average	0.20	Moderate	Retain
Item11	15	12	0.90	Easy	0.20	Moderate	Revise/Retain
Item12	6	8	0.47	Moderate or Average	-0.13	Low	Reject
Item13	12	14	0.87	Easy	-0.13	Low	Reject
Item14	15	9	0.80	Easy	0.40	Moderate	Retain
Item15	14	12	0.87	Easy	0.13	Low	Revise/Retain
Item16	9	5	0.47	Moderate or Average	0.27	Moderate	Retain
Item17	7	10	0.57	Moderate or Average	-0.20	Low	Reject
Item18	15	14	0.97	Very Easy	0.07	Low	Reject
Item19	11	2	0.43	Moderate or Average	0.60	High	Retain
Item20	13	7	0.67	Moderate or Average	0.40	Moderate	Retain
Item21	11	1	0.40	Moderate or Average	0.67	High	Retain
Item22	13	9	0.73	Moderate or Average	0.27	Moderate	Retain
Item23	15	8	0.77	Easy	0.47	High	Retain

Item24	**11**	**4**	**0.50**	**Moderate or Average**	**0.47**	**High**	**Retain**
Item25	**15**	**15**	**1.00**	**Very Easy**	**0.00**	**Low**	**Reject**
Item26	**12**	**9**	**0.70**	**Moderate or Average**	**0.20**	**Moderate**	**Retain**
Item27	**4**	**6**	**0.33**	**Moderate or Average**	**-0.13**	**Low**	**Reject**
Item28	**3**	**3**	**0.20**	**Difficult**	**0.00**	**Low**	**Reject**
Item29	**15**	**10**	**0.83**	**Easy**	**0.33**	**Moderate**	**Retain**
Item30	**15**	**10**	**0.83**	**Easy**	**0.33**	**Moderate**	**Retain**
Item31	**7**	**3**	**0.33**	**Moderate or Average**	**0.27**	**Moderate**	**Retain**
Item32	**8**	**5**	**0.43**	**Moderate or Average**	**0.20**	**Moderate**	**Retain**
Item33	**9**	**11**	**0.67**	**Moderate or Average**	**-0.13**	**Low**	**Reject**
Item34	**15**	**10**	**0.83**	**Easy**	**0.33**	**Moderate**	**Retain**
Item35	**14**	**15**	**0.97**	**Very Easy**	**-0.07**	**Low**	**Reject**
Item36	**15**	**14**	**0.97**	**Very Easy**	**0.07**	**Low**	**Reject**
Item37	**13**	**11**	**0.80**	**Easy**	**0.13**	**Low**	**Reject**
Item38	**14**	**8**	**0.73**	**Moderate or Average**	**0.40**	**Moderate**	**Retain**
Item39	**15**	**9**	**0.80**	**Easy**	**0.40**	**Moderate**	**Retain**
Item40	**15**	**10**	**0.83**	**Easy**	**0.33**	**Moderate**	**Retain**
Item41	**15**	**9**	**0.80**	**Easy**	**0.40**	**Moderate**	**Retain**
Item42	**14**	**6**	**0.67**	**Moderate or Average**	**0.53**	**High**	**Retain**
Item43	**15**	**14**	**0.97**	**Very Easy**	**0.07**	**Low**	**Reject**
Item44	**14**	**13**	**0.90**	**Easy**	**0.07**	**Low**	**Reject**
Item45	**8**	**5**	**0.43**	**Moderate or Average**	**0.20**	**Moderate**	**Retain**
Item46	**15**	**14**	**0.97**	**Very Easy**	**0.07**	**Low**	**Reject**
Item47	**15**	**8**	**0.77**	**Easy**	**0.47**	**High**	**Retain**
Item48	**15**	**12**	**0.90**	**Easy**	**0.20**	**Moderate**	**Retain**
Item49	**15**	**11**	**0.87**	**Easy**	**0.27**	**Moderate**	**Retain**
Item50	**12**	**8**	**0.67**	**Moderate or Average**	**0.27**	**Moderate**	**Retain**
Item51	**3**	**5**	**0.27**	**Moderate or Average**	**-0.13**	**Low**	**Reject**
Item52	**8**	**4**	**0.40**	**Moderate or Average**	**0.27**	**Moderate**	**Retain**

Item53	15	11	0.87	Easy	0.27	Moderate	Retain
Item54	14	12	0.87	Easy	0.13	Low	Reject
Item55	14	6	0.67	Moderate or Average	0.53	High	Retain
Item56	13	3	0.53	Moderate or Average	0.67	High	Retain
Item57	15	6	0.70	Moderate or Average	0.60	High	Retain
Item58	13	8	0.70	Moderate or Average	0.33	Moderate	Retain
Item59	14	7	0.70	Moderate or Average	0.47	High	Retain
Item60	13	10	0.77	Easy	0.20	Moderate	Retain
Item61	9	10	0.63	Moderate or Average	-0.07	Low	Reject
Item62	15	8	0.77	Easy	0.47	High	Retain
Item63	15	9	0.80	Easy	0.40	Moderate	Retain
Item64	9	6	0.50	Moderate or Average	0.20	Moderate	Retain
Item65	4	4	0.27	Moderate or Average	0.00	Low	Reject
Item66	3	2	0.17	Difficult	0.07	Low	Reject
Item67	12	6	0.60	Moderate or Average	0.40	Moderate	Retain
Item68	15	12	0.90	Easy	0.20	Moderate	Retain
Item69	15	5	0.67	Moderate or Average	0.67	High	Retain
Item70	15	9	0.80	Easy	0.40	Moderate	Retain
Item71	10	3	0.43	Moderate or Average	0.47	High	Retain
Item72	9	8	0.57	Moderate or Average	0.07	Low	Reject
Item73	15	6	0.70	Moderate or Average	0.60	High	Retain
Item74	15	6	0.70	Moderate or Average	0.60	High	Retain
Item75	15	6	0.70	Moderate or Average	0.60	High	Retain
Item76	15	6	0.70	Moderate or Average	0.60	High	Retain
Item77	15	6	0.70	Moderate or Average	0.60	High	Retain
Item78	15	6	0.70	Moderate or Average	0.60	High	Retain
Item79	15	6	0.70	Moderate or Average	0.60	High	Retain
Item80	15	6	0.70	Moderate or Average	0.60	High	Retain

Item analysis:

After the evaluation of the score a table was made in an Excel sheet with the headings “Item number”, “Upper group (27%, N=15) “, “Lower group (27%, N=15)”,” Difficulty Index”, “Difficulty Value Decision”, “Discriminating Index”, “Discriminating value Decision”, “Final

Decision". The scores of 57 respondents were arranged in descending order of the total scores. In the case of ties, students getting higher scores in the first few items were put at the top. The top 27% of answer sheets and the bottom 27% of sheets were used for comparisons. The difficulty index was calculated. Items having a difficulty index between 0.25 and 0.75 and discriminating power above 0.25 only were selected for the final test.

(B) Content validity: The appropriateness of the content of the test was checked by content validity. To establish the content validity of the achievement test on gifted education an expert opinion survey was conducted. Experts were from the field of education, teacher education, inclusive education, etc. They were asked to judge the appropriateness of the items on the test. To have a universal and unbiased view about the test experts were all over the country. The experts have been chosen to give their expertise on the following aspects of the achievement test:

- Language
- Topics covered (modules
- Learning domains- knowledge, understanding and application
- Blueprint of the test

Most of the experts have positive opinions about the topic. The blueprint was appreciated. The contents of the module were highly appreciated. A few modifications from the experts in terms of the number of questions and syllabus were incorporated. Some items have been recommended to be dropped from the test.

Some key suggestions by the experts

- Reduce the number of items and also time duration.
- The language of items in some cases needs modification.
- Add some descriptive questions related to gifted education.
- There is a contradiction regarding the difficulty level of questions. The majority of experts from an education background suggested that the questions are appropriate but few experts are of the view that the difficulty level should be increased.
- Repeated questions should be deleted.

The final draft of the achievement test

After item analysis, 55 items were accepted out of the initial 80 items. To incorporate expert opinion 1 more item was added. In this way, the final test paper containing 56 questions with a total mark of 60(55 -1 mark and 1 subjective type carrying 5 marks) was made.

(1. e) Reliability of the tool

The reliability of a tool refers to its consistency and stability in producing similar results under consistent conditions. In the context of achievement tests, reliability refers to the consistency of item difficulty and discrimination parameters. Several types of reliability can be assessed for a tool or test:

- Test-Retest Reliability
- Parallel forms Reliability
- Split-Half Reliability
- Rational equivalence method

Here for the study split-half reliability was employed because it is most commonly used for objective-type tests.

Table 3.5: Reliability Statistics

Cronbach's Alpha	Part 1	Value	.802
		N of Items	40[a]
	Part 2	Value	.897
		N of Items	40[b]
	Total N of Items		80
Correlation Between Forms			.573
Spearman-Brown Coefficient	Equal Length		.729
	Unequal Length		.729
Guttman Split-Half Coefficient			.711

The split-half method (odd-even) was used to test the reliability of the score obtained by 80 items Spearman-Brown formula was used to estimate the reliability of the whole test, The reliability of the whole test was .729 which indicates the test was high reliability.

(2) Instructional modules on the concepts of Gifted Education

Instructional Modules were constructed based on the instructional system design model. For this researcher reviewed various existing available instructional system design models and found the ADDIE model the most suitable. Overall, 8 modules in the form of two courses have been developed following major steps of Analysis, Design, Development, Implementation, and Evaluation. The details of the development and validation of the modules have been covered in the fourth chapter titled "Development and Validation of Instructional Modules on the Concepts of Gifted Education"

. The self-instructional module was prepared based on the outcome of the following activities;

- Discussion with experts from the field of education, senior teachers, principals and psychologists.
- The researcher studied thoroughly the B.Ed. syllabus and the parts which are not included were taken into consideration.

Based on their comments and feedback the following was undertaken-

• Finalization of the topics for the module based on the outcomes of the views of the experts.
• Discuss the topics with a selected group of senior teachers, principals, experts from the education field to validate the content
• Prepare the material and get it validated by the experts
• Finalize the material, and get it printed.

The total time taken for this phase was approximately six months. There are eight modules consisting of two courses.

(3) Educational needs for gifted education Scale by Cavide Demirci and Guzin Igci

(a) Description of the tool

The researcher has adapted the educational needs for the gifted education scale Cavide Demirci and Guzin Igci. It has been adapted according to the needs of B.Ed. students- Teachers of Nagaland. For this, the items have been revised and their language has been checked sitting with the supervisor and other experts finally all the 65 items have been adapted according to the level of B.Ed. student-teachers of Nagaland.

The scale was created to identify the education needs of teachers of gifted and talented students. At the end of the study, a 5-point Likert scale was developed having 65 items and one factor, a good level of explained variance (66%), and a high level of validity and reliability

- Pearson correlation analysis has been carried out to identify the distinctiveness of scale items.
- Exploratory factor analysis (EFA) has been implemented to recognize and summarize the data of the scale, to determine the implicit structure of the scale and accordingly to collect the data to test the construct validity of the scale.
- Cronbach's Alpha internal consistency coefficient has been calculated with the aim of determining the reliability of the scale.

As per the author, the scale has been designed to identify the educational needs of teachers of gifted and talented students employed at a specific institution named BILSEMs. However, it could also be used to determine the educational needs of teachers employed at any formal training school. That's why the researcher adopted it for the B.Ed. student teachers of Nagaland taking pre-service training for teacher education.

Dimensions of the items of the scale

The scale is designed to specify the educational needs of teachers of gifted and talented students. The scale has six dimensions as follows:

- Field Knowledge
- Planning of Educational management
- Creating teaching settings
- Management of the Learning and Teaching process
- Testing and Evaluation
- Communication and collaboration

NORMS

Since the scale that has been adopted did not have norms, the researcher has created norms for the overall scores of the B.Ed. student-teachers and find out the different levels of the educational need for gifted education of B.Ed. student-teachers of Nagaland. The details of the table are as follows:

Table 3.6: Overall Norms

Avg= 235.40

STD= 35.65

S.No.	Raw scores	Z scores
1	163	-2.03
2	164	-2
3	165	-1.97
4	166	-1.95
5	167	-1.92
6	168	-1.89
7	169	-1.86
8	170	-1.83
9	171	-1.81
10	172	-1.78
11	173	-1.75
12	174	-1.72
13	175	-1.69
14	176	-1.67
15	177	-1.64
16	178	-1.61
17	179	-1.58
18	180	-1.55
19	181	-1.53
20	182	-1.5
21	183	-1.47
22	184	-1.44
23	185	-1.41
24	186	-1.39
25	187	-1.36
26	188	-1.33
27	189	-1.3
28	190	-1.27
29	191	-1.25
30	192	-1.22
31	193	-1.19
32	194	-1.16
33	195	-1.13
34	196	-1.11
35	197	-1.08
36	198	-1.05

37	**199**	**-1.02**
38	**200**	**-0.99**
39	**201**	**-0.96**
40	**202**	**-0.94**
41	**203**	**-0.91**
42	**204**	**-0.88**
43	**205**	**-0.85**
44	**206**	**-0.82**
45	**207**	**-0.8**
46	**208**	**-0.77**
47	**209**	**-0.74**
48	**210**	**-0.71**
49	**211**	**-0.68**
50	**212**	**-0.66**
51	**213**	**-0.63**
52	**214**	**-0.6**
53	**215**	**-0.57**
54	**216**	**-0.54**
55	**217**	**-0.52**
56	**218**	**-0.49**
57	**219**	**-0.46**
58	**220**	**-0.43**
59	**221**	**-0.4**
60	**222**	**-0.38**
61	**223**	**-0.35**
62	**224**	**-0.32**
63	**225**	**-0.29**
64	**226**	**-0.26**
65	**227**	**-0.24**
66	**228**	**-0.21**
67	**229**	**-0.18**
68	**230**	**-0.15**
69	**231**	**-0.12**
70	**232**	**-0.1**
71	**233**	**-0.07**
72	**234**	**-0.04**
73	**235**	**-0.01**
74	**236**	**0.02**
75	**237**	**0.05**
76	**238**	**0.07**
77	**239**	**0.1**
78	**240**	**0.13**
79	**241**	**0.16**
80	**242**	**0.19**
81	**243**	**0.21**
82	**244**	**0.24**

83	**245**	**0.27**
84	**246**	**0.3**
85	**247**	**0.33**
86	**248**	**0.35**
87	**249**	**0.38**
88	**250**	**0.41**
89	**251**	**0.44**
90	**252**	**0.47**
91	**253**	**0.49**
92	**254**	**0.52**
93	**255**	**0.55**
94	**256**	**0.58**
95	**257**	**0.61**
96	**258**	**0.63**
97	**259**	**0.66**
98	**260**	**0.69**
99	**261**	**0.72**
100	**262**	**0.75**
101	**263**	**0.77**
102	**264**	**0.8**
103	**265**	**0.83**
104	**266**	**0.86**
105	**267**	**0.89**
106	**268**	**0.91**
107	**269**	**0.94**
108	**270**	**0.97**
109	**271**	**1**
110	**272**	**1.03**
111	**273**	**1.05**
112	**274**	**1.08**
113	**275**	**1.11**
114	**276**	**1.14**
115	**277**	**1.17**
116	**278**	**1.2**
117	**279**	**1.22**
118	**280**	**1.25**
119	**281**	**1.28**
120	**282**	**1.31**
121	**283**	**1.34**
122	**284**	**1.36**
123	**285**	**1.39**
124	**286**	**1.42**
125	**287**	**1.45**
126	**288**	**1.48**
127	**289**	**1.5**
128	**290**	**1.53**

129	**291**	**1.56**
130	**292**	**1.59**
131	**293**	**1.62**
132	**294**	**1.64**
133	**295**	**1.67**
134	**296**	**1.7**
135	**297**	**1.73**
136	**298**	**1.76**
137	**299**	**1.78**
138	**300**	**1.81**
139	**301**	**1.84**
140	**302**	**1.87**
141	**303**	**1.9**
142	**304**	**1.92**
143	**305**	**1.95**
144	**306**	**1.98**
145	**307**	**2.01**
146	**308**	**2.04**
147	**309**	**2.06**
148	**310**	**2.09**
149	**311**	**2.12**
150	**312**	**2.15**
151	**313**	**2.18**
152	**314**	**2.2**
153	**315**	**2.23**
154	**316**	**2.26**
155	**317**	**2.29**
156	**318**	**2.32**
157	**319**	**2.35**
158	**320**	**2.37**
159	**321**	**2.4**
160	**322**	**2.43**
161	**323**	**2.46**
162	**324**	**2.49**
163	**325**	**2.51**

Z score range	**Raw score range**	**Grade**	**Description of the Levels** *for educational needs of Gifted Education (GE) in B.Ed. student-teachers*
+2.01 and above	**307 and above**	**A**	**Extremely high needs for GE**

+1.26 to +2.00	**281 to 306**	**B**	**High needs for GE**
+0.51 to +1.25	**254 to 280**	**C**	**Above-average needs for GE**
-0.50 to +0.50	**218 to 253**	**D**	**Average needs for GE**
-0.51 to -1.25	**191to 218**	**E**	**Below-average needs for GE**
-1.26 to -2.00	**164 to 190**	**F**	**Less need for GE**
-2.01 and below	**163 and below**	**G**	**Extremely Less need for GE**

3.7 Statistical techniques used:

For the present study, the investigator used descriptive statistical techniques such as Mean, Frequency tables, Standard Deviation, and Bar graphs. Inferential statistics like Pearson's Product Moment Correlation, 't' test, were used in the study. The raw data obtained from the tools was coded. IBM version 20.0 of SPSS (Statistical Package of Social Sciences) and the Microsoft Excel package were utilized for the statistical analysis of the data.

