Rationalization of School Curriculum

Background

The conventional teacher centred and rote learning form of education has served us well through ages. As the education system in Bhutan embraces the 21st Century education framework and principles, it warrants a paradigm shift in curriculum design and development, including the pedagogy, commensurate the competency based learning. An approach, which underscores that learning in the 21st century, is for the development of competencies through active engagement of learners in learning experiences, guided by formation and utilisation of "working knowledge". This empowers learners to take responsibilities of their learning and develop "portable skills or soft skills," such as critical thinking, creativity, communication and collaboration, vital for all as individuals with unique talent and competencies. The current culture of curriculum design and practices in schools, however, do not render condition to facilitate realisation of the national aspiration of nurturing "nationally rooted and globally competent" citizen.

Amongst others, it has always been a concern for REC on the extent, relevancy and quality of the curriculum in all subjects. Thus, in order to facilitate quality learning for 21st Century education, REC has initiated major curriculum reform in all subjects.

Rationale

The Bhutan Education Blueprint 2014-2024 indicated that the existing curriculum was 'heavy'. This was echoed as one of the major pointers in the National School Curriculum Conference 2016 that the curriculum was 'vast'. These findings led to the need for curriculum "thinning" [Resolution 3.1.10 (IV)]. In response to these findings, REC started the rationalization of the existing curriculum by reviewing and screening out the obsolete and irrelevant content, and updating them with the most recent information and also rectifying errors in the textbooks. Therefore, some portions of the syllabi from several subjects, for instance, have been dropped. The rationalization or thinning of curriculum is one of the important considerations made while developing new textbooks based on new curriculum frameworks.

The curriculum rationalization process also aligns very well with Resolution 13 of the National Education Conference 2018 of "Doing away with the Saturday classes". The para 13.4 of the resolution requires 'REC to work on curriculum thinning and review of time allocation for each subject'. This resolution has further facilitated REC to expedite the curriculum rationalization and review the time and period allocation for each subject.

Rationalization of the school curricula is based on the following strategies:

i. Review the goals and outcomes of each subject to identify topics, chapters, learning activities, exercises and assessment.
ii. Develop rationalized syllabus for each subjects ensuring conceptual linkages and progression within the chapter or topic in the textbooks.
iii. Minimize lexical density in text by reducing heavy textual materials from the textbooks.
iv. Remove topics, learning activities or assessment items, which are redundant, overlapping irrelevant or inappropriate.
v. Delete irrelevant or inappropriate illustrations or diagrams, and examples from the text.

vi. Update and align the content width and depth with the teaching time available for each subject.
vii. The revised syllabi for each subject are categorised and compiled under four subject classifications, namely STEM, Social Sciences, Language, and TVET & Commercial Studies.

The review of the instructional time allocation is based on the following criteria:

i. Maintain the instructional time requirement at the international standard.
ii. Maintain gradual increase of instructional time across most of the key stages.
iii. Reduce the instructional time for each subject across the grades based on the doing away of the Saturday classes.
iv. Allocate time for personal development learning areas, such as HPE, Arts Education, Values Education, CGC, TVET Program (clubs and PVOP).
v. Non-curricular activities and programmes are to be conducted outside the instructional hours.
vi. Calculate 150 actual curricular instructional days (excluding examination days in June and November months) in an academic year based on 5 working days per week.
vii. Calculation of instructional time is based on 8 periods a day of 40 minutes each.

Conclusion

Instructional time refers to the actual contact time in the classroom. This is the minimum time available for the delivery of the curriculum including assessment. Instructional Time equals to number of days multiplied by number of periods per day times duration of one period (180 x 8 x 40). The rationalization of the curriculum is based on 150 days of the actual instructional time.

Instructional days are the total number of days within which the curricular activities are conducted. Within these days, a maximum of 5.33 hours (320 minutes) are available for actual classroom instruction per day. This calculation is based on 8 periods a day of 40 minutes each. The average instructional time in the OECD countries ranges from 799 to 915 hours per year. This includes all the educational activities that happen in the school in a day. However, the calculation of instructional time for the rationalized curriculum is based on the actual contact time for curriculum delivery, which has resulted in more instructional time than in OECD countries.

Lastly, it must be noted that the instructional time and days are suggested guide. Thus, it is envisaged that schools will make adjustment in instructional time as deemed applicable.

