

Implementation of Integrated Teacher Education Programme (ITEP): Challenges and Opportunities

Prabhat Manjari Sarangi^{1*} and Subhash Chandra Panda²

¹Nalini Devi Women's College of Teacher Education, Bhubaneswar, Odisha, India

²Regional Institute of Education, Bhubneshwar, Odisha, India

*Corresponding author: prabhatmanjarisarang@gmail.com

Received: 19-06-2025

Revised: 12-07-2025

Accepted: 30-07-2025

ABSTRACT

After thirty four years of implementation of National Policy on Education 1986, National Education Policy 2020 has been introduced by the Government of India. This emphasizes at bringing necessary changes in the education system with reference to the present context. It focusses on the holistic development of future generations of the nation. Additionally, it envisages bringing transformations in various aspects of teacher education system to meet the present day classroom challenges emerging from the schooling process. The recently introduced four-year Integrated Teacher Education Programme (ITEP) aims at preparing dedicated, passionate, motivated, adequately educated, efficient, professionally competent and skillful teachers. This programme enables teachers to design and implement various learning activities for learners of different curriculum structures in school education process. The programme is designed to ensure that future teachers received enriched ideas in content and pedagogy along with exposure to effective learning strategies and ethical values. They are exposed to various schooling practices to deal with varied classroom situations. Challenges arising in different fields of teacher education like changes in contextual classroom atmosphere which would reshape the behaviour of the learners. It emphasizes on the multidisciplinary inputs in schooling process so as to equip the learners to develop right knowledge, skill and attitude to face challenges in life. This paper discusses the implementation of the Integrated Teacher Education Program (ITEP) under NEP-2020 and its challenges and opportunities to be faced by the teacher education process. Challenges in different field of teacher education such as infrastructure development, qualifications of teacher-educators, collaboration between school-community, research on student-teachers' behavior and integration of technology in teaching learning process and the unique opportunities of integrating theory and practice, content and pedagogy and bridging the gaps across the stages of school education are taken into consideration in this study. The NCTE regulation required for the successful implementation of ITEP should be designed in such a way that the challenges could be nipped from its origin itself so that teacher education programmes would take the right direction in inculcating the professionalism among the student-teachers and teacher-educators.

Keywords: NEP-2020, ITEP, Integration, School Curriculum stages

Development of a nation primarily depends on the quality of its educational process. It begins in the classroom at grassroots level. Quality learning environment is created by well-educated competent and committed teachers. Therefore, teachers need to be professionally equipped with competencies in content, pedagogy, classroom management skill, communication skill, ethics and integrity, performance and commitment to

meet the classroom challenges arising out of students' behavior during the learning process. It is widely believed that students attain better

How to cite this article: Sarangi, P.M. and Panda, S.C. (2025). Implementation of Integrated Teacher Education Programme (ITEP): Challenges and Opportunities. *Educational Quest: An Int. J. Edu. Appl. Soc. Sci.*, 16(02): 171-178.

Source of Support: None; **Conflict of Interest:** None



performance level when guided by committed teachers having accountability and responsibility towards profession. The objectives of NEP-2020 is to foster active, responsible and participatory citizens who can contribute for building a fair, inclusive and diverse society as envisioned by our constitution. Teacher preparation as outlined in NEP-2020 is a holistic activity that requires multifaceted insights and knowledge, cultivation of attitudes, values, skills and development of best practices under the guidance of experienced mentors. The objective of Teacher Education is to create teachers grounded in Indian heritage, values, languages, knowledge, ethos and traditions with expertise in academic content as well as in pedagogy. To restore the honour of the teaching profession, the regulatory framework for teacher education must have the authority to adopt befitting measures against low quality and ineffective institutions that fail to fulfill the basic educational needs. It is decided that teacher education must be provided in multidisciplinary contexts. An integrated teacher education should be embedded within multidisciplinary institutions. Hence, it must emphasize excellence in both the content as well as in pedagogy. As stated in NEP-2020 all the teacher education institutions are required to undertake research programmes in collaboration with diverse departments like Indian languages, arts, music, psychology, philosophy, sociology, history, literature, physical education, neuroscience, science and mathematics etc. It is expected by NEP-2020 that all independent (standalone) Teacher Education Institutions (TEIs) must become multidisciplinary institutions by the year 2030 as they are required to provide four-year Integrated Teacher Education Programme (ITEP).