CHAPTER- IV

DEVELOPMENT AND

CHAPTER IV

Development and Validation of Instructional Modules

Chapter IV of any research report generally discusses about data analysis and result interpretation. However, in the case of the present study, the researcher proposed one more chapter “Development and Validation of Instructional Modules” on the concepts of gifted education as chapter IV of the study. Chapter IV of the study specifically fulfills objectives 1 and 2 of the study by recording and presenting details of activities performed during the

development of the instructional modules of the study. Let us recall objectives 1 and 2 of the study again as follows before embarking upon the details of the development and validation of the instructional modules:

Objective 1. To analyze and select an appropriate *instructional system design model* for developing instructional modules for B.Ed. student-teachers on concepts of gifted education.

Objective 2. To develop and validate instructional modules for B.Ed. student-teachers on concepts of gifted education.

To achieve objective 1 of the study, the researcher, along with her supervisor, who has specialized in the field of educational technology and e-content development, studied various Instructional system design models through books, OERS, and research articles to identify the most suitable ISD model for the progress of the study for the development of effective instructional modules on the concepts of gifted education. For this, it is also important to understand the importance and need of ISD models in developing effective instructional systems. Let us briefly overview the concept of ISD models and their significance.

4.1 Concept of Instructional System Design (ISD) Model

Instructional system design models are a planned process of creating a course or curriculum. They are the blueprint that includes everything from pre-learning to assessment. Instructional design can be defined as the practice of creating instructional experiences to help students learn easily and effectively. It is a method used to construct instructional material. It helps the learner to gain effective instructions.

4.1.1 Need for Instructional System Design in B.Ed. course of Nagaland

In the effective teaching process, instructional design plays an important role. It acts as a road map for the development of a course. The efficacy of any course depends upon how well it is being designed and executed. As per Kurt (2021), an instructional system design model provides guidelines to organize appropriate pedagogical scenarios to achieve instructional goals. For developing the concepts of perspective teachers about gifted education, instructional designing under some instructional system design models will be effective and applicable. As B.Ed. student-teachers are adult learners; therefore, their learning needs are specific. In the context of Nagaland, there are even more situational disadvantages regarding internet connectivity, electricity cuts, and other resource limitations. In such unique circumstances, a

systematic plan specific to their needs for designing and developing instructional modules is certainly the need of the hour.

4.1.2 Instructional System Design Models for the Study

There are numerous instructional system designs that have been developed and are being developed each day. Educators, academicians, and psychologists from various fields have shown great interest in developing instructional design models for modern-day blended, online, and offline instructional systems. The researcher has studied many instructional design models and theories of instruction for the study. Out of them, the following instructional design models have been studied in detail due to their popularity and frequent usage. Following is the description of these instructional system design models: -

- ADDIE Model (1975)
- Dick and Carey Model (1978)
- Merrill's Principles of Instruction (2002)
- Kemp's Design Model (2004)
- Bloom's Taxonomy (1956)
- Action Mapping by Cathy Moore (2008)
- Gagne's Nine Events of Instructions

All models are based upon certain principles of instruction. The model should be selected as per learners' need for which type of course is being developed. A few models are explained below: -

(i) ADDIE Model- (Analyze, Design, Develop, Implement, and Evaluate): This is the most accepted and commonly used model for instructional development. Although developed in the 1970s for the U.S. Military, this model remains the most commonly used model for instructional design because of its simplicity yet highly practical nature. This model includes *five interlinked parts*:

- Analysis
- Design
- Development
- Implementation
- Evaluation

The purpose of this model is to ensure a structured framework for every course each time they are created. It is a generic step-by-step framework. In the analysis phase, the instructional designer will try to compile the analysis of needs and objectives. In the design phase, learning objectives are identified, and methods and approaches for providing instructions will be divided. Third is the development phase, which is when content is produced and completed. Fourth is the implementation phase; training content is prepared and delivered. In the end evaluation phase, the success of the entire program is decided. Both formative and summative evaluations are carried out to determine the faults.

(ii) Dick and Carey Model: It is also known as Systems Approach Model. This is another prominent instructional design model. The model was originally published in 1978 by Walter Dick and Lou Carey in their book "The Systematic Design of Instruction."

According to Yavuz (2007), this model consists of the following *ten components*:

1. Assess needs to identify goals.
2. Conduct instructional analysis.
3. Analyze learners and contexts.
4. Write performance objectives.
5. Develop assessment instruments.
6. Develop an instructional strategy.
7. Develop and select instructional materials.
8. Design and conduct the formative evaluation.
9. Revise instructions.
10. Design and conduct the summative evaluation.

The Dick and Carey Model emphasizes the relationship between content, context, instructions, and teaching.

(iii) Merrill's principle of instruction: Merrill's principles of instruction are a task-based approach that focuses on different types of learning. So, it is a problem-based theory. Its main focus is that learning is advanced when:

- Learning is problem/task-centered, and learners are engaged in solving the real world.
- Existing knowledge is activated as a foundation for new knowledge.
- New knowledge is demonstrated to the learner.
- New knowledge is applied by the learner.

- New knowledge is integrated into the learner's world."

So, the *five rules of instruction* are:

1. Problem-based
2. Activation
3. Demonstration
4. Application
5. Integration

(iv) Kemp Design Model: The Kemp design model has a circular shape, which conveys that the design process is a continuous cycle. So, continuous planning, design, and evaluation are required to gain quality instructions. The *nine core elements* of the Kemp instructional design model are:

1. Select the specific goals and identify the instructional issues.
2. Identify the characteristics and needs of the learners that should be taken into account.
3. Identify subject matter and analyze task contents related to stated goals and purposes.
4. Define the instructional objectives and learning outcomes.
5. Ensure the component for each component of instruction is sequentially and logically presented.
6. Design instructional strategies to enable learners to master the content and achieve the learning outcomes.
7. Plan the instructional message and the appropriate mode of delivery.
8. Develop the evaluation instruments to achieve the assessment objectives.
9. Select appropriate resources that will support the teaching and learning activities."

(v) Bloom's Taxonomy: Taxonomy means a system of classification. So, Bloom's taxonomy of learning divided instructional objectives into three domains: cognitive, affective, and psychomotor. It divided educational objectives into six major groups in increasing order of students' grasp: knowledge, comprehension, application, analysis, synthesis, and evaluation. The taxonomy has been found useful not only for purposes of evaluation but, more importantly, for designing courses and curricula (Christopher et al., 2004). It was later revised by Anderson and Krathwohlinin (2001) and is known as the 'Revised Taxonomy.' As per the revised

taxonomy, six levels of cognitive learning are remembering, understanding, applying, analyzing, evaluating, and creating.

(vi) Action Mapping by Cathy Moore: It takes a visual approach to instructional design. Primarily, it is used in business. It's a process that helps avoid information dumps and create more actively centered training. Its goal is to help designers.

1. Point out the business goal.
2. Recognize what people need to do to reach that goal.
3. Design activities that help people practice each behavior.
4. Identify the minimum information people need to complete each activity.

(vii) Gagne's nine events of instruction: It is a well-ordered instructional design process that addresses the different learning conditions. Gagne's instructions are given below:

1. Gain the attention of the students.
2. Inform students of the objectives.
3. Stimulate recall of prior learning.
4. Present the content to the learner.
5. Provide learning guidance.
6. Elicit performance/practice.
7. Provide feedback
8. Assess information.
9. Enhance retention and transfer to the job.

Each of the above Instructional design models is very helpful for designing and planning e-learning, offline, and blended learning systems. However, the researcher has selected the most appropriate ISD model on some important considerations of the study, namely the learning needs of the learners of study, local conditions, and pedagogical prioprities.

4.1.3 Selection of Instructional System Design Models for the Study

According to the nature of the course and the types of learners, a model can be selected for course design. Every model is unique by nature. Some of the models follow a theoretical approach, while others are practical in nature. The researcher considered the following major criteria for the selection of the appropriate ISD model for the study:

- ✓ Number of stages/elements of ISD models

- ✓ Ease of implementation
- ✓ Principles of self-regulated learning for adult learners
- ✓ Suitability of ISD models according to the conditions of Nagaland

To provide a more objective approach to the selection of the appropriate ISD model for the study, the following rubric of selection criteria has been prepared by the researcher:

Selection Criteria → / ISD Model under consideration ↓	**Structural simplicity** (***No. of steps, liner/non-linear)*** **(1-5)***	**Ease of implementation** ***(Complexity of each step)*** **(1-5)***	**User-centricity** ***(Does it cater to the needs of adult learners?)*** **(1-5)***	**Pedagogical considerations** (***To what extent does it facilitate self-regulated adult learning?)*****(1-5)***	**Customization possibilities** ***(accommodation of local situations, revision flexibility etc.)*** **(1-5)***	**Applicability suitability in diverse situations** **(1-5)***	**Total score**
ADDIE	5	5	3	4	5	5	**27**
The Dick and Carey Model	3	3	4	4	2	3	**19**
Kemp's Design Model	4	3	5	3	4	3	**22**
Gagne's nine events of instruction	3	3	5	4	3	4	**22**
***1=Not appropriate, 2=Slightly appropriate, 3=Moderately appropriate, 4= Fairly appropriate, 5=Highly appropriate**							

Table 4.1 Selection Criteria Table of appropriate ISD Model for the Study

On the basis of the above rubrics-based analysis and exploring B.Ed. course syllabus of Nagaland since 2015, there has been no element of gifted education in the syllabus. Nagaland, as a geographically disadvantaged state, has limited resources, and also, due to the specific need for a B.Ed. student-teachers of Nagaland, the most suitable ISD model for the development of instructional modules on concepts of gifted education was found to be the ADDIE model of instructional system design. It is considered to be the foundation ISD model, and after studying various models, researchers have found it to be the most suitable one due to its flexibility, wide applicability, and user-centricity.

4.2 Adoption of ADDIE Model for the Study

For the present research study on the development of instructional modules on the concepts of gifted education, the ADDIE model of instructional system design was followed. This is the best-known and most frequently used instructional design model. ADDIE is an acronym for Analyze, Design, Develop, Implement, and Evaluate - the five phases that are common to the practice of instructional design. ADDIE model was chosen because of its flexibility. This model is learner-friendly, too; it provides learners with their own pace of learning and understanding with feasible steps to follow. Following is the flow chart of the ADDIE model of Instructional System Design with the major activities involved under each step:

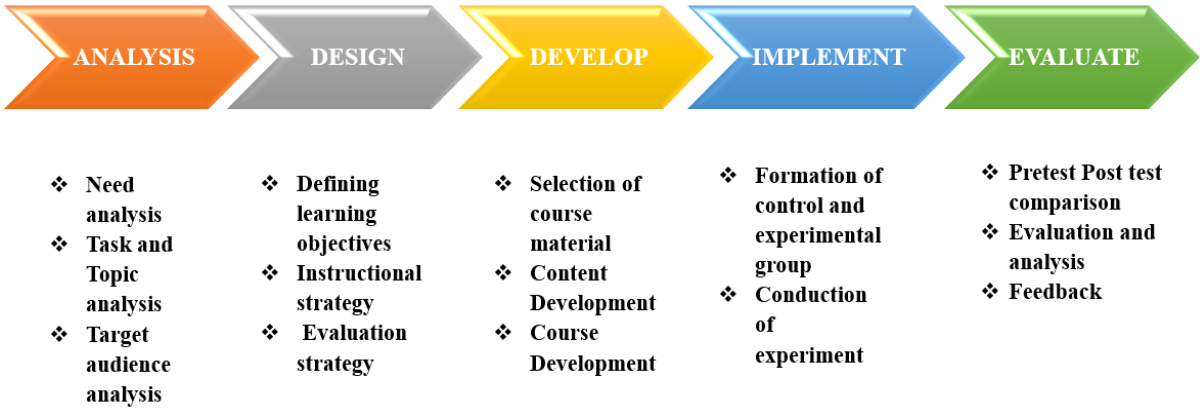

Figure 4.1 Integration of ADDIE Model of Instructional System Design in the Study

After incorporating the ADDIE instruction design model, the study progressed in five major phases of the model. The development process followed the five stages of the ADDIE ISD model, as depicted in Figure 4.1, and activities under them to develop quality instructional modules on concepts of gifted education for B.Ed. student teachers of Nagaland. The following sections of the chapter detail the activities carried out in each stage of the ADDIE model. Let us understand each stage of the ADDIE model with the activities in detail:

4.2.1 Step1: ANALYSIS

This phase involves gathering information about the target audience, their learning needs, existing knowledge, and any constraints or limitations. It is about understanding the problem and identifying the goals of the instructional design project. For the study, the analysis phase includes need analysis, task and topic (=content) analysis, and target user analysis.

(i) Need analysis

The main focus of the activity needs analysis is to identify gaps and deficiencies for improvement within a particular context. In this study, the analysis involves data collection through a questionnaire to understand current problems, challenges, and needs. The outcome of the need analysis is a clear understanding of the need for gifted education in Nagaland. To start this phase, the researcher has prepared a questionnaire to get student teachers' suggestions for the need for gifted education in Nagaland. This form is divided into two parts, namely, Part A: Introduction and Part B: Response. Part A summarizes the details of the research work undertaken to build an understanding of the problem. Part B is meant to record responses in the form of comments and suggestions regarding the topic. The responses from the student teachers were requested on three major aspects;

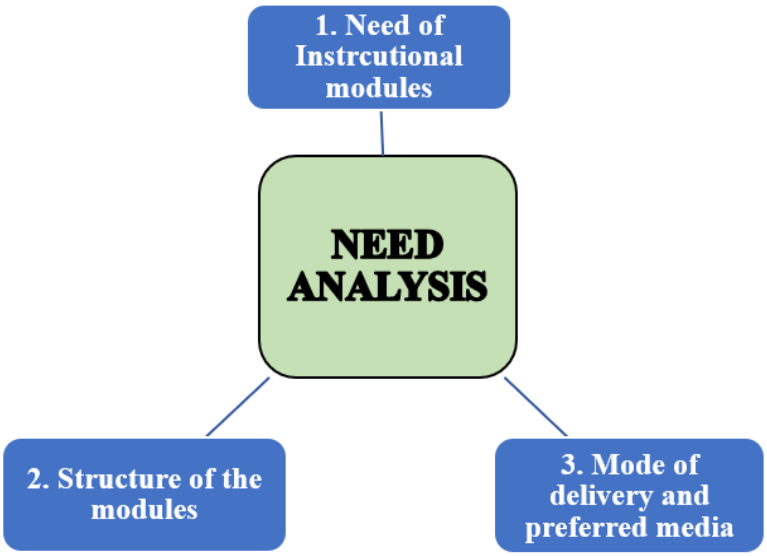

Figure 4.2: Dimension as three items of need analysis survey

(i) **Item1**-Need for the development of instructional modules for developing concepts of gifted education,

(ii) **Item2**-Feedback regarding the following proposed structure for the planned instructional modules on the concepts of gifted education:

Module 1: Concept of Giftedness
1. Meaning of Giftedness. 2. Kinds of Gifted learners 3. Myths about Gifted learners
Module 2: Understanding of Giftedness
1. Intelligence v/s Giftedness 2. Creativity and Giftedness 3. Characteristics of gifted learners
Module 3: Teaching of Gifted Learners
1. Identification of gifted leaners 2. Curriculum Models for Gifted learners 3. Instructional strategies of gifted learners.
Module 4:Gifted Education in the Indian Context
1. Gifted education in Indian policies and documents 2. Initiatives/schemes for gifted learners 3. Available tools for measuring giftedness

Table 4.2 Proposed topics for the instructional modules through the Need Analysis Survey

(iii) **Item3-**Suggestions for the preferable mode of delivery and appropriate forms of instructional modules.

- **Details of Need Analysis Survey**

For the study, 20 experienced teacher educators, special education experts, and professors working in the field of education and gifted education were requested to give their input. Some major suggestions given by them are as follows:

Item 1: Need for Instructional modules on the concepts of Gifted Education
1. *instructional materials make learning more interesting, practical, realistic, and appealing. I think that the development of this kind of module will help the B.Ed. Student teachers to participate effectively and actively in different teaching-learning processes for gifted children.* 2. *It is needed to develop instructional modules for developing concepts of gifted education in B.Ed. student-teachers. B.Ed. student-teachers need to understand the meaning of giftedness., the kinds of giftedness, and myths about giftedness. As they are going to deal with gifted children in the classroom, they need to understand the concept clearly.* 3. *In my opinion, every school should give special attention to foster the talent of the gifted children. Frankly speaking, the talent of these children is not recognized in*

majority of the schools of India. One of the reasons is the absence of trained teachers to handle these children. In Trinidad and Tobago (where I am staying at present), teachers put extra time and effort into promoting the talent of gifted children. I strongly support to develop an instructional module on gifted children for the B.Ed., student-teachers.

4. *The proposed module has covered multiple units which will be useful for the trainees to know about teaching gifted children during their training period. Additionally, I would suggest specifying the methods of teaching that would be more suitable for gifted children. Furthermore, include a topic on practical approaches that will guide the trainees to engage the gifted children.*
5. *In two-year B.Ed. course there is no paper/units included in developing concept of gifted education.*
6. *Yes, I strongly recommend the need for the development of an instructional module for developing the concept of gifted education. As the normal classroom discussion and the instructional objectives are particularly and largely formed for normal students, the theme is an urgent need for an effective module for gifted as well as slow learners. NEP 2020 has also stressed the importance of giving due attention to the needs and demands of each student.*
7. *The present research study during gift education at B.Ed. level, I am sure it is a very important area of research to develop some modules on gifted education*

Many gifted and creative students have been missed down the years. This is a huge loss to the society.

2) It is needed for permanent development and growth- for a happy satisfied existence.

3) it is needed for the progress of the nation/society as a whole. For the country to niche for itself in the Committee of Nations.

4) gifted/creative students have not been understood well by teachers and parents. they have been mistreated at times.

Item 2: Feedback regarding the proposed structure of modules

1. *Needs of the gifted learners.*

2. *Guidance and counseling strategies for gifted learners where career guidance can be added.*
3. *Myths about gifted learners.*

Module 3: 1) Identification of gifted learners.

2) Available tools for measuring giftedness.

3) Instructional strategies of gifted learners.

