

# Towards Actionable Learning Outcomes

SHILPI BANERJEE\* AANCHAL CHOMAL\*\*

---

## Abstract

*Annual Status of Education Report (ASER), and National Achievement Survey (NAS) routinely reports the crisis of Learning Outcomes in Indian school education. The identified primary reason for this crisis is stakeholders unclarity about the kind of desired learning for each subject and criteria of assessment. Learning Outcomes for elementary stage developed by National Council for Educational Research and Training (NCERT) states important knowledge, skills and dispositions students need to attain at the end of an academic year. This paper attempts to develop a deep understanding about how Learning Outcomes are derived from aims of school education and their characteristics. Furthermore, the paper proposes an approach of designing effective lesson plan by following suitable pedagogy and assessment strategies in classroom. The paper concludes with a set of recommendations to institutionalise Learning Outcomes at the systemic level for stakeholders including teachers, schools, government and the private sector to enable them to work towards building integrated and holistic solutions.*

---

## INTRODUCTION

As India's Twelfth Five-Year Plan notes: "The four main priorities for education policy have been access, equity, quality and governance.

The Twelfth Plan will continue to prioritise these four areas but will place the greatest emphasis on improving Learning Outcomes at all levels" (ASER, 2012). Driving up

---

\* Assistant Professor, Azim Premji University, Electronic city, Bengaluru.

\*\* Associate Professor, Azim Premji University, Electronic city, Bengaluru.

Learning Outcomes is now clearly a key priority for Ministry of Human Resource Development (MHRD). MHRD in India has instituted NAS annually in all States and Union Territories (UTs) of the country. These assessments are based on Learning Outcomes that were published by the NCERT in 2016. With the decision of conducting this exercise on a yearly basis, states have begun to show a deep interest in understanding what Learning Outcomes mean, and how can they be achieved in schools (NCERT, 2017) (ASER, 2019).

Under Right to Education (RTE) Act and *Sarva Shiksha Abhiyan* (SSA), several interventions like Continuous and Comprehensive Evaluation, ICT based teaching, activity based learning, etc., to improve the quality of education have been undertaken. However, within a classroom, seldom these interventions meet its stated objectives, as there is little understanding of their purpose. There is also inadequate awareness that, all classroom-based interventions should ultimately aim at improving student learning. Sole dependence on textbooks for teaching, with improper orientation to the concepts and objectives of the subject, often leads to classroom pedagogy that over-emphasises rote memorisation of content, leaving no space for students to acquire the skills and dispositions (attitudes and values) that is expected of a formal school system (Bhattacharjea, 2015).

It is no surprise therefore, that every year we continue to witness poor students' learning levels in the ASER (ASER, 2019) and NAS (NCERT, 2017) reports. One of the primary reasons as indicated in Learning Outcomes document (MHRD, 2017) is teachers being unclear about what kind of learning are desired in each subject, and the criteria against which it could be assessed. A survey was conducted to understand teachers' and teacher educators understanding of Learning Outcomes. This survey was conducted as part of Learning Outcomes course offered by Azim Premji University to teachers and teacher educators teaching in various schools and teacher education institutes. 110 teachers and 125 teacher educators across various states in India were surveyed to know the extent of their understanding about Learning Outcomes. It was found that close to 80 per cent of the teachers and teacher educators had not heard of Learning Outcomes; for those who may have heard about it saw it, only as the basis for National Achievement Surveys conducted by NCERT. There were hardly 5 per cent teachers and teacher educators who recognised the importance and relevance of Learning Outcomes in setting benchmarks and standards for learning. In order to shift the focus of education from rote learning of textbooks, to outcome-based education that comprehensively addresses the knowledge, skills and dispositions that school education

aims to inculcate, a thorough engagement with the meaning, purpose, characteristics of Learning Outcomes becomes indispensable (NCERT, 2017).

Learning Outcomes defines the knowledge, skills and dispositions which the students need to acquire through a subject. Therefore, they are very critical for determining the teaching methodologies, learning activities and assessment schemes for the successful transaction of the concepts in each subject. Therefore, an in-depth understanding of the characteristics, benefits and challenges in transacting Learning Outcomes becomes crucial for teachers. This paper will help in developing a deeper understanding of what should be the outcomes of education, across stages and subjects, how are they derived, and how they could be achieved through a coherent and well-aligned pedagogy and assessment process.

### **NEED OF LEARNING OUTCOMES**

The National Policy of Education (NPE) (Aggarwal, 1989) recommended articulation of competencies and values that should be nurtured through various stages of schooling. To address quality issues in education class-wise and subject-wise, Minimum levels of Learning (MLLs) were developed for primary stage in 1992 by the NCERT. The MLLs laid down Learning Outcomes in the form of competencies as the minimum required educational standards

to be acquired by all children irrespective of their class, caste, gender, religion and region. MLLs were soon criticised for being highly product oriented and focusing only on cognitive domain of development (MHRD, 2017). Examinations based on the MLL have continued to focus on rote learnt information. In 1993, Yashpal Committee Report (Yashpal, 1993) advocated the concept of learning without burden to relieve the students of unnecessary stress and burden of examination. The report clearly states that, learning should focus on application of knowledge and skills instead of being memory-based and short-term information accumulation.

With the coming of the National Curriculum Framework (NCF) 2005 (NCERT, 2005), there was a paradigm shift in the approach to learning. Constructivist approaches to learning with the child being at the center of the learning process as an active constructor of knowledge was emphasised. It was also deliberated that the purpose of education is to develop knowledge, skills and dispositions that would enable children to become reflective, rational and empathetic citizens in a multi-cultural and plural country. Quite obviously, the assessments in such a system would also need to significantly transform from one-time summative tests that overtly focus on textbook learning, to formative assessments that are integral to teaching-learning and assess all aspects of learning. It

is with this intent that Continuous and Comprehensive Evaluation (CCE) was proposed in NCF 2005, and it was mandated till elementary level of education in Right to Education (RTE) Act proposed in 2009 (Jain, 2009).

