



# ARTIFICIAL INTELLIGENCE

VERSUS OR PLUS

# ONLINE COLLABORATIVIST LEARNING

by Linda Harasim, Ph.D

October, 2017

# Building the Field of Online Collaborative Learning

## BOOKS

- 1986: Computer Networks for Teachers
- 1990: Online Education
- 1993: Global Networks
- 1995: Learning Networks
- 2012: Learning Theory & Online Technologies
- 2017: **Learning Theory & Online Technologies** (2<sup>nd</sup> edition)

## PROJECTS

- 1983-> Study Online Education
- 1985→ Teach Online
- 1994-2014: Virtual-U collaborative learning platform
- 1995-2002: Leader of the TeleLearning Network of Centers of Excellence \$50 million for R&D
- 1995-2002: Largest field trials of online education & OCL

## PRACTICE

- 1986: 1<sup>st</sup> online university course in the world
- +100 publications
- +60 keynotes
- OCL Theory Building
- OCL Research Methods
- OCL Pedagogy
- OCL Assessment



# My Purpose Today

- ▶ Celebrate and review Human Civilization
- ▶ Celebrate the Role of Teaching and Learning
- ▶ Identify Challenges Ahead
- ▶ Focus on the Role of Pedagogy & Technology
- ▶ Consider Artificial Intelligence v Augmented Human Intelligence
- ▶ Next Steps?

# 4 Major Paradigms in Human Civilization

- ▶ 3.8 million BCE: Rise of homonids
- ▶ 200,000 BCE: Rise of Homo Sapiens (defined as Intentional Collaborators)

## Paradigmatic Shifts in Human Development & Technology

1. Speech: 60,000 years BCE
2. Writing: 10,000 years BCE
3. Printing Press: 1493 AD
4. Computer/Internet: 1950s/1969

# Human Civilization

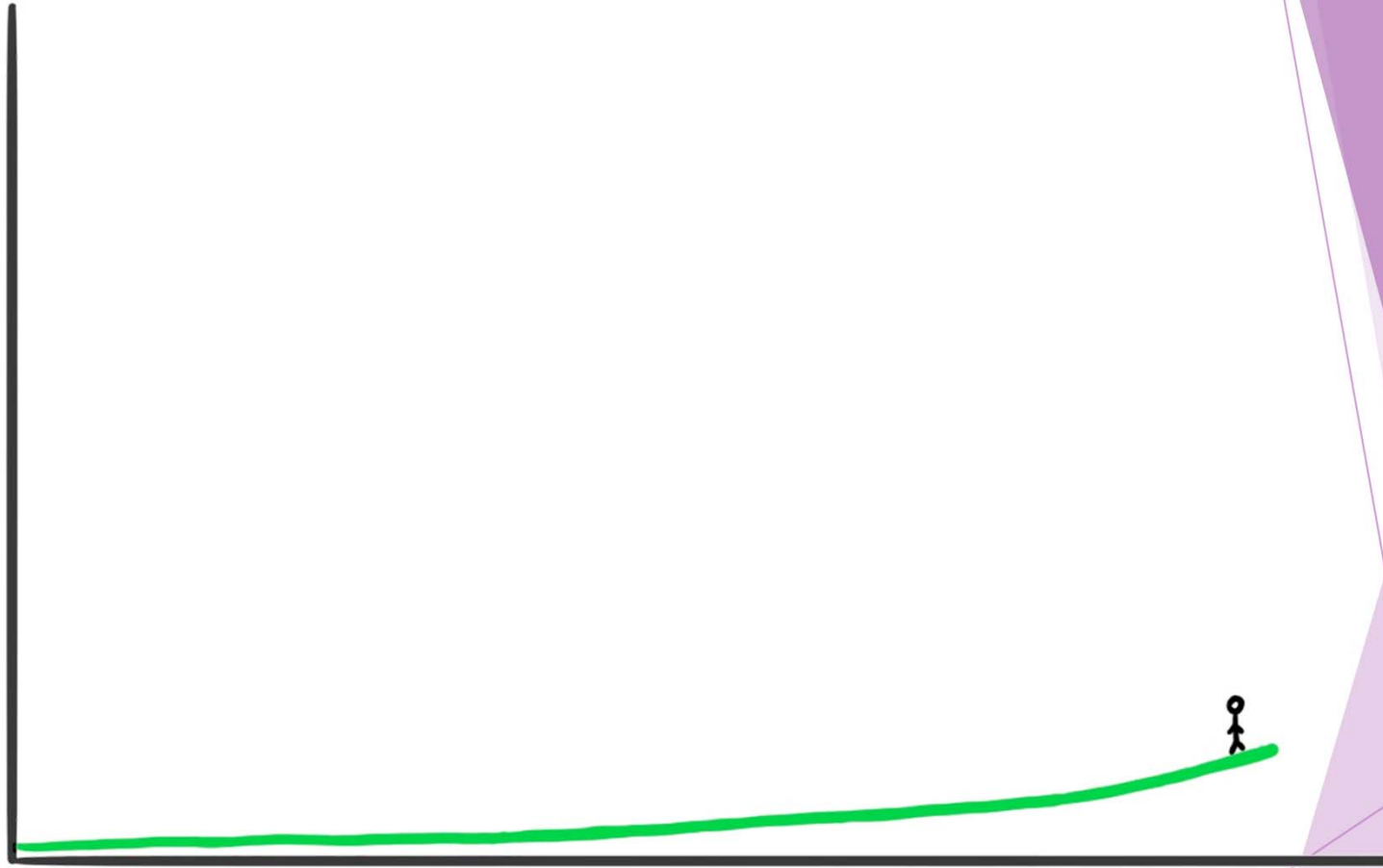
1. Speech: <-----→ Collaborative Intelligence Revolution
2. Writing: <-----→ Agrarian Revolution
3. Printing:      → Scientific Revolution  
                  -->Enlightenment  
                  -->Industrial Revolution
4. AI/Internet:→Knowledge Revolution?      or  
                  →Automation Revolution?