Module 4: 1) Gifted education in Indian policies and documents.

2) Initiatives and schemes for gifted learners.

3) Plan of action for the inclusion of gifted education in B.Ed. course.

Strategies for teaching gifted to students.

4) Understanding of contemporary issues in research and gifted education.

5) Teacher training - Gifted Education

6) mentoring and counseling gifted / parenting also.

7) this module structure needs to be in line with the CBCS guidelines units/credits etc.

8) may add another unit / repeat one with amendments and measurements.

9) in the fourth (4) unit- education groups can be added- acceleration, enrichment, grouping, etc.

Item 3: Suggestions for the preferable mode of delivery and appropriate forms of instructional modules.

1. *ICT-based teaching.*
2. *TPACQ*
3. *Online-*
4. *Hybrid.*
5. *Blended*
6. *Competency and Need-based teaching.*

7. *Flipped classroom.* *Blended mode with videos, audio, and classroom transactions. Four modules will be appropriate.* *Forms of Module: Print, Video, Online and Physical* *Numbers of Module: Changeable, difficult to say* *Provision of enriched curricular material/modules* *In the instruction module give special attention to self-directed/ self-regulated learning.* *Lecture method, supplemented/ supported by the use of PPT wherever suitable.*

Table 4.3 Major Suggestions from the Experts each item-wise

After content analysis of the expert's suggestions on each item of the survey, the following key categories of responses were identified:

- There is a need for gifted education in teacher education in Nagaland.
- The development of instructional materials makes learning more interesting, practical, realistic, and appealing.
- The mode of delivery should be blended form with videos, audio, and classroom transactions.
- Practical activities may be included.

(ii) Topic analysis

The study focused on the development and assessment of instructional modules for developing concepts of gifted education in B.Ed. student-teachers. To finally choose the module topics, the researcher incorporated item # 2 (refer to table 4.2) in the need analysis survey. The experts's comments helped in the logical clustering of module content, and finally, two distinct courses were finalized for 8 modules. course 1 deliberated on the concepts of giftedness, and Course 2 focused on the applicability of gifted education in teacher education. Following are the topics of gifted education that have been finally selected based on experts' suggestions:

Course 1: - Understanding & Nurturing Giftedness

Module 1- Fundamental Concepts of Giftedness

Module 2- Understanding Giftedness

Module 3- The Nature of Giftedness

Module 4- Nurturing Giftedness

Course 2: - Teacher Education for Gifted Education

Module 1- Gifted Education for Teacher Education

Module 2- Identification and curriculum need for the gifted education

Module 3- Principles & Models of Gifted Education

Module 4- Characteristics of Gifted Education Teachers

(iii) Target user analysis

For the present study B.Ed. student-teachers of Nagaland were interviewed. As in Nagaland, all are comfortable with English, so English medium was chosen. The content was decided to be presented both online and offline. They needed gifted education.

4.2.2 Step 2: Design

In this phase, instructional designers develop a blueprint or plan for the learning experience. This includes defining learning objectives, choosing instructional strategies, selecting the type of media and materials, sequencing content, and creating a detailed outline or storyboard in online content development. The following are the details of the activities under this step;

(i) Defining Learning Objectives

Before deciding the learning objective of the study. It was imperative to decide on the sequence and time allocation to administer any study module. For this, the researcher first prepared the credit-wise structure of each course. The developed structure also helped in deciding the length of the experiment conducted finally in the implementation step. Credit fixation also increases the preciseness of the instruction and facilitates learners. The following Table 4.4 describes the credit division and ideal hours each module to implement the modules of the study:

TOTAL DAYS FOR COURSE:1	Module wise hrs	CONTENT OF THE MODULES – 08 weeks programme	Hrs	Credits	Weeks in a month
		Course 1: Understanding and Nurturing Giftedness	60	4	4 weeks
6 days per module total 30 days	15	Module 1. Fundamental concepts of giftedness			
	15	Module 2. Understanding Giftedness			
	15	Module 3. The Nature of Giftedness			
	15	Module 4. Nurturing Giftedness			
TOTAL Hrs	60 HOURS				
TOTAL DAYS FOR COURSE:2	Module wise hrs	**Course 2: Teachers Education for Gifted Education**			
6 days per module total =30 days	15	Module 5: Gifted Education for Teacher Education	60	4	4 weeks
	15	Module 6: Identification and Curriculum Needs for the Gifted Education			
	15	Module 7: Principles and Models of Gifted Education.			
	15	Module 8: Characteristics of Gifted Education Teachers			
TOTAL Hrs	60 HOURS				
Administration of Modules in terms of hours, days and weeks			120 hrs	8 Credits	8 weeks

Table 4.4 Details of Instructional Modules credit division wise

After achieving appropriate sequencing of the study, as the first activity of step 2, the following specific learning objectives were identified and written based on the instructional goals to be achieved through each module of the study:

- **SPECIFIC LEARNING OUTCOMES OF THE STUDY EACH MODULE WISE**

- **Module 1**

By the end of this module, student-teachers should be able to:

- Describe the concept of inclusive education
- Give meaning and definitions of giftedness
- Differentiate giftedness from other related terms
- Discuss and compare concepts like intelligence, creativity, and giftedness

- **Module 2**

By the end of this module, student-teachers should be able to

- Describe various types of gifted learners
- Recognize and explain levels of giftedness
- Discuss various myths and understand realities about gifted learners
- Understand and explain the Importance of Giftedness

- **Module 3**

By the end of this module, student-teachers should be able to

- Identify and describe the cognitive, social, and emotional needs of gifted learners
- Recognize the characteristics of gifted and talented students and their special needs
- Understand the special needs of the gifted

- **Module 4**

By the end of this module, student-teachers should be able to

- Discuss the role of teachers and parents in nurturing giftedness
- Identify and support vocational needs for gifted learners
- Develop collaborative relationships with parents and community members to extend and enhance learning opportunities for gifted and talented students

- **Module 5**

By the end of this module, student-teachers should be able to

- Discuss giftedness from the historical perspectives in global and Indian contexts
- Explain the aims and importance of gifted education in teacher education

- **Module 6**

By the end of this module, student-teachers should be able to

- Understand how to identify gifted and talented students
- Analyze and use the available tools for identifying gifted students

- Describe enrichment and acceleration programs to enhance the learning opportunities for gifted students

➢ **Module 7**

By the end of this module, student-teachers should be able to

- Explain various theories and models of gifted education
- Identify numerous approaches to fulfil learning needs of gifted
- Describe different evaluation approaches for gifted learners

➢ **Module 8**

By the end of this module, student-teachers should be able to

- Understand and explain the role of teachers of gifted education
- Explain various Challenges for teachers of gifted education
- Analyse and describe the Global principles for professional teaching learning in Gifted Education

The above activity also decided the flow of the content, and the important step of deciding the sequence of the content of the study modules was also achieved by fixing the learning objectives of each module through *sequencing, credit fixation, and writing specific learning objectives*.

(ii) Instructional strategies

The instructional strategies were the most important points where learning is facilitated for the learners by using small activities and capturing the learners' (B.Ed. student teachers) interest in the content of the modules. Since, B.Ed. student teachers were adult learners; therefore, principles of heutagogy were kept in mind while designing the modules. the following prominent instructional strategies were incorporated:

- *Human instructor as facilitator*: The researcher adopted the offline classroom teaching strategy for the content of the modules to teach the participants of the experiment group.
- *Team teaching*: A few portions of the modules have been coordinated with the local college teacher to make B.Ed. student-teachers contextualize the needs of gifted education in Nagaland. For this, she utilized a team-teaching method and strategy.

- *Use of in-depth concept development:* Instead of developing many concepts of Gifted Education, a researcher focused on covering the depth of selected concepts by discussing their definitions, meaning, types, importance, etc.
- *Abundant textual content as pdf:* keeping the needs of the B.Ed. Student teachers, limited resources, limited internet facilities, and poor electricity supplies. The researcher heavily relied on textual material supplied as supporting notes to the study participants. The modules fulfilled their aim of developing in-depth knowledge and understanding of the concepts of Gifted Education.
- *Use of OER resources:* Due to limited resources, the researcher utilized various OERs, such as online videos, mobile applications, and websites. The text developed was kept in the English language, as Nagaland is predominantly an English-speaking state. The researcher has kept her approach learner-centric and promoted a self-paced anytime study of the study participants. The media choice for the study has been in the form of a printed booklet, which was a combination of written text and illustrations based on the text. Some videos related to gifted education also circulated among the B.Ed. student-teachers for home-based learning and assignments.

(iii) Evaluation strategies

As we know, assessment is an integral part of any effective instructional procedure. Therefore, for the present study, the researcher implemented both formative and summative evaluation strategies. The following evaluation strategies were adopted for the study during the experiment conduction:

- *Classroom discussion-based activities:* The modules have reflection-based small activities at various points of the teaching of the instructional modules.
- *Case studies:* The participants of the experiment group were given case studies in various modules as home-based assignments. It helped them to go deep into the concept taught in the class and collect proper evidence to come to a conclusion. It was a research-based approach to formative assessment.
- *Instructor asked questions*: The researcher, as an instructor of the experiment, asked various prompting, guiding, and supplementary questions to assess their understanding of the topics.

4.2.3 Step 3: Development

Here, the actual materials and resources are created based on the design plan. This involved writing content, developing multimedia elements, creating evaluation tools, and building a plan on paper. The whole process was carried out systematically and is described under the following heads:

(i) Text script writing
(ii) Achievement test preparation
(iii) OER incorporation
(iv) Evaluation items finalization
(v) Module validation

A. Writing of the First Draft of the Module-it involved the following activities;

1-Writing of learning objectives - With the help of a literature review and pilot study, the researcher wrote and refined the learning objectives

2- Scriptwriting- This module was for B.Ed. student-teachers of Nagaland. The text portion of the module was written in the English language.

1. Self-Check Exercises-self check exercise questions were written in the module.
2. Achievement Test- For the final evaluation, an achievement test was constructed. A detailed description of the development process is discussed in Chapter 3 under the head of tools of data collection.

B. Expert's Opinion on the first draft to Establish Content Validity of the Module

Content validity refers to how well a test covers all relevant parts of the construct it aims to measure. For establishing the content validity, a total of five experts were selected and their expert opinions on the given parameters were taken into consideration.

C. Second Draft of the Module

All the expert's opinions and suggestions were collected and analyzed by the researcher. Important suggestions regarding language and illustrations were received. These suggestions were incorporated.

D. Try Out of the Module

Try-out is mainly done to the feasibility of studying newly developed materials before carrying them out on a larger scale. For try-out, the revised second draft of the Module was given to 30 student-teachers from six B.Ed. colleges of Nagaland.

The outcome of this step was the final script as the booklet of instructional modules on the concepts of Gifted Education for B.Ed. student teachers. After this, the next step of the ADDIE was accomplished, as explained in the next heading.

4.2.4 Step 4: Implementation

This phase involves delivering the instructional materials to the target audience. During implementation, the course is put into action**.** For the administration of the instructional modules and conduction of the experiment, the researcher has obtained permission from one of the colleges in Kohima, Nagaland, called Modern Institute of Teacher Education. It was suitable for the study due to its availability and also the maximum intake of B.Ed. student-teachers in one semester, i.e., 100/semester. In consultation with the college principal, it has been found that the college will be available to conduct the experiment only for one month. So, based on the availability of the students, the dates from 25th October to 25th November 2023 have been finalized, and the researcher, with due permission from the department, went on with the experiment conduction. The schedule of the experiment is as follows:

S. No.	Week-wise Dates	No. of hours of instruction/wee	Topics/ Modules covered
Week 1			
1	**25-10-2023**	**CONDUCTION OF PRE-TEST**	
2	**26-10-2023**	**2.5 HOURS**	Fundamental concepts of giftedness
3	**27-10-2023**	**2.5 HOURS**	Intelligence, creativity, and giftedness
Week 2			
4	**30-10-2023**	**2.5 HOURS**	Kinds of gifted learners
5	**31-10-2023**	**2.5 HOURS**	Levels of giftedness
6	**01-11-2023**	**2.5 HOURS**	Myths about gifted learners, Importance of giftedness
7	**02-11-2023**	**2.5 HOURS**	Characteristics of the gifted with reference to cognitive, social, emotional, and moral aspects
8	**03-11-2023**	**2.5 HOURS**	Challenges of gifted education, Special needs of the gifted
9	**04-11-2023**	**2.5 HOURS**	Parenting the gifted
Week 3			
10	**06-11-2023**	**2.5 HOURS**	Formal and informal agencies supporting the gifted
11	**07-11-2023**	**2.5 HOURS**	Vocational needs for gifted learners
12	**08-11-2023**	**2.5 HOURS**	Historical perspectives of gifted education in the global context

13	**09-11-2023**	**2.5 HOURS**	Indian context of gifted education
14	**10-11-2023**	**2.5 HOURS**	Aims and importance of gifted education in teacher education
Week 4			
15	**13-11-2023**	**2.5 HOURS**	Need for identification of gifted learners for teachers
16	**14-11-2023**	**2.5 HOURS**	Common strategies & e-resources for gifted
17	**15-11-2023**	**2.5 HOURS**	Instruments for identification of the gifted
18	**16-11-2023**	**2.5 HOURS**	Creativity and intelligence testing
19	**17-11-2023**	**2.5 HOURS**	Principles of Gifted Education
20	**18-11-2023**	**2.5 HOURS**	Models of gifted education
Week 5			
21	**20-11-2023**	**2.5 HOURS**	Different approaches to giftedness: Western & Indian approaches
22	**21-11-2023**	**2.5 HOURS**	Evaluation approach for gifted learners
23	**22-11-2023**	**2.5 HOURS**	Role of teachers of gifted education
24	**23-11-2023**	**2.5 HOURS**	Challenges for teachers of gifted education
25	**24-11-2023**	**2.5 HOURS**	Professional ethics for the development of gifted education teachers
26	**25-11-2023**	**CONDUCTION OF POST-TEST**	

Table 4.5 Schedule of Experiment for the Administration of the Modules of the Study

Before conducting the experiment and preparation of the control and experimental groups of the study, experimental control was ensured by controlling two interfering variables, as 1 and 3-semester B.Ed. student teachers of the B.Ed. course and gifted education need levels identified through administering the Gifted education needs scale. The pre-test on the control and experimental groups was performed only after preparing the matched equivalent control and experimental groups based on two major controlling variables of the study. This way internal and external validity of the experiment of the study was ensured throughout the process of implementation.

4.2.5 Step 5: Evaluation

Finally, the effectiveness of the instructional materials was assessed through statistical analysis and interpretation of the study's findings. During this step, learners' feedback was discussed about instructional modules on gifted education and achievement tests. On face validity, most of the B.Ed. student teachers did not know the basic concepts of gifted education and many showed curiosity to learn and understand gifted education. They all

seemed to realize the importance of giftedness and felt the need to incorporate concepts of gifted education in B.Ed. curriculum of Nagaland. The quantitative results of the study have been discussed in chapters 4 and 5 of the study. The coming chapters provide comprehensive details of the analysis of the effectiveness of the instructional modules on the concepts of gifted education for B.Ed. student-teachers. With this, the evaluation step and all previous steps of the ADDIE model of institutional design are accomplished. Chapter 4 culminates here with the fulfillment of objectives 1 and 2 of the study discussed at the beginning of the chapter

CHAPTER- V

ANALYSIS AND INTERPRETATION OF THE DATA

CHAPTER-V

Analysis and Interpretation of the Data

Chapter V, analysis and interpretation of the data covers analysis, presentation, tables, and graphs of the findings and the interpretation of the results. This chapter has been arranged into two major sections for the study: (a) descriptive analysis and (b) inferential analysis. The descriptive analysis performed during the study describes the important characteristics of the sample in the form of percentages, means, etc., and other normality-related parameters. However, inferential analysis describes the characteristics of the population from the sample primarily by testing the hypotheses of the study.

For the systematic presentation of the results, chapter V of the study has been divided into two major sections and further into sub-sections. Let us understand the following section of the study as follows:

5.1 Section I—Descriptive analysis

The descriptive analysis of the study discusses and depicts its findings in the following sub-headings.