The NCERT published Source Books on Assessment of different school subjects, and along with that a document called LINDICS (NCERT, 2014). Despite the development of detailed assessment procedures and concepts, there was a felt gap between the policy documents and the LINDICS. The 'Learning Outcomes' for Elementary Stage developed by the NCERT in 2016, subsequently led to addressing this gap. These 'Learning Outcomes' for Classes 1 to 8 synthesised all available policy recommendations on 'quality' and made concrete suggestions of 'what should be taught' and 'how should it be taught'. These were developed in consultation with academicians, practitioners, researchers and various civil society organisations across India. In the current context of outcome-based education, Learning Outcomes clearly serves the following purposes:

### **OBJECTIVITY**

Due to diversity in geographical and cultural setting, building an education system which ensures uniformity and comparability in education received by all Indian children is a major concern (Eksath, 2011). Learning Outcomes acts as common benchmarks for learning—class-wise

and subject-wise outcomes helps educating children across India for achieving common core standards of education. In many ways, they could be compared to the common core standards developed in United States (CCSC, 2009). While the Learning Outcomes remains the same, the teaching-learning environment should be contextualised based on the social, political and economic environment of that location which in turn gives students meaning, relevance and usefulness of learning. Contextualisation allows teacher to adapt the content in order to make students relate the content to local environment. This in turn makes teaching-learning more effective and enjoyable.

### **ACCOUNTABILITY**

Accountability in education system is the collective responsibility of all stakeholders to implement the policies and practices used for raising students learning levels. All stakeholders including students, teachers, parents, community members, administrators and the policy makers are expected to be accountable and ensure that goals of education are achieved.

Accountability can be established by measurable indicators of quality. One of the measurable indicators of education quality is Learning Outcomes. They are assessment standards indicating the expecting level of learning that children should achieve for that class (MHRD,

2017). These outcomes can be used as checkpoints to assess learning at different point of time. Such assessment processes help policy makers, teachers, parents and students identify progress toward meeting the outcomes.

Conducting large scale assessment such as NAS to provide comprehensive picture of students learning levels across the country has helped in institutionalising Learning Outcomes. The NAS gives useful information to policy makers to devise strategies and allocate resources to strengthen poor performance of states/districts/schools/teachers, etc. In NAS, students learning levels are measured against the Learning Outcomes stated by NCERT, and action plans are devised for all areas of concerns including national level fund allocation, policy changes and teacher training (NCERT, 2017–18).

Accountability is also expected at the systemic level. National level indices have been designed to measure the effectiveness of the system in achieving quality. Two such indices are the School Education Quality Index (SEQI) (Niti Aayog, 2019), which was developed to evaluate the performance of States and UTs in the school education sector and the Performance Grading Index (PGI) (MHRD, 2017–18) which is a tool to grade states and UTs. Both these indices provide States and UTs with a platform to identify their strengths and weaknesses and undertake requisite course corrections or policy

interventions. The SEQI consists of 30 critical indicators that assess the overall effectiveness, quality and efficiency of the Indian school education system. Of the total score of 965 that a state can get, 360 points are allocated to Learning Outcomes. On the other hand, PGI has a total of 1000 points, of which 180 points are allocated to Learning Outcome and quality indicators. Both the indices refer to NAS results that are based on the Learning Outcomes to ascertain the score for the Learning Outcome indicator.

#### **IMPACT ON TEACHING LEARNING PROCESSES**

Attainment of Learning Outcomes should be a key goal of school education. Since Learning Outcomes indicate what knowledge, skills and dispositions a student will achieve at the end of the course, it is important that the major stakeholders of education that is, parents, teachers and students understand the Learning Outcomes. While these provide guidance for teachers to choose and direct their instructional methodology and plan for appropriate assessment strategies, and students to organise their learning, these would also help parents to know what their children are learning and achieving at the end of every class.

To ensure there is impact, teachers no longer have to focus on 'completing the syllabus' or 'finishing up the portions of the textbook', instead they should focus on whether

the students in the class can demonstrate the Learning Outcomes. An assessment of that would help the teacher in evaluating the efficacy of her teaching methods.

### **LINKAGES BETWEEN AIMS OF EDUCATION AND LEARNING OUTCOMES**

The school curriculum (NCERT, 2005) is a broad plan for facilitating certain capabilities such as knowledge, skills and dispositions in children which are guided by the larger aims of school education. These aims are influenced by what the child can do, the existing socio-cultural conditions and the needs of a learning community. The aims of education outlined in the NCF 2005 (NCERT, 2005), is the basis for development of Learning Outcomes. It states that an educational aim is perceived as an end; it sets the trajectory of development that is sought to achieve through education. Various school subjects enable in pursuing these aims through their disciplinary focus and methods. The broad aims of education stated in NCF are:

- Develop in students a commitment to democratic values of equality, justice, freedom respect and dignity, secularism and a concern for other's well-being. This commitment should be based on sound reason and understanding arising out of adequate dialogue and discussion in schools.
- Enable independence of thought and action to take well-considered rational decisions for self and collectively.
- Inculcate sensitivity to other's well-being and feelings.
- Learning to learn, and willingness to unlearn and re-learn.
- Participate in democratic processes and contribute to the society in constructive ways.
- Provide means and opportunities to enhance one's creative expressions and the capacity for aesthetic appreciation.

The realisation of these aims occurs through the teaching-learning of various school subjects such as Languages, Mathematics, Science, Social Science, Art, Music or Theatre. Illustratively, the curriculum and syllabus documents of Social Science, detailed in the National Focus Group Position Paper of Social Science (NCERT, 2006), clearly articulates the relevance of the subject in developing an appreciation for values enshrined in the Indian Constitution such as justice, liberty, equality, fraternity, unity and integrity of the nation and the building of a socialist, secular and democratic society. The document further states that Social Science as a subject must invest in building a child's moral and mental energy to provide them with the ability to think independently and deal with social forces that threaten these values without losing their individuality. It should promote children's ability to take initiative to critically reflect on social issues that have a bearing on the creative coexistence between individual good and collective good. Similarly, all subjects taught in

elementary schools help in addressing the aims of education through their respective curriculum and syllabus for different stages of schooling.

As these aims of education are very broad, they cannot be achieved at one go and needs to be developed gradually. Therefore, curricular expectations are defined for different stages of school education which includes primary, upper primary,

secondary and senior secondary. These form the basis for organising the age appropriate content based on their prior knowledge. Learning Outcomes are defined for each class in a stage and are more specific as compared to curricular expectations. Figure 1 shows an example of the relationship between aims of education, curricular expectation and Learning Outcomes.