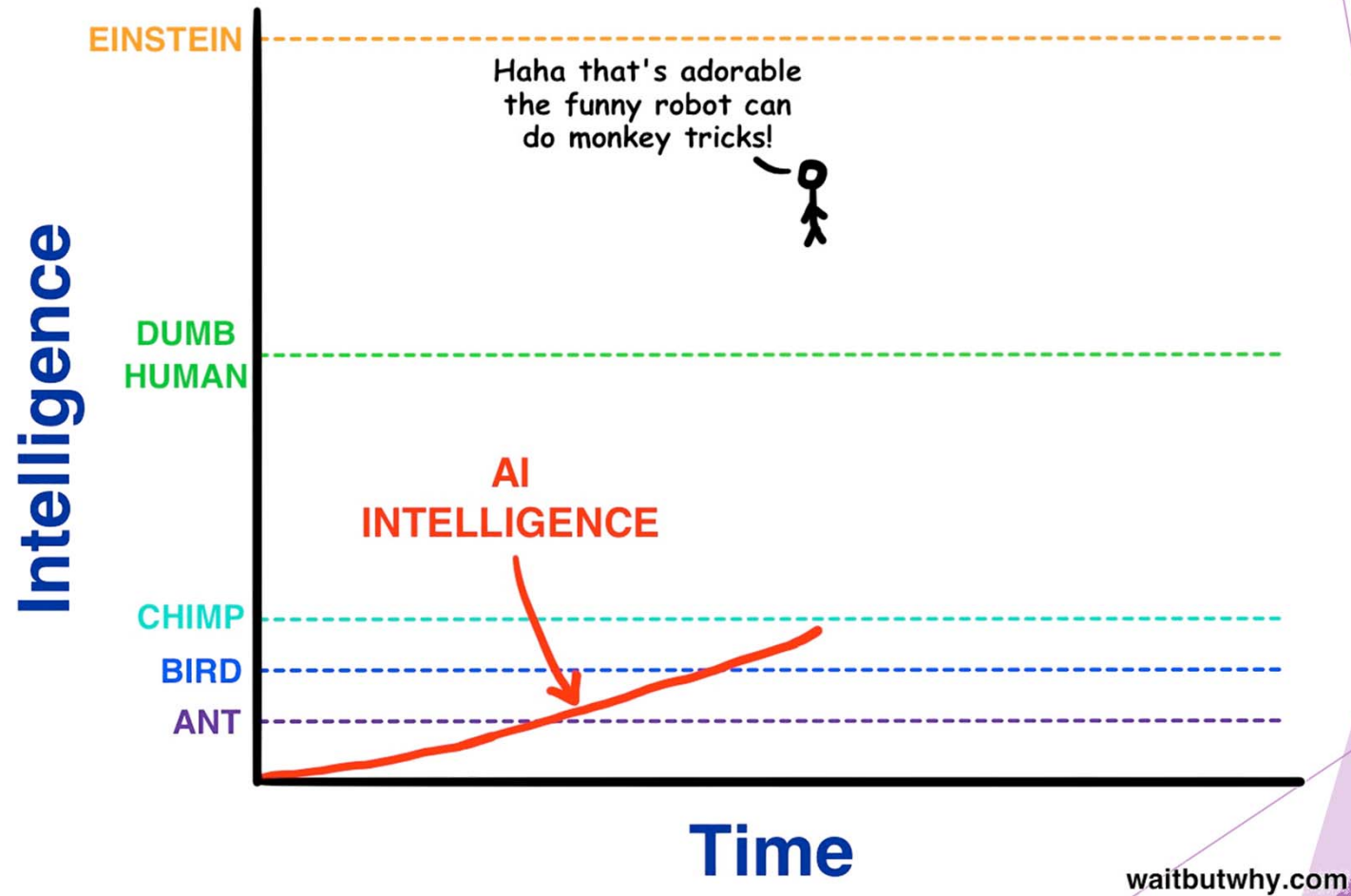
Human Progress

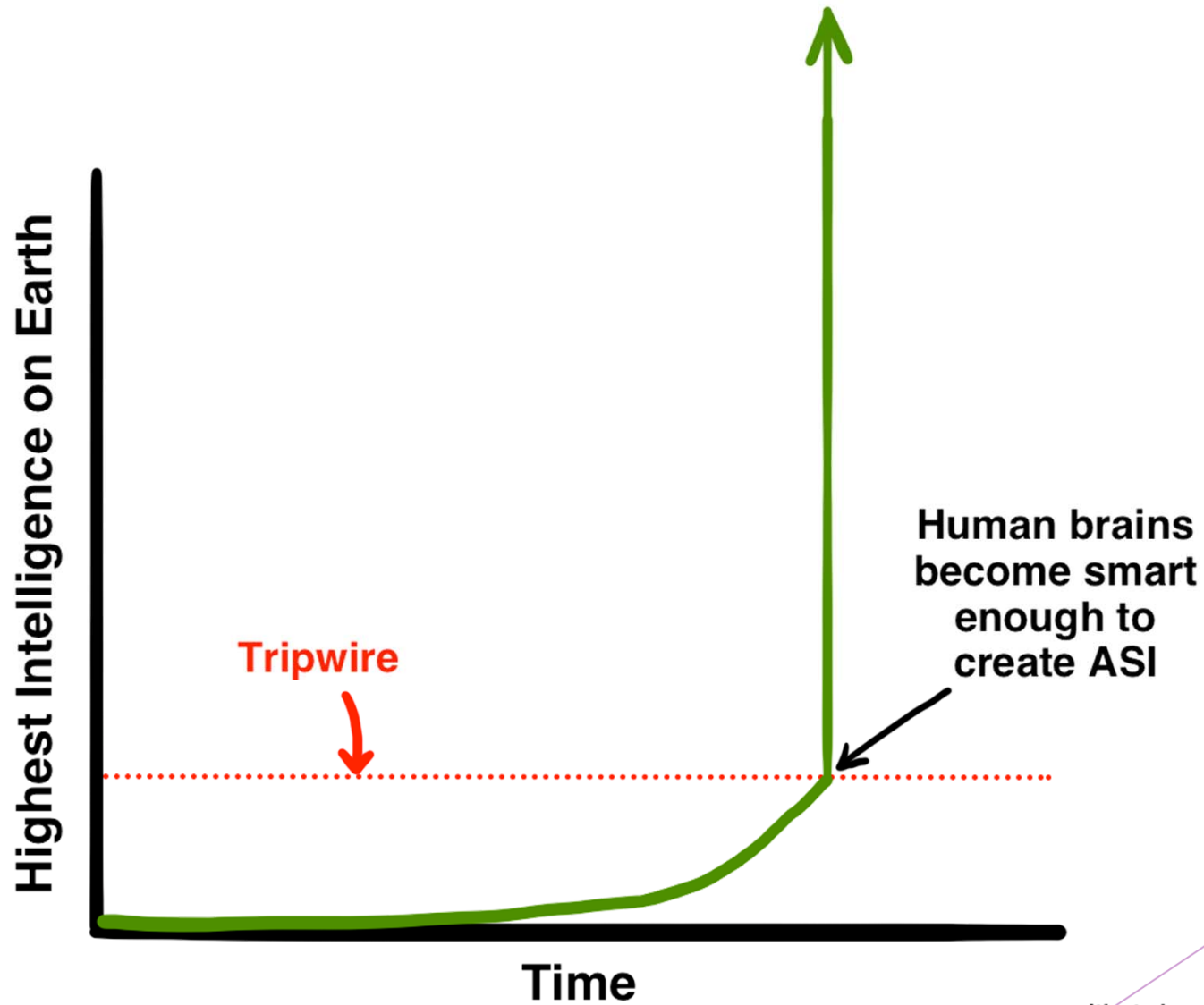
Time

[waitbutwhy.com](http://waitbutwhy.com)



