PRATITI

...becoming aware

WEBINAR SERIES

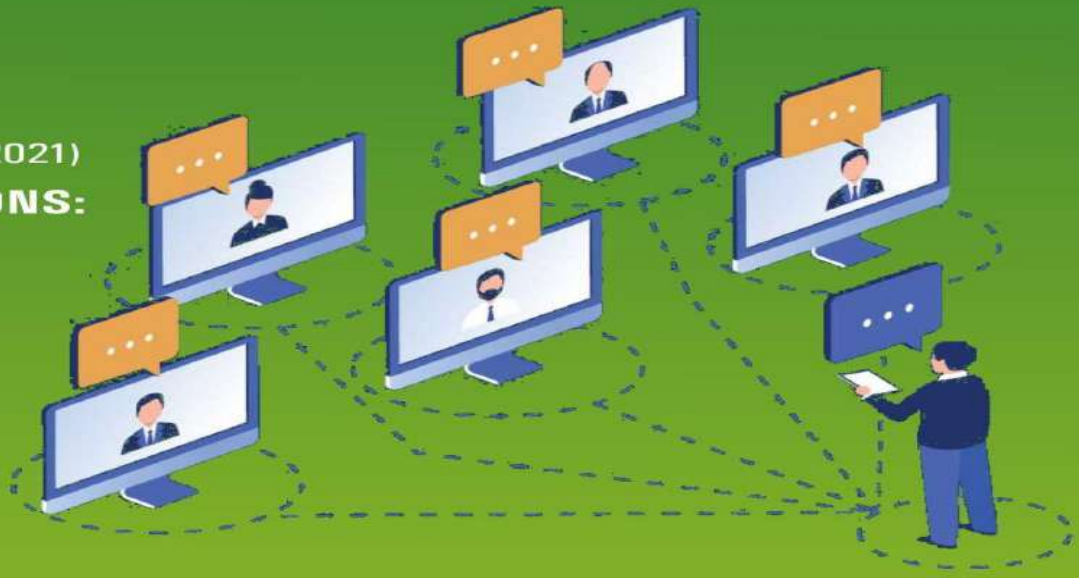
As A Precursor to

THE ANNUAL CONFERENCE OF INTERNATIONAL SIMULATION AND GAMING ASSOCIATION (ISAGA 2021)

GAMING, SIMULATION AND INNOVATIONS: CHALLENGES AND OPPORTUNITIES

ISAGA2021

52nd ANNIVERSARY CONFERENCE



SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE

Campus : Indore – Ujjain Road, Indore – 453111 (M.P.), INDIA
City Office : Shri Vaishnav VidyaParisar, 177 JawaharMarg, Indore (M.P.), INDIA
Web Address - https://www.svvv.edu.in/

The rising flame
epitomises leadership
through enlightenment

The bright orange colour
represents brilliance

The colour blue reflects
serenity and infinity

तमसो मा ज्योतिर्गमय
Lead me from
darkness to light.

PREAMBLE

Having accepted the mandate of organizing ISAGA 2020 in September 2020, we were geared up to take all necessary steps at our end. Covid-19, however, declared as pandemic by the World Health Organization forced us to postpone the conference to September 2021. All of us felt that enthusiasm and tempo should be maintained and members of the ISAGA fraternity should meet regularly to exchange the learnings. Thus, we thought of inviting the simulation and gaming professionals for presenting the webinars on the topics of their choice on saturdays. The idea worked very well, and we had 28 webinars between October 3, 2020 and August 21, 2021.

We are grateful to all the presenters for having accepted our invitation and sparing their valuable time. We are thankful to the members of ISAGA and faculty as well as students of *Shri Vaishnav Vidyapeeth Vishwavidyalaya* for having attended the webinars. The presentations have been compiled with brief profile of the presenters in this volume that has been named as **PRATITI**, which means *becoming aware*. We are confident that this compilation will be found useful by the interested readers.

We wish happy learning to all!

Upinder Dhar

Vinod Dumblekar

Jigyasu Dubey

Anand Rajavat

उत्साहो बलवानार्य नास्त्युत्साहात्परं बलम |

सोत्साहस्य च लोकेषु न किंचिदपि दुर्लभम ||

A Person with enthusiasm is a powerful person. There is nothing as powerful as enthusiasm. Nothing is impossible to an enthusiastic person.

This subhashit says "If there is a will, there is a way." Nothing is impossible; one must push it till the end.

Chairperson

Dr. Upinder Dhar

Coordinators

Dr. Jigyasu Dubey

Dr. Vinod Dumblekar

Technical Support

Dr. Anand Rajavat

Mr. Gaurav Shrivastava
Mr. Shrikant Telang
Mr. Romil Rawat
Mrs. Rina Patidar
Mr. Nitin Sakore
Mr. Mohd. Parvez
Mr. Shadab Sheikh
Mrs. Ruchika Dubey

You can watch all the webinars on following web link:

S.No.	YouTube Link
Webinar 1	https://www.youtube.com/watch?v=IikxJvDfkek
Webinar 2	https://www.youtube.com/watch?v=2wE8fMcWi3Q
Webinar 3	https://www.youtube.com/watch?v=-Rkz87yFoWI
Webinar 4	https://www.youtube.com/watch?v=f0drbrRPWIs
Webinar 5	https://www.youtube.com/watch?v=Izh7CypV5vU
Webinar 6	https://www.youtube.com/watch?v=iyoEhj9fjjE
Webinar 7	https://www.youtube.com/watch?v=3dUTWBVfZcw
Webinar 8	https://www.youtube.com/watch?v=n64mmzE0s6s
Webinar 9	https://www.youtube.com/watch?v=8IZQ4xOtcdI
Webinar 10	https://www.youtube.com/watch?v=rW7EGHdk5Iw
Webinar 11	https://www.youtube.com/watch?v=cUXYUr2oOws
Webinar 12	https://www.youtube.com/watch?v=kYcxW-XxxzU
Webinar 13	https://www.youtube.com/watch?v=OWP8JCLieUU
Webinar 14	https://www.youtube.com/watch?v=rNXPKeSbXew
Webinar 15	https://www.youtube.com/watch?v=Z830NPKHC7M
Webinar 16	https://www.youtube.com/watch?v=vgm0TtevmBU
Webinar 17	https://www.youtube.com/watch?v=wypc6lBsDO0
Webinar 18	https://www.youtube.com/watch?v=NQYkNze6V0A
Webinar 19	https://www.youtube.com/watch?v=i-W0NX0kx2I
Webinar 20	https://www.youtube.com/watch?v=1Ls1N04-KjU
Webinar 21	https://www.youtube.com/watch?v=JqBnh4dnOrY
Webinar 22	https://www.youtube.com/watch?v=drDRFrjpQqo
Webinar 23	https://www.youtube.com/watch?v=FrY_8UMqFQU
Webinar 24	https://www.youtube.com/watch?v=YLelqzok_AE
Webinar 25	https://www.youtube.com/watch?v=RmUPq5IBPTw
Webinar 26	https://www.youtube.com/watch?v=wsF-lD2L8Oc
Webinar 27	https://www.youtube.com/watch?v=5VBgfsKYWqM
Webinar 28	https://www.youtube.com/watch?v=Jzw0r0Kv7n0

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Webinar – 01

Day, Date & Time: Saturday, 03-10-2020, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Sebastiaan Meijer,** Professor, Vice Dean, KTH Royal Institute of Technology

Country: Sweden

Title: Gaming, Simulation and Participation: A Systems Approach to Mental Health and Wellbeing

Webinar Topic

Gaming, Simulation and Participation: A Systems Approach to Mental Health and Wellbeing

Abstract

Many countries and regions aim to priorities well-being and mental health as a means to both counter the increasing demand of psychological health care and to actually support citizens in what matters to them. Steering for such large and overarching goals requires cross-sectorial collaborations and large-scale systems design. To aid in building up this capacity, we use gaming and simulation in trajectories with Region Stockholm and 4 pilot municipalities. In this talk, Sebastiaan will explain the approach, and reflected upon the methodological learnings obtained.

Speaker Profile

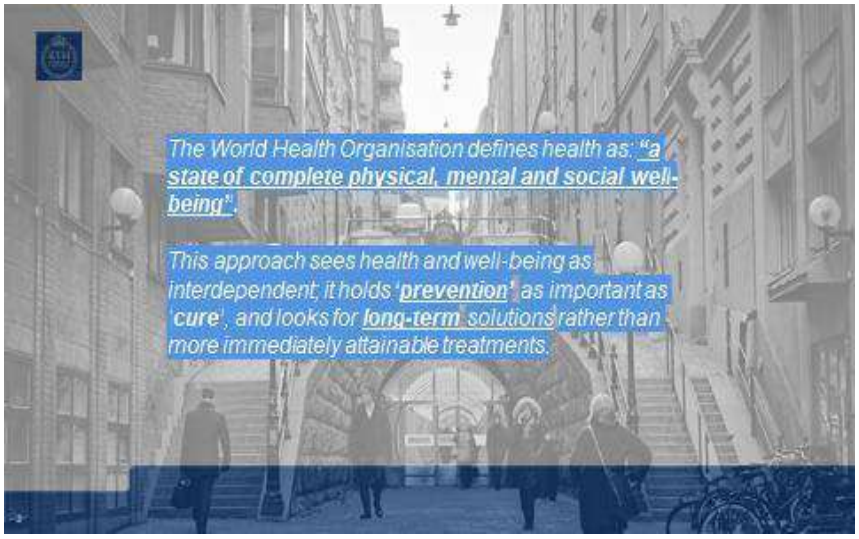
Sebastiaan Meijer is a Professor in Health Care Logistics. He specialized in gaming simulation and other interactive methods to involve the operational level of organizations in innovation processes. His Interests is in theory of design of complex adaptive systems and the backbones of society.

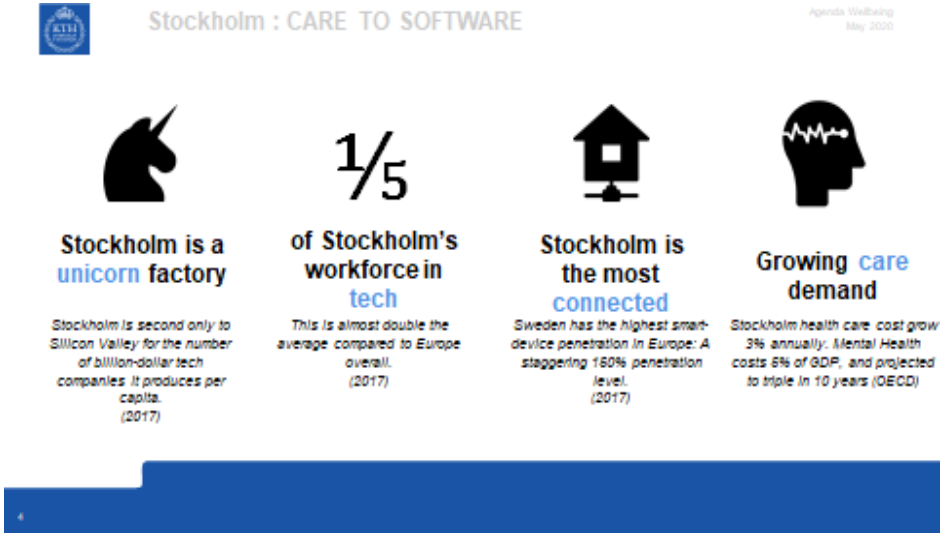
Gaming, Simulation and Participation: A Systems Approach to Mental Health and Wellbeing