According to NEP-2020 students aspiring to become teachers can enroll in four-year integrated teacher education programme (ITEP) after completion of class XII. By the year 2030, a bachelor degree will be the minimum qualification to be enrolled as school teachers. To promote a holistic and multidisciplinary approach, this specialized teacher education programme aims to integrate knowledge among the sciences, commerce, humanities and sports, ensuring a broad and interconnected learning environment for the future teacher-educators.

Integrated Teacher Education Programme (ITEP)

The NCTE proposed ITEP to attract outstanding students into the teaching profession at a young age. ITEP will be accessible to those candidates who opt for the teaching profession after successfully completion of final board examination of class XII. ITEP curriculum integrates a Bachelor degree in Education and as per UGC guidelines subject specialization to be useful at school education level. NEP-2020 stated that the primary objective of ITEP is to empower teachers with the requisite knowledge, understanding, skills and competencies to teach students effectively at different stages of school education. The admission process of ITEP will be managed by the National Testing Agency (NTA) through National Common Entrance Test (NCET). Additionally, the ITEP is designed to meet the demands of 21st century skills like critical thinking, creativity, collaboration, information literacy, leadership, initiative, productivity, social adaptation etc. For the first time in India, the pre-primary education including early childhood care and education (ECCE) takes a place in regular school education system. It also focuses on foundational literacy and numeracy (FLN). ITEP prepares teachers for all the stages of school education i.e. Foundational, Preparatory, Middle and Secondary.

The ITEP also prioritizes practical training and internships providing aspiring teachers with hands-on classroom experiences. Through structured school-based experiences, teaching practice and internships future teachers can apply theoretical knowledge in real-world teaching environments and honouring their pedagogical skills and classroom management techniques. Recognising the importance of technology in modern education, ITEP also focusses on integrating educational technology, virtual learning platforms and development of technology enhanced teaching methods into their practices in teacher preparation education. Additionally, it highlights the significance of continuous professional development of teachers to promote lifelong learning enabling teachers to expand their knowledge, investigate new ideas and remain actively engaged in their profession. This programme ensures teachers to stay connected and updated with the latest best pedagogical practices and innovations.

Institutions/Colleges where ITEP offered in Odisha by the end of 2024-2025

In the academic year 2023-24, IIT Bhubaneswar introduced ITEP. Fifty number of students (one unit) got the chance to pursue in Bachelor of Science (B.Sc.) programmes in one of the specific subject area i.e. physics/chemistry/mathematics/economics along with professional component which provides necessary knowledge, skills and competencies to teach students of secondary stage-II school science education.

Maharaja Purna Chandra Autonomous College located in Baripada, Mayurbhanja is another premier institution of Higher Education in Odisha has been offering ITEP from the academic year 2023-2024. The institution offers admission to fifty numbers (one unit) of students in B.Sc. B.Ed. in one of the disciplines namely Physics, Chemistry, Mathematics, Botany and Zoology. Another 50 students had the opportunity to pursue B.A. B.Ed. programme in one of the discipline i.e. Languages (Hindi, English, Odia), Humanities (History, Political Science, Geography, Economics) which imparts the knowledge, skills and competencies to teach at secondary school education.

Regulation in Brief on ITEP

The ITEP is a bachelor's degree offering dual specialization in subject matter and pedagogy for different levels of school education. As per new pedagogical structure there will be 12 different programmes of ITEP to meet the pedagogical needs at different levels of school education. Secondly, the degree level of disciplinary education in the field of science, arts and commerce shall be imparted simultaneously. Hence, at one hand the product would be having a degree in Science/ Arts/Commerce along with Bachelor in Education (B.Ed.) in Foundational, Preparatory, Middle and Secondary stage. Hence, this programme indicates that the minimum eligibility condition of the teachers would be graduate in disciplinary subjects and B.Ed. in different pedagogical stages. Till date such programme was not available and it becomes an innovative and regular programme in the field of teacher education. It also provides a facility of vertical mobility of student-teachers either in disciplinary or in professional education.

This is a programme of eight semesters, each semester consisting of 125 working days and 36 contact hours in a week for the student-teachers with the faculty. Minimum eligibility condition to get into the programme is class XII pass certificates. As proposed by NCTE the total credit available for student per semester is 20. As a result a student needs to obtain minimum of 160 credits including at least 80 credits for the first major(i.e. in Education) and 64 credits for the second major(i.e. in school subjects of science/humanities/commerce) in order to earn the dual graduate degree in disciplinary subject and in professional subjects.