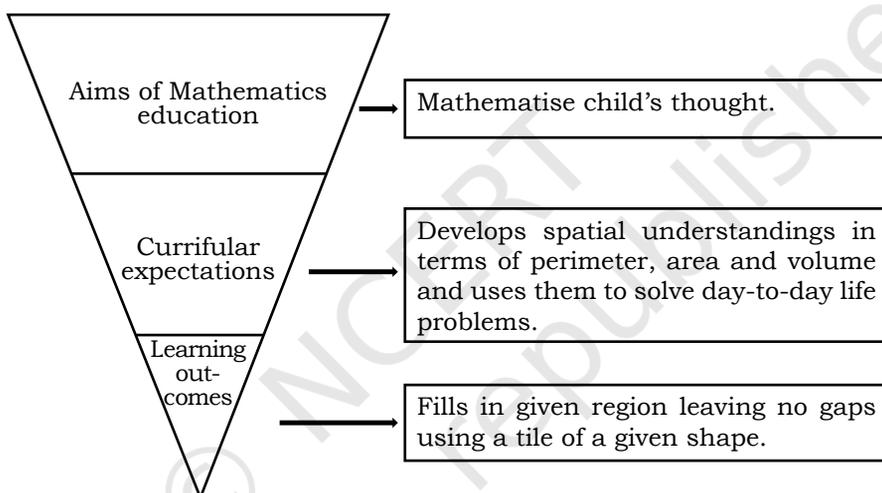


Figure 1: Relationship between aims of education, curricular expectation and Learning Outcomes

### Characteristics of Learning Outcomes

A thorough investigation of the elementary level NCERT Learning Outcomes reveals the following common characteristics across subjects:

### Alignment of Learning Outcomes with Curricular Expectation

Curricular expectations for a subject areas are determined through a range and variety of Learning Outcomes

defined for all the classes in a stage. For example, one of the curricular expectations as stated in primary stage of Language teaching is '*Ability to read and interpret critically the texts in different contexts—both verbal and in pictorial mode.*' This is addressed by a series of Learning Outcome as shown in Figure 2. Similarly, one of the curricular expectations as stated in primary stage of Mathematics teaching is '*Develop own methods*

*of performing operations on numbers in daily life (addition, subtraction, multiplication and division).*' This is addressed by a series of Learning Outcome as shown in Figure 3.

Within all subjects, such an alignment between the curricular expectation and the Learning Outcomes for different classes can be found.

Class I	<ul style="list-style-type: none"> <li>• E1.1 Distinguishes between print and non-print materials (pictures or graphics).</li> <li>• E1. 2 Names familiar objects seen in the pictures.</li> <li>• E1. 3 Associates word with pictures.</li> <li>• E1. 4 Recognises letters and its sounds.</li> <li>• E1. 5 Observes subtle and explicit aspects of a picture.</li> <li>• E1. 6 Understands different events, characters in a picture or a sequence of pictures.</li> <li>• E1. 7 Attempts reading books available in school or outside.</li> <li>• E1. 8 Guesses meaning of printed text or familiar text from the given context.</li> </ul>
Class II	<ul style="list-style-type: none"> <li>• E2.1 Selects books to read available at school or outside.</li> <li>• E2.2 Understands the various units of language, e.g., letter, word and sentence.</li> <li>• E2.3 Uses multiple strategies to guess the meaning of read material, e.g., estimate meaning of words by seeing the pictures, associates letters and their sounds, identifies letters, etc.</li> <li>• E2.4 Appreciates different events, characters, in a story or other text.</li> <li>• E2.5 Shows interest in reading familiar or unfamiliar text.</li> </ul>
Class III	<ul style="list-style-type: none"> <li>• E3.1 Reads various texts (newspaper, children's magazines, hoardings, etc.) and expresses their opinion or discusses with peers and teachers and answers questions.</li> <li>• E3.2 Reads small text with comprehension (i.e., identifies main ideas, details and sequence and draws conclusions, asks questions).</li> <li>• E3.3 Reads printed scripts on the classroom walls, posters, charts, etc.</li> <li>• E3.4 Reads aloud with appropriate pronunciation and pause.</li> <li>• E3.5 Ascertains meaning of words by reading them in various context or text.</li> </ul>

Class IV	<ul style="list-style-type: none"> <li>• E4.1 Reads subtitles on TV, titles of books, news headlines, pamphlets and advertisements.</li> <li>• E4.2 Reads printed scripts on the classroom walls, notice board, in posters, advertisements, etc.</li> <li>• E4.3 Uses punctuation marks appropriately in reading aloud, with intonation and pauses such as question mark, comma and full stop.</li> <li>• E4.4 Infers the meaning of unfamiliar words by reading them in context.</li> <li>• E4.5 Connects stories and other texts with personal experiences and expresses ideas that one has inferred through reading and interaction.</li> <li>• E4.6 Asks questions and gives reason or arguments on content, events, pictures, characters, titles of read texts.</li> <li>• E4.7 Appreciates vocabulary of other subjects such as mathematics, science, social science, arts, medicine, etc.</li> <li>• E4.8 Shows excitement towards reading and selects personal favourites from the school library or reading corner.</li> </ul>
Class V	<ul style="list-style-type: none"> <li>• E5.1 Reads storybooks, news bulletin or headlines, advertisements, program reports, children's magazines, hoardings, etc., and discusses about them.</li> <li>• E5.2 Reads different genres of text (humour, heroic tales, social issues, poems, etc.) with comprehension, asks questions, gives views, draws conclusions.</li> <li>• E5.3 Uses dictionary to find meaning of unknown words.</li> </ul>

*Figure 2: Class I to Class V Learning Outcomes for the curricular expectations— Ability to read and interpret critically the texts in different contexts—both verbal and in pictorial mode.*

Class I	<ul style="list-style-type: none"> <li>• M1.1 Constructs addition facts up to 9 by using concrete objects.</li> <li>• M1.2 Subtracts numbers using 1 to 9.</li> <li>• M1.3 Solves day to day problems related to addition and subtraction of numbers up to 9.</li> </ul>
Class II	<ul style="list-style-type: none"> <li>• M2.1 Solves simple daily life problems or situations based on addition of two-digit numbers.</li> <li>• M2.3 Solves daily life situations based on subtraction of two-digit numbers.</li> </ul>