Class: IV **Subject: Science**

Sl. No.	Chapter	Times (min)	Weighting (%)	Changes	Reasons
1	1. Materials in Our Surrounding	800	11	Removed Activity 1.5C	Activity is similar to 1.5 A and 1.5 B
2	2. Matter	800	12	Remove Activity 2.2 B	Activity is similar to 2.2 A
3	3: Materials in Mixtures	720	10	Remove Activity 3.5 B	Activity is similar to A
4	4: Separating Mixtures	600	8	Status quo	
5	5: Forces	440	6	Status quo	
6	6: Light and Sound	600	9	Remove Activity 6.1 B	Activity 6.1 B is not required
7	7: Electricity and Magnetism	640	9	Remove Activity 7.4 B	Activity is similar to Activity 7.4 B
8	8: Living Things and their environment	800	11	Status quo	
9	9: Green Plants	640	9	Status quo	
10	10: Food	560	8	Remove Activity 10.3 B	Activity is Similar to A
11	11: Our Earth	600	7	Remove Activity 11.1.B	Activity is not necessary
	Total	**7200**	**100**		

Class: V **Subject: Science**

Sl. No.	Chapter	Times (min)	Weighting (%)	Changes	Reasons
1	**1. Matter**	640	9	Status quo	
2	**2. Physical Change**	560	8	Remove activity 2.4 B	Activity is similar to A
3	**3. Separating the Mixture**	600	8	Remove **Activity** 3.5 B	Activity is similar to A
4	**4. Frictional Force**	440	6	Remove Activity 4.3 B	Activities are of similar types.

5	**5. Light and Sound**	640	9	Remove activity 5.5 B	Not necessary as it demands lots of time and resources.
6	***6.*** **Electricity and Magnetism**	680	10	Remove Activity 6.2 B	Can conduct Activity B along with activity A
7	**7. Energy**	600	7	Remove Activity 7.3 B	Not necessary
8	**8. Characteristics of Living things**	680	9	Status quo	
9	**9. Green Plants**	640	9	Remove Activity 9.5 B Work in group (Last activity)	Lots of activity of same type.
10	**10. Living things and their Environment**	640	9	Remove Activity 10.2 B	Not necessary
11	**11. Nutrition and Human System**	560	8	Remove Activity 11.4 B	Time consuming
12	**12.0ur Moon**	520	8	Status quo	
Total		7200	100		

Class: IV Subject: Science

Sl. No.	Chapter	Times (min)	Weighting (%)	Changes	Reasons
1	1. Elements, Acids and Alkalis	600	8	Remove Activity 1.1 C	Not necessary
2	2. Chemical Changes	560	8	Status quo	
3	3. Separating Mixture	640	9	remove Activity 3.1 C	Activity is similar to activity B
4	4. Mass and Weight	360	4	Status quo	
5	5. Light and Sound	600	9	Remove Activity 5.4 C	Activity is not appropriate
6	6. Electricity and Magnetism	600	8	Status quo	
7	7. Living things and their environment	600	9	Remove Activity 7.2 C	Similar activities are repeated.
8	8. Green plants	680	9	Status quo	
9	9. Classification of Animals	640	9	Status quo	
10	10. Diet and Human system	640	10	Remove Activity 10.1 C	Activity is Similar to activity A and B
11	11. Work and Energy	720	10	Status quo	

12	12. Earth, Moon and the Sun	560	7	Remove Activity 12.4 B	Activity is not necessary since the content is reflected in the theory
Total		**7200**	**100**		

Class: VII Subject: Science

Sl. No.	Chapter	Times (min)	Weighting (%)	Changes	Reasons
1	Cells	560	6%	Status quo	
2	Human as Organism	830	10%	Remove Activity 2.7	Mentioned in detail in the content part.
3	Green Plants	800	9%	Remove Activity 3.7	Soil testing kit is not available in schools
4	Living Things and their Environment	560	6%	Remove Activity 4.6	Not necessary as it is also discussed un balance in nature.
5	Classifying Materials	560	7%	Status quo	
6	Materials and Change	690	9%	Remove Activity 6.2	Not necessary
7	Separating Mixture	560	7%	Status quo	
8	Patterns in Chemistry	800	10%	Remove Activity 8.2	Mention in detail in theory part.
9	Work and Energy	560	6%	Remove Activity 9.4	Covered in Question answer
10	Forces and Motion	580	7%	Remove Activity 10.5	Requires more time to complete
11	Electricity and Magnetism	730	9%	Remove Activity 11.7	Activity 11.6 is sufficient to explain the topic.
12	Light and Sound	800	10%	Status quo	
13	The Earth and Beyond	370	4%	Remove Activity 13.1(reflected as 7.1 in text)	Enough content in the theory part
Total		8400	100%		

Class: VIII Subject: Science

Sl. No.	Chapter	Times (min)	Weighting (%)	Changes	Reasons
	Cells	480	5%	Status quo	
1	Human as Organism	1000	13%	Remove Activity 2.3	Consequences of smoking is discussed under effect of smoking under lungs
2	Green Plants	560	7%	Status quo	
3	Living Things and their Environment	640	8%	Remove Activity 4.4	Difficult to conduct the activity as it requires to visit the community.
4	Classifying Materials	960	12%	Status quo	
5	Materials and Change	520	6%	Status quo	
6	Separating Mixture	480	5%	Status quo	
7	Patterns in Chemistry	720	9%	Remove Activity 8.1	Not Necessary
8	Forces and Motion	520	6%	remove Activity 9.5	Investigation activity is not required.
9	Work and Energy	400	4%	Status quo	
10	Electricity and Magnetism	800	10%	Status quo	
11	Light and Sound	920	11%	Status quo	
12	The Earth and Beyond	400	4%	Remove Activity 13.2	Not necessary
Total		8400	100%		