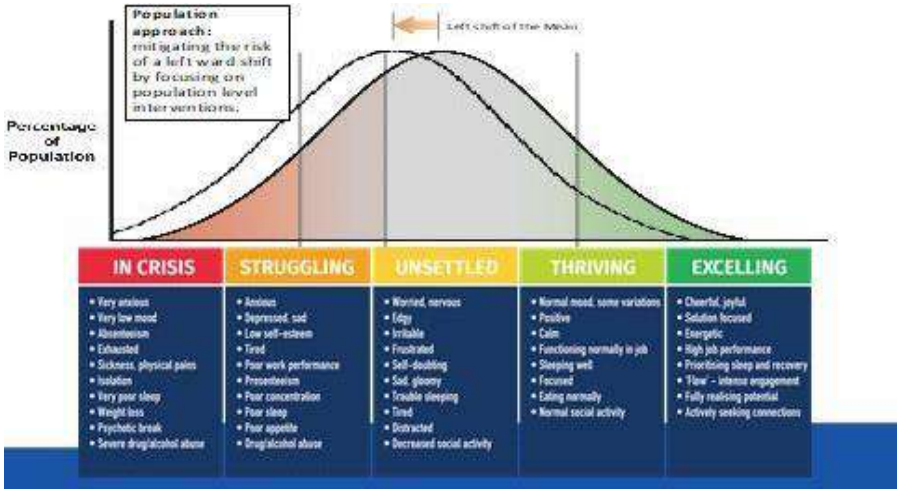
Prof.dr.ir. Sebastiaan Meijer

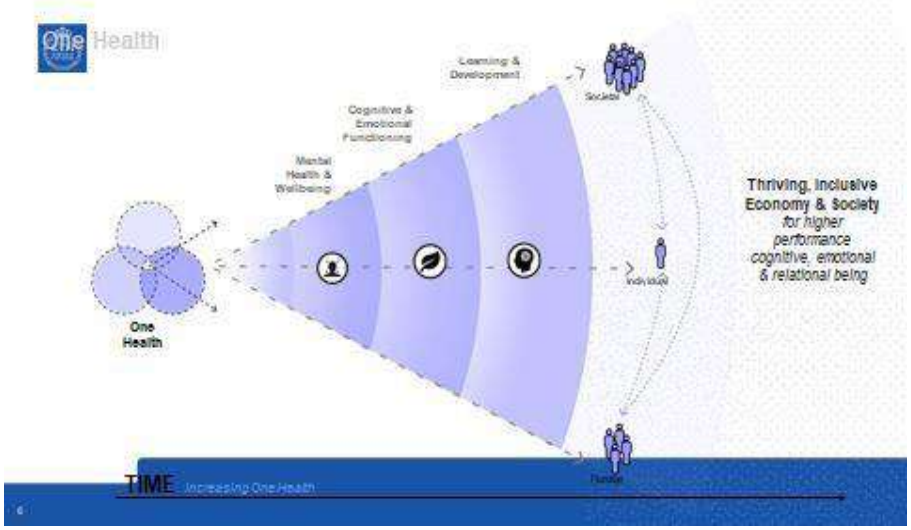
Part 1:

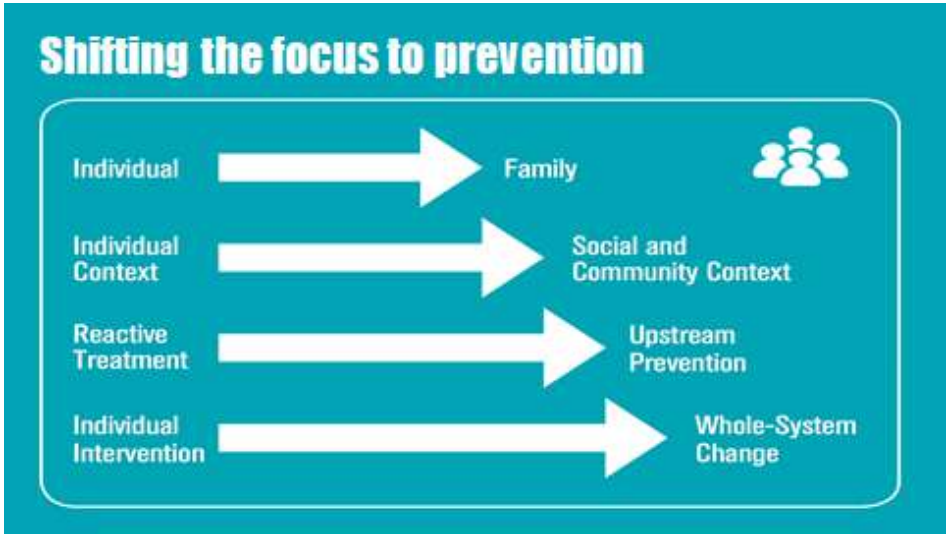
the mental health and wellbeing challenge

