



# Constructionism 2016

Constructionism in Action

February 2-5, 2016

Hosted by: King Mongkut's University of Technology Thonburi

## CONSTRUCTIONISM CONFERENCE 2016 DIRECTORY AND ABSTRACT

### Organizers



### Sponsors



# Pre-Conference City Tour/Reception

Feb 6-7, 2016

	<b>Monday Feb 1, 2016</b>	
12:00	Registration desk opens	
12:30		
13:00	Pre-conference City Tour	
13:30		
14:00		
14:30		
15:00		
15:30		
16:00		
16:30		
17:00		
17:30		
18:00	Welcome Reception	
18:30		
19:00		
19:30		
20:00		

## Program Overview

	Tuesday	Wednesday	Thursday	Friday
9:00	Opening Ceremony Special keynotes Welcome address  <b>Main Auditorium (2fl)</b>	(6) Plenary 2 <b>Main Auditorium (2fl)</b>	(10) Plenary 3 <b>Main Auditorium (2fl)</b>	(16) Plenary 4 <b>Main Auditorium (2fl)</b>
9:30				
10:00		Break	(11) Conference-wide Brainstorm	Break
10:30	Break	(7A, 7B, 7C) Paper presentations  <b>Auditorium (2fl), Lib (9fl), CLab(10fl)</b>	Break	(17A, 17B, 17C) Paper presentations  <b>Auditorium (2fl), Lib (9fl), CLab(10fl)</b>
11:00	(3) Plenary 1  <b>Main Auditorium (2fl)</b>		(12) Group discussions	
11:30				
12:00				
12:30	Lunch	Lunch	Lunch	Lunch
13:00			(13) Group Presentations	
13:30	(4) Open house  <b>School Lobby (1 fl)</b>	(8A, 8B, 8C) Paper presentations  <b>Auditorium (2fl), Lib (9fl), CLab(10fl)</b>	(14A, 14B, 14C) Paper presentations <b>Auditorium (2fl), Lib (9fl), CLab(10fl)</b>	(18A, 18B, 18C) Workshops  <b>CLab(10fl), Auditorium (2fl), Fablab (10fl)</b>
14:00			Break	
14:30				
15:00				
15:30	Break	Break	(15A, 15B, 15C) Workshops  <b>Lib (9fl), CLab(10fl), Fablab (10fl)</b>	Break
16:00	(5A, 5B) Poster & Demos  <b>Gymnasium (2 fl)</b>	(9A, 9B, 9C, 9D) Workshops  <b>CLab(10fl), Auditorium (2fl), Lib (9fl), Fablab (10fl)</b>		(19) Plenary 5 <b>Main Auditorium (2fl)</b>
16:30				
17:00				
17:30				Closing
18:00				
Evening	Dinner at Mr. Paron's House		Conference Dinner	

# Post Conference Fieldtrip

Feb 6-7, 2016

	Saturday	Sunday
8:00	Depart Hotel Lobby	
8:30		
9:00		Presentation "Constructionism: Learning as means for sustainable development"
9:30		
10:00		
10:30	Ban Sankhampan School visit	Walking tour. Visiting various village projects.
11:00		
11:30		
12:00		
12:30	Lunch	Lunch
13:00		
13:30		
14:00		
14:30	Visit Bor Sang (A traditional arts and crafts center)	Discussion
15:00		
15:30		
16:00		Depart for Lumpang airport
16:30	Travel to Ban Samkha village in Lumpang Province	Flight check-in and light supper
17:00		
17:30		
18:00		
18:30	Arrive Ban Samkha and check-in (village home-stay)	Flight back to Bangkok (Suvarnabhumi airport)
19:00	Dinner and welcoming ceremony by the villagers	

## Conference Venue Directory

The conference will be held at DSIL building. (DSIL stands for Darunsikkhalai School for Innovative Learning.) It is the 14 floors building with all facilities located inside the building. All the program will be conduct at different floors. Here is some directory for presentation location as well as some interesting activities arranged by DSIL students, teachers and parents throughout the conference week. Please enjoy your time and make yourself comfortable. If you need help, have any questions or need translation for your interesting conversation, please don't hesitate to ask our staffs or rescuers team. ☺ Welcome to Bangkok, Thailand!