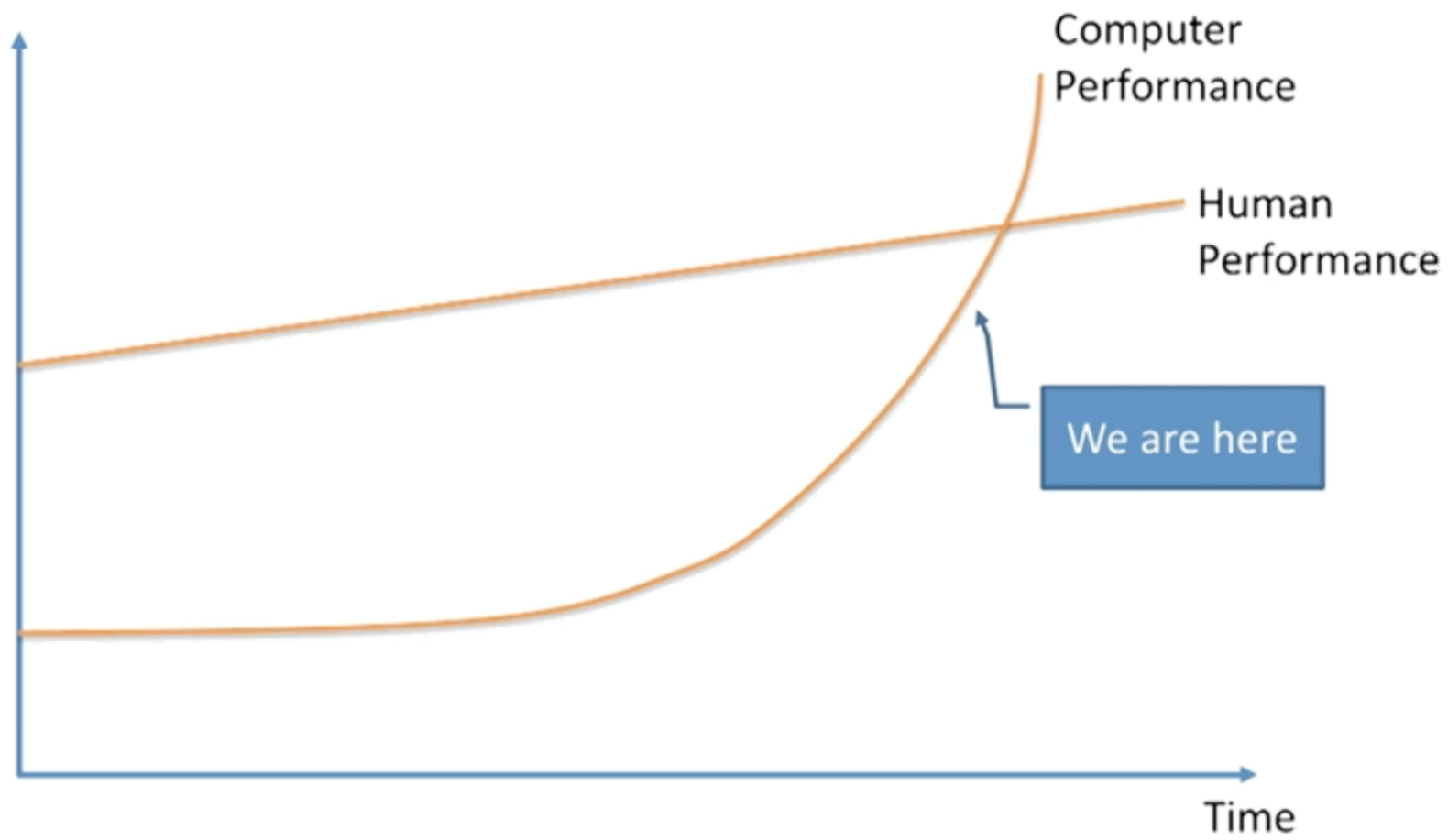
# Our Distorted View of Intelligence

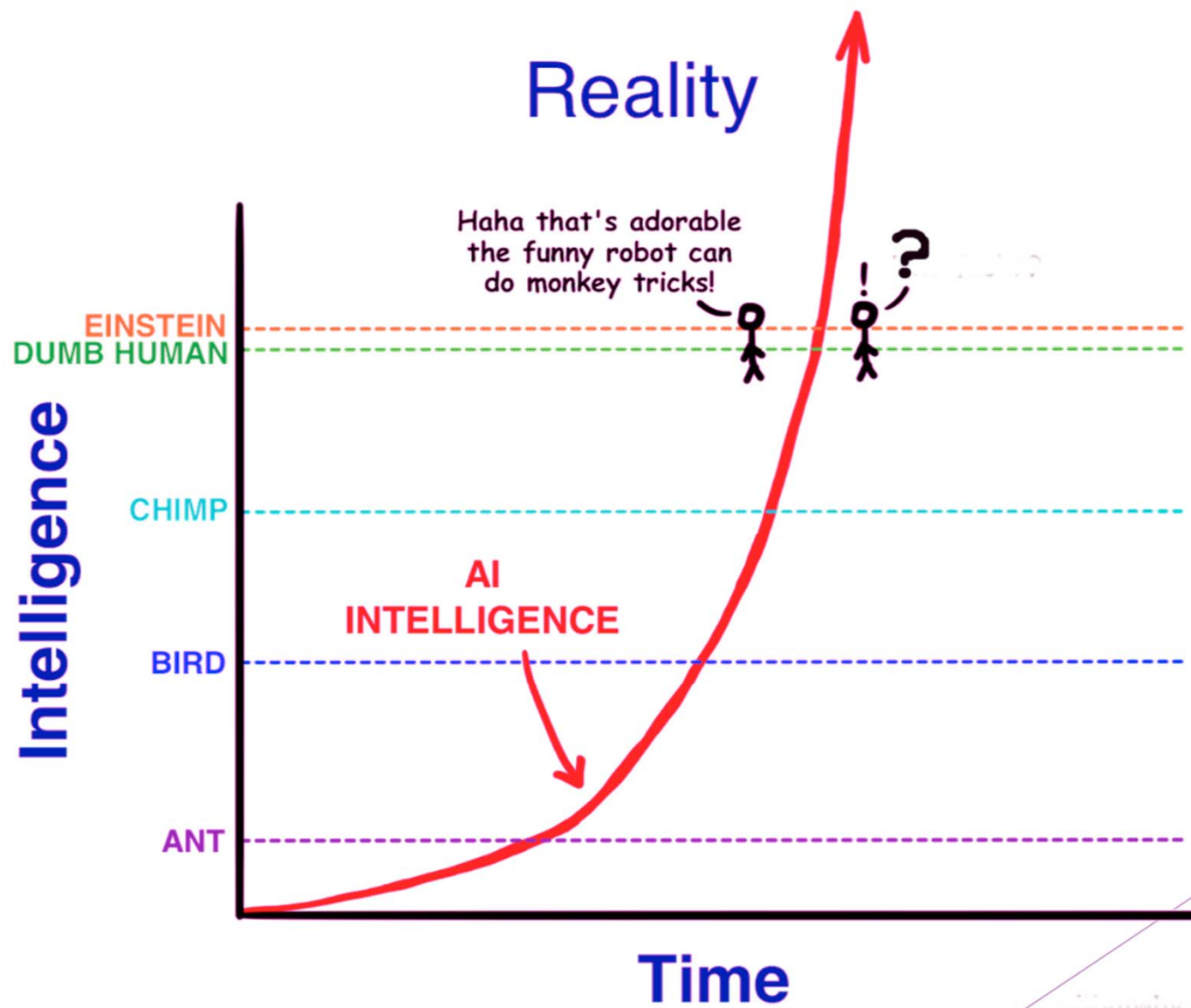




waitbutwhy.com



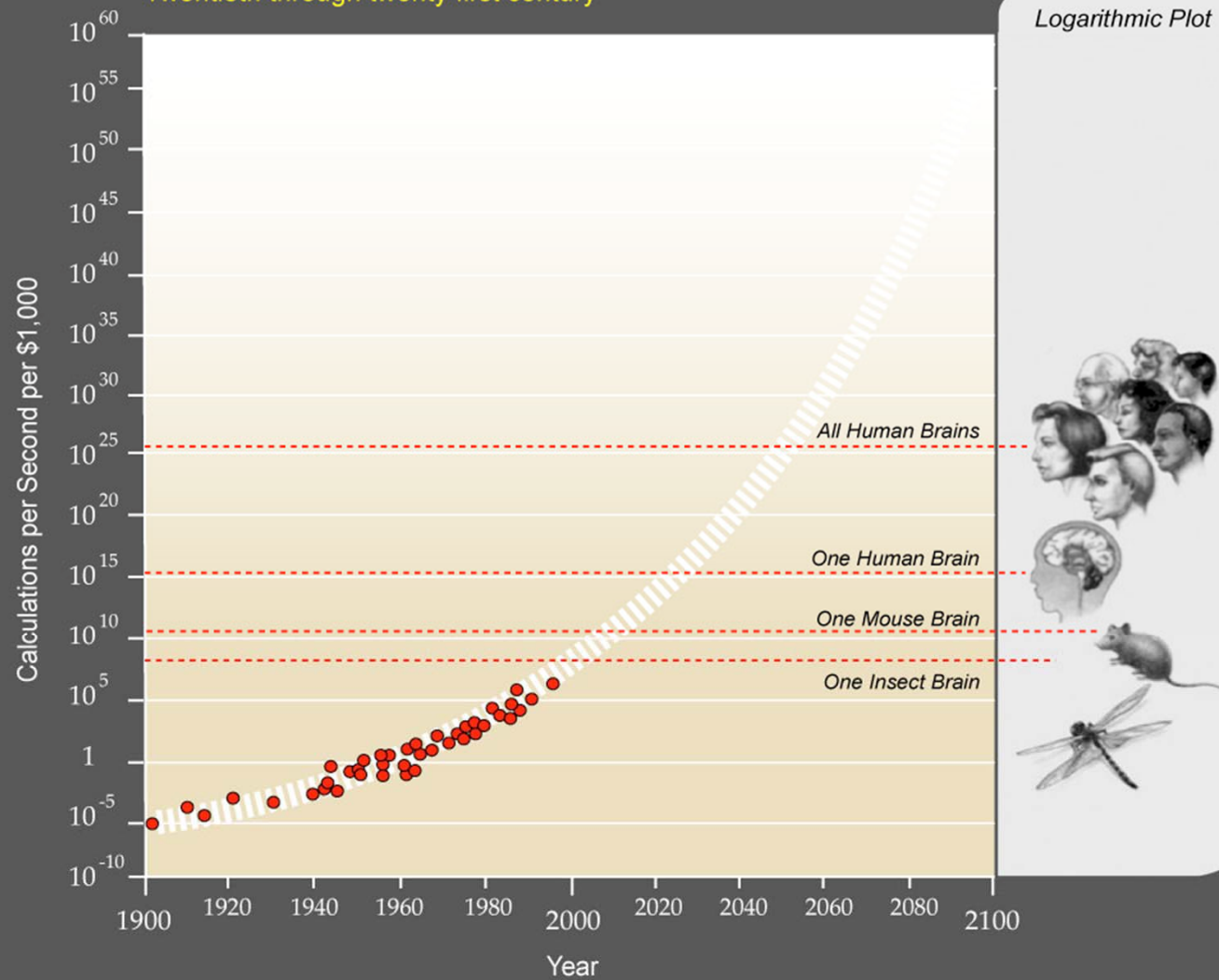






## Exponential Growth of Computing

Twentieth through twenty first century



# Humans Face an Unprecedented Future

either...

## AI – Artificial Intelligence

Computer Acts Alone

or...

## AHI – Augmented Human Intelligence

Computer Acts thru Human Intentions



Where are we at as  
Humans?

CrossRoad

AI

Automation  
Computers  
Decide

AHI

Knowledge  
Humans Decide  
How Computers  
Act

Where are we at as  
Teachers?

eLearning  
CrossRoad

AI

Computers  
Decide  
Individualization  
Memorization

AHI

Humans  
Decide  
Collaboration  
Thinking



# TEACHERS Face an Unprecedented Challenge

either....Be replaced by

AI – Artificial Intelligence

or... Change Our Pedagogy to Augment Human  
THINKING

AHI – Augmented Human  
Intelligence

Teachers are key!





# eLEARNING'S PEDAGOGICAL CrossRoad

## Artificial Intelligence

- NO TEACHERS
- INDIVIDUALIZED LEARNING
- Memorization + repetition of “correct answer”
- EDUCATION IS AUTOMATED
  - Packaged Courseware
  - AI Delivers Content 24/7
  - Autograded Quizzes
  - AI assigns future path
- COMPUTER ACTS ALONE
- AUTOMATION REVOLUTION

## Augmented Human Intelligence

- HUMAN TEACHER IS KEY
- COLLABORATIVE LEARNING
  - Seminars, Debates, Projects, Simulations
  - Teamwork, Innovation
- PROBLEM-CENTERED wrt
  - Emphasis on Thinking Skills, Analysis, Creativity
  - Real-World Problem Solving with AI tools
- TEACHER & LEARNERS develop AHL to create a
- KNOWLEDGE REVOLUTION

# eLEARNING'S PEDAGOGICAL OPPORTUNITY

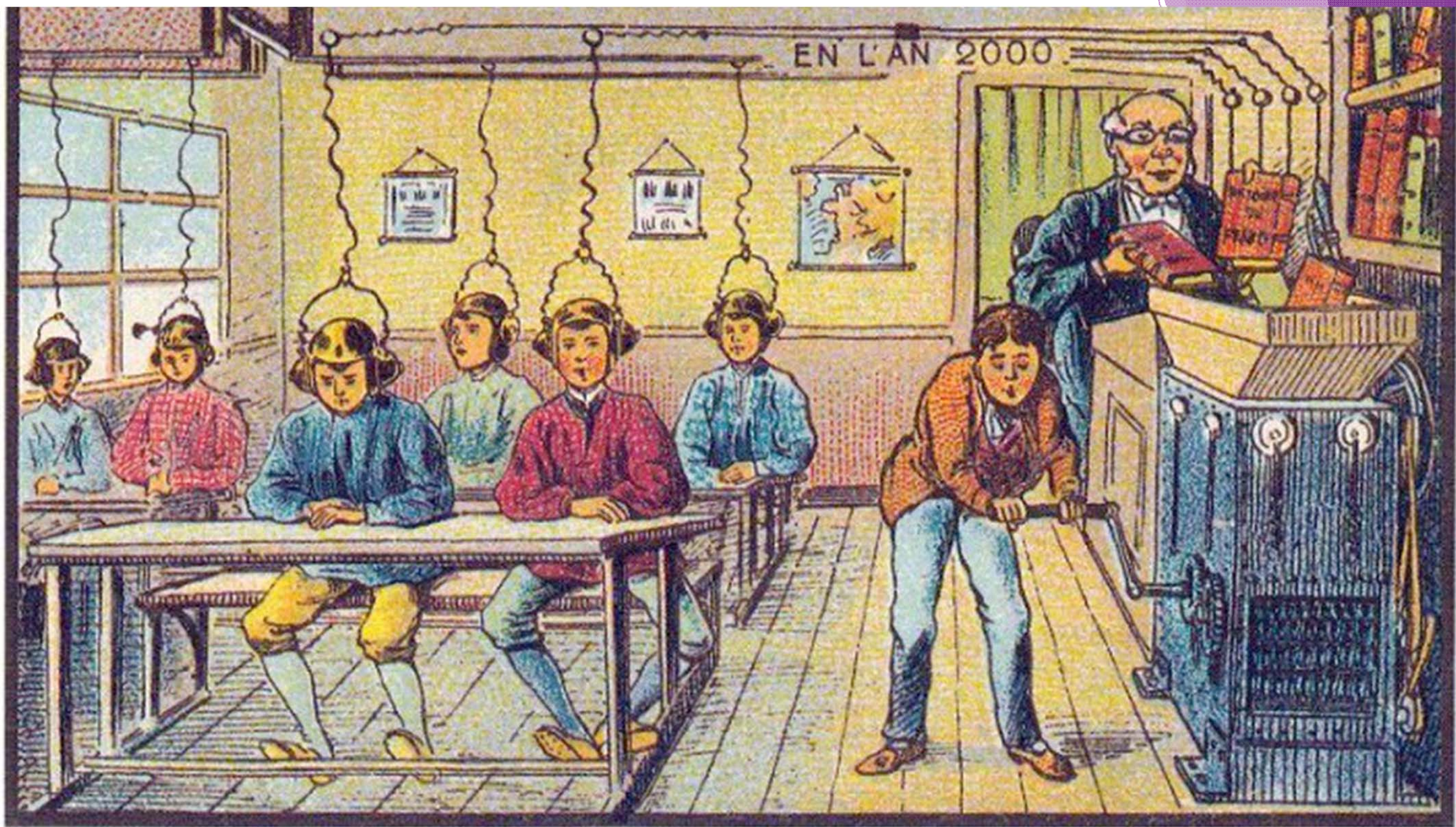
## Artificial Intelligence

- COMPUTER ACTS ALONE
- AUTOMATION REVOLUTION

## Augmented Human Intelligence

- **TEACHER & LEARNERS COLLABORATE**, use AI to develop **AHI** and create a
- **KNOWLEDGE REVOLUTION**





AUTOMATED EDUCATION





# Collaborativist Learning (OCL)

**Collaborativism is a THEORY and a PEDAGOGY for Elearning to develop Augmented Human Intelligence (AHI)**

**OCL employs AI tools with teamwork to develop AHI**

- To use AI tools in Problem Solving in real world scenarios
- Facilitate learner expertise for 21<sup>st</sup> century knowledge industries
- Knowledge building in scientific and professional communities

**OCL is based on DISCOURSE (group discussion)**

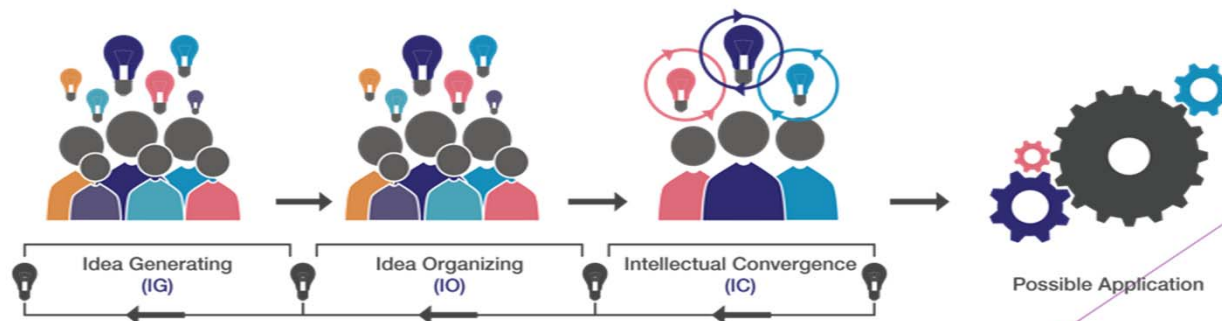
- The TEACHER facilitates learning by engaging LEARNERS in group discussion to understand the discipline and to apply the key analytical terms and AI tools to
  - construct knowledge,
  - innovate solutions, and
  - solve problems.