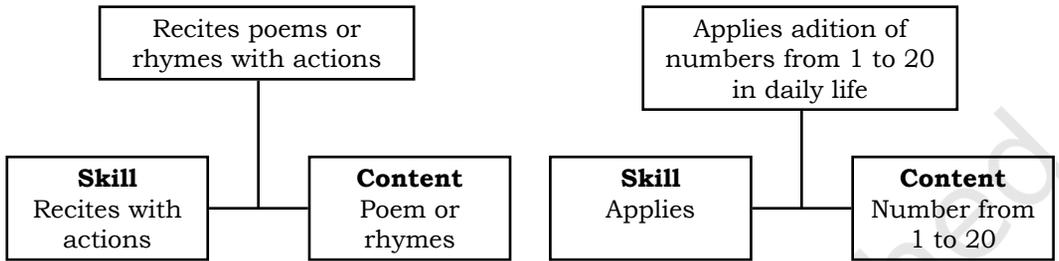
Class III	<ul style="list-style-type: none"> <li>• M3.1 Solves simple daily life problems using addition and subtraction of three-digit numbers with and without regrouping, sums not exceeding 999.</li> <li>• M3.2 Constructs and uses the multiplication facts (tables) of 2, 3, 4, 5 and 10 in daily life situations.</li> <li>• M3.3 Analyses and applies an appropriate number operation in the situation or context.</li> <li>• M3.4 Explains the meaning of division facts by equal grouping or sharing and finds it by repeated subtraction.</li> <li>• M3.5 Adds and subtracts small amounts of money with or without regrouping.</li> <li>• M3.6 Makes rate charts and simple bills.</li> </ul>
Class IV	<ul style="list-style-type: none"> <li>• M4.1 Applies operations of numbers in daily life.</li> <li>• M4.2 Multiplies 2- and 3-digit numbers.</li> <li>• M4.3 Divides a number by another number using different methods like: pictorially (by drawing dots), equal grouping, repeated subtraction and by using inter-relationship between division and multiplication.</li> <li>• M4.4 Creates and solves simple real-life situations or problems including money, length, mass and capacity by using the four operations.</li> <li>• M4.5 Identifies half, one-fourth, three-fourths in a given picture (by paper folding) and also in a collection of objects.</li> <li>• M4.6 Represents the fractions as half, one-fourth and three-fourths by using symbols respectively.</li> <li>• M4.7 Shows the equivalence of half and two-fourth and other fractions.</li> </ul>
Class V	<ul style="list-style-type: none"> <li>• M5.1 Performs four basic arithmetic operations on numbers beyond 1000 by understanding of place value of numbers.</li> <li>• M5.2 Divides a given number by another number using standard algorithms.</li> <li>• M5.3 Estimates sum, difference, product and quotient of numbers and verifies the same using different strategies like using standard algorithms or breaking a number and then using operation.</li> <li>• M5.4 Finds the number corresponding to part of a collection.</li> <li>• M5.5 Identifies and forms equivalent fractions of a given fraction.</li> <li>• M5.6 Expresses a given fraction, in decimal notation and vice versa.</li> <li>• M5.7 Converts fractions into decimals and vice versa.</li> </ul>

*Figure 3: Class I to Class V Learning Outcomes for the curricular expectations— Develop own methods of performing operations on numbers in daily life (addition, subtraction, multiplication and division)*

**Structure of Learning Outcome statement—Skill and Content**

All the Learning Outcomes are expressed in terms of skill to be demonstrated and content to be

acquired by the students. Each statement consists of a verb and noun (Tyler, 2013). The verb describes the cognitive skill and the noun.



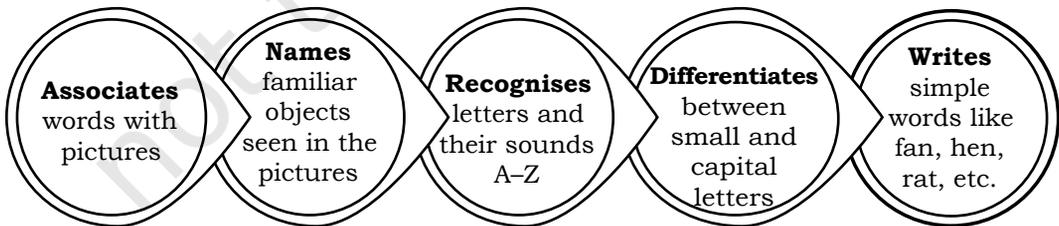
*Describe the content as shown in Figure 4.  
Figure 4: Structure of Learning Outcome statements*

The cognitive skills addressed in the Learning Outcomes may range from lower order cognitive processes like Remember (R) and Understand (U) to more complex cognitive processes such as Apply (Ap), Analysis (An), Evaluate (E) and Create (C) (Krathwohl, 2009).

**Progression across difficulty levels and cognitive levels within a class and across stages**

The Learning Outcomes are spirally linked in terms of age appropriateness and complexity within and across curricular areas and stages. A clear

progression in terms of content domains dealt, difficulty of these content domains and complexity of cognitive processes is observed in Learning Outcomes. Content and cognitive processes for each class are decided based on prerequisite knowledge needed, and are appropriate to the child’s age. This progression is found within a class where content and skills are seen progressing from simple to complex, and across a stage (primary and upper primary) where similar progression is observed. This progression is explained through examples given in Fig. 5 to Fig. 10.



*Figure 5: Language — Progression in difficulty of writing skill content domain and complexity of skills within a class*

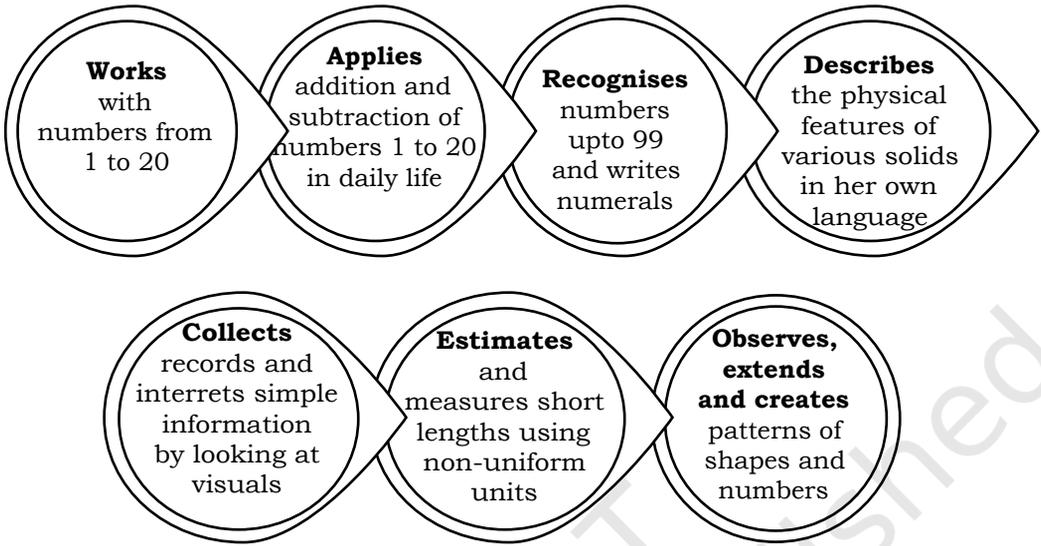


Figure 6: Mathematics — Progression in difficulty of numbers content domain and complexity of skills within a class