Floor	Room Number	Activities
10 <sup>th</sup>	Constructionism Lab 1 and 2	Paper presentation Room 3 Demos and workshops
10 <sup>th</sup>	DSIL FabLab@School	Workshop Room 4 Feel free to check out our FabLab.
9 <sup>th</sup>	Library	Paper presentation Room 2 Demos and workshops
8 <sup>th</sup>	Classrooms	Workshops and Open house
7 <sup>th</sup>	Classrooms	
6 <sup>th</sup>	Classrooms	
5 <sup>th</sup>	Cafeteria and Food lab	Lunch and Thai arts and crafts activities Small futsal field with panoramic view of Bangmod area.
4 <sup>th</sup>	Fitness and Performing art classroom	Not opened during conference week.
2 <sup>nd</sup>	Main Auditorium	Plenary session Opening and closing
2 <sup>nd</sup>	Gymnasium and Open Space	Tea and coffee break and Poster session * CCTV for plenary session
1 <sup>st</sup>	DSIL Hall	Registration Thailand Constructionism Expo

## Directory for Thailand Constructionism Expo (Tuesday 2<sup>nd</sup> February, 2016.)

### Schedule

13:30-13:50 Introduction to Lighthouse Project and Candle Light Project (Nalin)

13:50-14:05 There will be just one round of approximately an hour presentation in each area. You may choose to stay in one area or move around. There are 3 different groups of presentations.

14:05 – 15:00 Demo / Presentation

15:00- 15:30 Q&A and Discussion

Groups	Moderator	Presentation / Demo and Location
<b>Group A : Schools that learn</b> Different application of Constructionism in different school contexts throughout Thailand.	Nalin Tutiyaphuengprasert  14:05 -15:00 Demo / Presentation in classrooms  15:00-15:30 Q&A Discussion	<b>6<sup>th</sup> – 8<sup>th</sup> floor</b> -DSIL Science classroom, Biology Lab (6 <sup>th</sup> fl.) - Engineering Project (7 <sup>th</sup> -8 <sup>th</sup> grade) Room805-806 - Young Constructionist (1 <sup>st</sup> and 2 <sup>nd</sup> grades) Room706 - Ban Sankampang School in Chiang Mai Room 707 - Ban Kha Yang School (Hill tribe school) Room 707 - Wat Kien Kate Room 707 - Koh Yao School District Room 707
<b>Group B: Villages that learn</b> Constructionism applied in informal learning to improve quality of life and sustainable development.	Arnan Sipitakiat  14:05 -15:00 Booth presentation 15:00-15:30 Q&A Discussion at the main stage	<b>Booth on 1<sup>st</sup> floor</b> <ul style="list-style-type: none"> <li>• Ban Lim Thong Constructionist Village from Buriram Province</li> <li>• Ban Samkha Constructionist Village from Lampang Province</li> </ul>
<b>Group C: Business and Industries that learn</b> Constructionism applied in professional development programs in different business units which reduce cost and increase revenue. Quality improvement by empowering innovative culture in organization.	Tawan Tantikul  14:05 -15:00 Booth presentation 15:00-15:30 Q&A Discussion at the committee's meeting room	<b>Booth on 1<sup>st</sup> floor</b> <ul style="list-style-type: none"> <li>• Siam Cement Groups Constructionist Practice Schools (All business units)</li> <li>• Petrochemical Industry Constructionist Practice School</li> <li>• Mabtaput vocational school</li> </ul>