Collaborativism is more than a HUDDLE:



## COLLABORATIVISM IS A PEDAGOGY



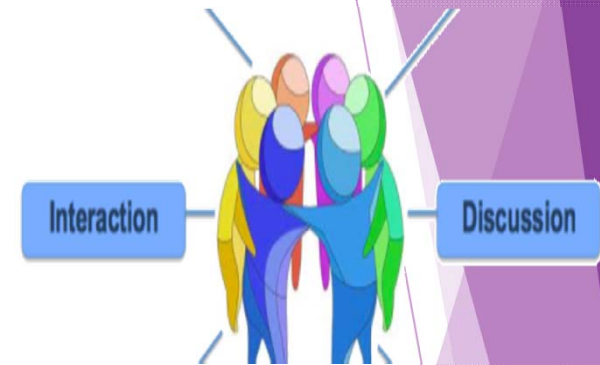


# Collaborativist Learning: Role of the Teacher

Collaborativist pedagogy is more than huddling:

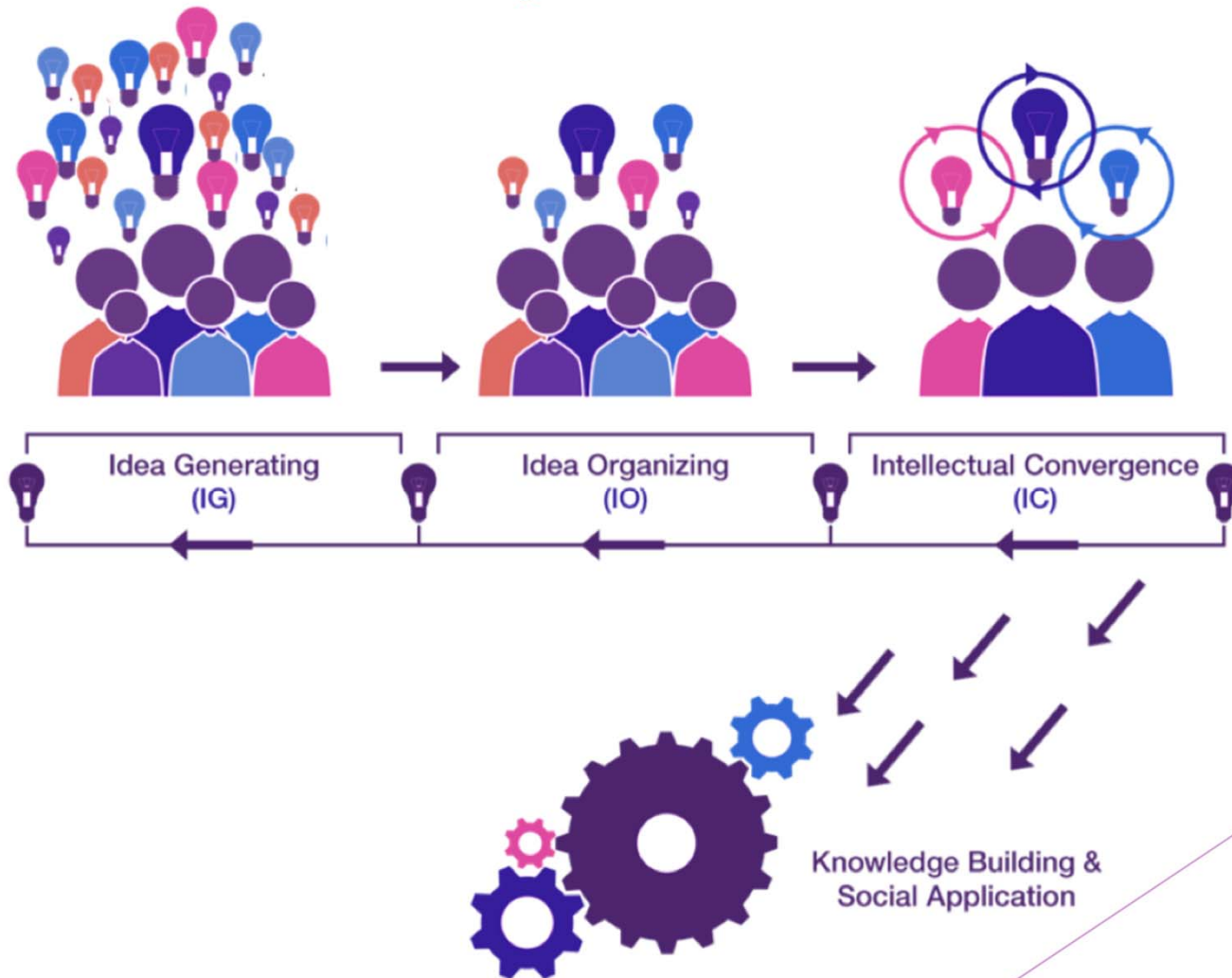
## ROLE OF THE TEACHER:

- To induct the learners into the field
- To provide **Content Expertise**
  - introduce learners to the discipline
    - What is the field of knowledge?
    - What is the analytical language of the field?
    - How to engage and problem solve?
- To provide **Process Expertise**
  - enable learners to apply analytical frameworks and terms
    - To engage learners in collaborative problem solving
    - **3 processes of OCL: IG→IO→IC**



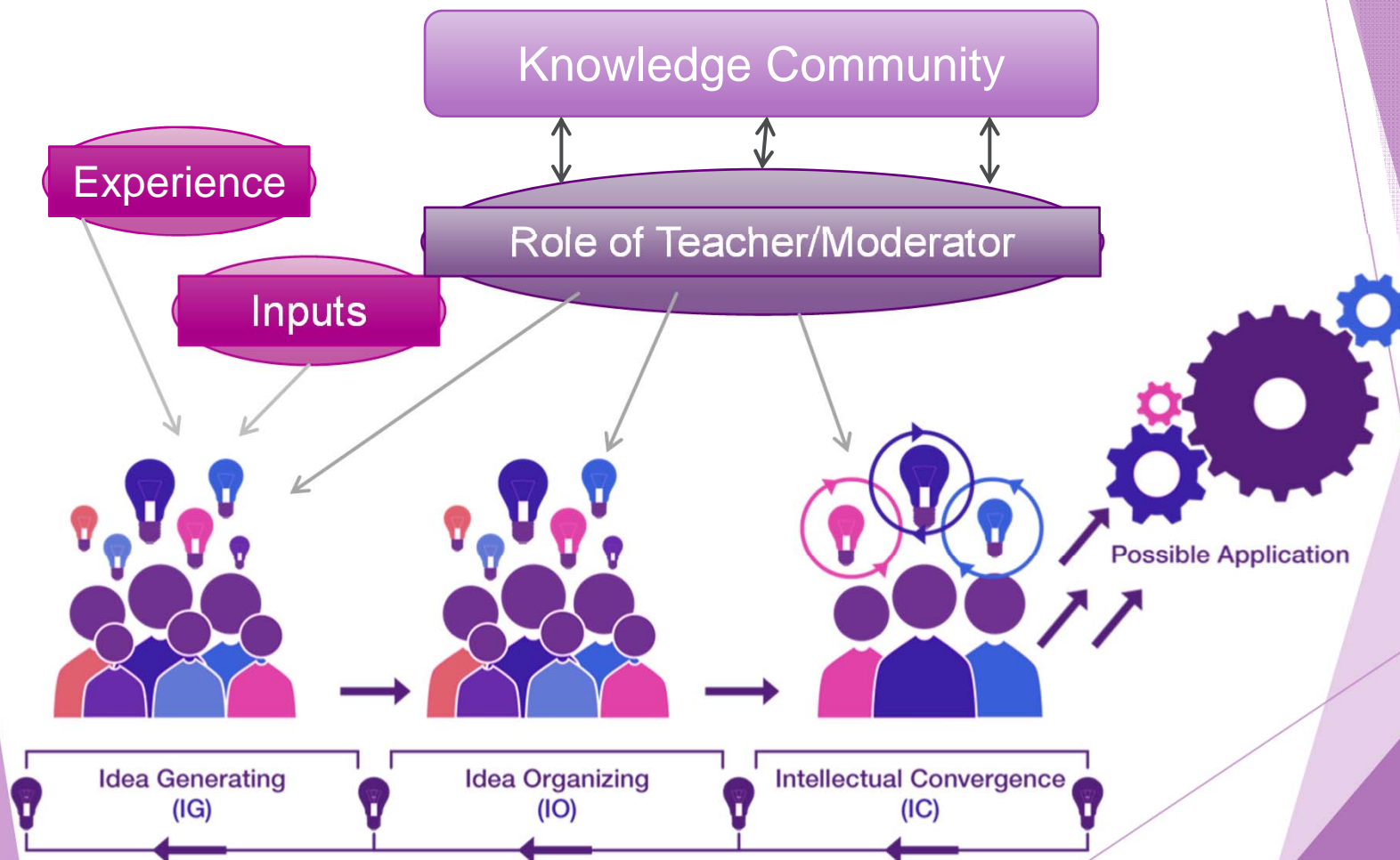
# COLLABORATIVIST LEARNING

## Theory: 3 Processes

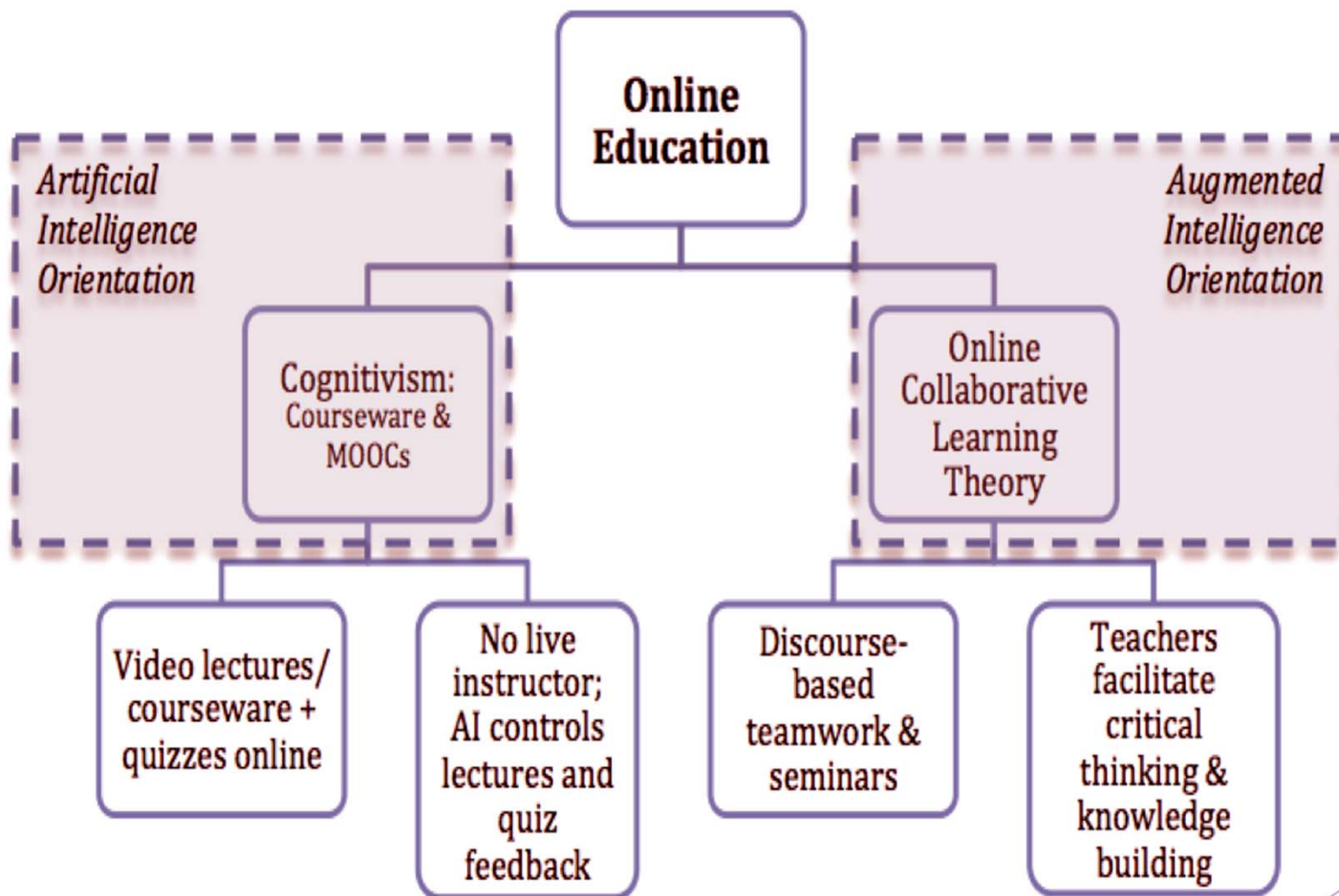




# Collaborativist Learning Theory & Pedagogy









Teachers can choose from or design many Collaborativist Pedagogies:

- Plenary group discussions
- Small group discussion
- Team projects
- Dyads
- Debates
- Role Plays, Simulations
- Student-led Online Seminars (SOS)

+ Employ

AI tools such as AR, Mobile, VR, Gamification



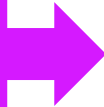
## SOS Student Roles:

1. Team Moderate an Online Seminar:  
1 week
2. Discussant in an Online Seminar  
3 weeks



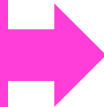
# SOS: Student Moderator Team: 1 week Seminar

Presentation  
10%



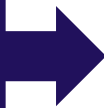
- Present Seminar Topic that week
- Introduce Seminar Design & Schedule
- 3 Discussion Questions
- Readings

Facilitation  
10%



- Facilitate the Quality of Discussion
- Facilitate Progress from IG-→IO-→IC

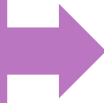
Discourse  
Analysis 20%



- Lessons Learned: In Retrospect
- Assess Quality of User Participation
- Analyze CHANGE Over TIME in type and level of participation
- Reflect on Design and Role as moderator

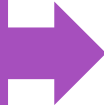
# Student Role: Discussant in Seminar: 3 weeks

Collaborate



- Log in daily
- Do readings
- Post minimum 8 messages to reply to 3 DQs
- Reply to others

Build  
Knowledge



- Contribute new ideas, resources
- Provide reasons/evidence to agree/disagree
- Advance from IG-→IO-→IC



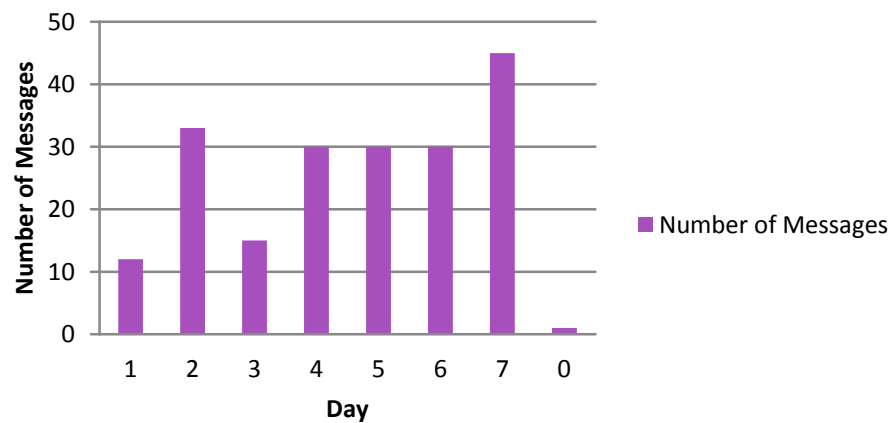
# MAKING LEARNING VISIBLE

## (Discourse Analysis):

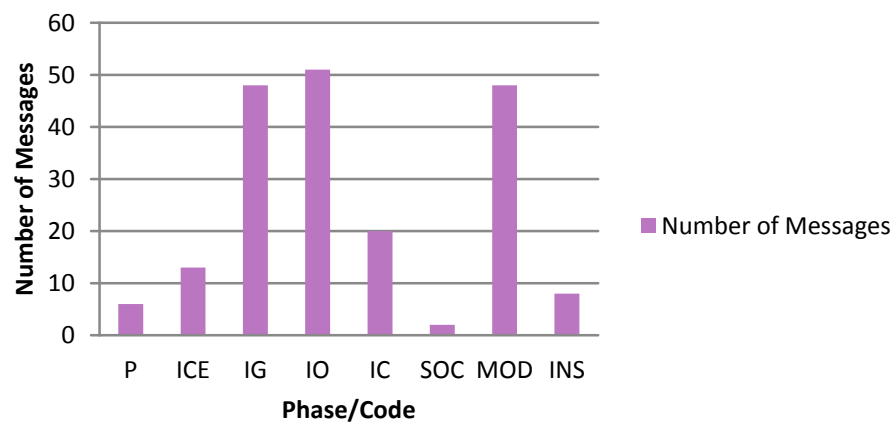
Study the Transcripts of the Online DISCUSSIONS to Identify Learning PROGRESS and activities. Analyze the TRANSCRIPTS according to:  
SEMINAR 1:

- Total # of Messages
- By date:
  - # of message per day
  - Size of Messages per day
- By Gender
- By Role
  - Message numbers or size by Moderators, Discussants, Instructor
- By Process (IG, IO, IC)
  - Messages numbers or size by Process type
    - Per day
    - Per Participant
- CHANGE OVER TIME