Thirdly, a candidate can exit after second and fourth and sixth semester before concluding the final semester. Moreover, if he/she feels also can make re-entry in third or fifth or seventh semester. But in any way the programme has to be completed by a student-teacher within six years from the date of his/her admission into the programme.

Fourthly, the faculty in discipline areas must have the B.Ed. degree to their credit. The success of management of the programme rests on all the faculty members so as to involve all in different types of activities conducted in disciplinary and professional education. The concerned experts in liberal and professional education have to join hands to bring in the integration of content and pedagogy, theory and practical and bridging the stage wise academic gap that exists in between the stages of school education. The most important programme of school based experience and field work like community engagement and service requires involvement of all faculty irrespective of educational studies and liberal and pedagogical studies.

Challenges of ITEP

The NCTE proposed ITEP as a four-year integrate programme which started in 42 numbers of renowned central/state government universities/institutions from academic session 2023-24. It includes other multidisciplinary institutions like IIT, NIT, IISc. in addition to other multidisciplinary degree and Post graduate institutions. In the year 2024-2025, the programme was launched in 22 more institutions across the country. However, implementing ITEP in higher education multidisciplinary degree and post-graduate institutions possesses a great

challenging task and the respective institutions must take proactive steps to facilitate a successful and efficient programme. Few of the challenges relating to implementation and curriculum development issues adopted by the NCTE are discussed below.

- ❑ As per NEP-2020 (clause 15.4, p.42) all standalone Teacher Education Institutions must be converted into multidisciplinary institutions by the year 2030 to provide ITEP. Despite this transition, the country may still face a shortage of ITEP graduates at different school education levels. Initially it was decided to hold a pilot study on this programme in 50 multidisciplinary institutions by the year and may be due to certain compulsions altogether 64 institutions have been identified out of which 42 have already started during the year 2023-2024 and the remaining 22 institutions have launched the programme during the year 2024-25. During the year 2025-2026 two categories of institutions were asked to apply: those already continuing the previous 4-year integrated B.A. B.Ed. and B.Sc. B.Ed. programme through a transition process and new multidisciplinary institutions run by both government and private enterprisers. Hence some more institutions may be added to the list shortly.
- ❑ The three year UGC curriculum framework demands 120 credits with 60 credits allocated to the major subjects and around 24 credits to the minor subjects in addition to the content of 2 year B.Ed. programme. But the ITEP as per NCTE norm requires 64 credits for the disciplinary/interdisciplinary subject. This condition laid by NCTE helps to an individual to have vertical mobility. This condition of single subject does not help a student-teacher to be competent in school subject teachers. In school system a teacher is supposed to teach minimum of two school subjects. Moreover, there is difference between school subject and higher education disciplines. This difference in credits in disciplinary courses in three-year general graduate programme would be superior to four-year ITEP programme. They do have major one and minor one discipline but ITEP does have only one. But in reality a school teacher should have one major and two minors to be a competent teacher. This develops

lack of content competency among the ITEP graduates to meet the classroom challenges in schooling process. Even at present context the students of class XI & XII are taught by teachers holding post graduate degrees. But as per NCTE norm the students of class XI and XII will also be taught by less competent graduates. This creates a serious anomaly in teacher qualification at phase II secondary level.

- ❑ To conduct ITEP programme effectively two types of adequate resources are required i.e. physical (material) and human resources. The institution must provide modern classrooms, well-equipped laboratories for the subjects as per requirement. Moreover, classroom having projectors, smart boards and an uninterrupted power supply with backup generators etc. become an added requirement. Additionally other facilities like digital library, inclusive classrooms setup, environment for developing research- culture, separate hostels for both boys and girls students are necessary to foster a suitable environment for learning. As per NCTE norms adequate infrastructure is crucial to ensure a high quality learning experiences for students. Equally important is the availability of specialised teacher educators for Educational studies, Liberal & Pedagogical studies and allied subjects like art, music, sports etc. as per the NCTE norms and standards for ensuring quality education. Adequate guidance and career counselling facilities are essential for producing quality teachers. The qualified and competent teacher-educators as indicated in NCTE norms need be appointed for conducting effective activities during the programme for student-teachers. However, the present institutional scenario lacks these necessary facilities.
- ❑ As per NCTE guideline, ITEP provides flexible entry and exit options for student-teachers along with suitable certification. The candidates, those who opt to withdraw themselves from the programme after completion of one year (two semesters) will be awarded a certificate showing the credits they have earned. Those, who exit after completion of two years (four semesters) will be granted a diploma certificate indicating the credits obtained for the courses

