LITERACY & NUMERACY THROUGH PLAY-BASED LEARNING
RESEARCH BRIEF

WHY DO WE PLAY IN SCHOOL?

For children, learning and playing is inextricably linked. The critical role of play in developing children's life skills–cognitive, social, emotional and physical competencies–is well-established.[1] Not only are life skills foundational for healthy child development, **life skills are also essential building blocks for success in school.**[2] A growing body of research over the last decade and a half highlights how play, when applied effectively in the classroom, can contribute to learning, especially in the areas of literacy and numeracy.[3]

HOW DOES RIGHT TO PLAY'S PLAY-BASED LEARNING APPROACH DEVELOP FOUNDATIONAL LIFE SKILLS TO IMPROVE LITERACY AND NUMERACY?

The experiential, participatory and guided approach to play-based learning promoted by Right To Play directly supports curriculum learning, including the development of literacy and numeracy in students.

In addition to fostering healthy cognitive, social, emotional, and physical development, our play-based learning approach develops specific skills, competencies and processes in association with the development of the language strands laid out in our Literacy Curriculum Framework. These are (i) social skills, (ii) critical thinking and problem-solving skills, (iii) viewing and (iv) values.[4] Under the Numeracy Curriculum Framework, the skills, competencies and processes developed in association with the development of the numeracy strands are (i) problem-solving, (ii) reasoning, (iii) connecting and (iv) communicating.[5] (More on the Curriculum Frameworks below.)

HOW DOES RIGHT TO PLAY APPROACH LITERACY AND NUMERACY INSTRUCTION THROUGH PLAY-BASED LEARNING?

Pedagogical experts have been debating the best method for teaching and learning literacy for decades. Over the years many approaches have risen and fallen in popularity. The broadest distinctions are between two main approaches. One emphasizes the elements (or letters/characters) that make up words to decode words for meaning, and the other emphasizes drawing meaning from whole words. In other words,

1. **Explicit or focused instruction** looks at the relationship between the symbol (letter/character) and sound. The goal is to enable beginner readers to decode new written words by sounding them out, or in phonics terms, 'blending' the sound-spelling patterns. This approach draws from behaviourist learning theory (B.F. Skinner).
2. **Whole language instruction** focuses on reading a word as a whole piece of language, not a combination of letters/characters. The goal is to enable beginner readers to make meaning from whole words by learning them in relation to each other in a context. This approach draws from cognitivist learning theory (J. Piaget, L. Vygotsky).

Today, the latest pedagogical research promotes an **integrated approach that blends both instructional practices** (code-emphasis and meaning-emphasis).

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1 Baer, Bruner, Erikson, Freud, Piaget, Sutton-Smith, Vygotsky and others established the broad understand that play builds strong affective, cognitive, social and communication skills, motor development, emotional self-awareness and self-regulation. See for example, Gordon (2014).

2 See for example, Durlak et al. (2011), Payton et al. (2008), Elias and Zins (2007), Aber, Brown and Jones (2003).

3 See for example, Active Living Research (2015), McCracken and Colucci (2014), Whitebread (2011), Elementary Teachers' Federation of Ontario (2010), Stead and Neville (2010), Bailey et al. (2009), Hirsh-Pasek et al. (2009), Trudeau and Shephard (2008), Christie and Roskos (2006), Zigler, Singer, & Bishop-Josef (2004). Literature on the value of play dates back much further to historians and sociologists such as Huizinga (1938) and Caillois (1961).

4 Social skills are the ability to use language to establish and maintain healthy relationships with people in a wide range of contexts; critical thinking and problem-solving skills are the ability to develop critical, creative, imaginative, logical and rational thinking through language in order to make inferences and conclusions; viewing is the ability to view a wide range of visual texts in language with purpose, understanding and critical awareness; values is the development of a positive attitude towards language, the self and society through the study of language. See Right To Play *Literacy Learning Through Play* manual (2015, p. 14).

5 Problem solving is the ability to choose appropriate strategies for carrying out calculations, checking answers, constructing, symbolizing, applying and generalizing mathematical ideas, thinking imaginatively and broadly to evaluate and find solutions to problems encountered in all situations; reasoning is the ability to making a sensible estimate of a calculation and consider whether an answer is reasonable; connecting is the ability to make connections among simple mathematical concepts and procedures, and relating mathematical ideas to situations drawn from everyday contexts; communicating is the ability to express mathematical ideas and understand orally, visually and in writing, using numbers, symbols, pictures, graphs, diagrams, to reflect upon and clarify ideas, understanding of mathematical relationships and construct mathematical arguments. See Right To Play *Numeracy Learning Through Play* manual (2015, p. 15).