### Number of Messages By Day

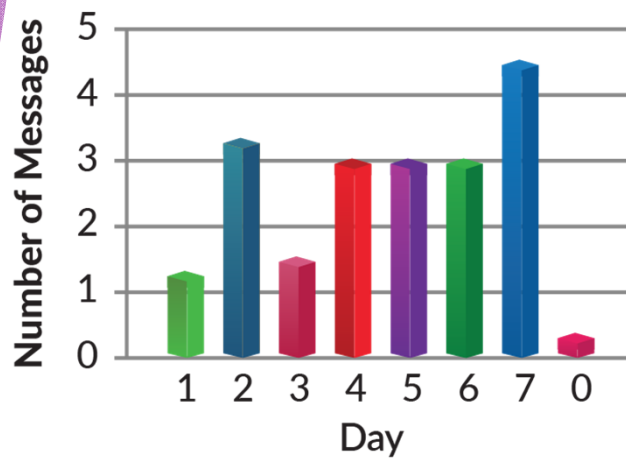


### Total Number of Messages by Type

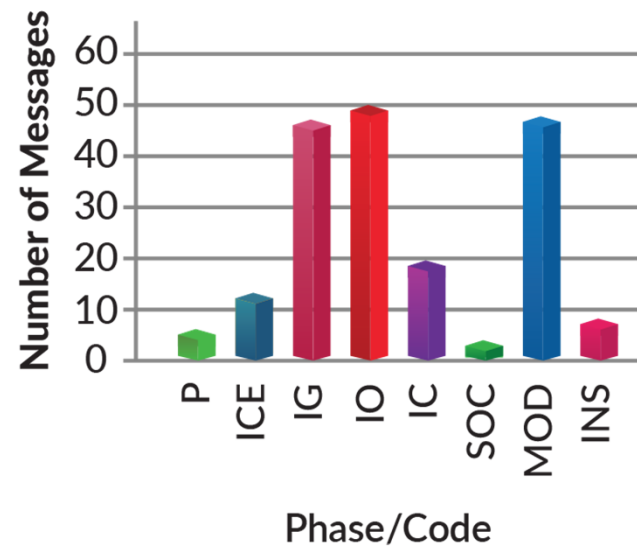


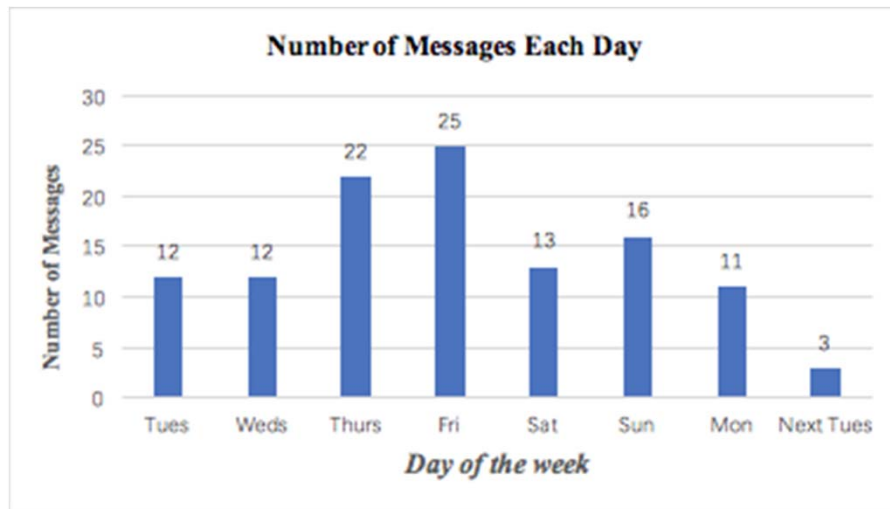


**Number of Messages By Day**

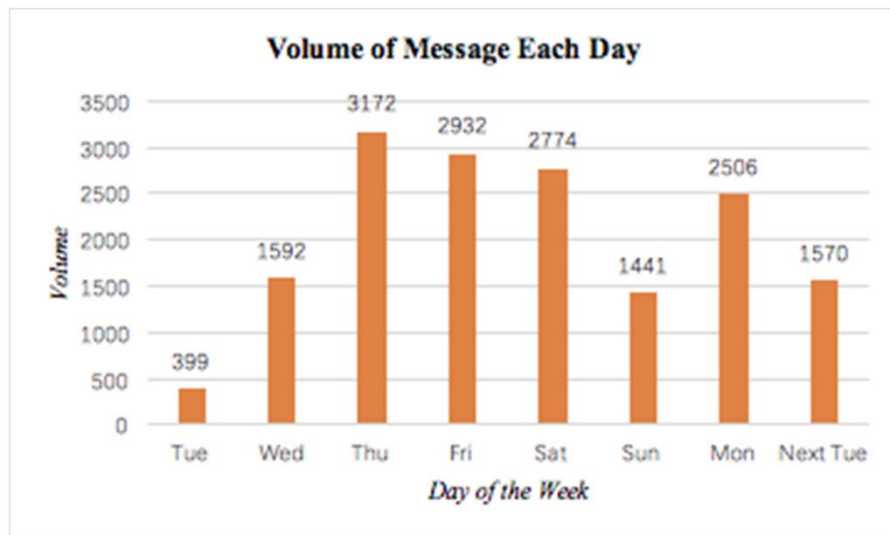


**Number of Messages By Phase**



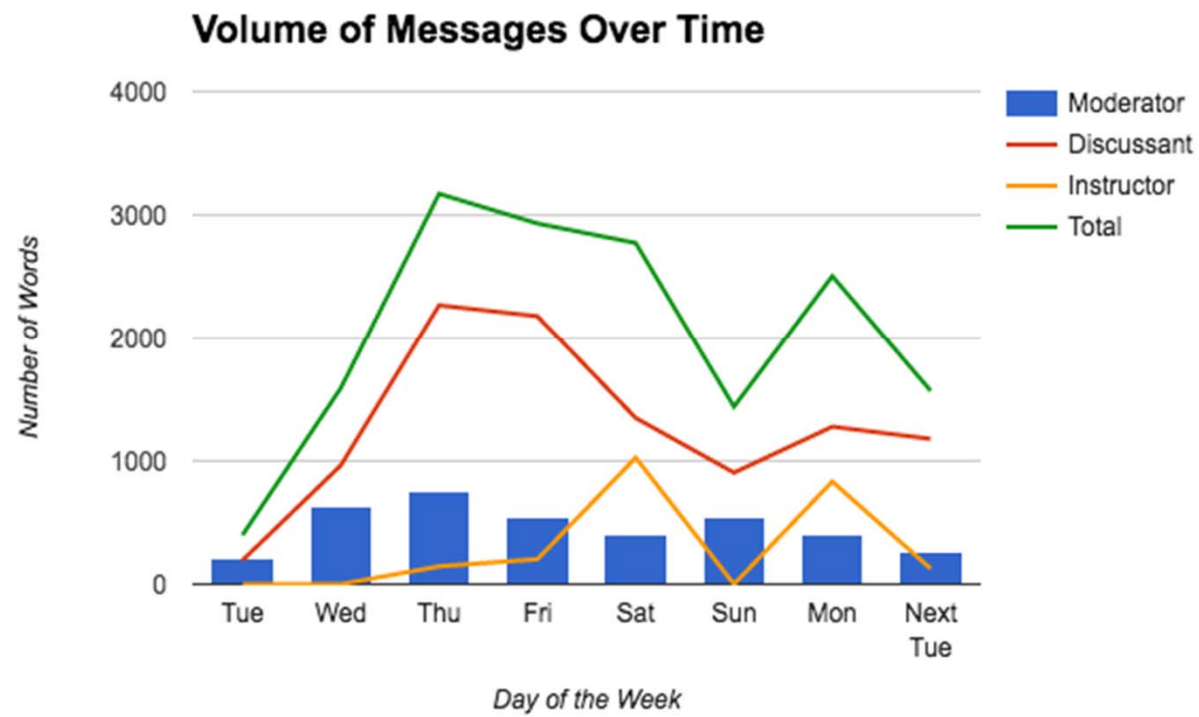


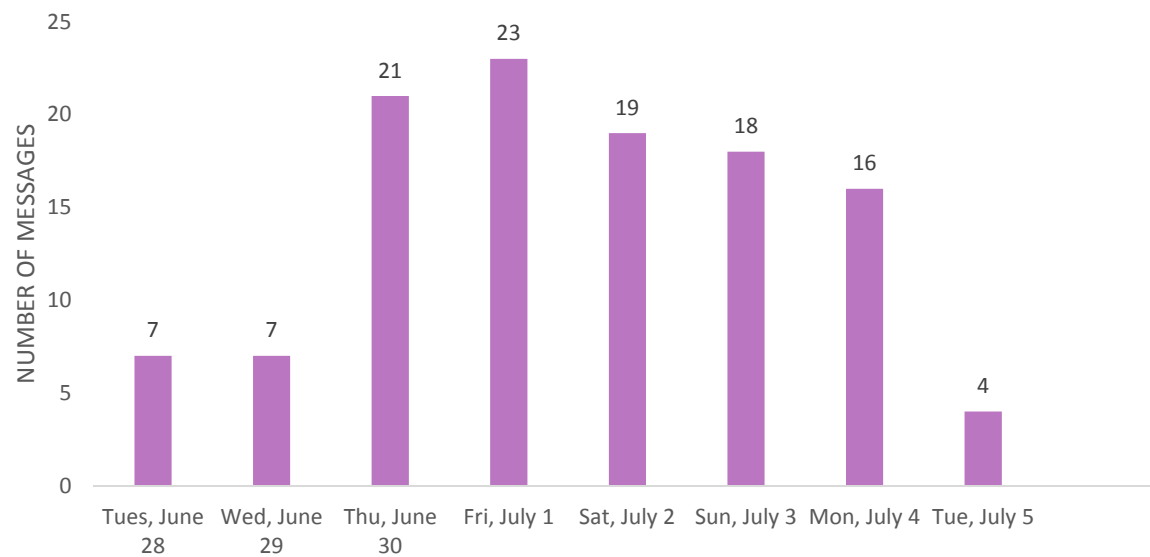
*Figure 1: Total Number of Messages by Day*



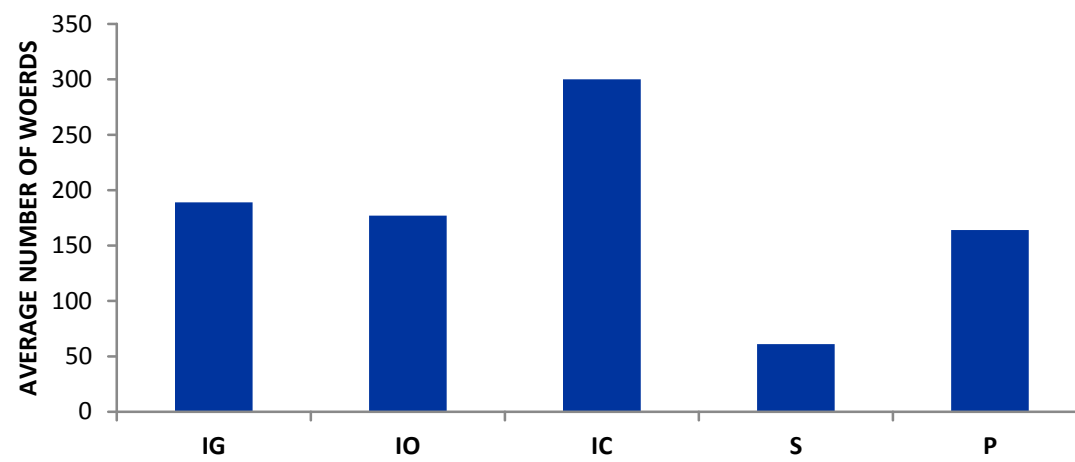
*Figure 2: Total Number of Words of Messages by Day*