completed. In addition to it they should be offered a vocational course worth 2 credits to enhance their skills for employability in the job market. Students who exit after three years (six semesters) of the study and fulfill the necessary requirements will be awarded a Bachelor's degree certificate in the main subject area. After obtaining 120 credits at the end of three years and satisfying the minimum credit requirements of 64 credits for their major subject the students will be issued a graduate degree. Those who successfully complete the entire four-year programme (eight semesters) will receive a dual-major Bachelor's degree comprising their primary disciplines along with a professional teaching area such as B.A, B.Ed. or B.Sc. B.Ed. or B.Com. B.Ed. They are required to accumulate a total of 160 academic credits with at least of 80 credits allocated to their first major (i.e. in Education) and a minimum of 64 credits to the second major (which may include subjects from Humanities, Science or Commerce). Hence, how far the exit-entry system gets fitted with the system is a big question. The UGC guidelines do not provide a strong support to this type of arrangement in professional programme. No vocational course is provided neither at the end of one year nor two years. The study continued in professional component has no use for them. The multiple entry and exit system in ITEP will be a great challenge for students striving to develop professionalism in them. In no other profession this kind of multiple entry and exit is visible. Moreover, in which way this certificate, diploma and degree will be helpful to student teachers to enter into world of work. This poses a challenging question in front of the product.

- ❑ In school system a teacher is supposed to teach two school subjects out of mathematics, science, social science, two/three languages. The science group consisting of main aspects of Physics, Chemistry and Biology while the social science draws contents mainly from Geography, History, Economics and Political Science subjects. But in degree stage only one major and two minor subjects with inadequate credits as compared to discipline (graduate) programmes may not be able to

make the teacher competent enough to handle the school subjects. Hence, in ITEP, there is strong need of one major minimum of 60 credits and two minors having at least 24 credits each (as minimum eligibility credits to pursue corresponding post graduate education) are very essential to meet the classroom challenges at school stage. As it is a programme of teacher education there is no harm to equip the student teachers even more than general disciplinary (graduate) programmes as ITEP is a specialized programme to prepare teachers for different levels of school education.

- ❑ In all teacher education programmes, content and pedagogy are deeply interconnected. But the integration of level specific gaps in all school stage i.e. pedagogical and curricular restructuring of 5+3+3+4 system along with integration of theory and practice in the disciplinary subjects are not available in any other teacher education programme. Hence, the theory and practice of integration need to be included for which there is ample scope in this programme. Rather the curriculum should be designed to have a focus on these issues.
- ❑ The primary focus of the ITEP curriculum is to empower student-teachers with the necessary skills and competencies to play the roles of a teacher and fulfill the expectations of society. They have to carry out responsibilities efficiently and effectively in diverse situations like social, economic, linguistic, cultural and technology. It seems there is little scope with these issues due to differing implementational strategies adopted by various types of multidisciplinary institution like technological institution universities, degree colleges and Regional Institute of Education..

Opportunities

The 4-year Integrated B.A. B.Ed. & B.Sc. B.Ed. programmes were initiated in NCERT (Four Regional Colleges of Education) in 1963. For the first time, graduation programme in Science and Arts were launched specifically for teacher education along with a professional degree i.e. Bachelor of Education in Science/Arts. Special care was taken to provide adequate knowledge in content and professional competencies with

the student teachers. The content included in the degree stage was developed keeping in mind the need and interest of the secondary school children as the programmes aimed at preparing teachers in Science, Mathematics, English and Social Studies teachers. Through the double degree programme (Content and Education- B.A./B.Sc. B.Ed.) care was taken to provide more knowledge competency than their counter part in general graduation such as B.A and B.Sc.

It was felt at that time the general graduates were content wise less competent than the product of B.A./B.Sc. B.Ed. Programmes. Due to which this integrated programme was better accepted among the youngs and the products were well accepted by the school system and society.

Now ITEP has been emerged as a very versatile programme being spread over all the pedagogical stages of school education. This movement helps our country to prepare specific pedagogy experts for each stage of education.