5.1.1 **Description of levels of educational needs for Gifted Education**

5.1.2 **Characteristics of the data before the experiment**

5.1.3 **Characteristics of the data after the experiment**

Let us pick each of the above headings one by one as follows:

5.1.1 Description of levels of educational needs for Gifted Education

The first sub-heading of section I- Descriptive analysis describes the sample characteristics in percentages for the formation of equivalent control and experimental groups. For this, the researcher has administrated the educational needs for gifted education scale for teachers adapted from the authors Cavide **Demirci and GUzin Igci** on the sample as all the 1st and 3rd semester 184 B.Ed. student-teachers of the Modern College of Teacher Education in Kohima. The norms table developed by the researcher was used to develop the levels of educational needs for gifted education for the B.Ed. student-teachers. The results are depicted in the following pie charts under the heading Description of levels of educational needs for gifted education:

(5.1.1.a) <u>Levels of educational needs for gifted education for all B.Ed. student-teachers</u>

Table 5.1: Levels of educational needs for gifted education for all B.Ed. student-teachers

Z- score range	**Raw score range**	**Grade**	**No. of Students**	**Description of the Levels** *Educational needs for Gifted Education (GE) in B.Ed. student-teachers*	**Percentage Educational Needs for Gifted Education (GE)**
+2.01 and above	**307 and above**	**A**	**15**	**Extremely high need for GE**	**8%**
+1.26 to +2.00	**281 to 306**	**B**	**14**	**High needs for GE**	**8%**
+0.51 to +1.25	**254 to 280**	**C**	**43**	**Above-average needs for GE**	**23%**
-0.50 to +0.50	**218 to 253**	**D**	**61**	**Average needs for GE**	**33%**
-0.51 to-1.25	**191 to 217**	**E**	**46**	**Below-average needs for GE**	**25%**
-1.26 to-2.00	**164 to 190**	**F**	**5**	**Less need for GE**	**3%**
-2.01 and below	**163 and below**		**0**	**Extremely Less needs for GE**	

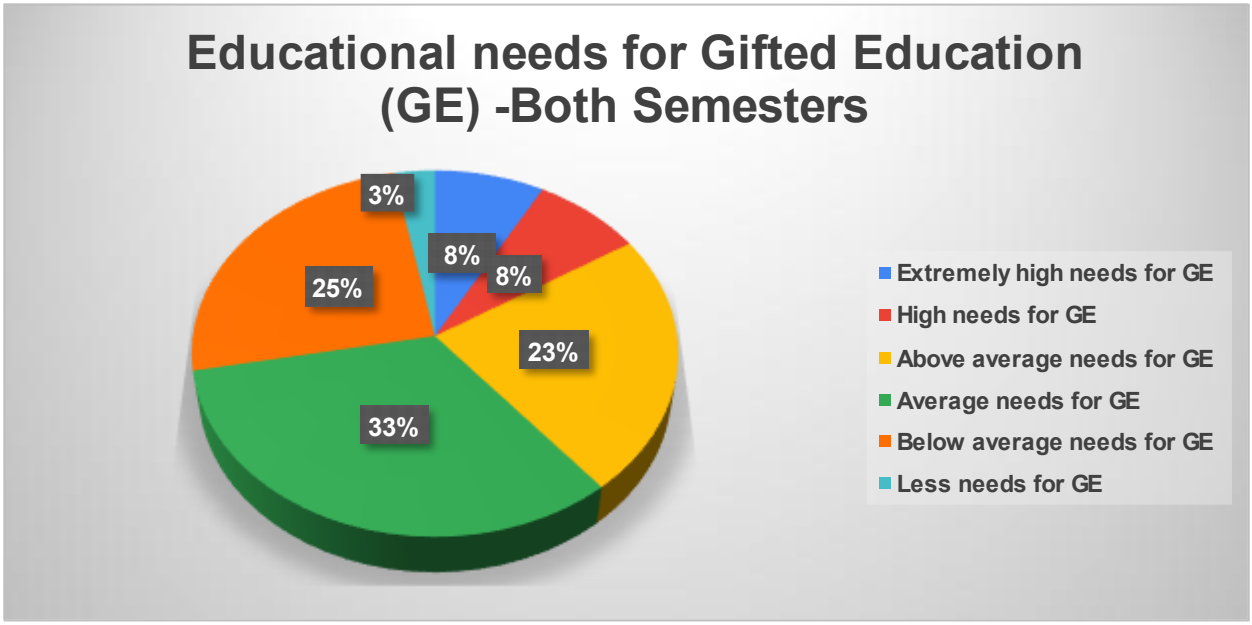

Figure5.1: Percentage distribution of educational needs for Gifted Education

Interpretation of the table

This table shows the percentage of distribution for the educational needs of gifted education. From the above table, the average need for gifted education percentage is maximum i.e. 33%. Above average is 23% and below average is 25%. Extreme high need and high need both are 8%. The remaining 3% comes under the category of less need for gifted education.

Thus, the above table shows that the majority of the student teachers needs gifted education.

5.1 .1 b) <u>Levels of educational needs for gifted education for all B.Ed. student-teachers of first semester</u>

Table 5.2: Levels of educational needs for gifted education for all B.Ed. student-teachers of first semester

Z- score range	**Raw score range**	**Grade**	**No. of students**	**Description of the Levels** *Educational needs for Gifted Education (GE) in B.Ed. student-teachers*	**Percentage Educational Needs for Gifted Education (GE)**
+2.01 and above	**307 and above**	**A**	**8**	**Extremely high needs for GE**	**9%**
+1.26 to +2.00	**281 to 306**	**B**	**8**	**High needs for GE**	**9%**
+0.51 to +1.25	**254 to 280**	**C**	**20**	**Above average needs for GE**	**21%**
-0.50 to +0.50	**218 to 253**	**D**	**30**	**Average needs for GE**	**32%**
-0.51 to-1.25	**191 to 217**	**E**	**24**	**Below average needs for GE**	**26%**
-1.26 to-2.00	**164 to 190**	**F**	**2**	**Less needs for GE**	**3%**
-2.01 and below	**163 and below**			**Extremely Less needs for GE**	

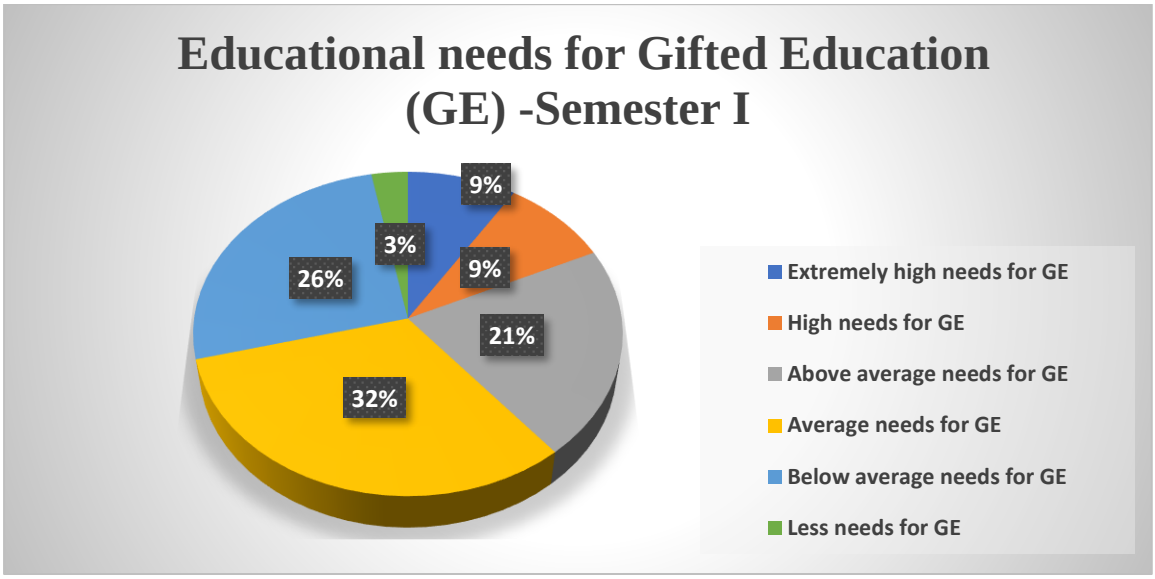

Figure5.2: Percentage distribution of educational needs for Gifted Education of the 1st-semester student-teachers

5. 1.1.b) <u>Levels of educational needs for gifted education for all B.Ed. student-teachers of the third semester</u>

Table 5.3: Levels of educational needs for gifted education for all B.Ed. student-teachers of the third semester

Z- score range	**Raw score range**	**Grade**	**No. of Students**	**Description of the Levels** *for educational needs of gifted education(GE) in B.Ed. students-teachers*	**Percentage Educational Needs for Gifted Education (GE)**
+2.01 and above	**307 and above**	**A**	**4**	**Extremely high needs for GE**	**5%**
+1.26 to +2.00	**281 to 306**	**B**	**7**	**High needs for GE**	**8%**

+0.51 to +1.25	254 to 280	C	24	Above average needs for GE	25%
-0.50 to +0.50	218 to 253	D	31	Average needs for GE	34%
-0.51 to-1.25	191 to 217	E	23	Below average needs for GE	25%
-1.26 to-2.00	164 to 190	F	3	Less needs for GE	3%
-2.01 and below	163 and below	G	0	Extremely Less needs for GE	

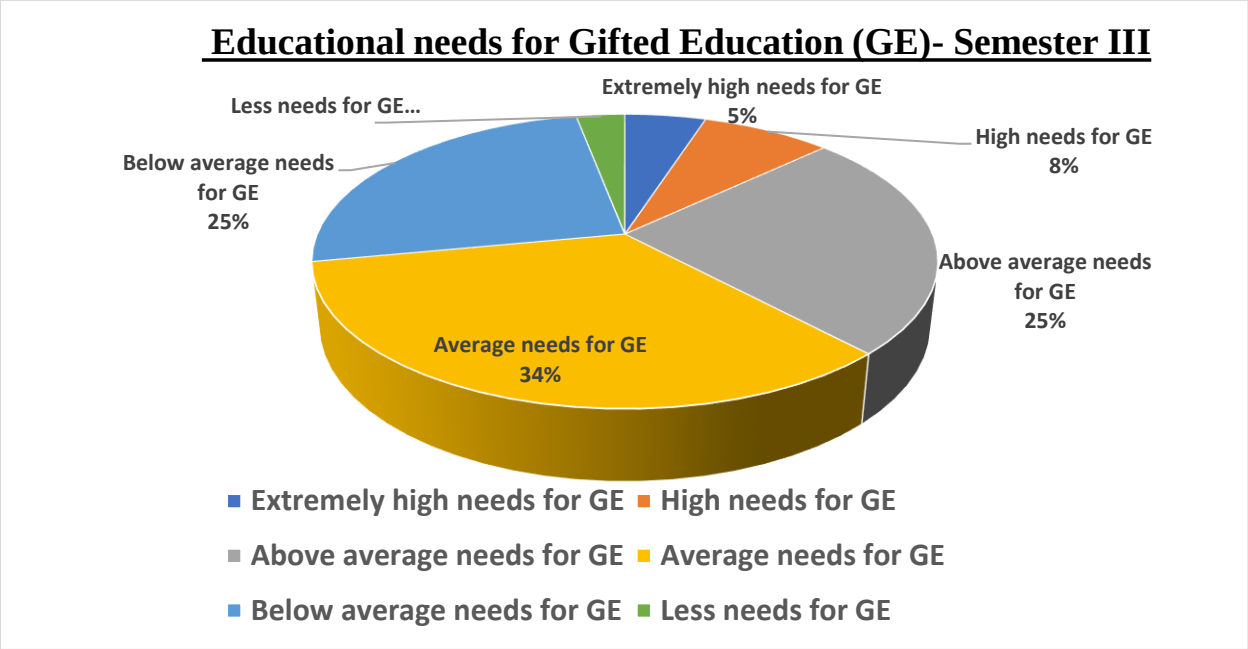

Figure5.3: Percentage distribution of educational needs for Gifted Education of the 3rd-semester student-teachers

Interpretation of the table 5.2 & 5.3

Both the table shows the percentage of distribution for the educational needs of gifted education. The result shows that there is an educational need for gifted education

The descriptive analysis of the study further comprises normality-related characteristics of the data. It is further described in terms of two, before the experiment and after the experiment. Let us understand them one by one as follows:

5.1.2 Characteristics of the data before the experiment

For the following calculation, the researcher developed an achievement test on the concepts of gifted education and administered it to the control and experimental groups. A pre-test was conducted to determine the B.Ed. student-teachers' previous knowledge about the concepts of gifted education. The equivalent control and experimental groups were already made using the educational needs for gifted education scale previously. Before starting the experiment, the pre-test scores obtained for both groups were collected, and then the various measures of central tendency, standard deviation, skewness, and kurtosis were calculated to draw a general picture of the data-related characteristics of both groups. The values of various statistics applied are discussed below in table 5.4 and figure 5.4.

Table 5.4: Measures of central tendency, standard deviation, skewness and kurtosis of pre-test scores of experimental and control groups in gifted education

Variables	Group	Mean	Median	Mode	SD	Skewness	Kurtosis
Gifted Education	Control	46	45	39	10.08	0.09	-1.25
	Experimental	47.96	47	40	9.29	0.32	-0.46

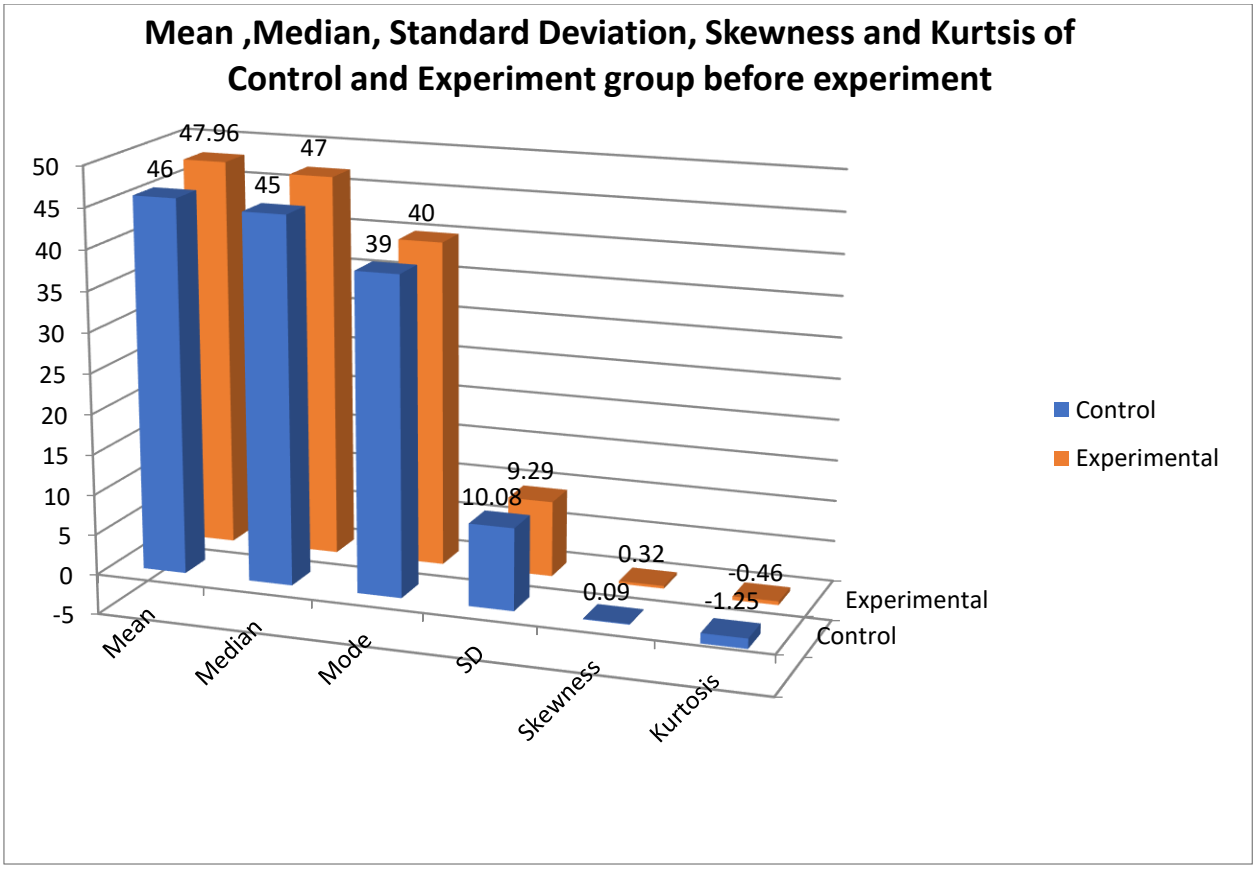

Figure 5.4: Mean, Median, Standard Deviation, Skewness, and Kurtosis of Control and Experiment group before the experiment

The mean of the scores obtained for the control and experimental groups are 46 and 47.96 respectively. This implies that the student teachers in both groups are more or less the same in their level of previous knowledge.

The median values of both groups are 45 and 47 respectively. The value shows that there is a slight difference in their achievement levels on the conceptual framework of gifted education.

The mode values of the control and experimental groups are 39 and 40. Again this value shows that two groups were more or less about the concept of gifted education before the experiment.

The SD for both groups are 10.08 and 9.29 respectively. Since the obtained standard deviation for the control and experiment groups is not high, it can be stated that the scores in both groups don't scatter very much.

The Skewness of the control and experimental groups are 0.09 and 0.32 respectively. This implies that there is positive Skewness of the control and experimental groups due to the

clustering of scores at the lower end of the distribution. The kurtosis for both groups are -1.25 and -0.46 respectively. This reflects that the two groups are closely distributed.

5.1.3 Characteristics of the data after the experiment

After experimenting, a post-test was conducted through the researcher-developed achievement test on the concepts of gifted education for the B.Ed. student-teachers. The post-test was conducted to find out the knowledge of the student-teachers on the concepts of gifted education. The post-test scores obtained for both groups were collected, and then the various measures of central tendency, standard deviation, skewness, and kurtosis were to draw a general picture of the performance of both groups. The values of various statistics applied are discussed below in table 5.5 and figure 5.5.