Right To Play's play-based learning approach does just this.[6] The literacy and numeracy games[7] encourage efforts to master the code of written language in order to achieve understanding, and our Reflect-Connect-Apply (RCA) component[8] encourages learners to actively search for meaning in a text. Also in line with best practice, our play-based learning approach integrates simultaneously, as opposed to sequentially, the Big Five[9] basic components of literacy within each of the language strands[10] in our Literacy Curriculum Framework.

Safe, supportive and inclusive learning environments matter for academic achievement.[11] Teachers trained in Right To Play's play-based learning approach are equipped with the knowledge, attitudes and skills necessary to embed our core principles of Child Protection, Community Engagement, Inclusion and Gender Equality into the teaching and learning process, to create a positive learning environment. The context-specific trainings are designed to reflect the realities of the teaching and learning environment and those obstacles that have a negative impact on learning. A positive learning environment allows children and youth to better enjoy and engage with the learning process, while enhancing social connections with peers and the teacher.

HOW DOES RIGHT TO PLAY'S PLAY-BASED LEARNING APPROACH ALIGN WITH OTHER APPROACHES TO LITERACY INSTRUCTION?

Right To Play's play-based learning approach is contextualized for different countries

Our Literacy Curriculum Framework is designed to enhance literacy instruction by using the government curriculum, not replacing it. The Framework was developed based on research and a review of national curricula from many of Right To Play's program countries, to capture literacy skills that are common across all curricula. It is a global tool that shows the progression of literacy skills, which can be used across countries and contexts. Teachers trained in the play-based learning approach are expected to use the indicators and curriculum learning outcomes stipulated in their national curriculum – and those same indicators and learning outcomes can be found in the Literacy Curriculum Framework.

In Right To Play trainings, teachers are also trained to modify games and activities to respond to the needs of their specific curriculum. For example, teachers learn how to target more than one key learning or competency indicated by the competency-based curriculum, with the same game, and continuously generate their own new, locally relevant, games and activities.

Students build literacy and numeracy skills through play-based learning (Boy age 10, Thailand)

Play-based learning works in harmony with alternative teaching methodologies

Play-based learning is compatible with and in fact complements other types of teaching methodologies, including a variety of literacy instructional strategies. For example, a dominant method of literacy instruction often implemented by development actors is direct instruction. Direct instruction through scripted methods aims to standardize the quality of curriculum delivery. Teachers are trained to follow a step-by-step, scripted lesson plan with repetitive templates that prompt them to 'say something', 'do something', 'read something' then 'write something'. Play-based games and activities can be integrated into the script so teachers 'play something' at appropriate moments. In Right To Play trainings, teachers are trained and expected to incorporate play-based learning into their existing schedules and program activities. In this way, play is a complementary, not just supplemental, activity – and can be used alongside other teaching methodologies for child-centered, active learning.

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6 A balanced approach was first promoted as best practice in literacy instruction by the U.S. National Reading Panel in 2000.

7 For example, Right To Play's whole language instruction games include Go Fish!, Match-Up Game, Newspaper Treasure Trove, My Name Is, Pick a Word, Three-Headed Monster, Writing with Pictures; our explicit or focused instruction games include Rhyming Word Chain, Sound Circle, Syllable Dance, Build a Word. See Right To Play's games and play-based activities manual, *Literacy Learning Through Play* (2015).

8 Reflect-Connect-Apply (RCA) is a Right To Play teaching and learning strategy that helps develop a 'community of learners' who process their experiences through reflection and dialogue with their peers. Learners, individually and in groups, examine their experiences consciously, relate those experiences to what they already know and formulate plans to use their learning. It is based on the work of educationalists such as Freire, Brown, Piaget, Brantford and others who support the concept of an educational process that is active, relevant, reflective, collaborative and applied, and has its roots in experiential learning theory (Kolb, 1984).

9 The Big Five were established by the National Reading Panel in the United States in 2000, which conducted the largest, most comprehensive evidence-based review of research on the most effective approach to reading instruction. They are: phonemic awareness [sounds], phonics [letters for decoding], fluency, vocabulary and comprehension.