Many more opportunities may emerge in front of us which are discussed here. Of course the experts who are at the highest level of developing implementation strategies have to take into consideration of the age-old four year integrated programme launched by NCERT in past which will be discontinued from the academic session of 2025-26.

The opportunities can be looked from a broad perspective to meet challenges of school education:

- ❑ **Impact of Integration:** The process of Integration in the academic field in general and in teacher education in particular is no doubt a great challenge. It gives birth to various benefits in the academic process to the students in terms of consumption of time or duration. When two programmes are integrated the beneficiaries (students) save at least one academic year so as to get the benefit of two degrees. But in addition to that in this teacher education programme gets the benefit in three other ways i.e. in terms of integrating theory with that of practice as skill orientation, integrating content with pedagogical process in the classroom and integrating bridging different pedagogical levels of education to minimize the content adjustment mechanism across the levels of pedagogical system i.e. when a student jumps

from one pedagogical stage to the other. In addition to saving one academic year there is enough scope for these three fold integrations in ITEP.

- ❑ **Development of Professionalism:** In ITEP, the students are enrolled after passing class XII examination when they are young. In course of their stay in the system continuously for four years they are supposed to get enough opportunity to develop professionalism in them.
- ❑ **Teacher preparation for all streams:** As vocational education becomes an integrated part from middle stage of school education, there is a need to include commerce education in teacher education programme. In ITEP, integrated degree of B.A. B.Ed., B.Sc. B.Ed. and B.Com. B.Ed. are introduced to provide an opportunity for preparing teachers in all the three streams.
- ❑ **Development of a specialized graduate programme for teacher education:** A great opportunity is available now to develop a specialized 3-year graduate programme in teacher education in Science, Arts and Commerce based on the guide lines of UGC as well as need of School education. The present 3-year graduate programme does not cater to the need of school education.
- ❑ **Easy conversion of principle of andragogy to pedagogy:** Making the principles of andragogical science at degree level useful for developing pedagogical ideas required at the school level with the student-teachers. The process of integration of content & pedagogy and theory & practice at degree level empower the student-teacher to develop the competency through practice in school experience and community engagement and service.
- ❑ **Better exposure to school and schooling process:** Better opportunity is available through ITEP, by making student teachers exposed to school, schooling systems and community within a long duration of four years and development of skill orientation aimed at by the programme.
- ❑ **Opportunity for long duration of internship in teaching:** Opportunity for long duration

internship in schools in school processes in lieu of age old system of least fruitful practice teaching process and community engagement and service.

- ❑ **Vertical Mobility:** There is opportunity for the student teachers to avail the chance of vertical mobility in disciplinary as well as professional subjects.
- ❑ **Impact of multidisciplinary:** ITEP provides opportunity of running the teacher education programme in multidisciplinary institutions which open the doors for sharing experiences, services and infrastructure by both disciplinary as well as teacher education programme.
- ❑ **Emphasis on Indian values:** ITEP integrates Indian values, ethos, art, culture and traditions into teacher education programme. This fosters a sense of national identity and cultural understanding in perspective teachers.
- ❑ **Development of Leadership and adaptability skills:** ITEP focusses on nurturing leadership qualities, flexibility and a problem solving mindset through its transactional processes. It provides student-centric pedagogy and preparing graduates with essential competencies to handle the challenging situation of modern education system.
- ❑ **Standardized admission via National Common Entrance Test (NCET):** The National Testing Agency (NTA) conducts the National Common Entrance Test (NCET) for admission to ITEP, ensuring a fair, competitive and standardized admission across institutions.
- ❑ **Scope for developing pedagogical expertise in areas other than the specific one:** Last but not the least opportunity is available for the student-teachers to take the help of short term pedagogical bridge courses for acquiring expertise in other pedagogical issues than the one earned.