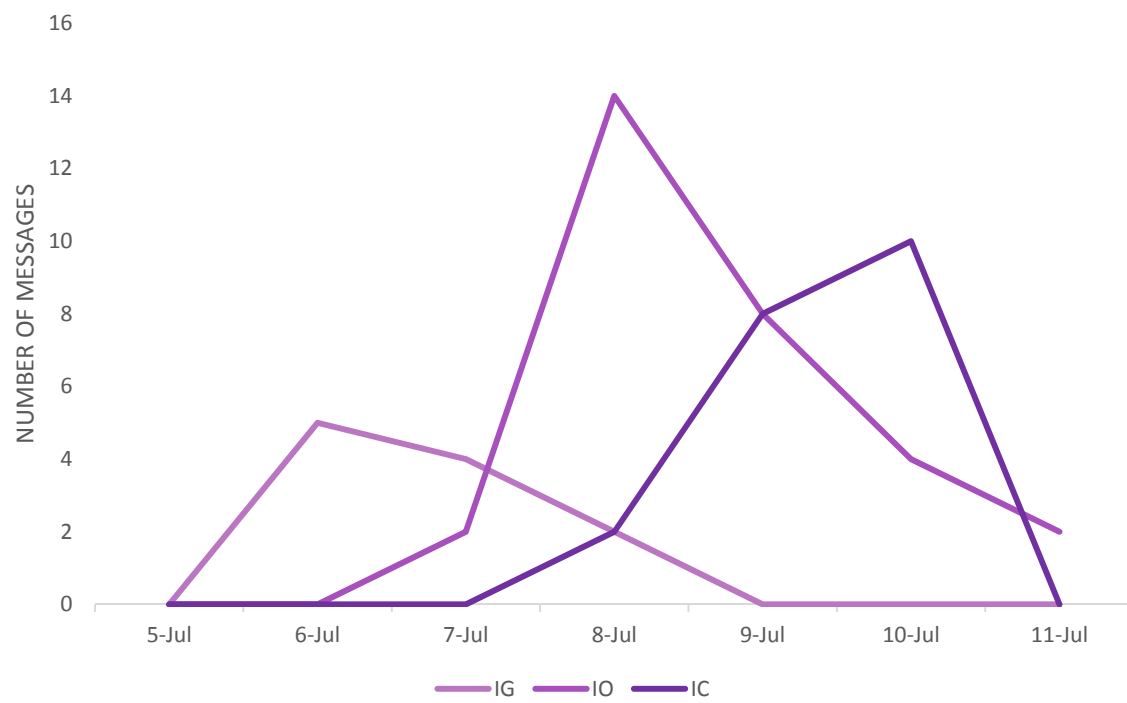




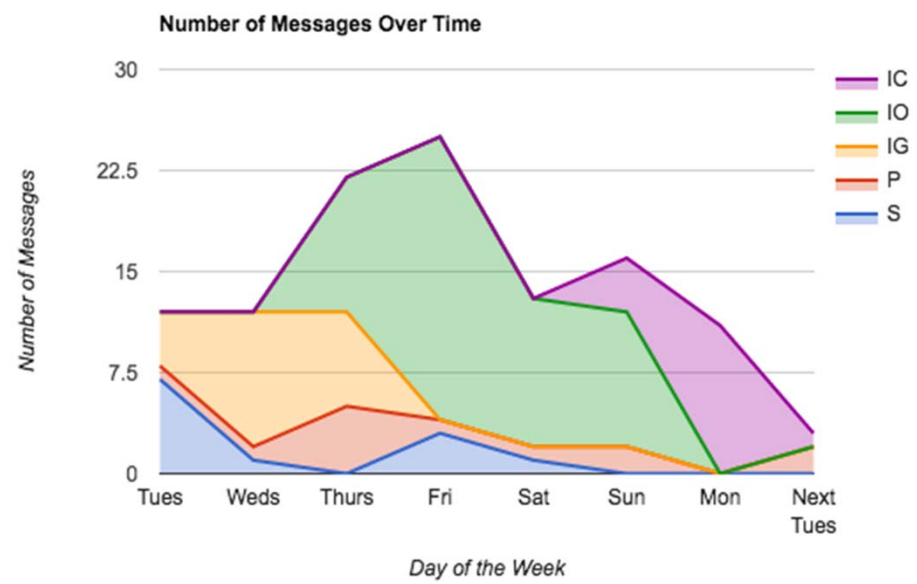


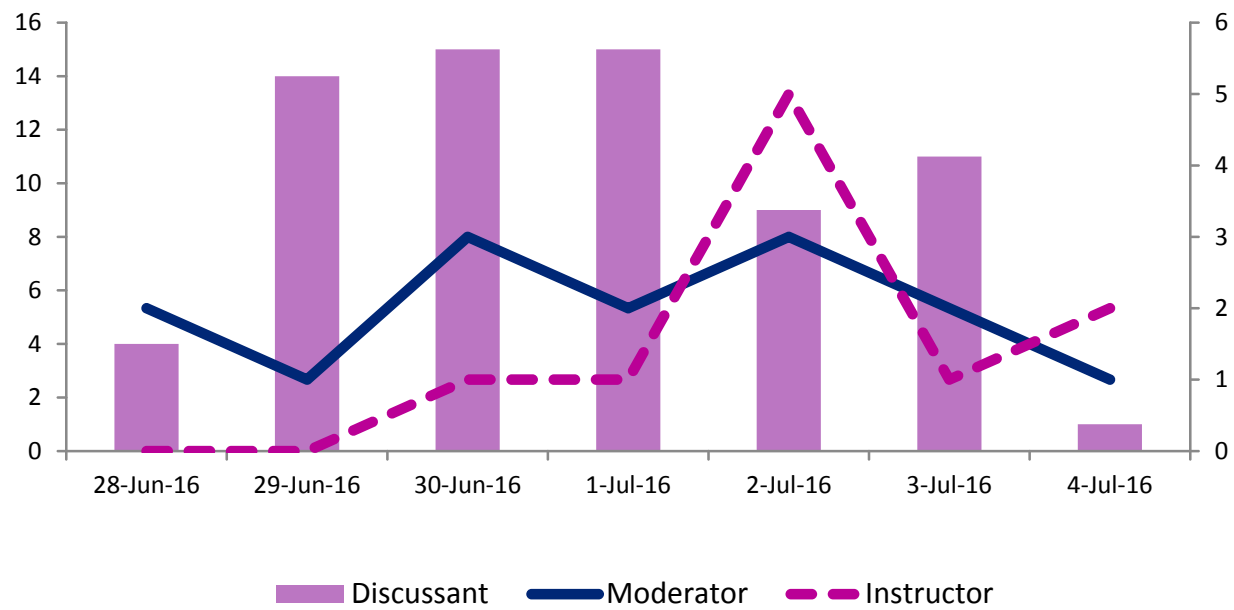




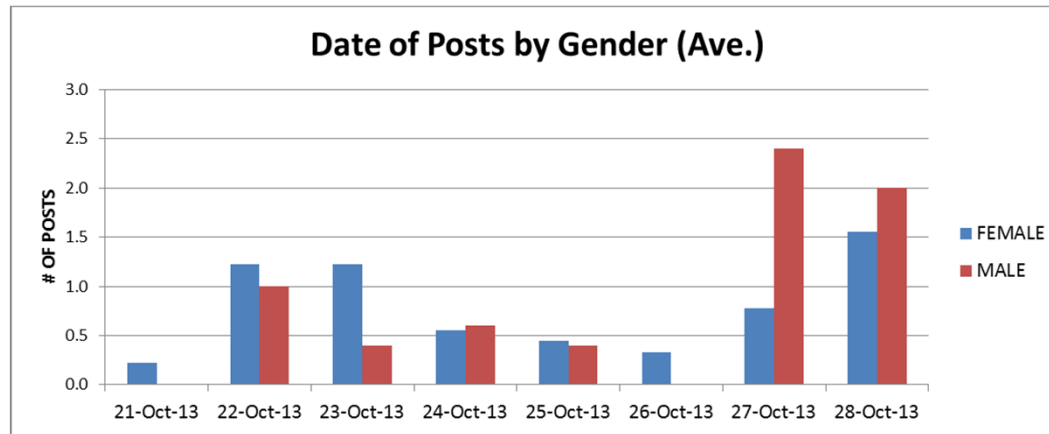






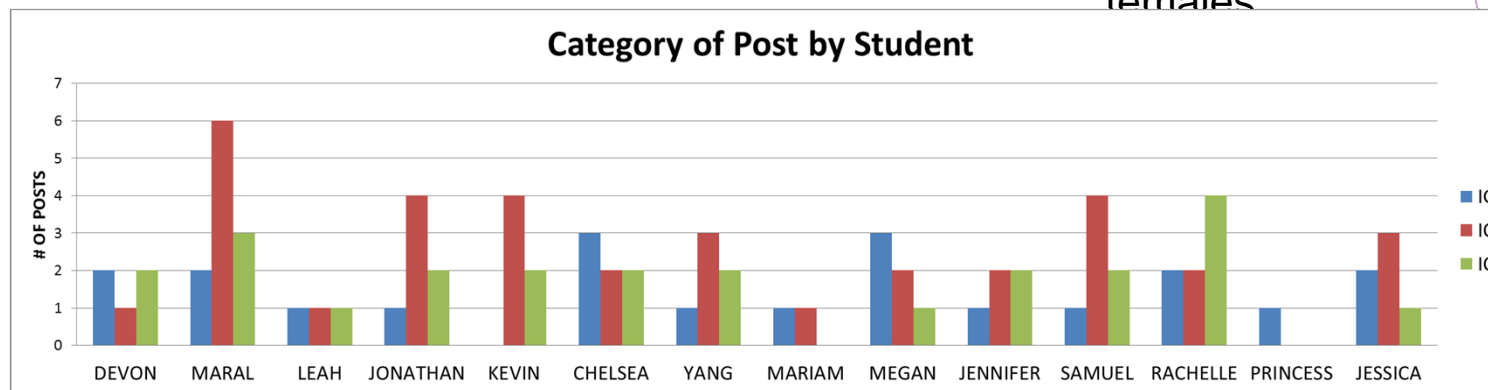




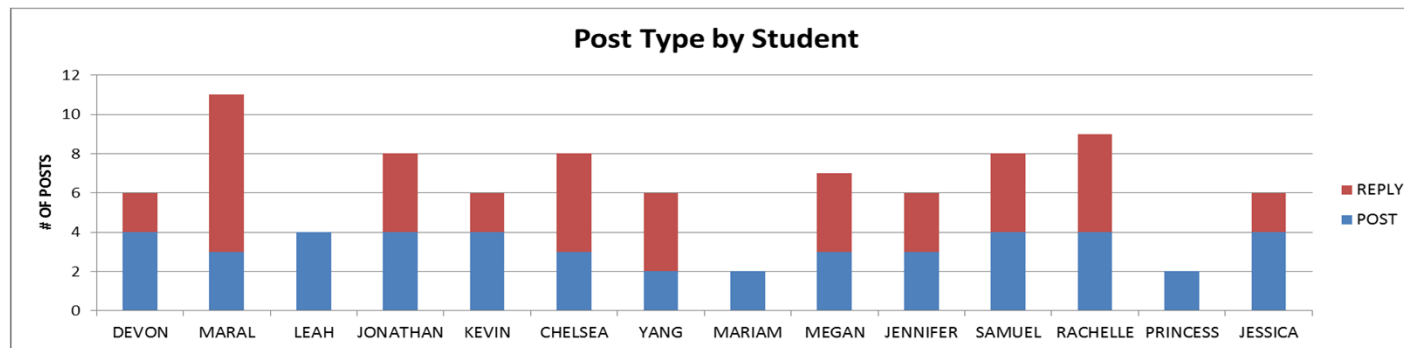
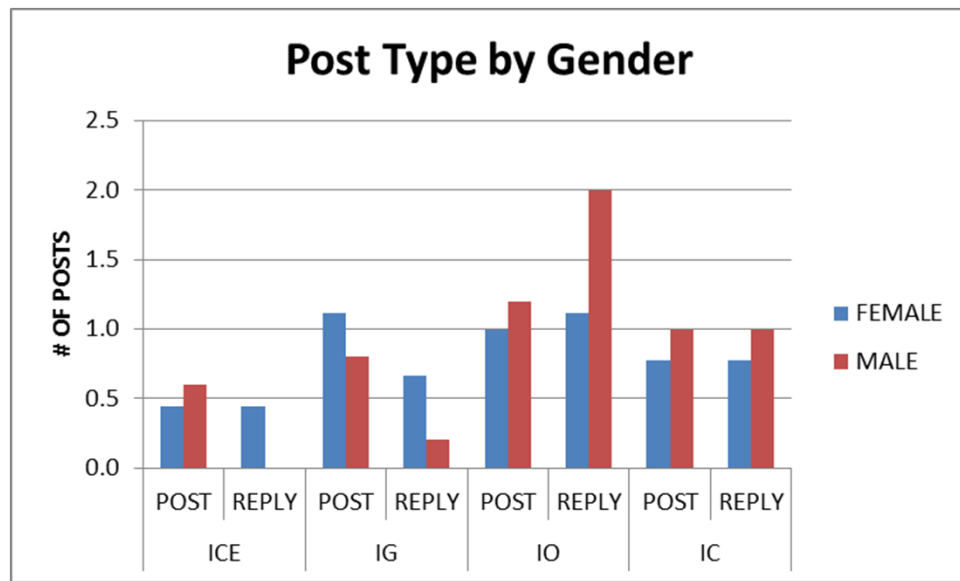


## Methodology

# of posts was calculated by total posts separated male/female and dividing it by the total males/females. I did this because there are twice as many females than males in our class - dividing by the entire class would have skewed posts in favour of females

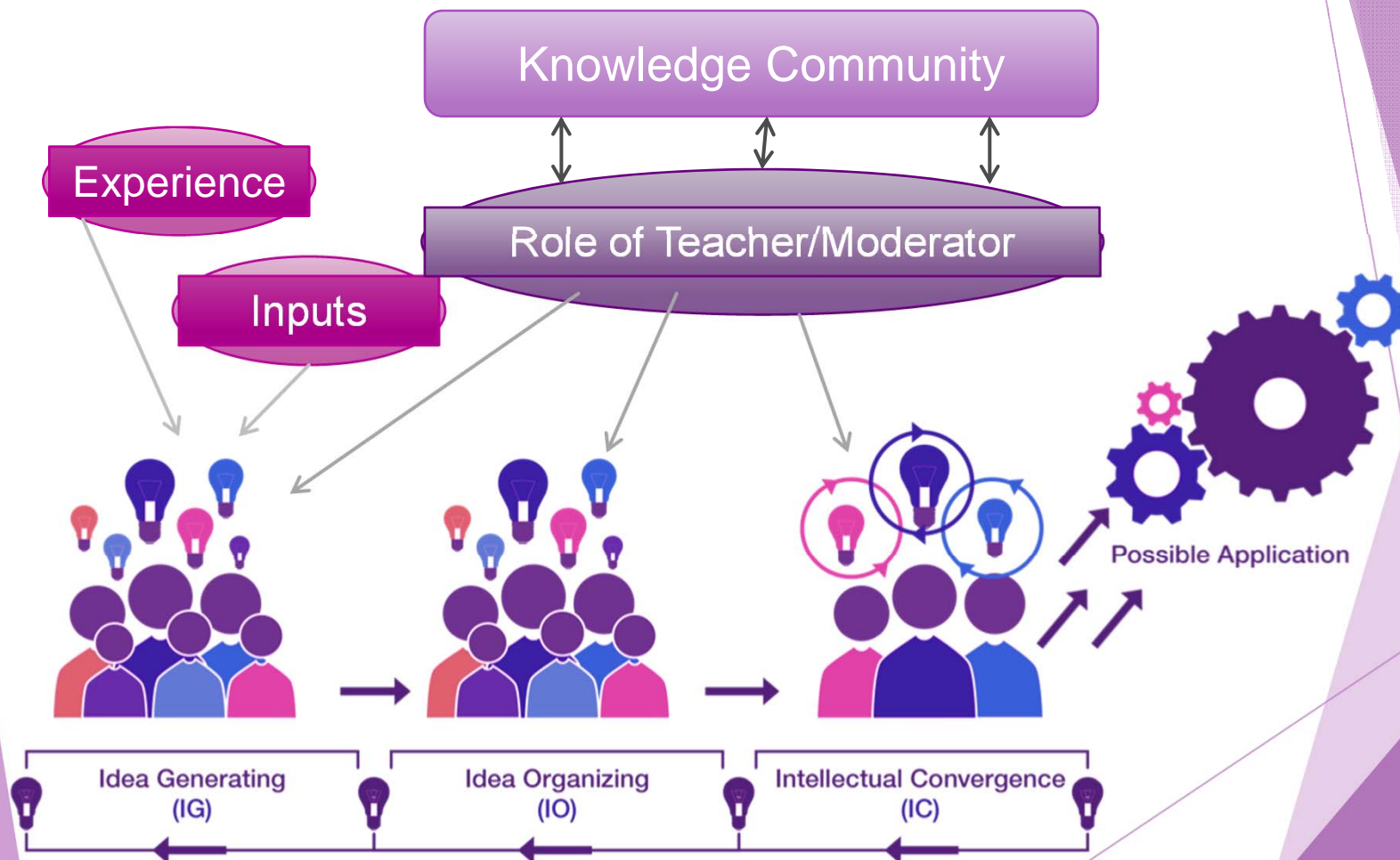


results.