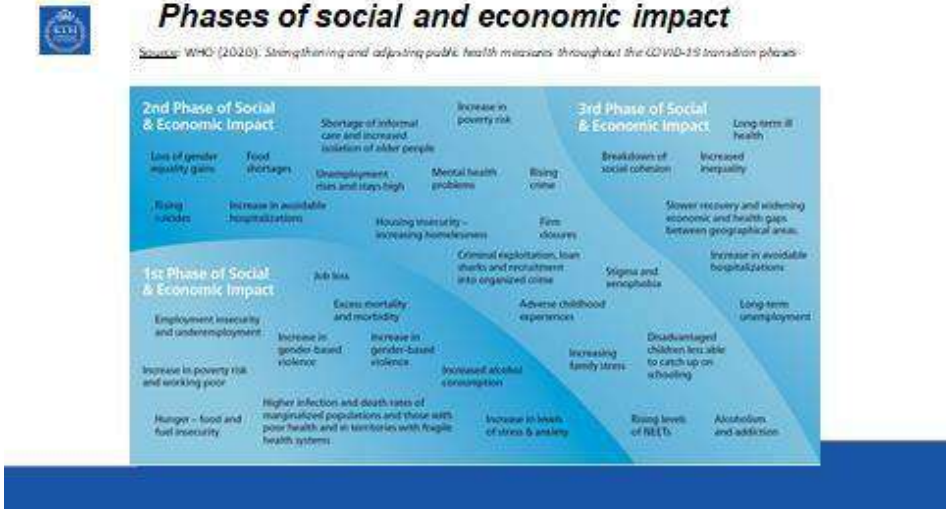


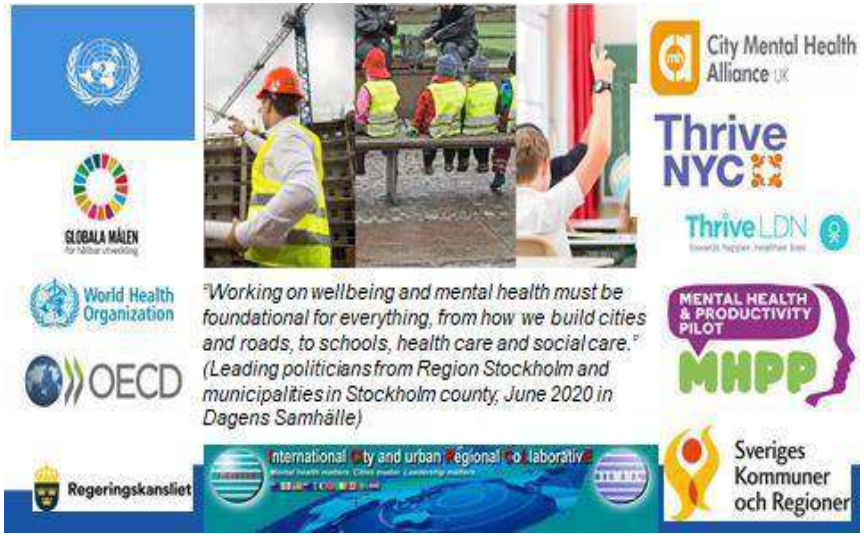



Population approach:
mitigating the risk of a left ward shift by focusing on population level interventions.
Left shift of the Mean
Percentage of Population
IN CRISIS
STRUGGLING
UNSETTLED
THRIVING
EXCELLING
• Very anxious
• Very low mood
• Absenteeism
• Exhausted
• Sickness, physical pains
• Isolation
• Very poor sleep
• Weight loss
• Psychotic break
• Severe drug/alcohol abuse
• Anxious
• Depressed, sad
• Low self-esteem
• Tired
• Poor work performance
• Presenteeism
• Poor concentration
• Poor sleep
• Poor appetite
• Drug/alcohol abuse
• Worried, nervous
• Edgy
• Irritable
• Frustrated
• Self-doubting
• Sad, gloomy
• Trouble sleeping
• Tired
• Distracted
• Decreased social activity
• Normal mood, some variations
• Positive
• Calm
• Functioning normally in job
• Sleeping well
• Focused
• Eating normally
• Normal social activity
• Cheerful, joyful
• Solution focused
• Energetic
• High job performance
• Prioritising sleep and recovery
• 'Flow' - intense engagement
• Fully realising potential
• Actively seeking connections


One Health
Learning & Development
Society
Cognitive & Emotional Functioning
Mental Health & Wellbeing
Individual
One Health
Thriving, Inclusive Economy & Society
for higher performance cognitive, emotional & relational being
TIME
Increasing One Health
Family


Shifting the focus to prevention
Individual
Family
Individual Context
Social and Community Context
Reactive Treatment
Upstream Prevention
Individual Intervention
Whole-System Change


Phases of social and economic impact
Source: WHO (2020). Strengthening and adjusting public health measures throughout the COVID-19 transition phases
2nd Phase of Social & Economic Impact
3rd Phase of Social & Economic Impact
1st Phase of Social & Economic Impact
Loss of gender equality gains
Food shortages
Shortage of informal care and increased isolation of older people
Unemployment rises and stays high
Mental health problems
Increase in poverty risk
Rising crime
Breakdown of social cohesion
Increased inequality
Long-term ill health
Rising suicides
Increase in avoidable hospitalizations
Housing insecurity - increasing homelessness
Firm closures
Slower recovery and widening economic and health gaps between geographical areas
Increase in avoidable hospitalizations
Job loss
Criminal exploitation, loan sharks and recruitment into organized crime
Stigma and xenophobia
Excess mortality and morbidity
Adverse childhood experiences
Long-term unemployment
Employment insecurity and underemployment
Increase in gender-based violence
Increase in gender-based violence
Increased alcohol consumption
Increasing family stress
Disadvantaged children less able to catch up on schooling
Increase in poverty risk and working poor
Hunger - food and fuel insecurity
Higher infection and death rates of marginalized populations and those with poor health and in territories with fragile health systems
Increase in levels of stress & anxiety
Rising levels of NEETs
Alcoholism and addiction



Part 2:

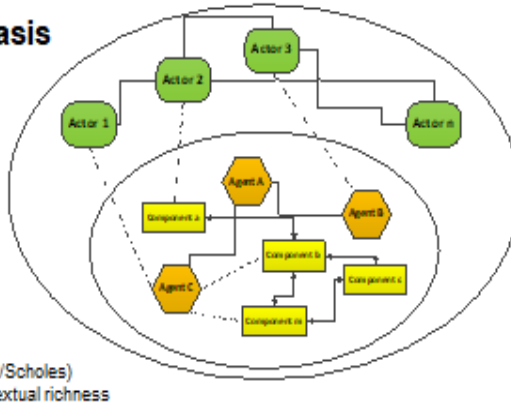
Design with games, simulations and participation

Theoretical basis

Complex adaptive systems
- Emergent behaviour due to
  - Adaptive agents
  - Dynamic relations

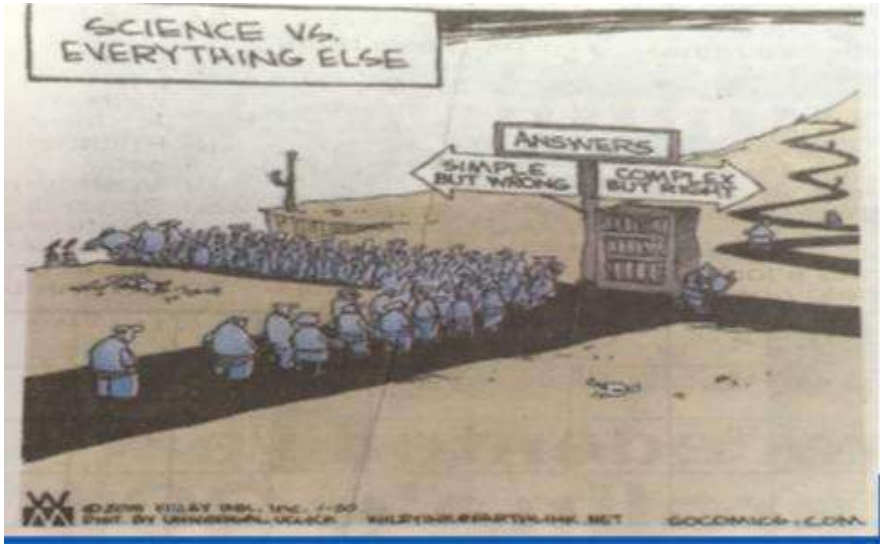
Sociotechnical systems theory
- Performance of systems has dependence on:
  - Technological capabilities
  - Human performance of control

Soft Systems methodology (Checkland /Scholes)
- Combine the quantitative with contextual richness



Two extremes of complexity

Technical-physical complexity	Socio-political complexity
Many interdependent 'variables' (system complexity)	Many interdependent loosely coupled stakeholders (policy network)
Cognitive uncertainty	Disputed knowledge, values & norms
Design phases (steps, structure)	Dynamic rounds and arena's (fluidity)
'Best' solution, best available knowledge	'Accepted' solution, Negotiated knowledge
Hard tools: simulation, models, DSS	Soft tools: participation, process management



Health Care Systems & Logistics

Health Care Systems encompass:

- Technical systems (operation theatre, ambulances,…)
- People (doctors, nurses, cleaners, drivers,…)
- Institutions (hospitals, dept, ministry, region…)

All bound together by streams of:

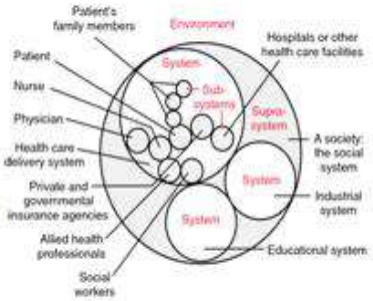
- Information
- Goods
- Money
- Patients
- Workers

So: what logistics are we talking about?

From aspect systems to sub systems

Taking CAS seriously implies to take a focus on agents and their interrelated behaviour:

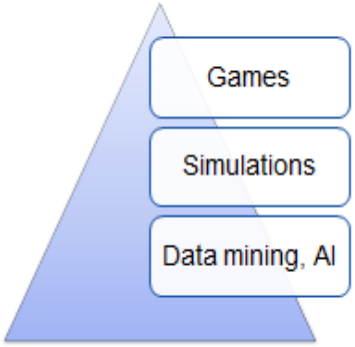
- Take entire life of people in social context into account
- Optimisation on aspect system (transport, health care, energy, etc) is relatively pointless
- Change systems through their recursion with other systems.



But Many Efforts Have Failed

"We like to bring together people from radically different fields and wait for the friction to produce heat, light and magic. Sometimes it takes a while."

Methodological layering



Games to test ideas, but also to map the actor complexity and to intervene

Reality only changes when causes are taken away: study potential effects in simulations

Machine learning and AI provide more insights in systems behaviour: *Rear view mirror*!

Russ (2010):Programmatic and Participatory: Two Frameworks for Classifying Experiential Change Implementation Methods

Table 1. Fundamental Differences Between the Programmatic and Participatory Frameworks

Programmatic Framework		Participatory Framework
Fixed implementation	⟷	Flexible implementation
High direction from leadership	⟷	Low direction from leadership
Low/no stakeholder collaboration	⟷	High stakeholder collaboration
Autocratic organizational climate	⟷	Democratic organizational climate
High communication efficiency	⟷	Low communication efficiency
A priori evaluation of "successful" change	⟷	Retroactive evaluation of "successful" change

A game, or a simulation?

Real world systems design is dependent on models that represent REALITY

But is that:

1. Fidelity?
2. Realism?
3. Specificity?

In many studies: assumption that (computer) simulation is essential for representing reality.

4 applications of gaming and simulation

Model type/ Beneficiary	Player	Principal
Closed world	**Learning:** Games are used as experiential teaching and learning methods to develop and enhance the acquisition of knowledge, skills and competencies.	**Quasi Experiment:** Games are used as environments and scenarios to empirically test, develop and justify theories in specific domains.
Open world	**Policy Games:** Games are used to as intervention in policy process.	**Games for Design:** Games are used as a method for the design of and within complex adaptive systems.

