Chapter 7

Curriculum and Learning Outcomes

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Effective learning requires a comprehensive approach that involves appropriate curriculum, engaging pedagogy, continuous formative assessment and adequate student support, as provided in the RTE Act. Audit observed shortcomings in preparation of curriculum, learning outcome models and introduction of Vocational Education in the State. Significant audit findings are as follows:

- The State had not framed State Curriculum Framework as of March 2023.
- Text Book Production & Marketing of the Department, had not completed processing of manuscripts of five books on Disaster and Pandemic Management. Consequently, these subject matters could not be included in the curriculum, as of March 2023.
- During 2018-23 (excluding 2020-21), 62 and 48 *per cent* students secured bottom grade / division in Class X and Class XII examinations, respectively. This is indicative of the fact that a large number of students were deprived of quality education which affected their performance ability.
- The State had decided to introduce Vocational Education in 877 Secondary and Higher Secondary schools during 2018-23. Against this target, Vocational Education could be introduced in 646 schools, as of March 2023.

7.1 Introduction

Effective learning requires a comprehensive approach that involves appropriate curriculum, engaging pedagogy, continuous formative assessment and adequate student support. Section 7(6) of the RTE Act provides for formulation of a National Curriculum Framework (NCFW) for Elementary education. Section 29 of the RTE Act states that the curriculum and evaluation procedure for elementary education shall be laid down by the academic authority, specified by the appropriate Government. The Act further provides for laying down the curriculum for Comprehensive and Continuous Evaluation (CCE) of a child's understanding of knowledge and his or her ability to apply the same.

7.1.1 Non-formulation of State Curriculum Framework

Paragraph 4.30 of the NEP 2020 and Paragraph 6.9.3.1 of SSIF state that National Council for Educational Research and Training (NCERT) would formulate a new and comprehensive NCFW for school education, which would

serve as broad guidelines including research-based recommendations on curriculum, pedagogy, assessment and examination for school education in the entire country. NCFW would be framed by incorporating and integrating local and indigenous flavours from across the country.

NCERT informed (May 2021) all the State Councils of Educational Research and Training (SCERT) to initiate the process for the development of four[49] State Curriculum Frameworks (SCFs) to be fed into the preparation of National Curriculum Frameworks (NCF). These SCFs in the draft form would provide valuable inputs for the NCFs. After the finalisation of all the four NCFs, the States would finalise their SCFs by adopting/adapting inputs from the final recommendations of NCFs for their implementation in the States. Accordingly, the School & Mass Education (SME) Department appointed (June 2021), the Director, Teachers' Education and State Council of Educational Research and Training (TE & SCERT) as the Nodal Officer for the development of the SCFs. Besides, the SME Department constituted (September 2021) three Steering Committees under the Chairmanship of the Principal Secretary. As per the timelines fixed by the NCERT, the final SCFs were to be shared with the NCERT on the online platform by August 2022.

Although the NCERT submitted the NCF Foundational Stage[50] (NCF(FS)) in October 2022, the State was yet to adopt the NCF(FS) for development of the SCF for Foundational Stage.

The Department stated (October 2024) that formulation of SCF had already been started.

7.1.2 Non-integration of disaster and pandemic management in curriculum

Paragraph 4.28 of NEP 2020 emphasised inclusion of disaster response and first-aid in the school curriculum. Audit noticed that SME Department, GoO, intimated (August 2021) the TE&SCERT to take action for the integration of Disaster and Pandemic Management (D&PM) in the School Curriculum (Classes IV to XII) from the academic session 2022-23 onwards. Accordingly, TE&SCERT prepared five books and submitted (April 2022) the manuscript of these D&PM books to the Director, Text Book Production & Marketing (TBPM) for preparation of five positives, to enable them to supply the text books to students in the year 2022-23.

Audit noticed that the TBPM had not completed the preparation of the positives for the manuscripts of five D&PM books, as of April 2023 and the TE&SCERT reminded (April 2023) TBPM to complete the same. Due to the delay in printing of books, the D&PM had not been included in the curriculum, as of March 2023. Thus, the SME Department failed to include D&PM in the Curriculum even after one year from the preparation of the Manuscript, due to non-supply of related textbooks in time by TBPM.