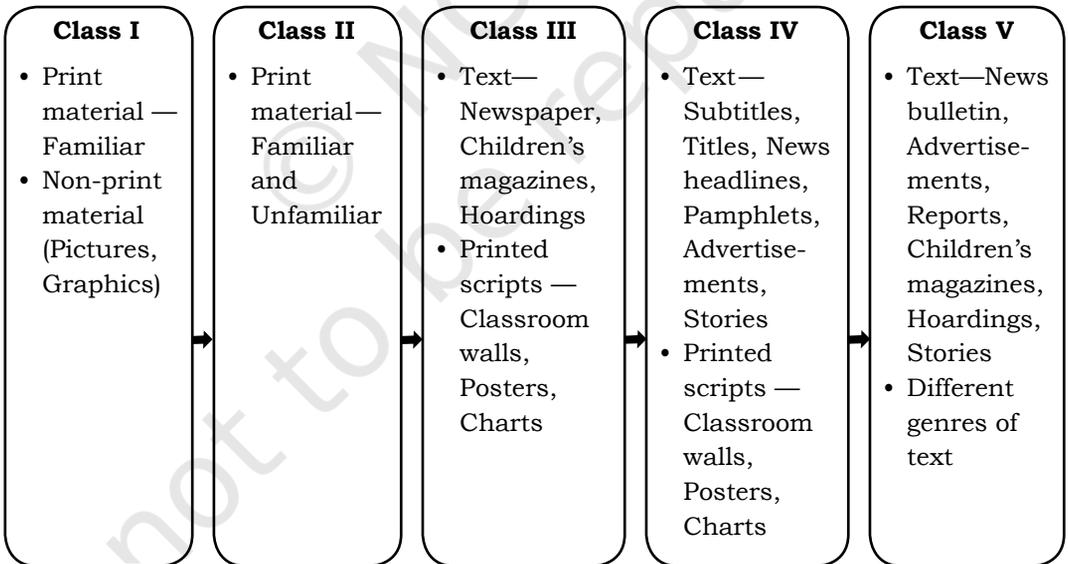


Figure 7: Language — Progression in difficulty of content domains from Class I to Class V

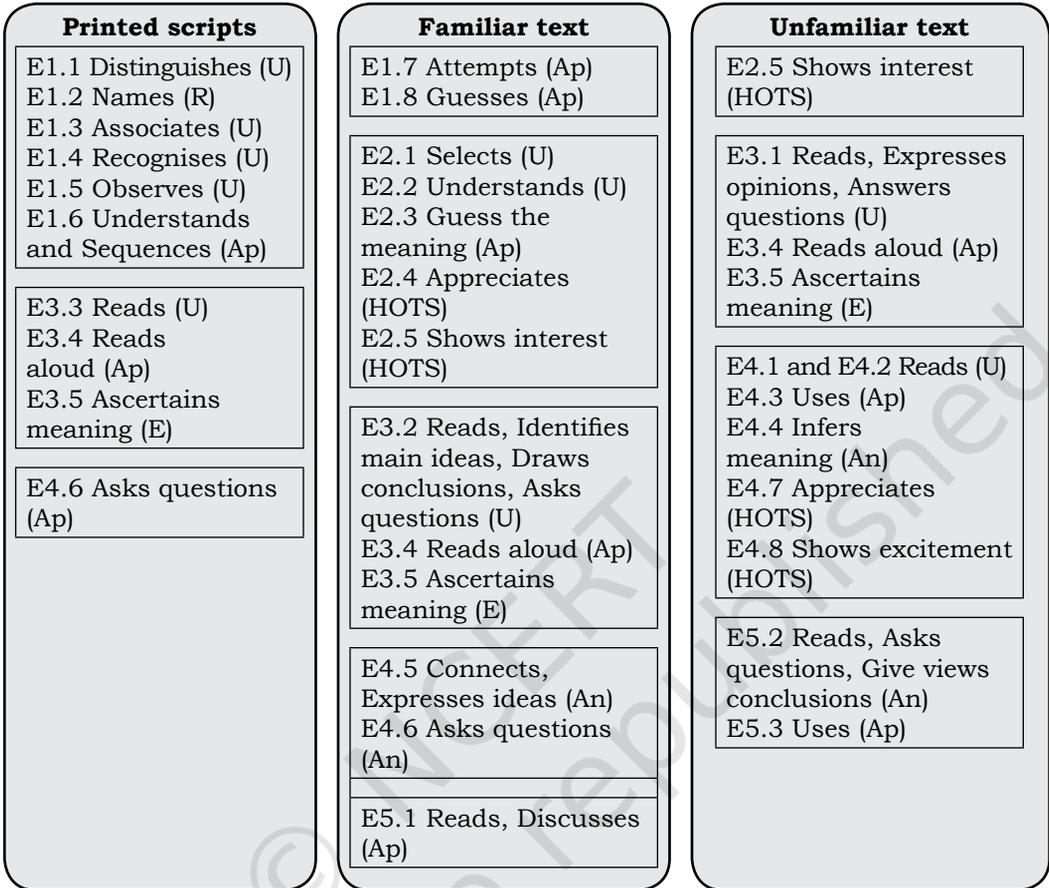
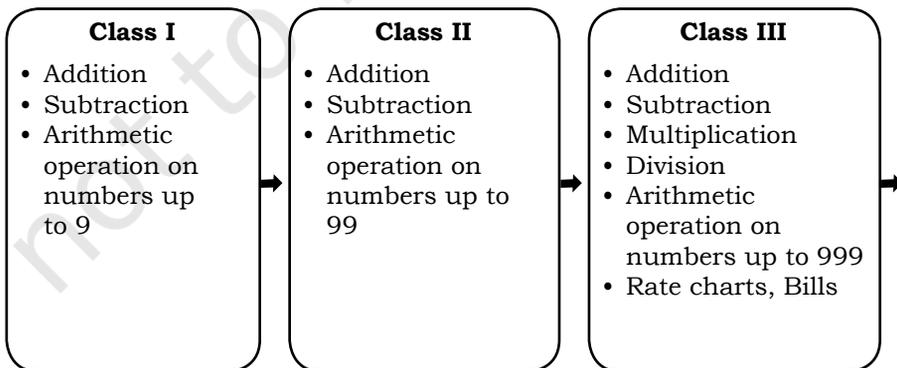