Need for 'realistic behaviour'

Model type/ Beneficiary	Player	Principal
Closed world	**Learning:** Games are used as experiential teaching and learning methods to develop and enhance the acquisition of knowledge, skills and competencies.	**Quasi Experiment:** Games are used as environments and scenarios to empirically test, develop and justify theories in specific domains.
Open world	**Policy Games:** Games	**Games for Design:** Games are

Players bring unformalised complexity

Need for 'realistic behaviour'

Model type/ Beneficiary	Player	Principal
Closed world	**Learning:** Games are used as experiential teaching and learning methods to develop and enhance the acquisition of knowledge, skills and competencies.	**Quasi Expe** used as en scenarios develop a specific d
Open world	**Policy Games:** Games are used to as intervention in policy process.	**Games fo** used as a r of and within systems.

Players bring their own role and behaviour

Recent Studies in Philosophy of Science

New insights into:

1. How complex sciences differs from classic sciences (even there, there are issues of scale/phase changes) – **pluralism**
2. Explicit study of the role of models in science and social sciences – revealing the nature of models as **dialogical devices** among **people** and **the phenomena** that is being studied or manipulated.
3. Reasoning with models.

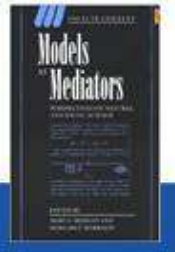
Reasoning with Models

Models' (cognitive devices) functions:

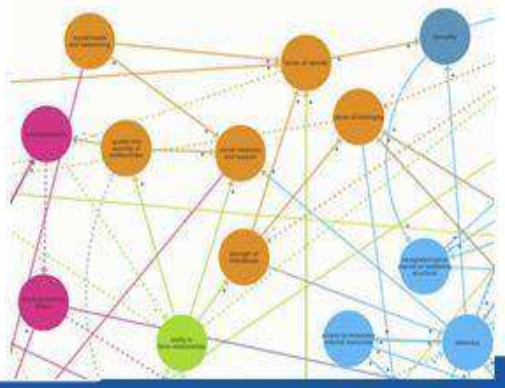
- Mediators (Morgan el al.)
- Scaffold that allows for codification both syntactically and semantically as well
- Play an epistemic role in both encoding and creating new knowledge
- Including temporary physical models

Models' properties:

- plastic while providing stability of knowledge



Steering in Systems



From complex to manageable

- Reasoning with models and stakeholders
- Real-time dashboards
- Monitor vicious and virtuous cycles
- Bridge abstraction levels

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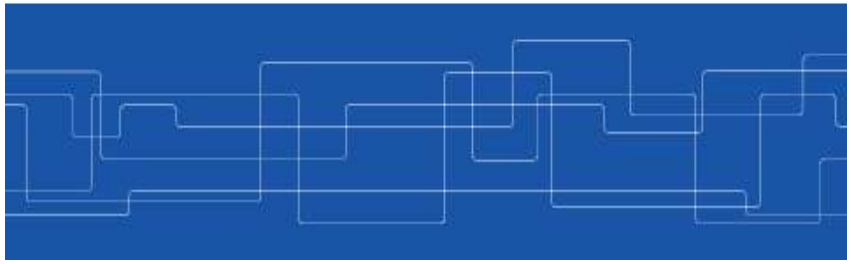
Part 3:

The Stockholm project



Mapping workshops March 2019

List of Mental Health promoting challenges

- Evidence-based

4 workshops of 16-20 participants

- Working in groups of 2 – 4 people on a challenge

Question: what processes need alignment /collaboration and who owns these processes?

Main findings

Young age:

- Schools, pre-schools & primary / preventative care
- Plus ENORMOUS number of other actors
- Very early warning is essential

Adults:

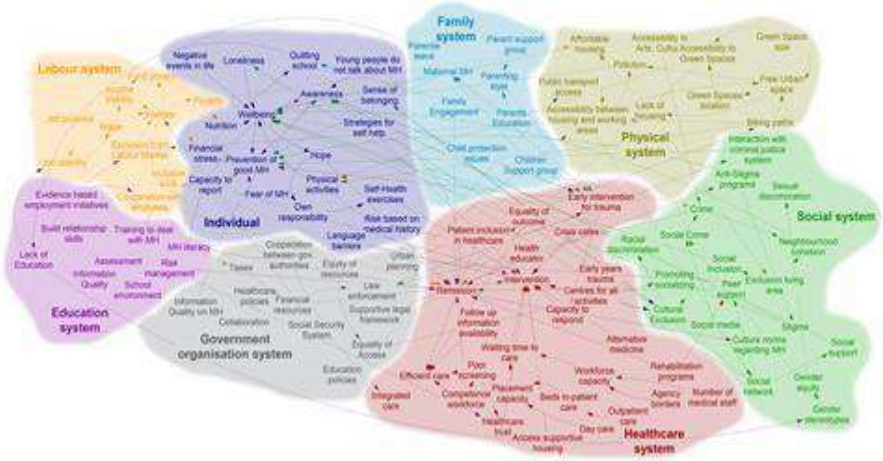
- Clubs, leisure, etc, need collaboration with health care and employers
- Those who know you cannot express worries

- interventions for adults: start from 16! Earlier than currently the norm.
  - Needs exploration: segregation in society