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[49] (1) State Curriculum Framework for School Education (SCFSE), (2) State Curriculum Framework for Early Childhood Care and Education (SCFECCE), (3) State Curriculum Framework for Teacher Education (SCFTE) and (4) State Curriculum Framework for Adult Education (SCFAE)

[50] National Curriculum Framework for Early Childhood Care and Education is also called as the NCF (FS)

The Director TE & SCERT stated (May 2023) that the TBP&M had submitted the soft copy of five textbooks in May 2023. However, the fact remained that the D&PM could not be included in the curriculum of students, as of March 2023.

The Department stated (October 2024) that Director, TE & SCERT had developed supplementary booklet on D&PM for Classes IV to VIII, which would be integrated in the school curriculum of Classes IV to VIII, at the time of revision of text books.

7.1.3 Curriculum and pedagogy in sampled schools

Paragraphs 4.5 to 4.9 of the NEP 2020 emphasised reduction in curriculum content to enhance essential learning and critical thinking. As per the NEP, the curriculum must include basic arts, crafts besides humanities, games, sports *etc*, to develop all aspects and capabilities of learners and make education more well-rounded, useful and fulfilling for the learner. Paragraph 6.9.12.2 of SSIF suggested promotion of activity-based learning at the foundational stage (3-8 years), experiential learning at the preparatory stage (8-11 years), activity & vocational sensitivities at the middle stage (11-14 years), competency-based learning, arts and sports-integrated education and greater flexibility in choice of subjects at secondary stages (14-18 years).

Audit noticed that:

- Out of 77 sampled Government and Government-aided schools offering Primary to Upper Primary levels of education, only 43 schools had introduced art and craft-based activities, activities based on local context *etc*., for the students. Further, 24 of the sampled schools did not impart experiential, vocational sensitivities based learning to students at Primary and Upper Primary level, as of March 2023.
- Out of 63 sampled Secondary and Higher Secondary schools, only 33 schools imparted physical education as well as arts and crafts education to the students.

The Department stated (October 2024) that after development of the SCF, pedagogy shall be implemented in the schools.

Recommendation 7.1

Immediate steps need to be taken for formulation of State Curriculum Framework in line with the pronouncements made in the National Education Policy, 2020.

7.2 Learning outcomes

Improving the learning outcomes of children requires strategic interventions at the district, sub-district and institutional levels to address gaps in learning. The achievement level of performance of students could be assessed from the learning outcome tests carried out by the State at different stages of education. The NEP 2020 focuses on bridging the gaps in attainment of learning outcomes, undertaking reforms to bring the highest quality, equity and integrity into the system.

Audit analysed performances of students in the final examinations of Class X and Class XII and noticed the following:

7.2.1 Performance of students in Class X and XII examinations

The Board of Secondary Education, Odisha (BSE) conducts annual examination for students of Class X and awards different grades[51] according to the marks secured by them. The Council of Higher Secondary Education, Odisha (CHSE) conducts annual examination for the students of Class XII and awards three different divisions based on the marks secured by them.

Audit collected the details of students who enrolled, appeared in and passed the annual examination of Class X from the Board of Secondary Education and of Class XII from Council of Higher Secondary Education (CHSE), Odisha for the years 2018-19 to 2022-23. The details are given in ***Table 7.1***.

Table 7.1: Students enrolled, appeared in and passed Class X and Class XII examinations, during 2018-19 to 2022-23 in the State

Year	Class X examination conducted by BSE (in numbers)					Class XII examination conducted by CHSE (in numbers)				
	Enrolled	Appeared	Successful	Bottom division		Enrolled	Appeared	Successful	Bottom division	
				Number	*Per cent*				Number	*Per cent*
2018-19	603078	535859	386924	304599	79	361628	355735	241872	146069	60.39
2019-20	617769	511677	407873	348717	85	343782	342865	236095	127456	53.99
2020-21	593944	0	562408	0		**339500**	338743	**315996**	151211	47.85
2021-22	573881	523508	515479	190027	37	315645	308961	266163	80464	30.23
2022-23	566292	516435	508405	278091	55	352078	347734	280552	139341	49.67
Total	**2361020**	**2087479**	**1818681**	**1121434**		**1712633**	**1694038**	**1340678**	**644541**	

(Source: Information furnished by BSE and CHSE, Odisha)

On analysis of the data collected from the BSE and CHSE, the following observations are made by Audit.

- **Performance of Class X students under BSE:** Analysis of the enrolment, appearance and success of students in the Class X examination for 2018-19 to 2022-23 (excluding 2020-21[52]) revealed that out of 23.61 lakh students enrolled in Class X, 2.74 lakh students (12 *per cent*) did not appear in the examinations. The proportion of non-appearance of students was highest during 2019-20 (1.06 lakh). Further, out of the 20.87 lakh students, who appeared in the examination during 2018-23, 18.19 lakh students came out successful. The success rate of student was 98 *per cent* during 2021-22 and 2022-23.