Table 5.5: Measures of central tendency, standard deviation, skewness, and kurtosis of pre-test scores of experimental and control groups

Group	Mean	Median	Mode	SD	Skewness	Kurtosis
Control	28.15	28	31	5.97	0.35	-0.22
Experimental	42.08	43	35	5.82	-0.36	-0.47

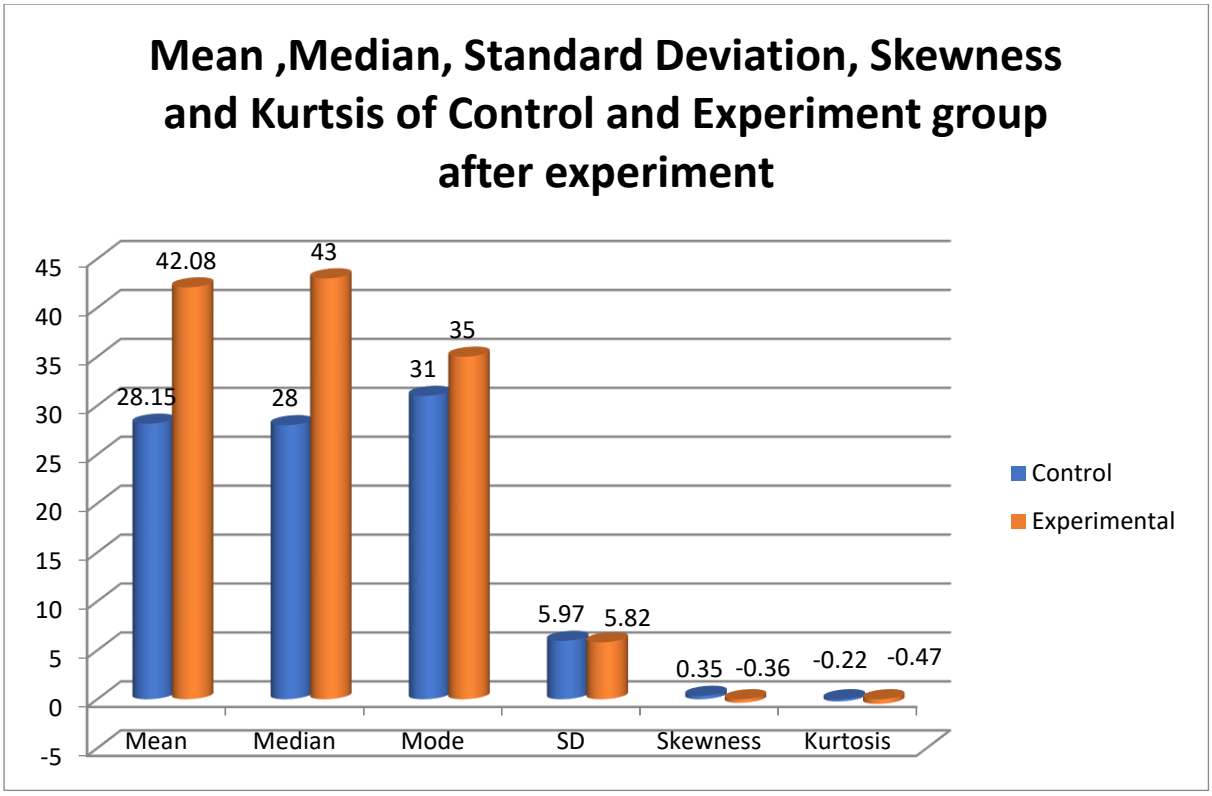

Figure 5.5

The mean of the scores obtained for the control and experimental groups are 28 and 42.08 respectively. This implies that the student teachers in experimental group obtained high marks when they studied the module. This indicates that instruction through developed module is effective in increasing learner's achievement.

The median values of both groups are 28 and 43 respectively. The value shows that the achievement of learners in the experimental group which has received treatment of instruction through modules is higher than the control group which has not received any treatment

The mode values of the control and experimental groups are 31 and 35. again this value shows that student teachers of experimental groups have achieved significantly high after treatment.

The SD for both groups are 5.97 and 5.82 respectively. Since the obtained standard deviation for the control and experiment groups are not high, it can be stated that the scores in both groups don't scatter very much.

The Skewness of the control and experimental groups are 0.35 and -0.36 respectively. This implies that there is positive Skewness of the control group due to the clustering of scores at the lower end of the distribution. The negative values of skewness of the

experimental group indicate that the student teachers who scored high marks are comparatively more in number than those who scored low marks. The kurtosis for both the groups are -0.22 and -0.47respectively. This reflects that the two groups are closely distributed.

5.2 Section II—Inferential Analysis

This part deals with the presentation of the results of the control and experimental groups through hypotheses testing of the study. The data have been presented in tables in terms of N=number of students, M=Means, SD=Standard deviation, t value=difference of means. The level of significance is 0.05. Let us consider each hypothesis under the objectives of the study:

Objective 1. To analyze and select an appropriate *instructional system design model* for the development of instructional modules for B.Ed. student-teachers on concepts of gifted education.

Objective 2. To develop and validate instructional modules for B.Ed. student-teachers on concepts of gifted education.

The above two objectives have been achieved through Chapter 4, "Development and validation of instructional modules"

Objective 3: To assess the effectiveness of instructional modules for B.Ed. student-teachers on concepts of gifted education, the following hypotheses 3.1 and 3.2 have been formulated:

3.1. To compare the performance level of the control group and experimental groups before and after the administration of the intervention.

3.1.1 There is no significant difference between the pre-test mean scores of the control group and experimental groups for overall scores.

3.1.2 There is no significant difference between the post-test mean scores of the control group and experimental groups for overall scores.

Table 5.6: T-value table of pre-test mean scores of the control group and experimental groups for overall scores in gifted education

Pre-test	N	M	SD	t- Value	

Group				Computed 't' value	Table 't' value of .05	significant/not significant @0.05 level
Control	60	46	10.08	1.002	1.96	Not significant
Experimental	60	47.96	9.29			

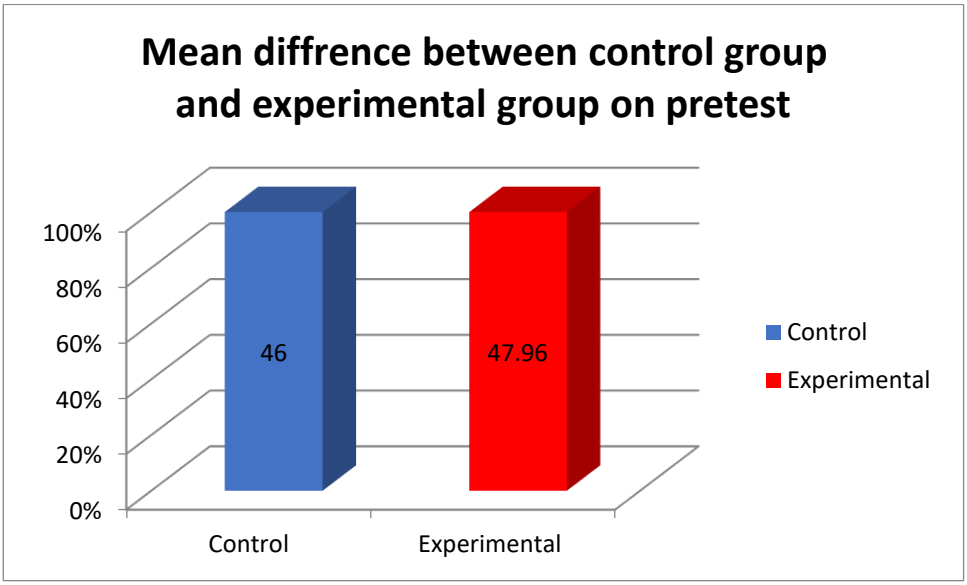

Figure 5.6

Table 5.6 shows that the mean scores on gifted education of the control and experimental group on the pre-test of student teachers are 46 and 47.96 respectively. The critical ratio between the two groups comes out to be 1.002 which is not significant at both levels. It means the control and experimental groups of student teachers were found to not differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis which states that" There is no significant difference between the pre-test mean scores of the control group and experimental group is accepted."

3.1.2 There is no significant difference between the post-test mean scores of the control group and the experimental group.

Table 5.7: T-value table of post-test mean scores of the control group and experimental groups for overall scores in gifted education

Group Post-test	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Control	60	28.15	5.97	12.90	1.96	Significant
Experiment	60	42.08	5.82			

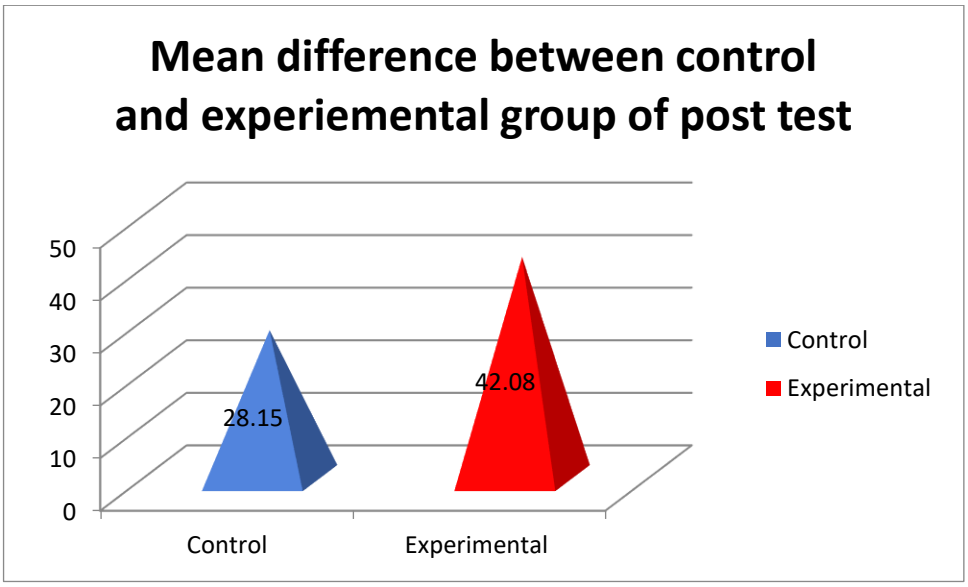

Figure 5.6

Table 5.7 shows that the mean scores on gifted education of control and experimental group of student teachers are 28.15 and 42.08 respectively. The critical ratio between the two groups comes out to be 12.09 which is significant at both levels. It means the control and experimental groups of student teachers were found differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis "There is no significant difference between the control and experimental mean scores of groups is rejected".

3.2. To compare experimental and control groups' pre-test and post-test scores to establish any significant influence of instructional modules on the experimental group.

3.2.1 There is no significant difference between the pre and post-test mean scores of the control group for overall scores.

3.2.2 There is no significant difference between the pre and post-test mean scores of the experimental group for overall scores.

Table 5.8: T-value table of pre and post-test mean scores of the control group for overall scores in gifted education

Group Control	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Pre-test	60	46	10.08	11.15	1.96	Significant
Post-test	60	28.15	5.97			

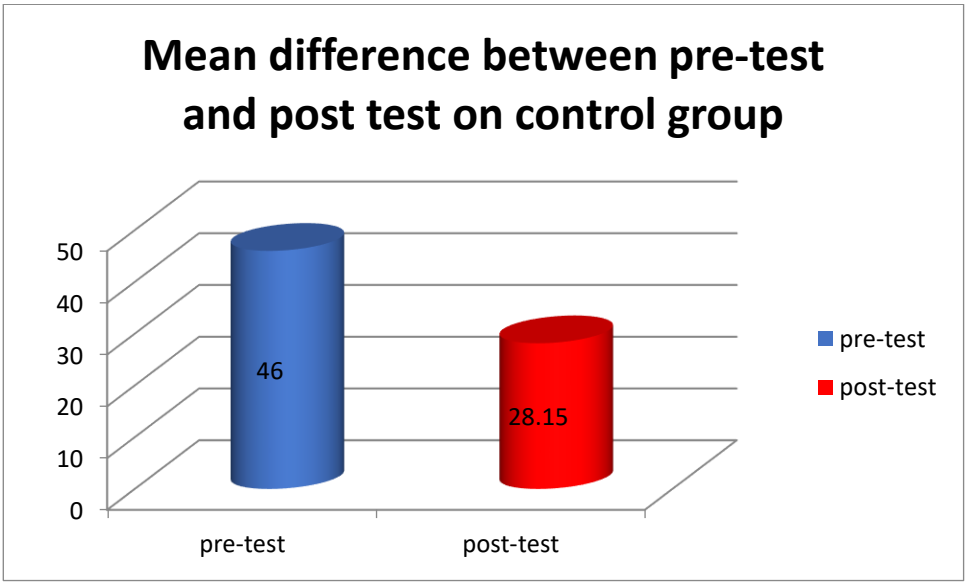

Figure 5.7

Table 5.8 shows that the mean scores on gifted education of the pre-test and post-test of the control group of student teachers are 46 and 28.15 respectively. The critical ratio between the two groups comes out to be 11.15 which are significant at both levels. It means the pre-test and post-test of the control group of student teachers were found to differ significantly on their

conceptual bass of gifted education. Hence the formulated null hypothesis "There is no significant difference between the pre-test and post-test mean scores of the control group is rejected".

3.2.2 There is no significant difference between the pre-test and post-test mean scores of the experimental group.

Table 5.9: T-value table of the pre-test and post-test mean scores of the experimental groups in gifted education

Group Experimental	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Pre-test	60	47.96	9.29	4.53	1.96	Significant
Post-test	60	42.08	5.85			

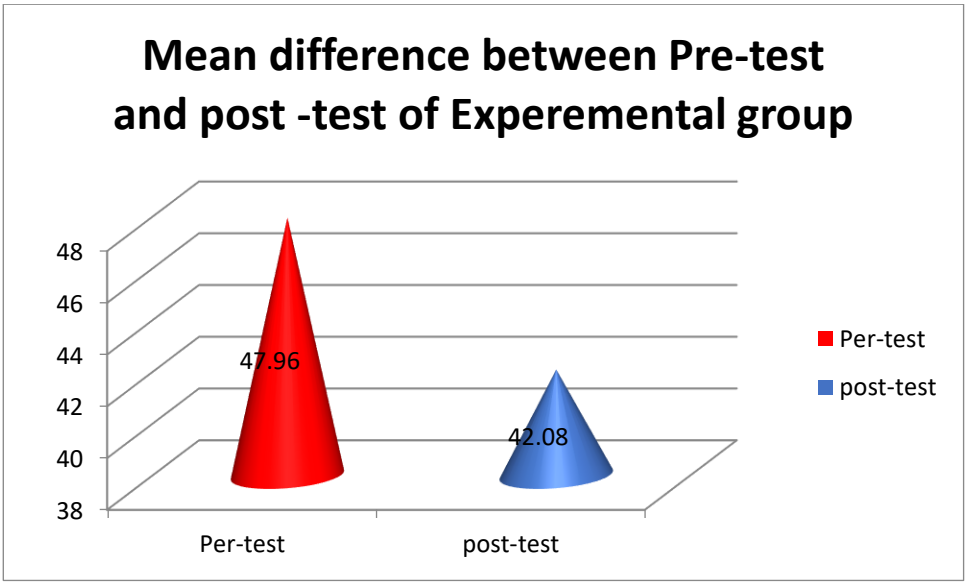

Figure 5.8

Table 5.9 shows that the mean scores on gifted education of pre-test and post-test of the Experimental group of student teachers are 47.96 and 42.08 respectively. The critical ratio between the two groups comes out to be 4.53 which are significant at both levels. It means the

pre-test and post-test of the Experimental group of student teachers were found to differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis "There is no significant difference between the pre-test and post-test mean scores of the Experimental group is rejected".

Objective 4: **To analyze the impact of the instructional module on the scores of the experimental group dimension-wise.**

4.1 There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 1.

Table 5.10: T-value table of the pre-test mean scores of the control group and experimental groups for the scores of course 1 in gifted education.

Group pre-test	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Control	60	19.31	3.22	1.86	1.96	Not significant
Experiment	60	18.13	3.15			

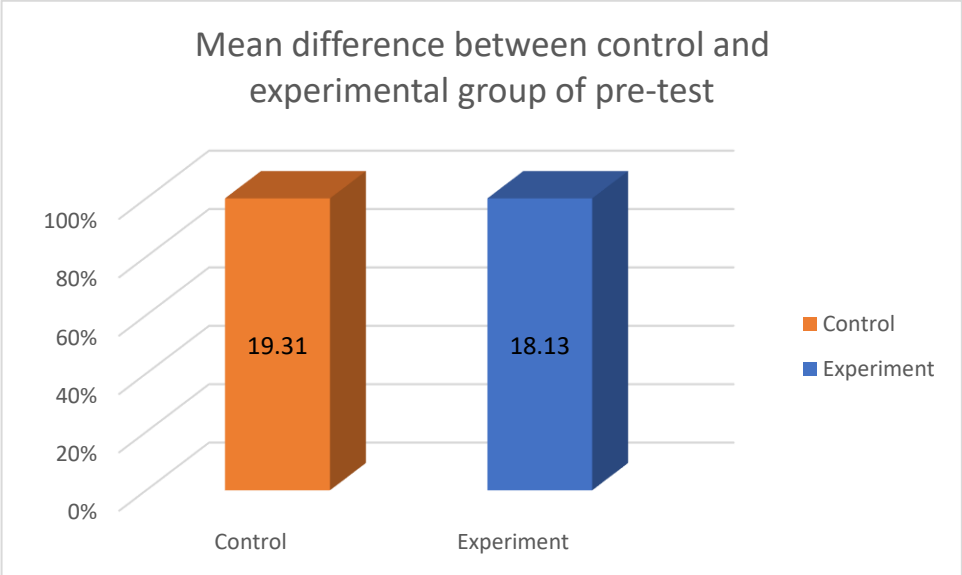

Figure 5.9

Table 5.10 shows that the mean scores on gifted education of the control and experimental group on the pre-test of student teachers are 19.31 and 18.13 respectively. The critical ratio between the two groups comes out to be 1.86 which is not significant at 0.05 level. It means the control and experimental groups of student teachers did not differ significantly in their conceptual bass of gifted education course-1. Hence the formulated null hypothesis "There is no significant difference between the pre-test mean scores of control and experimental groups for course-1 is accepted".

4.2 There is no significant difference between the post-test mean scores of the control group and

experimental groups for the scores of course 1.

Table 5.11: T-value table of the post-test mean scores of the control group and experimental groups for the scores of course 1 in gifted education.