Figure 8: Language — Progression in complexity of skills from Class I to Class V



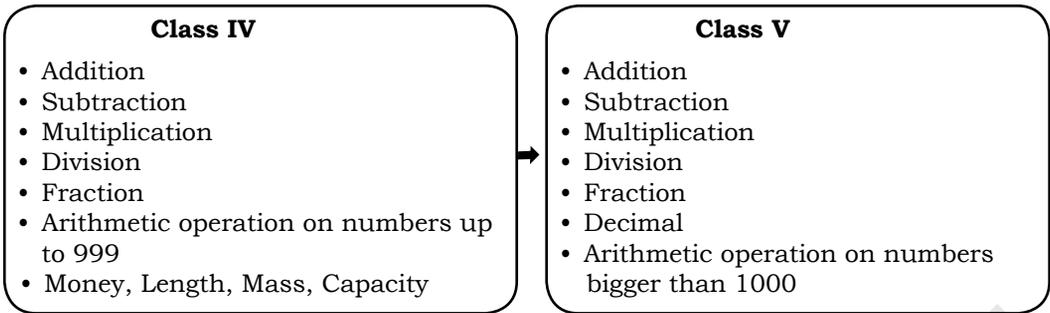


Figure 9: Mathematics — Progression in difficulty of content domains from Class I to Class V

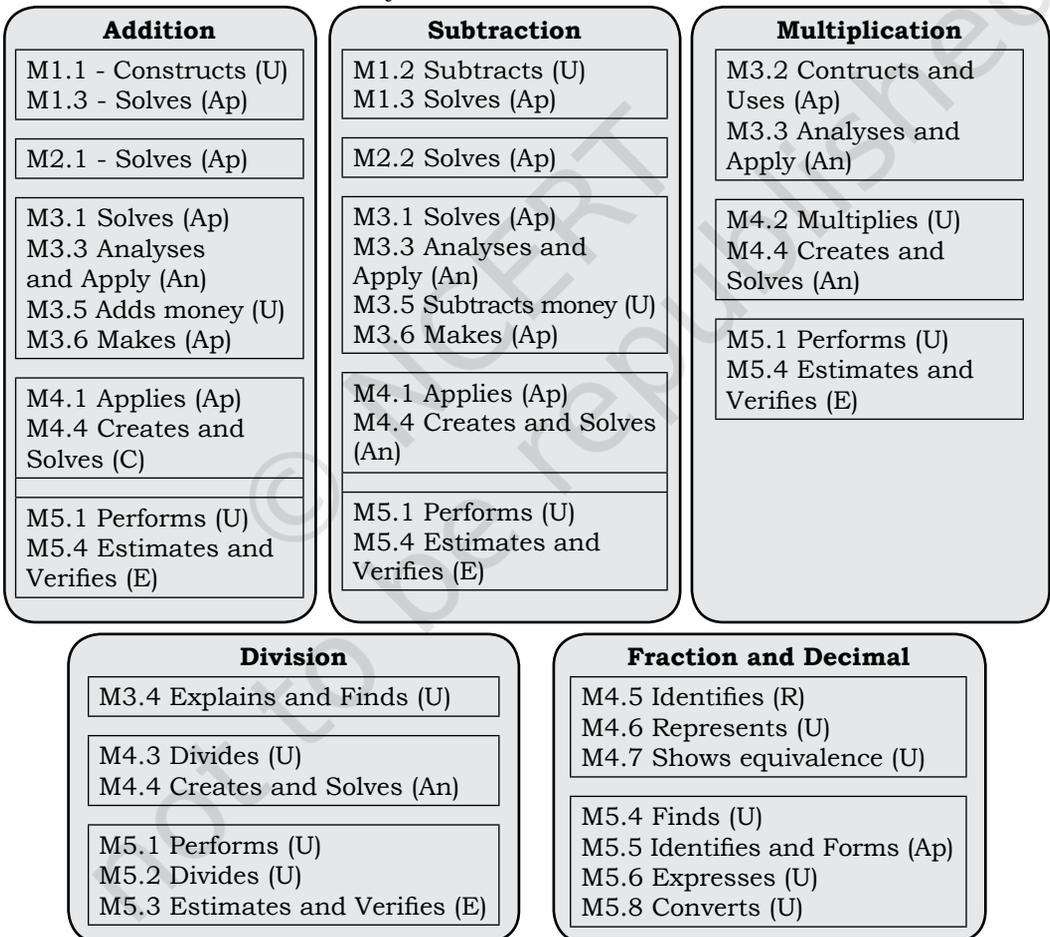


Figure 10: Mathematics — Progression in complexity of skills from Class I to Class V

### **Product and process oriented**

Learning Outcomes are articulated by focusing more on the dynamic engagement with the knowledge instead of treating it as static pieces of knowledge. Learning as a product refers to meeting the outcomes with a measurable change in behaviour while learning as a process refers to the internal development caused by acquiring new information and elaborating one's own understanding of using it. When learning is seen as a product, it is assumed that knowledge is transferred from teachers to students and students are the object of teacher's instruction. On the contrary, student's active engagement in their own learning process and making sense of the content is emphasised in learning as process, and here students are subjects of their own learning (Lachman, 1997). Both these types of learning complement each other as product is the outcome of a process, effective processes of learning leads to products of learning which can be used in or relate to real life situation better. The articulation of Learning Outcomes is done in a manner that the process as well as the product of learning has been taken care of.

### **Measurability and demonstrability**

The verb in the Learning Outcome describes an observable behaviour such as explain, summarise, demonstrate, compare, plan, estimate, etc., so that the students' performances are observed and measured to

conclude on how well the outcome is attained. The verbs used in Learning Outcomes have been articulated with great deal of precision and the verbs used for articulation of the outcomes are measurable and observable.

### **Addresses holistic learning**

Holistic learning refers to cognitive, affective and psychomotor development of a child (CBSE, 2102). These are often viewed as exclusive domains of development. However, the Learning Outcomes consider affective qualities and psychomotor development as part of process of development and change in the students' personality rather than treating them stand alone modules with specific set of inputs and expected outputs. For example, within the content domain of Plants and Animals in Environmental Sciences (EVS), the child is expected to identify, classify, describe, and group plants and animals, along with showing sensitivity towards and appreciate diversity of plants and animals. Similar integration is found across the other subjects.