  Out of 18.19 lakh students who came out successful in the Class X examinations, 11.21 lakh students (62 *per cent)* secured bottom three grades (Grade C, D and E). The percentage of students who secured bottom three grades ranged between 37 *per cent* (2021-22) and 55 *per cent* (2022-23). In 2018-20 (pre-COVID), the proportion of students

[51] A1 (>90 *per cent)*, A2 (80-90 *per cent*), B1 (70-80 *per cent*), B2 (60-70 *per cent*), C (50-60 *per cent*), D (40-50 *per cent*), E (33-40 *per cent*) and F (<33 *per cent)*

[52] During 2020-21, Class-X examination was not held due to COVID-19, but BSE published the results adopting alternative method of assessment.

who successfully passed the examination was 72 and 80 *per cent*, whereas in 2021-23 (post-COVID), the success proportion rose exponentially and reached 98 *per cent.*

- ***Performance of Class XII students under CHSE:*** Analysis of Class XII students who appeared in the XII examination revealed that, while 79 *per cent* students appeared in examination and passed successfully, one *per cent* (18595) of the enrolled students did not appear in the examination during 2018-23, The proportion of successful students was 68 and 69 *per cent* in 2018-19 and 2019-20, respectively, which increased to 81 and 93 *per cent* in 2022-23 and 2020-21, respectively. The success rate among the students belonging to SC and ST categories was below the success rate of students of other categories, during 2018-23. While the success rate of students in other categories was 73 to 95 *per cent*, it was 59 to 90 *per cent* among the students of SC and ST categories. Further, out of the 13.41 lakh successful students, 6.45 lakh (48 *per cent)* students secured the bottom (3rd) grade.

  Thus, 62 and 48 *per cent* students secured bottom grade / division in Class X and Class XII examinations, which indicated that a large number of students were deprived of quality education which affected their performance.

  The Department had not analysed the reasons for such poor performance. However, lack of required academic facilities including infrastructure and adverse pupil to teachers' ratio could be some of the contributing factors as discussed in ***Chapters 5*** and ***6*** of this Report, leading to poor performance of students.

The Department replied (October 2024) that in case of performance of Class X students, steps were being taken for improvement of scoring of marks by the students. No reply was furnished in case of performance of students of Class XII.

7.2.2 Assessment of learning levels of students

PRATHAM, a Non-Government Organization conducts surveys of students, studying at Elementary level in the country. The survey of students is conducted to assess the performance of students against different parameters like capabilities in basic maths (subtraction and division), ability to read text as well as sentences written in English. It has been publishing 'Annual Status of Educational Report (ASER)' since 2005. As per ASER 2022, the learning level of students of Classes V and VIII of Government run schools in the State *vis-à-vis* All-India level, is shown in ***Table 7.2.***

Table 7.2: Learning level of students of Classes V and VIII

(Figures denote percentage)

Particulars	Class V		Class VIII	
	India	State	India	State
Can do Subtraction	24.3	22.4	23.1	23.6
Can do Division	25.6	28.2	44.6	43.0
Can read Class II level text	38.5	50.4	66.2	73.2
Can read English sentences	17.5	22.9	40.7	46.9

(Source: Annual Status of Education Report)

As may be seen from the above, the performance of students of Class V and Class VIII of the State Government schools was comparatively poorer as compared to the all India average in some aspects, namely subtraction and division, respectively.

In order to assess the learning level of students, Audit conducted a learning outcome test of students of sampled schools in the presence of teachers of the school, on a pattern similar to that adopted by PRATHAM. As part of the exercise, four students each from the Classes V, VIII and X were asked to answer a set of questions in Odia, English and Mathematics subjects. The tests were designed to understand the quality of reading, writing and fundamental arithmetic levels of students, which are required in everyday life.

The test result showed that 389 (61 *per cent*) and 152 (24 *per cent*) students of Classes V, VIII and X of sampled Government schools failed to secure 30 *per cent* marks in English and Mathematics, respectively. In case of private schools, only two (5 *per cent*) and three (15 *per cent*) students of the above classes secured less than 30 *per cent* marks in English. The test results indicated that the performance of Government schools was poorer than that of private schools, and that learning levels of students of all classes were poorer in English compared to Odia and Mathematics.