## Conference Program

### Tuesday, February 2nd

09:00 - 09:15 Opening Ceremony

*LOCATION: Main Auditorium (2 fl)*

09:15 - 09:45 Session 1: Special Keynote

Yongyuth Yuthavong

**Sparks from the Spirit: Role of Learning in Constructing and Using Knowledge**

09:45 - 10:00 Welcome Address & Conference Introduction

10:00 - 10:30 Session 2: Opening Keynote

*Location: Main Auditorium (2 fl)*

Paron Israsena

**Constructionism the Thailand Way**

10:30 - 11:00 Break

Location: 2nd fl open space

11:00 - 12:30 Session 3: Plenary 1

*Chair: Arnan Sipitakiat*

*Location: Main Auditorium (2 fl)*

11:00 Nalin Tutiyaphuengprasert and Yuphin Trangkatarn

**Darunsikkhailai and its 15 years improvisation on Samba School**

11:45 Leda Munoz and Maria Eugenia Bujanda

**Costa Rica's Omar Dengo Foundation Program: 29 years later**

12:30 - 13:30 Lunch

*Location: Cafeteria (5 fl)*

13:30 - 15:30 Session 4: Open house: Constructionism in Thailand

*Chair: Nalin Tutiyaphuengprasert*

*Location: School Lobby (1 fl)*

15:30 - 15:45 Break

Location: 2nd fl open space

15:45 - 17:45 Session 5A: Poster Session

*Chairs: Arnan Sipitakiat and Nalin Tutiyaphuengprasert*

*Location: Gymnasium (2 fl)*

Sawaros Thanapornsanguth

**Compassion and Empathy through Inventions: GoGo Board Toolkit for 7 - 10 years old**

Brian Harvey

**What's New in Snap! and BJC**

Pavel Petrovič

**A new robot in a classroom**

Xiaoxue Du

**Curriculum planning in Global Climate Change Application of Public Repository in STEM Education**

Nathan Holbert

**Bots for Tots: Leveraging 'Ways of Knowing' to Increase Diversity in Makerspaces**

Tomohito Yashiro, Kazushi Mukaiyama and Yasushi Harada

**Workshop of Game Programming in Scratch**

Sawaros Thanapornsangsuth, Yongyuth Laitavorn, Kasidej Phulsuksombati, U-Lacha

Laochai, Rachaneeporn Assavanop, Surapat Somsri and Quankamon

Dejatiwongse Na Ayudhya

**Little Builders: Empowering At-risk Children by Building and Design**

Miki Matsumasa, Chieko Harayama, Kazuhiro Abe, Nobuko Kishi and Manabu Sugiura

**Robot Programming Workshop for Middle and High School Girls**

Alejandro Rosas Mendoza, Esteban Pablo Díaz and Avenilde Romo Vázquez

**Bridge of popsicle sticks: A project and a contest**

Aoi Yoshida, Kazunari Ito and Kazuhiro Abe

**A practical report on a course of learning by making at the university in Japan**

Mícheál Ó Dúill

**Philological philosophy, simplistic science, misleading mathematics, perfidious perception, trusty technology**

Mícheál Ó Dúill

**After Scratch: Logo(Writer)?**

Pavel Petrovič

**On controlling LEGO Education platforms from Imagine Logo**

Ildikó Tasnádi, László Csink and Károly Farkas

**Teaching programming constructively and playfully**

Suttipong Thajchayapong, Tanut Choksatchawathi, Paron Israsena and Chanikarn

Wongviriyawong

**Increasing Learning Gain in Linear Algebra through Play**

15:45 - 17:45 Session 5B: Demos

*Location: Gymnasium (2 fl)*

Pavel Petrovič

**Tatrabot - a mobile robotic platform for teaching programming**

Yu Guo and Uri Wilensky

**Learning About Complex Systems with the BeeSmart Participatory Simulation**

Mikhaela Dietch, Bryanne Leeming and Amon Millner

**JumpSmart: A Platform for Communal Making and Physical Engagement in Programming**

Kazuhiro Abe and Masashi Umezawa

**Pyonkee: A Scratch compatible visual-programming environment running on iPad**

Andreas Grillenberger and Ralf Romeike

**Analyzing Twitter Data using Snap!**

19:00 - 21:30 Dinner at Mr. Paron's house



## Wednesday, February 3rd

09:00 - 10:00 Session 6: Plenary 2

*Chair: Arnan Sipitakiat*  