### **Using Learning Outcomes in classroom teaching and learning**

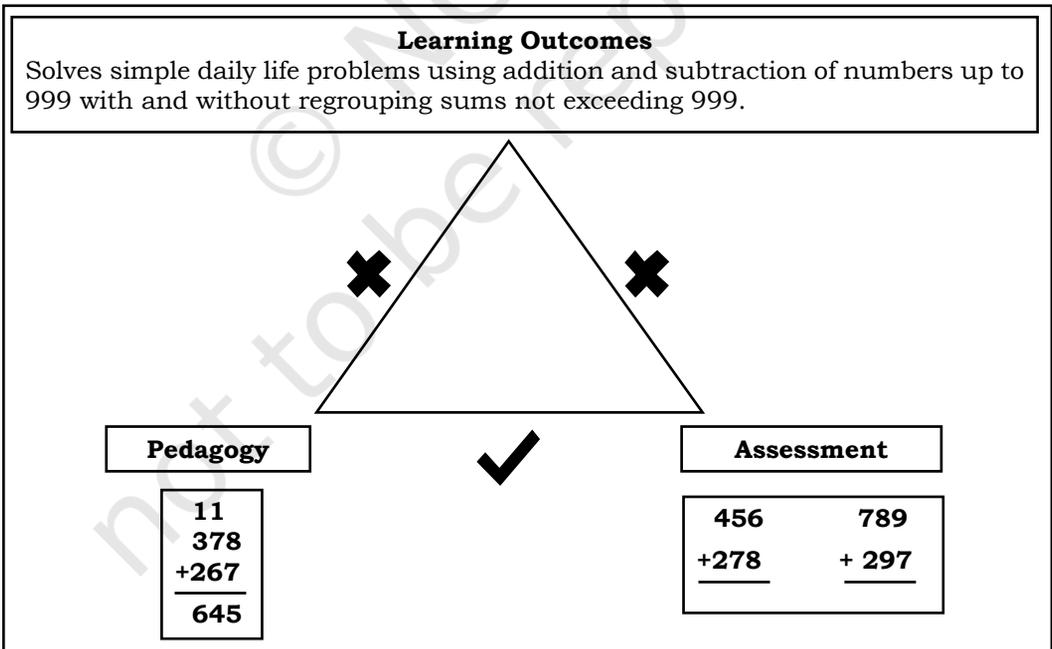
The teaching-learning process should provide overall development (holistic) of children rather than remain textbook centric. However, it is observed widely that textbooks dominate the educational process in Indian schools (MHRD, 2005), and textbooks are often the prime

curriculum resource in schools (Kaul, 1997). It is important that teachers understand the distinction between transmission of knowledge by transacting the concepts in the textbook and facilitation for attainment of certain skills and dispositions using the knowledge of concepts.

For example, in Language, very often the teaching is focused more on familiarising with key characters and events in a given story rather than using the same story as a context for building critical language skills such as interpretation, drawing inferences, arriving at conclusions, etc. Similarly, during teaching poems, the focus is on recitation rather than literary appreciation which includes interpreting; evaluating or making a

critical judgement about the poem. This in turn also gets assessed in their formal and informal assessments. In such situation, the Learning Outcomes of language such as the ability to comprehend, interpret, infer and evaluate different genres of text and poems gets side/lined.

Learning Outcomes help in in-depth review and reflection of pedagogical processes used, the focus of these processes should be on both content and skills. All assessments designed by teachers for classroom purposes and central agencies for developing large scale assessments should focus on the attainment of Learning Outcomes rather than content from the textbooks. It is important to internalise the characteristics of Learning Outcomes



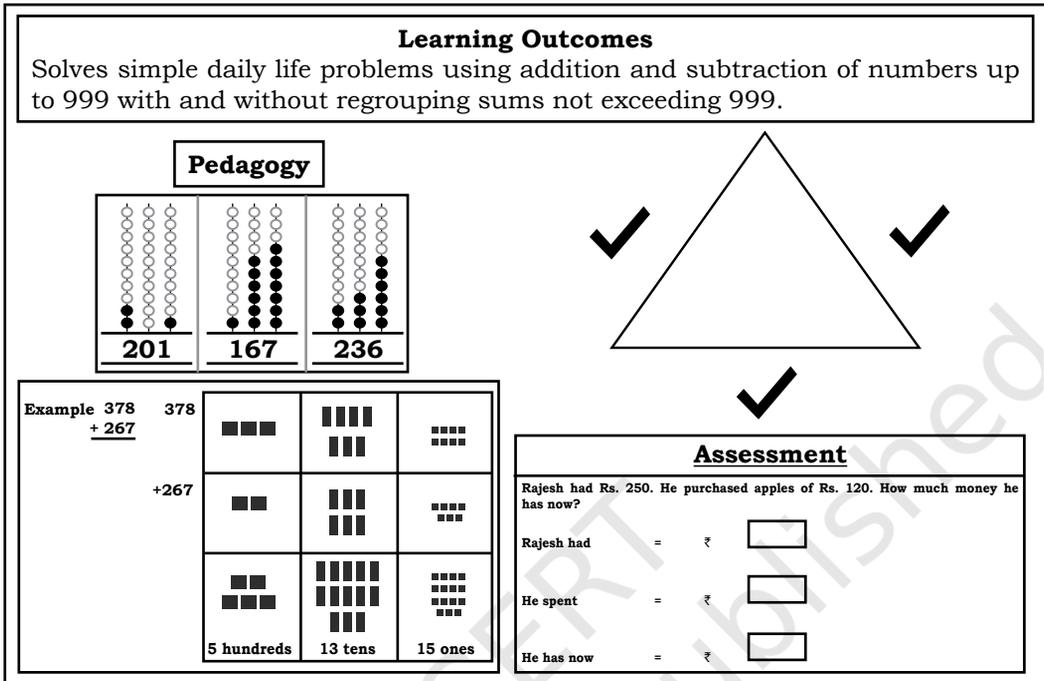


Figure 10: Misalignment and alignment of Learning Outcomes, pedagogy and assessment

to enable the development of well aligned lesson plans. Lesson plan should be developed in such a manner that the teaching-learning activities and assessment tasks are tightly linked with the Learning Outcomes. This approach is defined as constructive alignment (Biggs, 2003). The constructive part refers to the type of learning and what the student does. The alignment part refers to what the teacher does. Students learn better when the method of teaching, learning activities and assessment strategies are all aligned to each other. In the top box of Figure 10, the pedagogy followed, and assessment used is clearly not

aligned to the Learning Outcome. The Learning Outcome here focuses on application of concepts in real world while the pedagogy and assessment are making merely an attempt to remember and recall the procedure followed for subtraction. The bottom box on Figure 10 shows an example of aligned pedagogical approach and assessment strategy chosen to assess the attainment of Learning Outcome.