Post-test	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Control	60	16.61	3.14	7.89	1.96	Significant
Experimental	60	20.93	3.26			

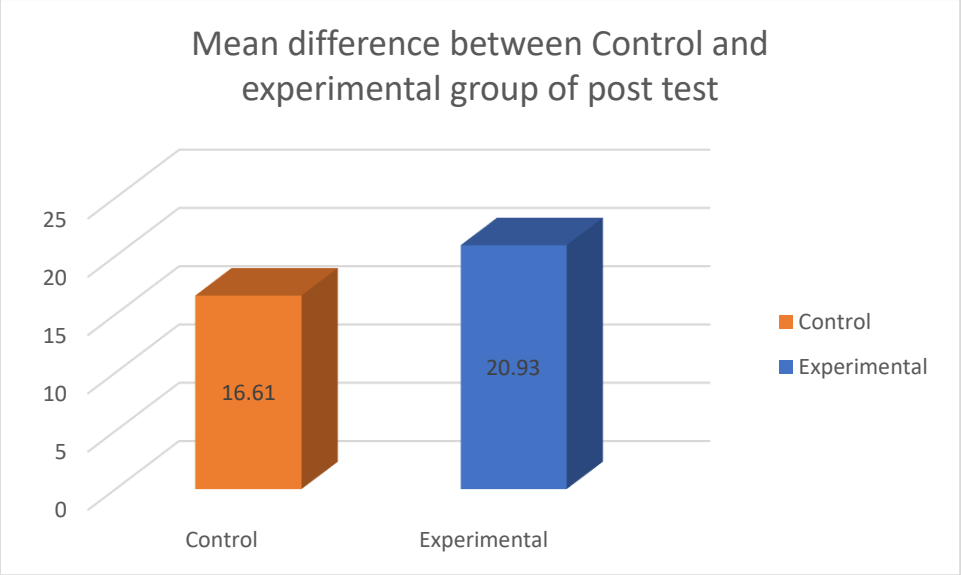

Figure 5.10

Table 5.11 shows that the mean scores on gifted education of the control and experimental groups of post-test of student teachers are 16.63 and 20.93 respectively. The critical ratio between the two groups comes out to be 7.89 which is significant at both levels. It means the control and experimental groups of student teachers were found to differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis "There is no significant difference between the post-test mean scores of control and experimental group of course-1 is rejected".

2.3 There is no significant difference between the pre-test and post-test mean scores of the control group for the scores of course 1.

Table 5.12: T-value table of the pre-test and post-test mean scores of the control group for the scores of course 1 in gifted education

Control group	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Pre-test	60	19.31	3.22	5.31	1.96	Significant
Post-test	60	16.61	3.14			

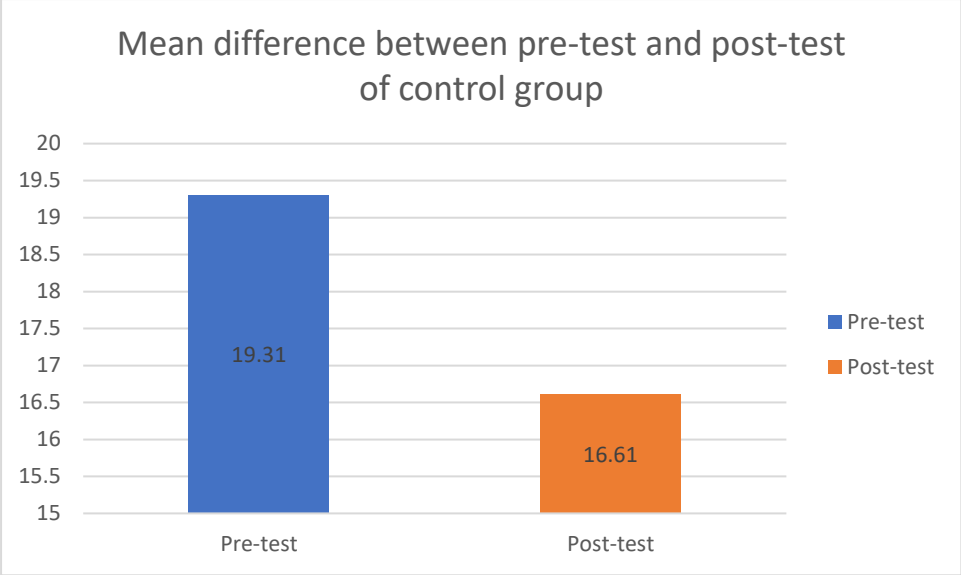

Figure 5.11

Table 5.12 shows that the mean scores on gifted education of pre-test and post-test of the control group of student teachers are 19.31 and 16.61 respectively on course wise. The critical ratio between the two groups comes out to be 5.31 which is significant at both levels. It means the pre-test and post-test of the control group of student teachers were found to differ significantly on their conceptual bass of gifted education in course 1. Hence the formulated null hypothesis "There is no significant difference between the pre-test and post-test mean scores of control group course-1 is rejected".

4.4 There is no significant difference between the pre-test and post-test mean scores of the Experimental group for the scores of course 1.

Table 5.13: T-value table of between the pre-test and post-test mean scores of the Experimental group for the scores of course 1 in gifted education.

Experimental	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Pre-test	60	18.13	3.15	7.60	1.96	Significant
Post test	60	21.93	3.26			

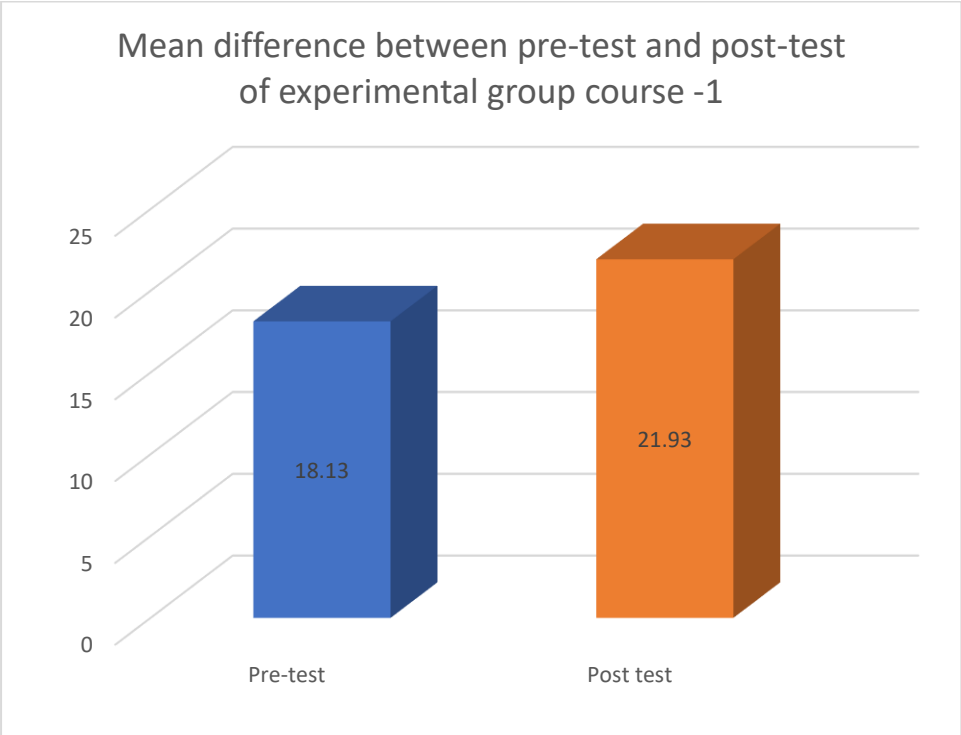

Figure 5.12

Table 5.13 shows that the mean scores on gifted education of pre-test and post-test of the Experimental group of students-teachers course-wise are 18.13 and 21.93 respectively. The critical ratio between the two groups comes out to be 7.60 which are significant at both levels. It means the pre-test and post-test of the Experimental group of student teachers were found to differ significantly on their conceptual bass of gifted education course-1. Hence the formulated null hypothesis "There is no significant difference between the pre-test and post-test mean scores of Experimental group course-1 is rejected".

4.5. There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 2.

Table 5.14: T-value table of the pre-test mean scores of the control group and experimental groups for the scores of course 2 in gifted education

Group pre-test	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Control	60	15.06	3.10	1.377	1.96	Not significant
Experiment	60	14.33	2.86			

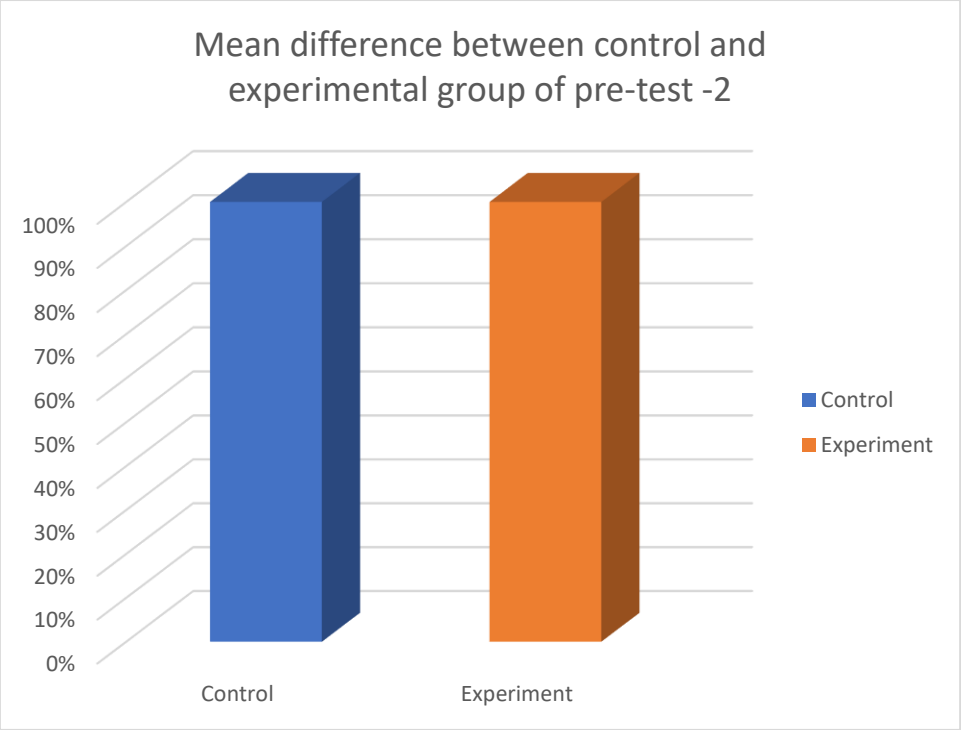

Figure 5.13

Table 5.14 shows that the mean scores on gifted education of the control and experimental group on the pre-test of student teachers are 15.06 and 14.33 respectively. The critical ratio between the two groups comes out to be 1.377 which is not significant at 0.05 level. It means the control and experimental groups of student teachers were found not differ significantly on their conceptual bass of gifted education in course-2 wise. Hence the formulated null hypothesis "There is no significant difference between the pre-test mean scores of control group and experimental groups for the scores of course 2.

4.6. There is no significant difference between the post-test mean scores of the control group and experimental groups for the scores of course 2.

Table 5.15: T-value table of the post-test mean scores of control group and experimental groups for the scores of course 2 in gifted education

Group post-test	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Control	60	13.55	3.249	11.05	1.96	Significant
Experimental	60	20.15	3.667			

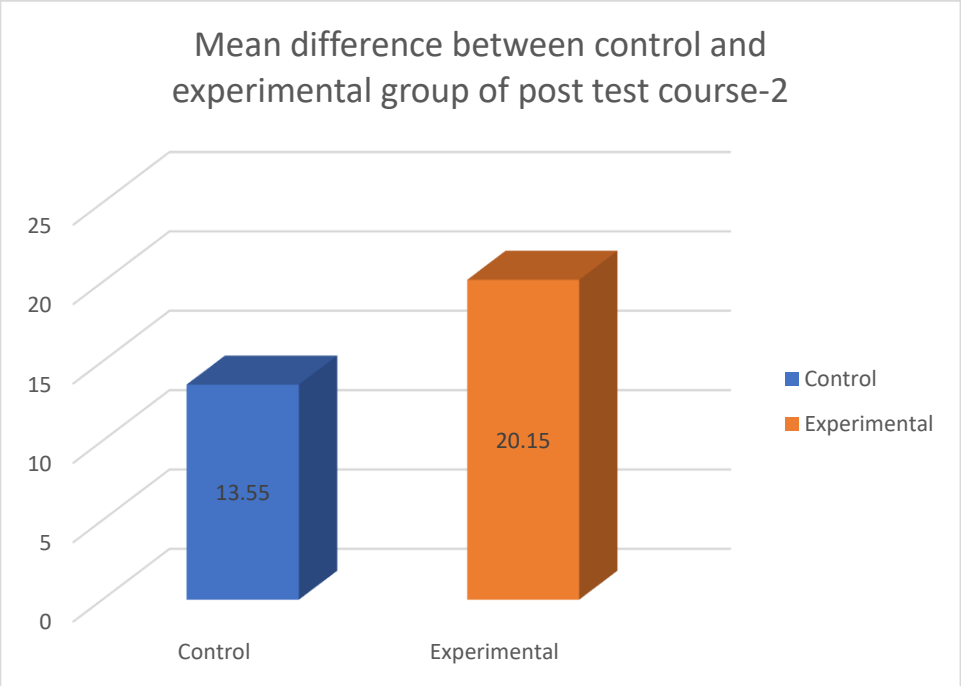

Figure 5.14

Table 5.15 shows that the mean scores on gifted education of the control and experimental group of post-tests of student teachers are 13.55 and 20.15 respectively. The critical ratio between the two groups comes out to be 11.05 which is significant at 0.05 level. It means the control and experimental groups of student teachers were found to differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis "There is no significant difference between the post-test mean scores of control group and experimental groups for the scores of course 2."

4.7. There is no significant difference between the pre-test and post-test mean scores of the control group for the scores of course 2.

Table 5.16: T-value table of the pre-test and post-test mean scores of the control group for the scores of course 2 in gifted education

Group control	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed 't' value	Table 't' value of .05	
Pre-test	60	15.06	3.10	3.26	1.96	Significant
Post-test	60	13.55	3.24			

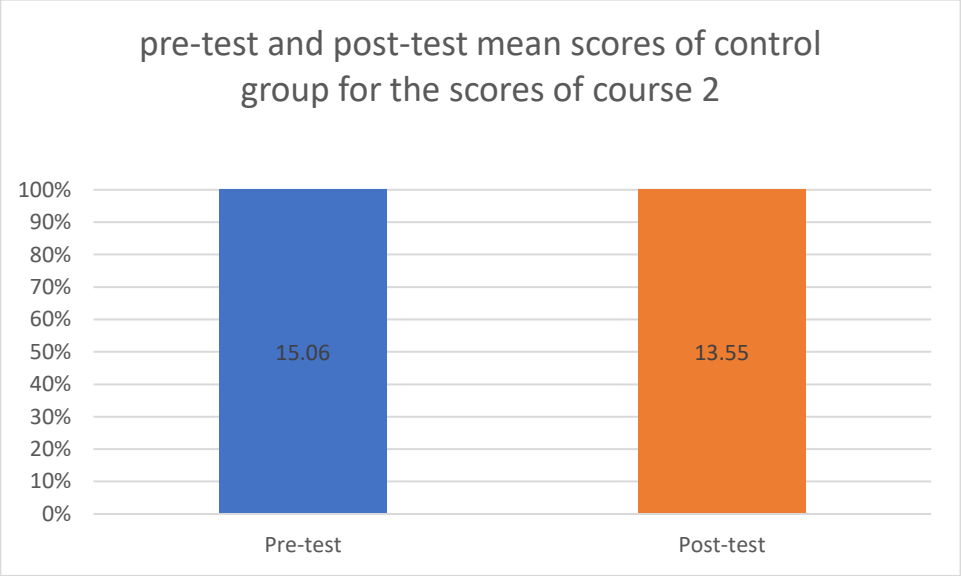

Figure 5.15

Table 5.16 shows that the mean scores on gifted education of pre-test and post-test of the control group of student teachers are 15.06 and 13.55 respectively course wise. The critical ratio between the two groups comes out to be 3.26 which is significant at both levels. It means the pre-test and post-test of the control group of student teachers were found differ significantly on their conceptual bass of gifted education in course 2. Hence the formulated null hypothesis

“There is no significant difference between the pre-test and post-test mean scores of the control group for the scores of course 2.

4,8. There is no significant difference between the pre-test and post-test mean scores of the experimental group for the scores of course 2.

Table 5.17: T-value table of the pre-test and post-test mean scores of the experimental group for the scores of course2 in gifted education

Group Experimental	N	M	SD	t- Value		significant/not significant @0.05 level
				Computed ‘t’ value	Table ‘t’ value of .05	
Pre-test	60	14.33	2.86	10.20	1.96	Significant
Post-test	60	20.15	3.66			

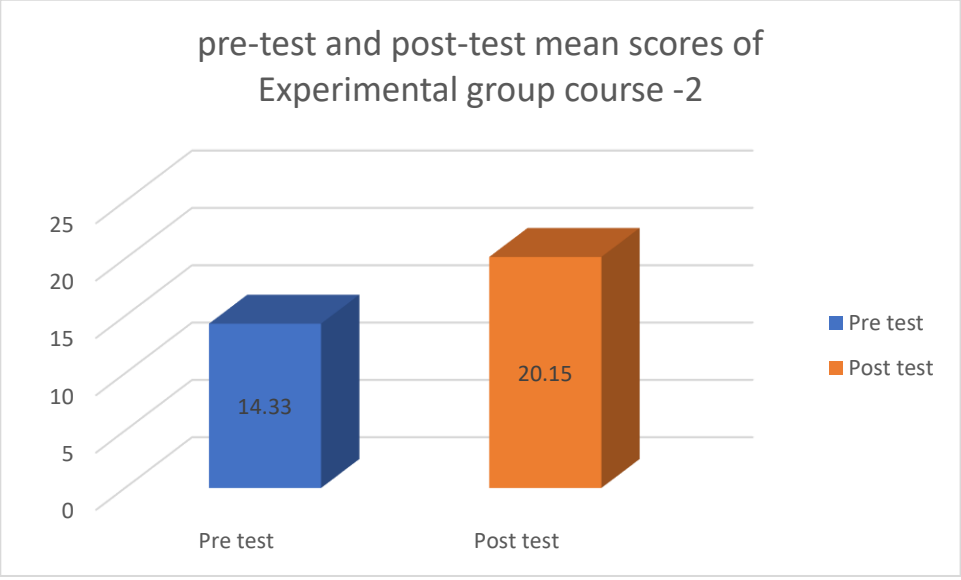

Figure 5.16

Table 5.17 shows that the mean scores on gifted education of pre-test and post-test of the Experimental group of students-teachers course-wise are 14.33 and 20.15 respectively. The critical ratio between the two groups comes out to be 10.20 which are significant at both levels. It means the pre-test and post-test of the Experimental group of student teachers were found to differ significantly on their conceptual bass of gifted education course-2. Hence the formulated

null hypothesis “There is no significant difference between the pre-test and post-test mean scores of Experimental group course -2 is rejected”.