CONCLUSION

The NEP-2020 proposed a significant reform in teacher education, leading to launching four-year Integrated Teacher Education Program (ITEP) in Science, Arts and Commerce. It has been initiated from the academic session 2023-2024 by the NCTE. This initiative aims for bringing a revolutionary

change in the teacher education processes resulting into better professionalism with the product of the programme. Present society demands teachers who are more accountable, responsible and capable of making meaningful contributions to students at different levels of school education. They will be instrumental to shape the future of our country by their knowledge, skills and experiences gained from the new type of programme. They will play a crucial role in shaping future of the nation. To develop professionalism in the product of ITEP, special emphasis need be given on the following direction:

The content competency of the product cannot be negotiated in anyway as compared to three year graduation programme. Rather as per the need of school education the number of subjects and credits need to be reorganized in higher side because of the fact that ITEP programme is a specialized programme to prepare teachers for the school education. Hence this programme can be developed so as to meet the challenges of school classrooms and make the teacher capable of dealing with all the required school subjects in general and integrated science and social science in the school classroom in particular. The necessity of exit-entry system needs to be reviewed in developing the professionalism in practitioners through teacher education programme. Maximum duration of stay in the programme as mentioned in the Regulation, 2021 is six years which can take care of student-teachers who faces problem of continuance in the programme. Integration must be emphasized i.e. between content with pedagogy, theory and practice even in disciplinary subjects and the process of bridging the gaps between the levels across school education that is between foundational and preparatory, preparatory and middle, middle and secondary stage I and stage II. Collaboration among faculties of disciplinary and professional subjects i.e. content & pedagogy is most essential. The impact of team approach of faculties involved from different disciplines will be most beneficial to produce quality teachers. This particular collaboration among different faculties of the multidisciplinary institution may be taken special care in practice but not only in records for record sake. Every faculty of disciplinary streams must have pedagogical orientation without which integration as proposed will remain unattended. Faculty Qualification-The regulation on ITEP has

made it compulsory to have pedagogy qualification (i.e. B.Ed.) by the faculty who are engaged in teaching disciplinary subjects at degree level. They will be required to handle the related pedagogy of the subjects at school level. The Educational studies components would be dealt with by the faculty of Education. It has been tried to maintain quality aspects of the programme by involving all faculties with different school based activities like Internship in teaching, community engagement and service and all other related activities during teacher education programme. But in reality majority of the institutions the departments relating to different disciplines mostly are not associated with school based activities indicating non-integration of areas discussed earlier. Rather in lieu of integration the phenomena of association of different departments take place. Student-teachers are not able to get the taste of integration. They developed the idea of getting advantages of 1 year time to their gain to be awarded with two degrees.

The ITEP not only offers holistic education in pedagogical and content knowledge but also ensures the benefits from multidisciplinary approach to teacher education process. It focuses practical training for developing skills through internships which offers hands-on classroom experience through rigorous school-based experiences, teaching learning practices etc. All these interventions are made through internships to transform a student to be an effective teacher. The ITEP emphasizes the practice of continuous professional development of teacher educators and make them feel the importance of technology in teacher education process. Before implementing ITEP each teacher education institute must assess and address the existing gaps, ensuring the availability of suitable infrastructure for implementation of the programme. It should involve smart classrooms and

must be equipped with better laboratory conditions, robust and modern internet facilities with computer in library. Institute must be capable of providing opportunities to participate in extracurricular activities such as dance, drama, music, painting, games & sports etc. to all the student-teachers. Lastly the institutes, most importantly look after the well-trained and motivated teacher-educators. We expect ITEP have to play an important role in developing India and elevating our country to a new height under the active leadership of regulatory authority i.e. NCTE.

REFERENCES

- Government of India. 2020. National Education Policy 2020. Ministry of Education. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Government of India. 2023. Curriculum Framework: Integrated Teacher Education Programme (ITEP). NCTE, New Delhi. <https://ncte.gov.in>
- Indian Institute of Technology. 2024. Integrated Teacher Education Programme (ITEP). Bhubaneswar. <https://itep.iitbbs.ac.in>
- Maharaja Purna Chandra Autonomous College. 2024. Undergraduate programmes. Baripada, Odisha. <http://mpcautocollege.org.in>
- MoE. 2023. Department of School Education and Literacy. Government of India. New Delhi. <https://dsel.education.gov.in>
- NCERT. 2023. National Curriculum Framework for School Education. NCERT, New Delhi. <http://ctegujarat.org/Downloads/NCF%20Secondary%20Education-2000.pdf>
- UGC. 2023. Curriculum and Credit Framework for Undergraduate Programmes. New Delhi. <https://www.ugc.gov.in/KeyInitiative?ID=yiPY1rgAlvz9/1chFf86gg==>
- UGC. 2023. National Higher Education Qualification Framework (NHEQF). New Delhi. <https://www.ugc.gov.in/KeyInitiative?ID=CjV3jqYIZhtroLHLDug2Ew==>