*Location: Main Auditorium (2 fl)*

Ivan Kalas  
**On the Road to Sustainable Primary Programming**

10:00 - 10:30 Break Location: 2nd fl open space

10:30 - 12:30 Session 7A: Papers: Programming in the 21st Century

*Chair: Brian Harvey*  
*Location: Main Auditorium (2 fl)*

- 10:30 Chris Proctor and Paulo Blikstein  
**Grounding How We Teach Programming in Why We Teach Programming**
- 11:00 Ken Kahn  
**What would the ideal constructionist programming language (or languages) be like?**
- 11:45 Marcelo Worsley, Kipp Bradford, Taylor Martin, Paulo Blikstein, Arnan Sipitakiat and Nalin Tutiyaphuengprasert  
**Constructionism and the Internet of Things**

10:30 - 12:30 Session 7B: Papers: Programming in Context

*Chair: Ana Isabel Sacristan*  
*Location: Library (9 fl)*

- 10:30 Anja Petri, Christian Schindler, Wolfgang Slany and Bernadette Spieler  
**Game Design with Pocket Code: Providing a Constructionist Environment for Girls in the School Context**
- 11:00 Walter Bender, Devin Ulibarri and Yash Khandelwal  
**Music Blocks: A Musical Microworld**
- 11:30 Deborah Fields, Lisa Quirke, Tori Horton, Jason Maughan, Xavier Velasquez, Janell Amely and Katarina Pantic  
**Working toward Equity in a Constructionist Scratch Camp: Lessons Learned in Applying a Studio Design Model**
- 12:00 Michael Weigend  
**Designing Interfaces for Special Needs**

10:30 - 12:30 Session 7C: Papers: Constructionism & New Ideas

*Chair: Gerald Futschek*  
*Location: Constructionism Lab (10 fl)*

- 10:30 Jean-Francois Maheux  
**Papert's sort-of-right mathematics**
- 11:00 Kate Mackrell and Dave Pratt

**Resituating Constructionism in the Space of Reasons**

11:30 Valentina Dagiene, Gerald Futschek and Gabrielė Stupuriene

**Teachers' Constructionist and Deconstructionist Learning by Creating Bebras Tasks**

12:00 Meurig Beynon, Jonathon Foss, Antony Harfield, Elizabeth Hudnott and Nicolas Pope

**Construing and Computing: Learning through Exploring and Exploiting Agency**

12:30 - 13:30 Lunch & Scientific Committee Meeting #1

*Location: Cafeteria (5 fl)*

13:30 - 15:15 Session 8A: Papers: Case Studies & New Approaches

*Chair: James Clayson*

*Location: Main Auditorium (2 fl)*

13:30 Tamar Fuhrmann, Marcelo Worsley and Paulo Blikstein

**A new Model for Eliciting Engineering Expertise from Novices: Expect non-Experts to Behave Like Experts**

14:00 Yoshiro Yoshiro, Nanako Ishido, Kazuhiro Abe and Mihoko Kamei

**Communities of Learning Designers in Japan – From constructing products to constructing communities –**

14:45 Umit Aslan and Uri Wilensky

**Restructuration in Practice: Challenging a Pop-Culture Evolutionary Theory through Agent Based Modeling**

13:30 - 15:15 Session 8B: Papers: Reflections & Next Steps for Constructionism

*Chair: Ivan Kalaš*

*Location: Library (9 fl)*

13:30 Chronis Kynigos

**Constructionist activity with institutionalized infrastructures: the case of Dimitris and his students.**

14:00 Laura Benton, Celia Hoyles, Ivan Kalas and Richard Noss

**Building mathematical knowledge with programming: insights from the ScratchMaths project**

14:30 Gary Stager, Tracy Rudzitis, Brian Smith and Amy Dugré

**Making Constructionism Real in Real Schools Every Day**

13:30 - 15:15 Session 8C: Papers: School Experiences

*Chair: Gerald Futschek*

*Location: Constructionism Lab (10 fl)*

13:30 Cristianne Butto-Zarzar, Joaquín Delgado and Ana Isabel Sacristán

**Generalization processes: an experience using eXpresser with primary-school children**

14:00 Antony Harfield, Rene Alimisi, Peter Tomcsányi, Nick Pope and Meurig Beynon