Conclusion

This experimental study was focused on ascertaining the need for gifted education among B.Ed. student teachers of Nagaland. The tables and figures mentioned in this chapter represent statistical analysis of the experimental group score and control group score. The results presented in the above tables showed the achievement of the experimental group and control group on the concept of gifted education. The control group could not perform better in the post-test than pretest as they were not given any treatment. On the contrary, the experimental group showed excellent performance on the post-test as they were given proper teaching and treatment on the above-said topic. Both tables and figures indicate that the performance of the experimental group was better than the control group.

CHAPTER- VI

SUMMARY, EDUCATIONAL IMPLICATIONS, CONCLUSION AND RECOMMENDATIONS FOR FURTHER STUDY

Chapter VI

Summary, Educational Implications, Conclusion, and Recommendations for further study

6.1 Introduction

Education plays a great role in shaping the overall personality. So, the importance of proper education never be ignored. In our general classrooms, there are different types of learners studying together, like slow learners, average-ability students as well as a gifted student. Every child has unique strengths and talents. It is the prime duty of the teacher to identify these strengths within the students and nurture them accordingly. In the area of education for the gifted, if teachers have specialized training, then the students will benefit more. Teachers must be prepared to create a restorative environment of potential and talents. To improve the skills and to develop a learning domain that supports the requirements of gifted children, teachers need regular professional development. In this study, we are involved with gifted and talented students.

The researcher aims to design, develop, and assess instructional modules to enhance the understanding of gifted education among Bachelor of Education (B.Ed.) student teachers. The research begins with a comprehensive review of existing literature on gifted education and instructional design principles. After going through the review of related literature, the researcher found that there is a scarcity of research on gifted education, particularly in Nagaland. Therefore, the researcher felt that there was a need to conduct a study on the concept of gifted education. Based on the review, instructional modules are created, focusing on key concepts and best practices in gifted education.

The instructional modules are designed to be interactive, engaging, and accessible, catering to the diverse learning needs of B.Ed. student teachers. The effectiveness of these modules is evaluated through pre- and post-module assessments. Additionally, feedback from both students and instructors is collected to further refine the modules. The results of the assessment indicate a significant improvement in the understanding and application of gifted education concepts among B.Ed. student teachers who participated in the modules. The findings highlight the importance of incorporating specialized training on gifted education in teacher education programs and provide valuable insights for future research in this area.

6.2 STATEMENT OF THE PROBLEM

The title for the present research problem is restated as follows:

"Development and Assessment of Instructional Modules for Developing Concepts of Gifted Education in B.Ed. Student-Teachers"

6.3 Operational Definitions

- **B.Ed. student-teachers:** In the context of the present study B.Ed. student-teachers are teachers and students who are taking B.Ed. courses in B.Ed. colleges/universities of teacher education to become a teacher.
- **Gifted Education**: - Gifted education is specific education meant to fulfill the learning needs of gifted learners, those who are naturally brilliant with a high degree of general mental ability (IQ) or extraordinary ability in a specific sphere of knowledge or both. For the proposed study, concepts of gifted education will be explored, ranging from its meaning to development, methods of identification of gifted learners, instructional strategies and models of gifted education, etc., for the development of instructional modules.
- **Instructional module:** - In the context of the present study, an instructional module is a self-sufficient unit of instruction for the learners to achieve a set of specific learning objectives developed under the appropriate Instructional System Design Model with online and offline content on concepts of gifted education.

6.4 Objectives of the Study

The present study has a unique nature as its objectives 1 and 2 have been achieved through qualitative analysis of previous research, content analysis, and content validity through experts. The objectives are as follows:

1. To analyze and select an appropriate *instructional system design model* for the development of instructional modules for B.Ed. student-teachers on concepts of gifted education.

2. To develop and validate instructional modules for B.Ed. student-teachers on concepts of gifted education.

3. To assess the effectiveness of instructional modules for B.Ed. student-teachers on concepts of gifted education.

3.1 To compare the performance level of the control group and experimental groups before and after the administration of the intervention.

3.2 To compare experimental and control groups' pre-test and post-test scores to establish any significant influence of instructional modules on the experimental group.

4. To analyze the impact of the instructional module on the scores of the experimental group dimension-wise.

6.5 Hypotheses of the Study

The following hypotheses have been formulated according to the objectives of the study. The hypotheses 5 to 8 are about course- 1 which is about basic concepts of gifted education (GE) comprising of scores of modules 1 to 4. The hypotheses 9 to 12 are about course- 2 which is about applicability of gifted education (GE) in teacher education comprising of scores of modules 5 to 8.

1. There is no significant difference between the pre-test mean scores of the control group and experimental groups for overall scores.
2. There is no significant difference between the post-test mean scores of the control group and the experimental group for overall scores.
3. There is no significant difference between the pre-test and post-test mean scores of the control group for overall scores.
4. There is no significant difference between the pre-test and post-test mean scores of the experimental group for overall scores.
5. There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 1 on concepts of GE.
6. There is no significant difference between the post-test mean scores of the control group and experimental groups for the scores of course 1 on concepts of GE.
7. There is no significant difference between the pre and post-test mean scores of the control group for the scores of course 1 on concepts of GE.
8. There is no significant difference between the pre and post-test mean scores of the experimental group for the scores of course 1 on concepts of GE.
9. There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 2 on gifted education in teacher education.

10. There is no significant difference between the post-test mean scores of the control group and experimental groups for the scores of course 2 on gifted education in teacher education.
11. There is no significant difference between the pre and post-test mean scores of the control group for the scores of course 2 on gifted education in teacher education.
12. There is no significant difference between the pre and post-test mean scores of the experimental group for the scores of course 2 on gifted education in teacher education.

6.6 Delimitations of the Study

1. The study is delimited to B.Ed. student-teachers of one college in Kohima district only due to its true experimental design and strict control requirements.
2. The study is delimited to and specifically focused on the development of concepts of gifted education in B.Ed. student-teachers only.

6.6 Population and Sample

The population for the present study comprised all the B.Ed. student-teachers from one B.Ed. College of Kohima, i.e., Modern Institute of Teacher Education. The study aimed to prepare and assess the effectiveness of instructional modules on the concept of gifted education; therefore, out of the complete population,650 B.Ed. student-teachers of the Modern College of Teacher Education have been selected as a sample of the study. It had the maximum number of B.Ed. student-teachers, which became the sample of the study. After the administration of the educational needs for gifted education scale on the B.Ed. student-teachers of the college, a sample of **168 B.Ed. Student-teachers** were selected for the formation of control and experimental groups from both semesters 1st and 3rd. The 168 B.Ed. student-teachers were randomly assigned to the control and experiment group through simple random sampling.

6.8 Variables of the study

(i) Independent variable: Instructional modules on the concepts of gifted education

(ii) Dependent variable: Achievement of B.Ed. student-teachers on the concepts of gifted education

(iii) Extraneous variables controlled: Type of semesters, educational needs for

gifted education

6.9 Tools used in the study

To meet the needs, aims, and objectives of the present research work, the following tools were employed:

(i) An Achievement test on concepts of Gifted Education was developed, and standardized by the researcher.

(ii) Instructional modules on concepts of Gifted Education were developed, and validated by the researcher.

(iii) The Educational Needs for Gifted Education Scale by Cavide Demirci and GUzin Igci was adapted by the researcher.

6.10 Main Findings of the Study

(A) Findings through objectives 1 and 2

- The prominent ISD models for teacher education have been successfully studied and analyzed for their suitability for the development of gifted education modules for teachers.
- The ADDIE model of instructional design has been adopted successfully for the development of instructional modules on gifted education for teachers.
- Learning objectives related to the development of modules on the concept of gifted education for teacher education in Nagaland are achievable.
- The design of the course structure could draw attention to the target group of B.Ed. student-teachers of Nagaland.
- The course1 and 2 and a total of eight modules on the concept of gifted education for B.Ed. Student-teachers of Nagaland are effective in developing concepts of gifted education.
- Experts from teacher education and education and heads of various educational institutions validated the applicability and utility of instructional modules on the concepts of gifted education developed for the B.Ed. student-teachers of Nagaland during the study adopted the ADDIE model of ISD.

(B) Findings through objectives 3 and 4

- **Objective: 3 To compare the performance level of the control group and experimental groups before and after the administration of the intervention.**

3.1.3 There is no significant difference between the pre-test mean scores of the control group and experimental groups for overall scores.

Findings: The control and experimental groups of student teachers were found to not differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis which states that" There is no significant difference between the pre-test mean scores of the control group and experimental group is accepted."

3.1.2 There is no significant difference between the post-test mean scores of the control group and the experimental group.

Findings: The control and experimental groups of student teachers were found differ significantly on their conceptual bass of gifted education. Hence the formulated null hypothesis "There is no significant difference between the control and experimental mean scores of groups is rejected".

- **3.2. To compare experimental and control groups' pre-test and post-test scores to establish any significant influence of instructional modules on the experimental group.**

3.2.3 There is no significant difference between the pre and post-test mean scores of the control group for overall scores.

Findings: The pre-test and post-test of the control group of student teachers were found to differ significantly on their conceptual bass of gifted education. Hence, the formulated null hypothesis, "There is no significant difference between the pre-test and post-test mean scores of the control group, is rejected".

3.2.4 There is no significant difference between the pre and post-test mean scores of the experimental group for overall scores.

Findings: The pre-test and post-test of the experimental group of student teachers were found to differ significantly in their conceptual bass of gifted education. Hence, the formulated null hypothesis, "There is no significant difference between the pre-test and post-test mean scores of the Experimental group, is rejected".

- **Objective 4: To analyze the impact of the instructional module on the scores of the experimental group dimension-wise.**

4.1 There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 1.

Findings: The control and experimental groups of student teachers did not differ significantly in their conceptual bass of gifted education course-1. Hence, the formulated null hypothesis, "There is no significant difference between the pre-test mean scores of control and experimental groups for course-1, is accepted".

4.2 There is no significant difference between the post-test mean scores of the control group and

experimental groups for the scores of course 1.

Findings: The control and experimental groups of student teachers were found to differ significantly on their conceptual bass of gifted education. Hence, the formulated null hypothesis, "There is no significant difference between the post-test mean scores of control and experimental group of course-1, is rejected".

4.3. There is no significant difference between the pre-test and post-test mean scores of the control group for the scores of course 1.

Findings: The pre-test and post-test of the control group of student teachers were found to differ significantly on their conceptual bass of gifted education in course 1. Hence, the formulated null hypothesis, "There is no significant difference between the pre-test and post-test mean scores of control group course-1, is rejected".

4.4 There is no significant difference between the pre-test and post-test mean scores of the Experimental group for the scores of course 1.

Findings: The pre-test and post-test of the experimental group of student teachers were found to differ significantly in their conceptual bass of gifted education course-1. Hence the formulated null hypothesis "There is no significant difference between the pre-test and post-test mean scores of Experimental group course-1 is rejected".

4.5 There is no significant difference between the pre-test mean scores of the control group and experimental groups for the scores of course 2.

Findings: The control and experimental groups of student teachers were found not differ significantly on their conceptual bass of gifted education in course-2 wise. Hence the formulated null hypothesis "There is no significant difference between the pre-test mean scores of control group and experimental groups for the scores of course 2.

4.6. There is no significant difference between the post-test mean scores of control group and experimental groups for the scores of course 2.

Findings: The control and experimental groups of student teachers were found to differ significantly on their conceptual bass of gifted education. Hence, the formulated null

hypothesis is: “There is no significant difference between the post-test mean scores of the control group and experimental groups for the scores of course 2.”

4.7. There is no significant difference between the pre-test and post-test mean scores of the control group for the scores of course 2

Findings: The pre-test and post-test of the control group of student teachers were found to differ significantly on their conceptual bass of gifted education in course 2. Hence, the formulated null hypothesis “There is no significant difference between the pre-test and post-test mean scores of the control group for the scores of course 2.

4.8 There is no significant difference between the pre-test and post-test mean scores of the experimental group for the scores of course 2.

Findings: The pre-test and post-test of the experimental group of student teachers were found to differ significantly in their conceptual bass of gifted education course-2. Hence, the formulated null hypothesis, “There is no significant difference between the pre-test and post-test mean scores of Experimental group course -2, is rejected”.

6.11 Educational implications of the study

- The study establishes that there is a need for the development of instructional models for the concept of gifted education among B.Ed. student-teachers of Nagaland.
- The study also establishes the need to understand the importance of instructional system design for the development of instructional modules for gifted education in the context of Nagaland.
- The instructional modules of study facilitate individualized teaching of teacher educators so that student-teachers can understand the topics of gifted education easily.
- One of the important aspects of this study is that it fills the research gaps in the field of gifted education in the special context of Nagaland, especially in the field of teacher education. There is a lack of research in the field of gifted education in the Indian context, particularly for learners as well as teachers. The present study may be helpful for future researchers who want to take some pieces of evidence from the study to develop instructional modules for preparing prospective teachers for gifted education.
- The study also has implications for practice. It shows that by gaining concepts of gifted education and using assessment tools of giftedness, the teacher may gain a greater understanding of a gifted student’s characteristics and required teaching techniques for

gifted learners. The study specifically establishes that prospective teachers of Nagaland need effective instructional modules to understand, identify, and teach gifted learners.

6.12 Suggestion for further study

As per the present study, the following ways can be adopted in further research on the concept of gifted education:

1. A similar study on the same topic may be conducted in different schools in Nagaland.
2. It may be more beneficial to have an in-depth study of the need for gifted education, covering all aspects of one class of any one branch at a time.
3. Extension of the same study to other subjects like science, mathematics, and social science teachers.
4. Similar module development in the Hindi language can be developed for the Hindi medium students.
5. The present study has been concerned with secondary-level student teachers. A similar type of research work may be undertaken to cover elementary-level student teachers.
6. Similar studies on the same topic may be undertaken in different states of India.
7. It may be more beneficial to have an in-depth study of e-content development of different topics of all school subjects.
8. The present study considered only one area of giftedness, i.e., conceptual, due to time and resource constraints. Therefore, researchers may also give priority to constructing such types of tools made for the Indian population.
9. It is suggested that all the factors responsible for the necessity of giftedness at the school level should be studied.
10. The present study is based on concept clarification on gifted education of student teachers. Further studies could be done on different academicians like teachers, administrators, Policy-makers, and school management.

6.11 Conclusion

The study has been taken up primarily to develop some contributing solutions in the field of gifted education in the context of Nagaland. The inspiration for the aim of the study came from the National Education Policy 2020, which has emphasized the education of gifted individuals in particular. In this regard, the researcher and the supervisor, being from the field of teacher education, felt an urgent need to educate prospective teachers of Nagaland to identify, understand, teach, and counsel gifted learners of Nagaland. Therefore, the instructional

modules on the concepts of gifted education developed through the study are a unique contribution to the study. The directions for studying and selecting an appropriate instructional system design model for the development of the instructional system are also unique contributions of the study for future researchers to follow. The researcher heartily submits her contribution in the form of instructional modules of the study as a solution for the education of the prospective teachers of Nagaland. She most humbly hopes that the process of development and evaluation of effective instructional modules documented in the thesis on the concepts of gifted education will contribute further to the field of teacher education, marking the study a milestone research work towards teacher education in gifted education in Nagaland.

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APPENDICES

To

Date: 20/10/2023

The Principal
Modern Institute of Teacher Education
A.G Road, Opp. SBI Lerie Branch
Kohima, Nagaland

Subject- Permission for Data Collection for Experiment Conduction for Ph.D. Study

Respected Sir,

I, Sarita Pattnaik, am pursuing Ph.D. from Nagaland University (A Central University) under the Department of Teacher Education Kohima, Nagaland, India, with Registration. No. Ph.D./ TED/00396 under the supervision of Dr. Neha Rawat, Assistant Professor, Department of Teacher Education, Nagaland University.

In this regard, I request you to give me permission for data collection for my Ph.D. research work from 25th Oct 2023 to 25th Nov 2023. This is to inform you that my research work is an experimental study therefore, kindly allow my supervisor to be with me for the first day, i.e., 25th Oct 2023, for pre-test and experimental and control groups set-up to your teacher education college Modern Institute of Teacher Education, Kohima.

Thanking You.

Yours sincerely

Sarita Pattnaik

Sarita Pattnaik
Ph.D. Research Scholar
Reg. No.- Ph.D./TED/00396
Department of Teacher Education
Nagaland University
Kohima campus
Kohima, Nagaland-797004.

Neha Rawat

Dr. Neha Rawat
Assistant Professor
Department of Teacher Education
Nagaland University, Kohima Campus
Meriema, Kohima, Nagaland - 797004

Granted Permission for Experiment Conduction in MITE for Ph.D purpose only.

25/10/2023

Principal
Modern Institute of Teacher Education
Kohima Nagaland

To

Date - 28.08.2023

The Principal

State College of Teacher Education

Kohima

Sub: **Permission letter for data collection (Try out of achievement test) related to Ph. D. Research work**

Dear Madam,

This letter is in regard for the collection of data related to the Ph.D. research work of **Ms. Sarita Pattnaik**, a bonafide Ph.D. scholar from the Department of Teacher Education, Nagaland University, Kohima Campus, Meriema. She is pursuing Ph.D. on the topic **"Development and Assessment of Instructional Modules for Developing Concepts of Gifted Education among B.Ed. student teachers"** under the supervision of **Dr. Neha Rawat**, Assistant Professor, Department of Teacher Education, Nagaland University, Kohima Campus, Meriema. For this purpose, she is required to validate her achievement test and thus, wants to collect data from B.Ed. student-teachers of your esteemed institution. I would be extremely grateful if you could kindly permit her to collect the data from your student-teachers. Utmost confidentiality will be maintained and the data will be used for the said purpose alone.