# Collaborativist Learning Theory & Pedagogy



# So What...?

## If AI Wins?

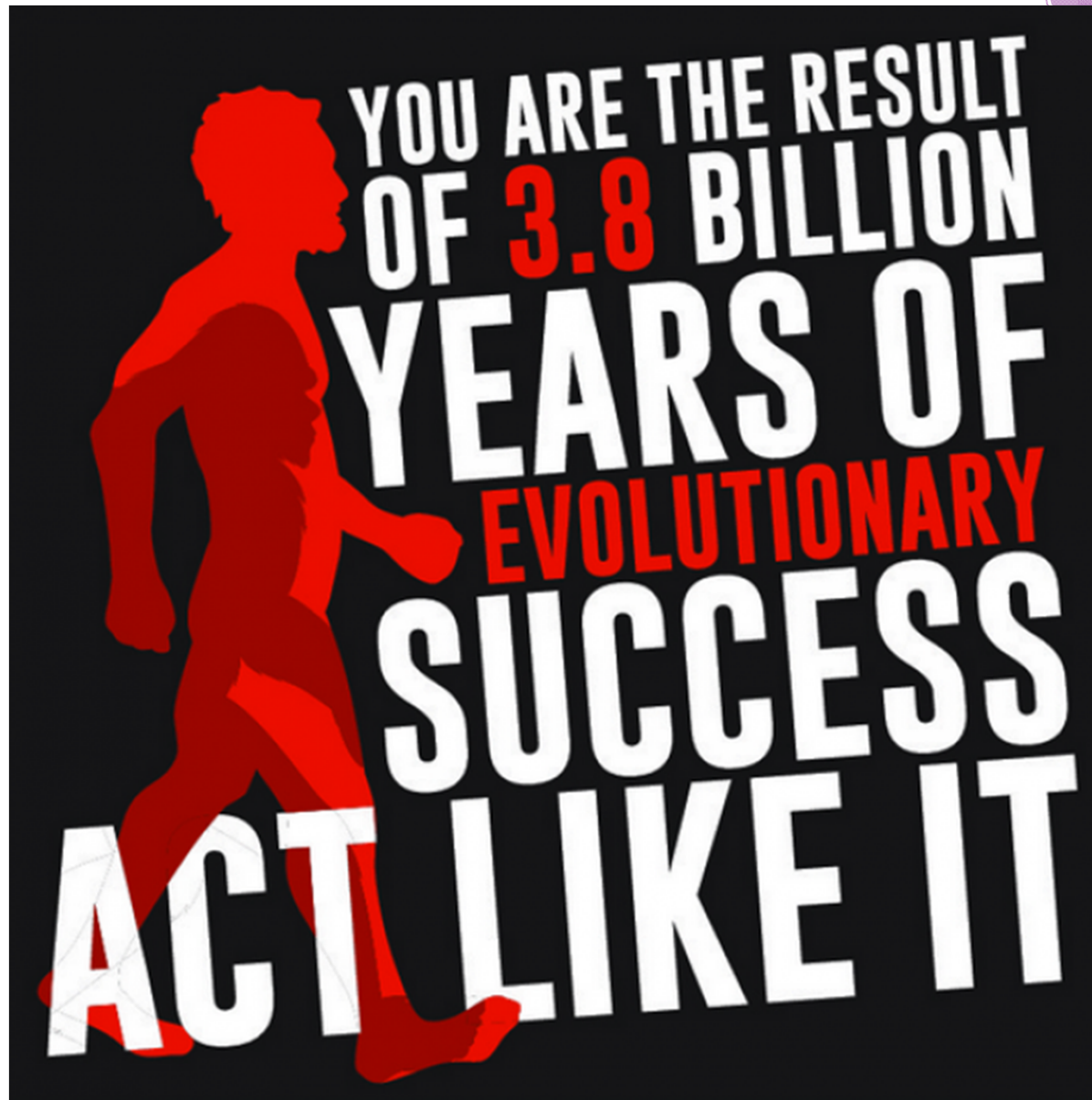
- ▶ Automation Model Dominates
- ▶ Teachers replaced by AI software delivering personalized commercial content
- ▶ Education is one-way information transfer
- ▶ Efficiency rules over quality
- ▶ Unprecedented costs in terms of human values, work, creativity which are replaced by AI
- ▶ **Humanity replaced by AI**
- ▶ **AUTOMATION REVOLUTION**

## If AHI Wins?

- Knowledge Model Grows
- Educators retain key role and adopt Collaborativist pedagogies to facilitate discourse and critical thinking
- Educators encourage human understanding, creativity & ethics
- AI to enhance Human Thinking,
- Quality rules over Efficiency
- **Humans Smarten Up**
- **KNOWLEDGE REVOLUTION:**

Next Steps...?







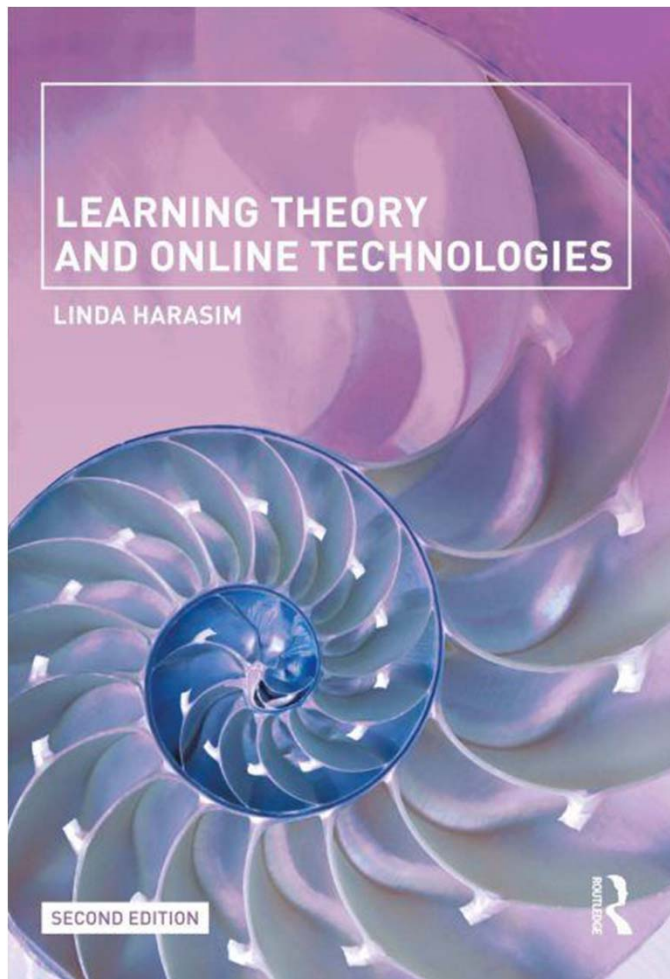
*To develop a complete mind:  
Study the science of art;  
Study the art of science.  
Learn how to see.  
Realize that everything  
connects to everything else.*

*- leonardo da vinci*



# THANK YOU!

[harasim@sfu.ca](mailto:harasim@sfu.ca)

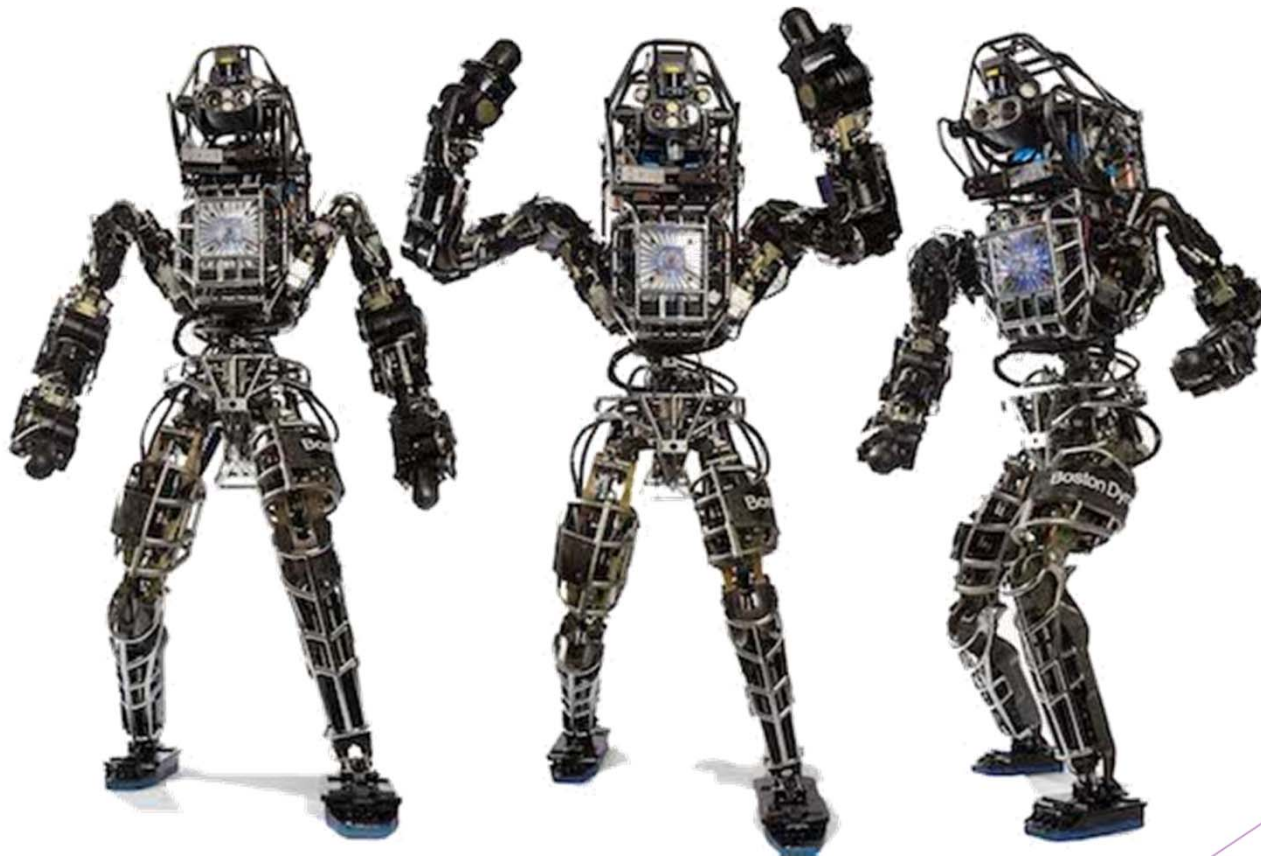


Dr. Linda Harasim is a founder of online education and the creator of Online Collaborative Learning (OCL).

She is a professor in the Communications Department at Simon Fraser University, Vancouver CANADA.

*Learning Theory and Online Technology: How New Technologies are Transforming Learning Opportunities.*  
New York: Routledge Press.  
(2017, 2<sup>nd</sup> Edition)

TEACHERS:  
Do what Robots Can't! Teach THINKing!!







# Reference List

Harasim, Linda. (November 2015). *Discussion #1*. Communications 453. Retrieved from <http://www.fightforeducationfuture.com/discussion-topic-1/>.

Harasim, Linda. (November 2015). *Discussion #2*. Communications 453. Retrieved from <http://www.fightforeducationfuture.com/discussion-topic-2/>.

Urban, Tim. (Jan. 22, 2015). *The AI Revolution: The Road to Superintelligence*. Retrieved from <http://waitbutwhy.com/2015/01/artificial-intelligence-revolution-1.html>.

Walia, Arjun. (September 30, 2015). *How French Artists In 1899 Envisioned Life In The Year 2000*. Retrieved from <http://www.collective-evolution.com/2015/09/30/how-french-artists-in-1899-envisioned-life-in-the-year-2000/>.