Further, learning outcome, being the sole indicator of outcome of education, was not encouraging, which is suggestive of inadequate/ ineffective and poor quality of education.

The Department replied (October 2024) that the learning level of the students of the State was above the National average as per National Achievement survey. However, the fact remained that most of the students did not have minimum knowledge required for day to day activities.

7.3. Introduction of Vocational Education

Paragraph 16.5 of NEP 2020 stipulates that by 2025, at least 50 *per cent* of learners through the school and higher education system shall have exposure to Vocational Education, for which a clear action plan with targets and timelines will be developed. As per Paragraph 11.3 of SSIF, the main objectives of Vocational Education are enhancing the employability and entrepreneurial abilities of the students, by providing them exposure to the work environment, generating awareness about various career options, so that they can make a choice as per their aptitude, competence and aspirations. As per Paragraph 11.4 of the SSIF, the Vocational Education component shall provide for the introduction of vocational courses along with other subjects from Classes IX to XII. The vocational subjects are to be introduced as an additional or compulsory subject at the Secondary level and as a compulsory (elective) one at the Higher Secondary level. Exposure to Vocational Education would also be provided in Classes VI to VIII to provide opportunities for the students to equip themselves with skills required for various occupations and to enable them to make informed choices while selecting their subjects in higher classes.

7.3.1 Vocational Education introduced in a limited manner

As of March 2018, Vocational Education was introduced in 314 Secondary schools in the State. In the Annual Work plan and Budget (AWP&B) (2018-23), the State had decided to introduce Vocational Education in 877 Secondary

(793) and Higher Secondary (84) schools. However, Vocational Education was introduced in 646 schools[53] only, as of March 2023.

Apart from the above, there were 231 Government Vocational Higher Secondary Schools (GVHSS) functioning in different Higher Secondary Government /non-Government aided college premises, up to the end of 2018-19. Due to non-admission of any students in 13 GVHSSs for three consecutive years, new admissions were restricted and the number of GVHSSs were reduced to 218, in July 2019. While the Government had targeted expansion of Vocational Education, the reduction of GVHSSs was contrary to these objectives. Audit observed that there were deficiencies in introduction of Vocational Education due to inadequate laboratory facilities, inadequacy of resource persons for imparting vocational education, non-establishment of linkage between secondary schools & ITIs / Polytechnics, as discussed below:

7.3.1.1 Inadequate laboratory facilities for vocational education

There were 960 Secondary and Higher Secondary schools (excluding 218 GVHSSs) in the State which were running Vocational Education, As of March 2023. Of these, 113 schools (12 *per cent*) did not have functional laboratory facilities (with tools and equipment) for the Vocational courses, as noticed by Audit.

Similarly, dedicated laboratory facilities were not established in any of the 218 functional GVHSSs to make learning more practical-based despite specialised trades *i.e*. horticulture, dairy, repair and maintenance of power-driven farm machinery, Medical Laboratory Technician (MLT) *etc*., being taught to students.

In the sampled districts, Audit noticed inadequate laboratory facilities, the details of which are given in ***Table 7.3***.

Table 7.3: Deficiencies in laboratory facilities in Vocational schools of sampled districts

District	Schools with Classes IX to XII	No. of schools in which VE introduced	No. of school without Vocational lab facilities	Percentage
Bhadrak	354	24	0	0
Koraput	302	44	15	34
Nabarangpur	250	37	37	100
Nuapada	166	33	5	15
Sambalpur	306	85	64	75
Sonepur	136	20	12	60

(Source: Information collected from the sampled districts, for 2022-23)

It may be seen that in Nabarangpur district no laboratory facility was available in any of the Higher Secondary schools which imparted Vocational education.

During test-check of records in 22 schools imparting vocational education in the sampled districts, Audit noticed that:

- 17 schools lacked Vocational laboratory rooms (***Appendix 7.1)***.

[53] Secondary schools: 591, Higher Secondary schools: 55

- In one[54] school, the Vocational tools, equipment, and furniture purchased were kept in office rooms, store rooms *etc*. and were thus not being used.
- In three[55] schools, despite introduction of Vocational courses, Vocational tools and equipment were not available for hands-on training to students.

7.3.1.2 Inadequate resource persons for imparting vocational education

As per the modalities (17th July 2004) of the Higher Education Department[56], either a Full Time Resource Person (FTRP) or one Part-Time Resource Person (PTRP) per trade, should be engaged to teach first and second year classes including practical classes. Audit noticed that against the requirement of 436 to 462 resource persons for the GVHSSs, the GVHSSs were running with 193 to 201 resource persons only during 2018-23, resulting in vacancies of 56 *per cent*, which adversely affected the teaching being imparted to students.