Aktör	Utmaning rad no.	Antal nämnad
Skola	4, 5, 10, 13, 14, 16, 20, 21, 24, 26, 29, 30	12
BVC (Barnvårdscentral)	3, 13, 14, 16, 19, 20, 21, 24, 27, 29, 30	11
Förskola	13, 14, 16, 19, 20, 21, 24, 27, 29, 30	10
Vårdcentral (primärvård)	4, 5, 14, 16, 21, 25, 27, 29, 31	9
Kommun	3, 5, 12, 13, 24, 25, 26, 31	8
Föreningsliv (ofta: idrott)	4, 5, 12, 16, 25, 26, 27, 29	8
Fritid & kultur	4, 13, 20, 21, 26, 27, 29, 31	8
Elevhälsa	4, 10, 16, 20, 21, 25, 31	7
Ungdomsmottagning	4, 10, 16, 20, 21, 24, 25	7
Civilsamhälle	3, 4, 5, 10, 13, 19	6
BUP (Barn- och ungdomspsykiatri)	4, 16, 20, 24, 27, 29	6
Föräldrar	5, 13, 20, 21, 26	5
Socialtjänst	13, 14, 16, 29, 30	5
Ideella organisationer	5, 16, 30, 31	4
Trossamfund/kyrkan	5, 16, 27, 29	4
Sociala medier	5, 20, 21, 26	4
Familj	10, 26, 27, 29	4
Mödravårdscentral	14, 24, 29, 30	4
Öppen förskola	14, 16, 19, 27	4
Vänner	10, 21, 25	3
Barnmorskamottagning	13, 16, 19	3
Föräldraskapsstödjare	13, 19, 29	3
HAB (Habiliteringscenter vuxna)	4, 27	2

- Number of actors involved for elderly relatively small
  - Misssampling????

Participatory mapping of system dynamics for MH



New process for building (SD) models

First cycle: traditional

- Core cycle
- Experts to add to model
- Cleaning phase
- Verification
- Validation

Updated process

- Literature study of domain
- 'Stitching' smaller studies together
- Experts review and add to model
- Almost no cleaning phase
- Validation

Work just published

Proceedings of the 2019 Winter Simulation Conference
N. Mustafee, K.-H.G. Bae, S. Lazarova-Molnar, M. Rabe, C. Szabo, P. Haas, and Y.-J. Son, eds.

SENSITIVITY ANALYSIS OF POLICY OPTIONS FOR URBAN MENTAL HEALTH USING SYSTEM DYNAMICS AND FUZZY COGNITIVE MAPS

Elhabib Moustaid
Maksims Kornevs
Sebastiaan Meijer

Department of Biomedical Engineering and Health Systems
KTH Royal Institute of Technology
Halsovagen 11, 14 152, Huddinge, SWEDEN

If you like: have a look

https://kumu.io/jayanthkth/mhsystems

Playing with own SD models

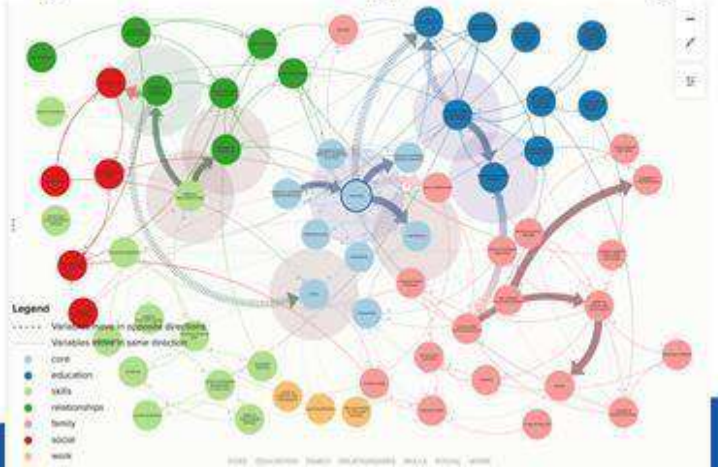
Positioning ourselves in 2025

Making the case backwards

- Take policy example
- Reason with other stakeholders
- Using the SD models
- And own data

Photo: Norrtälje 20200928

Right now: CS based approaches to analysis



What is new

- Changes to the SD model building:
  - More valid?
  - Different participation from broad range of stakeholders
- Gaming not as operational role play in a process, but
  - Playful in own role in future
  - Using OWN models!

Summarizing

Gaming, simulation and participation…

….are key methods for real change when working on Mental Health and Wellbeing

…. require engaging stakeholders. This is a massive effort, and political, operational and strategic at the same time.

…. need methodological innovation to overcome the traditional translational gap between games and reality

…& build support for a thriving society

WHAT

Future Task Shifting

We need to shift the direction of tasks, towards societal thriving.

WHERE

Preventative Agenda

We need to shift where we act to preventative settings & locations.

WITH

Co-Benefit Economy

We need to build a co-benefits economy for societal thriving, able to deal with future strategic risks.

HOW

Systems Change

We need to build a portfolio of interventions for societal thriving, able to deal with future strategic risks.

KNOW

Measure

We need to build system indicators, showing our progress towards thriving.

Mental Health & Well- Being is a **foundational challenge** of 21st century **economy and society**, as Public Health was to the Industrial revolutions, and **Stockholm** has to be in the **lead**.

Thank you!

Sebastiaan Meijer
smeijer@kth.se

Webinar - 02

Day, Date & Time: Saturday, 24-10-2020, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Ivo Wenzler,** Professor of Serious Gaming at the NHL Stenden University of Applied Sciences

Country: The Netherlands

Title: Serious Gaming and Why Should We Bother

Webinar Topic

Serious Gaming and Why Should We Bother

Abstract

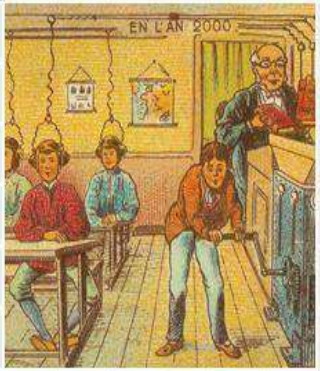
Future is and will be uncertain and discontinuous and the reality as we experience it is complex and requires learning for change. But enabling change through learning is not as simple as it sounds. There are competing theories on how to learn and change and the challenges are many. Learning for change is a journey starting from perceived reality, going through serious gaming, and then returning back to reality. Serious games are experiential learning environments supporting this journey and can take an analogue, digital or mixed reality form. They help us getting a holistic view of the change that is needed, creating awareness that leads to socially constructed meaning, constructing memories of the future that lead to actionable insights, and experiencing the benefits of change that lead to a commitment to action. With serious games we learn faster, we learn more, we pay less, and we decide better.