10 The Literacy Curriculum Framework consists of four language strands: (i) speaking, listening and responding, (ii) reading, (iii) writing, (iv) viewing and representing; and, three levels of Literacy Learning Outcomes that describe the specific knowledge and skills in each strand: (i) early literacy, (ii) emerging literacy, and (iii) expanding literacy.

11 See for example, Voight, Austin and Hanson (2013), Brand et al. (2003).

Play-based learning complements and adds value to other teaching methodologies

In addition to its compatibility with alternative teaching methodologies, our play-based learning approach purposefully stimulates work on reading comprehension and higher order thinking, and enables teachers' autonomy. The approach has been designed with the taxonomy of learning in mind (Bloom et al., 1956), which posits that learning progresses over six different steps—from remembering, to understanding, to applying, to analyzing, to evaluating, to creating. Play-based learning and the RCA method gives children the opportunity to go beyond just remembering and understanding, and to take part in higher-order thinking, asking them to reflect, connect and apply their learning, in order to analyze, evaluate and create. The inquiry-based classroom environment also contributes to their development as engaged, self-directed learners.[12]

Regarding the latter, Right To Play's play-based learning approach also supports teachers' professional capacity and influences teacher behavior with a deeper learning process over longer periods of time. It builds teachers' planning skills so they can apply their skills to other subjects. Teachers become in control of their own professional development: they learn analytical and decision-making skills to reflect on their own teaching, seek feedback from students, and constantly improve their learning. Through self-directed learning they continue to innovate and design their own games and activities. The experiential learning methodology also creates space to increase teachers' sense of confidence and ownership in their teaching, and their capacity to think critically and adapt. Alternative teaching methodologies, such as scripted teaching, can easily be adapted and even enhanced by including play-based learning.

HOW DO WE KNOW THAT RIGHT TO PLAY'S PLAY-BASED LEARNING APPROACH GETS RESULTS?

Right To Play's body of evidence is growing. Evaluations of our programming in Africa and the Middle East show how students in our partner schools outperform students in non-partner schools. We measure this using a combination of monitoring, evaluation and assessment strategies, from comparing school subject scores and national examination results, to employing standardized, validated tools such as the Early Grade Reading Assessment (EGRA).

In Tanzania,	*In Pakistan,*	*In Mali,*
MATH, SWAHILI AND ENGLISH SCHOOL GRADES OBTAINED BY STUDENTS IN RIGHT TO PLAY SUPPORTED SCHOOLS WERE CONSISTENTLY BETWEEN **3** AND **9.5% HIGHER** THAN THOSE OBTAINED BY STUDENTS IN COMPARISON SCHOOLS.[13]	THE TOTAL AVERAGE OF **NATIONAL EXAMINATION RESULTS** OBTAINED BY STUDENTS IN RIGHT TO PLAY SUPPORTED SCHOOLS **INCREASED FROM 56.5% TO 65.0% OVER 2013-2015**. THE INCREASE IN PERFORMANCE WAS **10.1% HIGHER** THAN THAT OF COMPARISON SCHOOLS.[14]	**AN EVALUATION OF LITERACY ACQUISITION** FOUND THAT ON SIX **EGRA** SUBTASKS **10** TO **20% MORE** STUDENTS IN RIGHT TO PLAY SUPPORTED SCHOOLS PERFORMED AT THE HIGHEST LEVEL OF ACHIEVEMENT IN COMPARISON TO STUDENTS IN THE CONTROL GROUP.[15]

The Reflect-Connect-Apply methodology helps students process their experiences with their peers and connect it to their daily lives. (Grade 6 class, Pakistan)

12 See, Jang, Reeve and Deci (2010).
13 Results from 'Raising her Voice: From Participation to Action for Children and Youth in East Africa' project (2013-2015). End of Program Evaluation Report. 2015. NORAD, Right To Play, Treeangles Ltd: Tonbridge UK. p. 57.
14 Results from 'Sport and Play Programs for Children and Youth' project (2013-2015). End of Program Evaluation Report. 2015. NORAD, Right To Play, Treeangles Ltd: Tonbridge UK. p. 57.
15 At the time of the evaluation, Right To Play had been supporting some of the schools in the sample since 2013 (two since 2013, two since 2014, and four more since 2015). *Étude de base des classes de 11ère et 3ème années de écoles partenaires appuyées par Right To Play Mali en comparaison aves des écoles témoins.* 2016. Ministére de L'Éducation Nationale, Direction Nationale de la Pédagogie, République du Mali.

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