In the sampled districts, Audit noticed deficiencies in teachers' positions in the vocational schools, the details of which are given in ***Table 7.4*.**

Table 7.4: Deficiencies in the introduction of Vocational Education in sampled districts

District	Schools with Classes IX to XII	No. of schools in which VE introduced	No. of Vocational teachers
Sonepur	136	20[57]	40
Sambalpur	306	85	40
Bhadrak	354	24	48
Nuapada	166	33	66
Nabarangpur	250	37	74
Koraput	302	44	88

(Source: Information collected from the DEOs of sampled districts)

Across the sampled districts, the status of Vocational teachers in position was not uniform. While two Vocational teachers were in position (in each school) in five sampled districts, in case of Sambalpur district, the teachers' position was not adequate as only 40 teachers were in position in 85 schools. Thus, there was irrational distribution of teachers across districts.

On scrutiny of records of 22 schools which imparted Vocational Education in the sampled districts, Audit noticed the following:

- The Vocational Higher Secondary School, Sunabeda was running Vocational courses in two trades (Catering and Restaurant Management and Computer Technology). The total seat strength in the trades was 48 each for Classes XI and XII in two trades. In the absence of a permanent faculty for the vocational courses, the course was being managed by part-time faculty. During 2018-23, against the combined

54 SSD Higher Secondary School Sunabeda

55 GVHSS Bant. GVHSS Naami, GVHSS Birmaharajpur

56 Up to 2015-16, the affairs of Higher Secondary Schools/ +2 Colleges were being managed by the Higher Education Department. Thereafter, the responsibility was assigned to SME Department

57 It includes only secondary schools where Vocational education has been introduced. Information about Higher secondary schools in which Vocational Education has been introduced, was not available at district level, hence not included.

seats of 480 for two trades, 169 seats (35 *per cent*) remained vacant for both these trades, the highest being in the Computer Technology (CT) trade *i.e*. 64 *per cent* during these years. The school attributed the low admission in the CT course to disinterest of students in Science-related courses.

- Dr. Jhasiketan Sahoo (JSS) College of Maneswar Block in Sambalpur District was running Vocational courses on Dairying and Farm Mechanism (FM) since 2007-08. The total seat strength was 48 each for Classes XI and XII for each trade. The college did not have Vocational lab facilities and faculties for FM since 2018-19 and for Dairying in 2022-23. Further, the Principal had requested (March and April 2018) the Director/ Dy Director, Vocational Education to shift the vocational stream to another college, due to insufficient infrastructure facility to accommodate Vocational students in the college and non-availability of teaching faculties. The request of the Principal had not been accepted by the Department, as of March 2023.
- In Government Higher Secondary School, Biramaharajpur of Sonepur district, 111 students were enrolled in Horticulture and Textile Designing during 2018-23. However, no vocational teachers were appointed for both the trades.
- In Government Higher Secondary School Nami of Bhadrak district, although 54 students were enrolled during 2018-23 in the Horticulture trade, there were no teachers for the trade during the period 2018-23.

Thus, the State had not fulfilled teaching and other supportive infrastructure requirements necessary for promotion of Vocational Education and development of vocational sensitivities among the students.

7.3.1.3 Non-establishment of linkage of Secondary schools with ITIs and Polytechnics

As per Paragraph 11.7.2 of SSIF, a strong linkage between Secondary schools and Industrial Training Institutes (ITIs) and polytechnics needs to be developed. Such linkages are also necessary for allowing horizontal mobility of students between various vocational training institutions and to mutually benefit from the infrastructure, curriculum and pedagogy as well as for improving the employability and mobility of students in employment.

OSEPA informed that 1.41 lakh (49 *per cent*) out of 2.86 lakh students of Secondary and Higher Secondary classes successfully completed the vocational courses during 2020-23 and 14 students (less than one *per cent*) out of the passed students got employment/ self-employment. The poor employment of passed students was indicative of the fact that the employability of the students had not improved by establishing required linkages between schools offering vocational education and ITIs and Polytechnics.

Thus, the State failed to address various aspects of vocational educational needs of the students, which could have enhanced the employability and entrepreneurial abilities of students.

Recommendation 7.2

Vocational education in the State may be revamped by providing adequate resources, in terms of instructors, tools and equipment in the laboratories as well as introducing new subjects and establishing linkages to enhance student employability.