**Constructionism as making construals: first steps with JS-Eden in the classroom**

14:30 Conor Wickham, Carina Girvan and Brendan Tangney

**Constructionism and microworlds as part of a 21st century learning activity to impact student engagement and confidence in physics**

15:15 - 15:45 Break Location: 2nd & 9th fl open space

15:45 - 18:15 Session 9A: workshop

*Location: Constructionism Lab (10 fl)*

Valentina Dagiene, Gerald Futschek and Gabrielė Stupurienė  
**Developing Computational Thinking by Using Constructionist and Deconstructionist Learning**

15:45 - 18:15 Session 9B: workshop

*Location: Main Auditorium (2 fl)*

Yoshiro Miyata and Mihoko Kamei  
**World Peace Song Project**

15:45 - 18:15 Session 9C: workshop

*Location: Library (9 fl)*

Walter Bender, Cynthia Solomon, Devin Ulibarri and Claudia Urrea  
**Music Blocks Workshop**

15:45 - 18:15 Session 9D: workshop

*Location: Fab Lab (10 fl)*

Gary Stager  
**Constructionist Archaeology - Digging into Papert Papers Lost and Found**

## Thursday, February 4th

09:00 - 10:00 Session 10: Plenary 3

*Location: Main Auditorium (2 fl)*

Brian Harvey  
**Report from the Future: The Next Generation High School**

10:00 - 10:45 Session 11: Conference-wide brainstorming:

"Where we are? What is next?"

*Chair: Paulo Blikstein*

*Location: Main Auditorium (2 fl)*

10:45 - 11:00 Break

Location: 2nd fl open space

11:00 - 12:15 Session 12: Group discussion based on themes that emerged from the brainstorming session.

*Chair: Paulo Blikstein*

*Location: Main Auditorium (2 fl)*

12:15 - 13:00 Lunch

Location: Cafeteria (5 fl)

13:00 - 13:45 Session 13: Presentation by all three groups.

*Chair: Paulo Blikstein*

*Location: Main Auditorium (2 fl)*

13:45 - 14:45 Session 14A: Papers: Early Childhood

*Chair: Richard Noss*

*Location: Main Auditorium (2 fl)*

13:45 Jose A. Valente

**Inquiry Based Learning Project: a study of doing science with elementary public school students**

14:15 Chrystalla Papademetri-Kachrimani and Marianna Efstathiadou

**Redefining Learning Through Constructivist/Onism Practices in Early Childhood Education: Is This Possible? A Case Study of a Teacher During Her Participation in a Continuing Professional Development Program**

13:45 - 14:45 Session 14B: Papers: New Tools & Activities

*Chair: Arnan Sipitakiat*

*Location: Library (9 fl)*

13:45 Corey Brady, David Weintrop, Gabriella Anton and Uri Wilensky

**Constructionist Learning at the Group Level with Programmable Badges**

14:15 Ken Kahn

**Integrating programming languages with web browsers**

13:45 - 14:45 Session 14C: Papers: Working with Teachers

*Chair: Ana Isabel Sacristan*

*Location: Constructionism Lab (10 fl)*

13:45 Mareen Przybylla and Ralf Romeike

**Teaching Computer Science Teachers: A Constructionist Approach to Professional Training on Physical Computing**

14:15 Elena Prieto-Rodriguez and Daniel Hickmott

**Preparing teachers for the Digital Technologies Curriculum: Preliminary results of a pilot study**

14:45 - 15:00 Break

Location: 2nd & 9th fl open space

15:00 - 17:30 Session 15A: workshop

*Location: Library (9 fl)*

Carina Girvan, Nathan Holbert, Chronis Kynigos, Celia Hoyles and Richard Noss  
**Considering approaches to research through the lens of constructionism**

15:00 - 17:30 Session 15B: workshop

*Location: Constructionism Lab (10 fl)*

Arthur Hjorth, David Weintrop, Corey Brady and Uri Wilensky

**LevelSpace: Constructing Models and Explanations across Levels**

15:00 - 17:30 Session 15C: workshop

*Location: Fab Lab (10 fl)*

Arnan Sipitakiat and Paulo Blikstein

**New Frontiers in Educational Robotics with the Raspberry Pi and the GoGo Board**

18:30 - 20:30 Sunset excursion and conference dinner on a private cruise along the Chao Phraya river.