**DISCUSSION**

It is often assumed that Learning Outcomes are relevant for a teacher teaching in a classroom, however, the effective implementation of it depends on what kind of efforts

are undertaken to institutionalise Learning Outcomes at the systemic level. There are at least five critical processes that are needed to enable this.

- (i) There is need for a common shared understanding among stakeholders of what is the Learning Outcomes and how are they derived. All education functionaries, teacher educators and teachers should be made aware of this through active dissemination and communication strategies. Workshops, short videos, posters, etc., can be used to enable this. Some governments such as Karnataka have tried innovative ways of doing this; lessons can be drawn from the same (Hindu, 2017).
- (ii) Comprehensive training packages should be designed for teachers and teacher educators to help them understand the linkages between their textbooks and the Learning Outcomes. These workshops should be hands on, with ample opportunities for participants to engage with the concept of Learning Outcomes and develop confidence of addressing it in their classrooms. Focus should not only be on understanding the Learning Outcomes but also on developing suitable pedagogical methods to address those outcomes and assessment strategies to measure if the outcomes have been attained (SCERT, 2019).
- (iii) Learning Outcomes is not another document or yet another program of the government. It is very important that it continues to form the basis of all educational programs and policies of the government to improve quality of learning in schools.
- (iv) Assessment of student learning through national surveys like NAS and other state surveys should be based on the Learning Outcomes. The questions should measure the same abilities as stated in Learning Outcome statements. Such surveys should not only focus on average performances in different subjects but should offer valuable insights to specific Learning Outcomes that are accomplished or are far from accomplishing. Since Learning Outcomes are articulated as standards of learning, it would also help us evaluate the kind of skills that we need to focus more upon in future.
- (v) It is also necessary to recognise that Learning Outcomes are not static. They should be constantly revised and improvised to adapt to changing needs and aspirations of the society.

### REFERENCES

- AGGARWAL, J.C. AND S.P. Agrawal. 1989. National Policy on Education: Agenda for India 2001. Concept Publishing Company, A/15-16, Commercial Block, Mohan Garden, New Delhi-110059, India.
- ASER CENTER. 2012. Twelfth Five Year Plan Doc Education. [http://img.asercentre.org/docs/Impact/ASER%20&%20Education%20Policy/12th\\_five\\_year\\_plan\\_doc\\_education.pdf](http://img.asercentre.org/docs/Impact/ASER%20&%20Education%20Policy/12th_five_year_plan_doc_education.pdf)
- . 2019. Annual Status of Education Report (Rural) 2018. <http://img.asercentre.org/docs/ASER%202018/Release%20Material/aserreport2018.pdf>
- BHATTACHARJEA, S., W. Wadhwa and P. Ramanujan 2015. Progress Through Primary School in Rural India: Evidence from a Longitudinal Study. In UKFIET International Conference on Education and Development—Education and Development Post.
- BIGGS, J. 2003. Aligning Teaching for Constructing Learning. Higher Education Academy, 1(4).
- CENTRAL BOARD OF SECONDARY EDUCATION (CBSE). 2012. Continuous and Comprehensive Evaluation (CCE).
- COMMON CORE STATE STANDARDS (CCSS). 2009. Council of Chief State School Officers (CCSSO) and the National Governors Association Center for Best Practices (NGA Center). <http://www.corestandards.org/about-the-standards/>
- EKSATH, M. 2011. Learning Diversity in India: Do Priorities in Primary Education Enable Capabilities, Enhance Equal Opportunities and Encourage Cultural Diversity?.
- JAIN, P.S. AND R.H. Dholakia. 2009. Feasibility of Implementation of Right to Education Act. *Economic and Political weekly*. pp. 38-43.
- KOUL, R. AND T.M. Dana. 1997. a School Science in India: Curriculum Developers/Textbook Authors' Perspectives. *Electronic Journal of Science Education*. Vol. 2, No. 2.
- KRATHWOHL, D.R. AND L.W. Anderson. 2009. A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Longman.
- LACHMAN, S.J. 1997. Learning is a process: Toward an improved definition of learning. *The Journal of psychology*. 131(5), pp. 477-480.
- MHRD, 2017. [https://mhrd.gov.in/sites/upload\\_files/mhrd/files/Learning\\_outcomes.pdf](https://mhrd.gov.in/sites/upload_files/mhrd/files/Learning_outcomes.pdf)
- MINISTRY OF HUMAN RESOURCES AND DEVELOPMENT (MHRD), 2005. Regulatory mechanisms for textbooks and parallel textbooks taught in schools outside the government system – A report
- . 2017-2018. Performance grading index (PGI). <http://pgi.seshagun.gov.in/#/home>
- NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING (India). NCERT. 2017, National Achievement Survey (NAS) – State reports 2017-18. <http://www.ncert.nic.in/programmes/NAS/SRC.html>
- . 2005. *National Curriculum Framework*, 2005.
- . 2006. Position papers of teaching.

———. 2014. Learning Indicators and Learning Outcomes at the Elementary Stage.

———. 2017–18 *Annual report*.

NITI AAYOG. 2019. School Education Quality Index (SEQI). <http://social.niti.gov.in/education-index>

NAGALAND STATE COUNCIL FOR EDUCATION RESEARCH AND TRAINING (SCERT), 2019. <https://nagalandpage.com › tots-trained-on-learning-outcome>

SINGHAL, P. 2012. Continuous and comprehensive evaluation: A study of teachers' perception. *Delhi Business Review*. Vol. 13, No. 1. pp. 81–99.

THE HINDU, 2017. <https://www.thehindu.com/news/national/karnataka/hows-your-child-doing-in-school-check-handy-manual/article18348360.ece>

TYLER, R.W. 2013. Basic principles of curriculum and instruction. In *Curriculum Studies Reader E2* (pp. 60-68). Routledge.

YASHPAL, P. 1993. Report of the National Advisory Committee on Learning Without Burden (1992–93). Ministry of Human Resources Development, Government of India.

© NCERT  
not to be republished