Thanking you.

Neha Rawat

Dr. Neha Rawat
Assistant Professor
Department of Teacher Education
Nagaland University
Kohima, Nagaland

(Dr. Neha Rawat)
Assistant Professor
Department of Teacher Education, Nagaland University
Kohima Campus, Meriema.

granted
28/8/23

Dr. Rawat

Fwd: Request to adopt tool for the study-Dr Neha Rawat and Sarita Pattnaik

From Neha Rawat <neha@nagalanduniversity.ac.in>
Date Tue, 11 Jun 2024 09:09:08

---------- Forwarded message ---------
From: **Güzin İĞCİ** <gznigci@gmail.com>
Date: Sat, May 6, 2023 at 1:04 PM
Subject: Re: Request to adopt tool for the study-Dr Neha Rawat and Sarita Pattnaik
To: Neha Rawat <neha@nagalanduniversity.ac.in>

Dear Madam,
Thanks for your interest in our studies. You can use our tool, if you cite our research.
I hope you will contribute to the field.
Good luck in your studies.

Dr. Güzin İĞCİ & Prof. Dr. Cavide Demirci

3 May 2023 Çar 12:08 tarihinde Neha Rawat <neha@nagalanduniversity.ac.in> şunu yazdı:

> **Dear Madam**
> I am Neha Rawat, Assistant Professor in the Department of Teacher Education, Kohima, Nagaland-India, 797004.
> My research scholar, Sarita Pattnaik, who is Ph.D. Research Scholar in the Department of Teacher Education,

I am Neha Rawat, Assistant Professor in the Department of Teacher Education, Kohima, Nagaland-India, 797004.
My research scholar, Sarita Pattnaik, who is Ph.D. Research Scholar in the Department of Teacher Education, Nagaland University (A Central University) Kohima, Nagaland, India (Reg. No.Ph.D./ TED/00396) is pursuing research work under my supervision.

Nagaland is the farthest northeast state of India with a tribal-dominant disadvantaged population. Education being the most important front, teacher trainees need to be empowered, especially for the inclusion for all in education. Our research work is one such endeavor in this direction.

It is specifically based on finding the impact of ***Self-developed Instructional Modules on the Concepts of Gifted Education for educating Teacher trainees.***

In this regard, we have come across your research article, "A scale designed for specifying educational needs of Teachers of Gifted and Talented students." The tool (Scale for educational needs of teachers for gifted and talented students) mentioned in the article will be suitable for our study. Therefore, I

for specifying educational needs of Teachers of Gifted and Talented students." The tool (Scale for educational needs of teachers for gifted and talented students) mentioned in the article will be suitable for our study. Therefore, I humbly request that you allow us to use your tool and make needed adaptations if required. We assure you to follow all the due citation requirements while the publication of our work.

Thank you in advance.

Neha Rawat, (Dr)
Assistant Professor
Department of Teacher Education
Nagaland University, Kohima
Nagaland-797004.
mobile number-91-9950604333

INCLUSION
"When everyone is included, everyone wins"-- *Jesse Jackson*

NEED ANALYSIS SURVEY FORM

PERSONAL DETAILS

Name:

Designation:

Phone number: e-mail:

Institution/college/University:

Total Experience:

Area of specialization:

Please Specify experience in Gifted education/Inclusive Education (if any):

About the form:

- The form is divided into parts namely **Part A: Introduction** and **Part B: Response.**
- Part A summarizes the details of the research work undertaken to build an understanding of the problem.
- Part B is meant to record your response in the form of comments and suggestions regarding the topic.
- You are requested to read part A and reply to part B completely with your valuable suggestions.
- Information provided by you here will remain confidential and will purely be used for educational and research purposes.

Part A: Introduction

No nation can afford the underutilization of the potential of its citizens which makes the education of the gifted and the talented an important consideration. Gifted students are the most important part of every society and keeping the gifted child engaged is necessary. A number of special techniques and teaching methods are required to teach gifted children. However, most teachers do not receive any training about how to teach gifted students. The New Education Policy-2020 has also recognized the need to identify and nurture gifted and talented children. It clearly mentions that Teacher Education will include methods for the recognition and fostering of gifted students' talents and interests. The number and variety of professional training for gifted students are rather limited. The present study titled "**Development and Assessment of Instructional Modules for Developing Concepts of Gifted Education in B.ED. Student-Teachers"** is an attempt in this direction to prepare prospective student-teachers about the concepts of gifted education.

Part B: Response

Kindly give your suggestion and comments about the following aspects of the problem: -

1. **Do you experience the need for the development of instructional modules for developing concepts of gifted education in B.Ed. student-teachers? Please suffice your response with your reflections or any relevant information that you want to share.**

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2. **The following are the proposed modules structure envisaged to be developed for the study:**

Module1: Concept of Giftedness
1. Meaning of Giftedness 2. Kinds of Gifted learners 3. Myths about Gifted learners
Module 2: Understanding of Giftedness
1. Intelligence v/s Giftedness 2. Creativity and Giftedness 3. Characteristics of gifted learners
Module 3: Teaching of Gifted leaners
1. Identification of gifted learners 2. Curriculum Models for Gifted learners 3. Instructional strategies of gifted learners
Module 4: Gifted Education in the Indian context
1. Gifted education in Indian policies and documents 2. Initiatives/schemes for gifted learners 3. Available tools for measuring giftedness

The proposed structure of modules is based on a review of studies conducted so far. You are requested to provide your feedback about it in relation to the proposed study. Please critically analyze it giving your suggestions.

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3. **Please give your suggestions for the preferable mode of delivery, appropriate forms of instructional modules, and the appropriate number of modules that will be most effective for teaching concepts of gifted education to B.Ed. Student-teachers.**

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ACHIEVEMENT TEST ON THE CONCEPTS OF GIFTED EDUCATION

Time: 2 hours **MM: 60**

General Instructions:

1. All questions are compulsory. There are a total of 7 pages in the test.
2. Choose the correct option for each question and **write it only in the separate answer sheet provided to you**. DO NOT MARK WRITE ANYTHING ON THE QUESTION PAPER.
3. The question paper consists of 55 Objective-type questions divided into three Sections, (A), (B), and (C) followed by one descriptive question of 5 marks.

SECTION (A)

Mark the following statements to be true (T) or false (F) in the answer sheet: - (20x1=**20**)

1. According to Gross, there are three categories of giftedness learners. (T/F)

2. Twice exceptional learners are gifted and have at least one learning disability. (T/F)

3. Lewis Terman expanded Galton's view of gifted children to include high IQ. (T/F)

4. 'Gifted' and 'talented' learners are similar words. (T/F)

5. Divergent thinking is one of the key qualities of gifted students. (T/F)

6. Acceleration concerning gifted children means promoting such students to the next higher grade by skipping the present grade. (T/F)

7. Every gifted child has a single or a group of unique gifted abilities. (T/F)

8. As per Gross's categories of giftedness, "profoundly gifted" children have an IQ level of 160. (T/F)

9. Parents of gifted children have the most important impact on their child's development. (T/F)

10. Highly superior social skills and maturity compared to their peers, an identifying characteristic of gifted children. (T/F)

11. 'Education for all Handicapped Children Act' and 'The Marland Report' discuss the provisions for gifted education. (T/F)

12. The US initiative 'No Child Left Behind' (NCLB) is criticised for not addressing the needs of gifted students who perform above grade level. (T/F)

13. The Advance course in science and mathematics and any other subject or giving harder tasks and extra reading materials is called the Enrichment Programme. (T/F)

14. The Stanford Binet scale is a psychological tool for measuring creativity. (T/F)

15. Reliability and validity are the most important characteristics of any measuring instrument. (T/F)

16. Under diversification of courses, gifted students are provided subjects according to their interests, needs, abilities, and aptitudes. (T/F)

17. Rating scales are used to assess students' behaviours. (T/F)

18. A teacher's role in meeting individual differences is to adjust the curriculum to the individual learner's needs, abilities, interests, and aptitudes. (T/F)

19. Getting a promotion is not related to the professional development of teachers. (T/F)

20. As Renzulli's triad model proposes, giftedness is a combination of high Talent, high creativity, and high memory. (T/F)

SECTION (B)

Choose the correct answer out of the four choices given for each statement: (27x1=**27**)

21. Who defined giftedness as the intersection of three basic clusters of human traits?
A) H. Gardener
B) R. Sternberg
C) J. Renzulli
D) Skinner

22. An I.Q. range of 115-129 would indicate what degree of giftedness?
A) Mildly Gifted
B) Moderately Gifted
C) Highly Gifted
D) Exceptionally Gifted

23. Studies on gifted children gained the forefront after the publication of 'Hereditary Genius' in 1869 by…
A) Lombroso
B) Galton
C) Guilford
D) Terman

24. A common myth among laymen regarding the characteristics of gifted children is…
A) Gifted students don't need help; they will do fine on their own
B) Gifted education programs are elitist.
C) Gifted students are happy, popular, and well-adjusted in school.
D) All of the above

25. Which of the following is a characteristic of a student with giftedness?
A) Tendency to opt for easy tasks
B) Slow comprehension
C) Lack of curiosity
D) Inclination for precision in thinking

26. According to NAGC, it is estimated that 20% to 25% of gifted children have social and emotional difficulties, about twice as many as in the general population of students. Often, they do not share interests with their classmates, resulting in isolation or being labelled unfavourably by their peer group. In such situations, which support system will not be helpful for them?
A) Support from their families and home
B) Psychological counselling
C) Grade promotions
D) Support from subject teachers

27. The most important factor for giftedness is…
A) Creativity
B) Intelligence
C) Balanced personality
D) None of the above

28. Which of the following strategies will likely be effective in catering to the needs of gifted students?
A) Giving additional time to comprehend information
B) Assigning simple and easy question
C) Giving a choice of self-initiated higher-order thinking tasks
D) Keeping low expectations of success from them

29. To identify a gifted learner, the preliminary tests should be based on …
A) Physical check-up
B) IQ test
C) Talent search programmes
D) Achievement test

30. Which type of schools in India cater to gifted children, mostly from rural areas?
A) Kendriya Vidyalaya
B) Sainik School
C) Navodaya Vidyalaya
D) Army School

31. Method/s for identifying gifted children is/are…
A) Observation
B) Intelligence test
C) Personality test
D) All of the above

32. Which of the following would encourage the least a student who wants to become a highly creative theatre artist?
A) Try to win the state-level competition that will ensure his/her scholarship
B) Develop empathetic, amicable, and supportive relationships with his/her peer theatre artist
C) Devote his/her time to those theatrical skills that s/he finds most enjoyable
D) Read about the performances of the world's best theatre artists and try to learn

33. The National Talent Search Examination is conducted by which organization?
A) NCTE
B) NCERT
C) UGC
D) CBSE

34. Jnana Prabodhini Prashala, the first school for gifted education in India, has a psychology department that works on …….. model of intelligence.
A) Harward Gardner's theory of multiple intelligences
B) Sternberg's theory of intelligence
C) J. P. Guilford's model of intelligence
D) Thurstone's theory of intelligence

35. In England, schools adopt a pragmatic approach and are expected to identify ……..of gifted and/or talented students in relation to the rest of the cohort in that school.
A) 20-25%
B) 5–10%
C) 11-15%
D) 15-20%

36. A teacher make use of following activities for effective teaching-learning but is not able to identify the most suitable activity for the gifted learners. Identify from the following activities that can be classified as a highly creative activity.
A) Making models of existing objects
B) Making new models of objects described by the teacher
C) Decorating only new objects
D) Decorating objects

37. A specified level of success on a learning task or a certain level of proficiency in any work is called…
A) Intelligence
B) Achievement
C) Creativity
D) Aptitude

38. Gifted children should be grouped according to their ability, talents, and levels of intelligence. This is called…
A) Acceleration
B) Ability Grouping or Separate class
C) Enrichment Programme
D) None of the above

39. The main tool used for identifying gifted children is…
A) Intelligence tests
B) Creativity tests
C) Only (A)
D) Both (A) and (B)

40. Thomas is an extraordinary achiever in all subjects. He has been suggested to skip grades according to his academic abilities. What is this called?
A) Enrichment Programme
B) Ability Grouping or Separate class
C) Providing Diversified courses
D) Acceleration and Double Promotion

41. The Enrichment Triad Model of gifted education was given by whom?
A) Coleman
B) Whitmore
C) Clark
D) Renzulli
42. How many steps are there in the Product Development Model?
A) 5
B) 8
C) 7
D) 6

43. Mohit is in class 5. He is remarkable in generating new ideas and finding new perspectives on an existing phenomenon. He is …….. learner.
A) A talented
B) A creative
C) Intellectually bright
D) Academically bright

44. Professionalism means…
A) Adherence to the Code of Professional Conduct
B) Participation in a training program,
C) Work for salary,
D) Giving extra marks to students

45. Kristen R. Stephens developed a Product Development Model for gifted in the year…
A) 1996

B) 1995
C) 1994
D) 1993

46. How does the gifted education teacher effectively communicate objectives so students can explain their learning?
A) Teacher collaborates with students to set a purpose for learning, before instruction
B) The teacher gives study materials
C) The teacher gives video lectures
D) The teacher asks questions

47. A model that helps gifted students develop skills for independent learning through the orientation stage, enrichment activities stage, seminar stage, individual development stage, and in-depth study stage is …
A) Collaborative Learner Model
B) Autonomous Learner Model
C) Product Development Model
D) Process Development Model

SECTION (C)

Choose the correct option showing the right pair of answers to the statements from column A with the statements from Column B (4x1=**4**)

S.No.	Column A	S.No	Column B
(48)	As per Joseph Renzulli, apart from "creativity" as one characteristic of gifted learners, two others are…	**(a)**	Critical and creative thinking
(49)	Gifted students may be asked to spend more time on questions dealing with …	**(b)**	Above-average ability and task commitment
(50)	A gifted learner will feel ……. if class activities are not challenging enough.	**(c)**	Cognitive, experiential, and adaptation and shaping up of experiences
(51)	Robert Sternberg proposed these aspects of giftedness as…	**(d)**	Under stimulated and bored

A) (48) -(c), (49)- (a), (50) -(d), (51)-(b)
B) (48)- (b), (49)- (a), (50) -(d), (51)-(c)
C) (48)- (a), (49)- (b), (50) -(d), (51)-(c)
D) (48)- (a), (49)- (b), (50) -(c), (51)-(d)

Choose the correct option showing the right pair of answers to the statements from column A with the statements from Column B (4x1=**4**)

S.No.	Column A	S.N	Column B
(52)	The major areas of creativity are…	**(a)**	to help gifted students develop skills of independent learning
(53)	Concerning gifted learners, 'acceleration' means…	**(d)**	their questioning manner, method, and teaching material have to be
(54)	Contrary to general belief, it is difficult to teach gifted learners because of...	**(c)**	Promoting them to the next higher grade earlier than normal learners
(55)	The Autonomous Learner Model was developed by George Betts …	**(d)**	fluency, flexibility, originality, and elaboration

A) (52)- (a), (53)- (b), (54) -(c), (55)-(d)

B) (52)- (a), (53)- (d), (54) -(b), (55)-(c)
C) (52)- (d), (53)- (a), (54) -(c), (55)-(b)
D) (52)- (d), (53)- (c), (54) -(d), (55)-(a)

Q56. **What is the importance of gifted learners? As a teacher, how will you identify gifted learners?**
(5 marks)

ANSWER SHEET

for ACHIEVEMENT TEST ON THE CONCEPTS OF GIFTED EDUCATION

Student
Name.....Semester.....Date……...
Group: Control/Experiment..... Pretest/Post-
test.....Gender……

Section A. State True (T) or False (F) against the question numbers given below:

1.		**2.**		**3.**		**4.**		**5.**	
6.		**7.**		**8.**		**9.**		**10.**	
11.		**12.**		**13.**		**14.**		**15.**	
16.		**17.**		**18.**		**19.**		**20.**	

Section B. Mention the correct option out of the given choices against the question numbers given below:

21.		**22.**		**23.**		**24.**		**25.**	
26.		**27.**		**28.**		**29.**		**30.**	
31.		**32.**		**33.**		**34.**		**35.**	
36.		**37.**		**38.**		**39.**		**40.**	
41.		**42.**		**43.**		**44.**		**45.**	
46.		**47.**							

Section C-1. Choose the correct pairs of answers from Column A with column B:

48.		**49.**		**50.**		**51.**	

Section C-2. Choose the correct pairs of answers from Column A with Column B:

52.		**53.**		**54.**		**55.**	

Q 56 (Marks)=
Total Marks = …….

Blueprint for the Achievement test

Objectives		Knowledge (36 Marks)			Understanding (36 Marks)			Application (8 Marks)	Total Questions 80 Questions			Total Marks (80)
		TF	MC	MT	TF	MC	MT	MC	TF	MC	MT	
Topics	Weightage (12.5%)	20%	20%	5%	20%	20%	5%	10%	40%	50%	10%	100%
COURSE 1: UNDERSTANDING AND NURTURING GIFTEDNESS												
Module 1:	10	2	2	1	2	2	0	1	4	5	1	10
Module 2:	10	2	2	1	2	2	0	1	4	5	1	10
Module 3:	10	2	2	1	2	2	0	1	4	5	1	10
Module 4:	10	2	2	1	2	2	0	1	4	5	1	10
COURSE 2: TEACHER EDUCATION FOR GIFTED EDUCATION												
Module 5:	10	2	2	0	2	2	1	1	4	5	1	10
Module 6:	10	2	2	0	2	2	1	1	4	5	1	10
Module 7:	10	2	2	0	2	2	1	1	4	5	1	10
Module 8:	10	2	2	0	2	2	1	1	4	5	1	10
Total	80	16	16	4	16	16	4	8	32	40	8	80

Meaning of Abbreviations in Table --- (1) TF= True/False type, (2) MC=Multiple choice type and (3) MT= Match the given options type.