## Friday, February 5th

09:00 - 10:00 Session 16: Plenary 4

*Chair: Richard Noss*

*Location: Main Auditorium (2 fl)*

Cynthia Solomon

**Constructionism Lifetime Achievement Award**

10:00 - 10:30 Break

Location: 2nd fl open space

10:30 - 12:30 Session 17A: Papers: Math, Programming, Robots

*Chair: Arnan Sipitakiat*

*Location: Main Auditorium (2 fl)*

10:30 Pavel Petrovič and Richard Balogh

**Summer League: Supporting FLL Competition**

11:00 Dave Catlin

**Learning Intentions and Educational Robots**

11:30 Han Hyuk Cho, Jin Hwan Jeong, Jong Jin Kim, Yong Hyun Seo and Seung Joo Lee

**Math-based Coding Education in Korean School**

12:00 Han Hyuk Cho, Hanik Jo, Cho Hee Lee, Eun Ji Lee and Hye Rim Jeong

**3D turtle coding activities for Korean primary education**

10:30 - 12:30 Session 17B: Papers: Emotion & Engagement

*Chair: James Clayson*

*Location: Library (9 fl)*

10:30 Chris Shelton

**Beyond lesson recipes: first steps towards a repertoire for teaching primary computing**

11:00 Ploybussara Gomasang, Pintippa Sangwan and Chanikarn Wongviriyawong

**Assessing Interpersonal Relationship Among Peers in a Constructionist Classroom: a Probabilistic Method**

11:30 Michael Weigend, Lisa-Marie Jung, Sarah Lenzen, Maike Gebhardt, Caroline Flaßhoff, Alisha-Sophie Unger, Julian Wagner, Weronika Jarosz, Stella Krämer and Stefanie Schweitzer

**Learning Emotional Aspects of Digital Competence By Creating Artefacts**  
12:00 Nalin Tutiyaengprasert  
**Samba School of the 21st Century : Learning in the Break Dance Community in Bangkok**

10:30 - 12:30 Session 17C: Papers: Tools & Powerful Ideas

*Chair: Ken Kahn*

*Location: Constructionism Lab (10 fl)*

10:30 Maite Mascaró and Ana Isabel Sacristán

**Exploring randomness and variability in statistics through R-based programming tasks**

11:00 Angel Pretelín-Ricárdez and Ana Isabel Sacristán

**Programming videogames with models of physical parameters: some examples**

11:30 Eleonora Badilla-Saxe and Florencia Morado

**The Imaginorium**

12:00 Arthur Hjorth, Corey Brady, Bryan Head and Uri Wilensky

**Turtles All the Way Down: Presenting LevelSpace, a NetLogo Extension for Reasoning about Complex Connectedness**

12:30 - 13:30 Lunch & Scientific Committee Meeting #2

*Location: Cafeteria (5 fl)*

13:30 - 16:00 Session 18A: workshop

*Location: Constructionism Lab (10 fl)*

David Weintrop, Arthur Hjorth and Uri Wilensky

**NetLogo Web: Bringing Turtles to the Cloud**

13:30 - 16:00 Session 18B: workshop

*Location: Main Auditorium (2 fl)*

Ken Kahn

**And now for something completely different: ToonTalk - a programming language that is not textual, block-based, or procedural**

13:30 - 16:00 Session 18C: workshop

*Location: Fab Lab (10 fl)*

Angel Pretelín-Ricárdez and Ana Isabel Sacristán

**Videogame construction with models of physical parameters**

16:00 - 16:30 Break

Location: 2nd fl open space

16:30 - 17:30 Session 19: Plenary 5

*Chair: Jose Valente*

*Location: Main Auditorium (2 fl)*

Jose A. Valente

**Computational Thinking in School: reviving programming in the context of digital culture**

17:30 - 17:45 Closing

*Location: Main Auditorium (2 fl)*