Speaker Profile

Dr. Ivo Wenzler is a professor of Serious Gaming at the NHL Stenden University of Applied Sciences. He focuses on innovative research into the design, implementation and value contribution of serious gaming, as well as on development of university level curricula with and about serious gaming. Prior to his current position he had a long career at Accenture Strategy, in parallel to an associate professorship at the Delft University of Technology. He often presents at international conferences and publishes regularly in the field of serious gaming, change management, and simulation-based modeling.

SERIOUS GAMING

WHY SHOULD WE BOTHER



DR. IVO WENZLER

REALITY

OUR REALITY IS COMPLEX AND REQUIRES LEARNING FOR CHANGE

WANDERLAND

... croquet game in which the balls are live hedgehogs and go private ways, the wickets are playing cards and more than usually unstable, the mallets are live flamingos with wills of their own, and the rules are constantly changing ...

REALITY LAND

... environment in which decisions are like live hedgehogs and go private ways, objectives are like playing cards and more than usually unstable, solutions are like live flamingos with wills of their own, and policies are constantly changing ...

Reality is the leading cause of stress amongst those in touch with it. Lily Tomlin

CHANGE	ASSOCIATIVE	PERSUASIVE	ATTENTIVE
THERE ARE DIFFERENT THEORIES OF CHANGE	For each person, there is one set of incentives that makes the best motivator; right incentives (carrot and stick), and the change will occur [Behaviorism]	Person-centered approach, where self-esteem, emotional needs, and values could provide leverage for changing behavior [Humanism]	Mental act of shaping reality through expectations and of focusing attention stabilizes the associated brain circuits [Attention density]

I think the one lesson I have learned is that there is no substitute for paying attention. Diane Sawyer

CHANGE	WHAT	WHY	HOW	WHEN
THERE ARE SEVERAL REQUIREMENTS TO ENSURE CHANGE IS SUCCESSFUL	Envisioning the change that needs to take place	Understanding the importance and urgency for change	Acquiring the capabilities required for change	Acting on time to achieve and sustain the benefits

If you don't like change, you are going to like irrelevance even less. Eric Shinseki

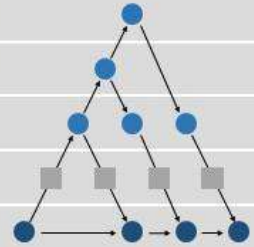
LEARNING	ASSOCIATIVE	COGNITIVE	SITUATIVE
THERE ARE DIFFERENT THEORIES OF LEARNING	Learning through structured tasks, association, trial and error, and reinforcement [Behaviorism]	Learning through understanding and creation of knowledge out of self-directed experiences [Psychological constructivism]	Learning through social participation, imitation, modelling, and joint construction of knowledge [Social constructivism]

Learning is bidirectional. We learn from the environment, and the environment learns and is modified thanks to our actions. Albert Bandura

LEARNING	WHAT	WHY	HOW	WHEN
THERE ARE SEVERAL REQUIREMENTS TO ENSURE LEARNING IS SUCCESSFUL	Avoiding habits that are obstacles to future learning	Focusing on adaptability as a key enabler of survival	Learning through a social process of discovery and play	Learning and acting on what has been learned, continuously

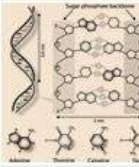
The trouble with learning from experience is that you never graduate. Doug Larson

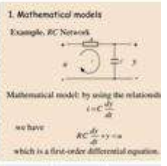
WHERE TO LEARN		
LEARNING IS A JOURNEY FROM REALITY TO GAMING AND BACK	GAMING	Simulated reality, driven by actions and behaviors of players through their roles
	SIMULATION	Dynamic imitation of the operation of a process or system in time
	MODEL	Conceptual representation of ideas about perceived reality
	TRANSFER	Transfer from reality to a simulated reality and back
	REALITY	Experience of relations and interactions within real processes or systems



Our brains are constantly active, predicting the incoming streams of input before they arrive, to prepare us for action. Andy Clark

MODEL	PHYSICAL	SCHEMATIC	VERBAL	MATHEMATICAL
CONCEPTUAL REPRESENTATION OF IDEAS ABOUT PERCEIVED REALITY	Replica of the object or system being modeled that can be easily observed	Pictorial (visual) representation of conceptual relationships	Using words and numbers to represent some object or a situation	Abstract, formula and equation-based representation of real-life systems





All models are wrong, but some are useful. George E. P. Box

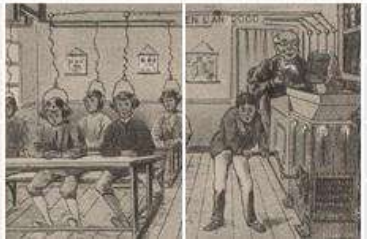
SIMULATION	MOCK-UP	COMPUTER	VIRTUAL REALITY	DIGITAL TWIN
DYNAMIC IMITATION OF THE OPERATION OF A PROCESS OR SYSTEM IN TIME	Physical simulations including human operators (human-in-the-loop)	Simulations running discrete-event, continuous, or agent-based models	Virtual (3D) representations of real or imaginary systems	Dynamic, digital representations of physical objects or systems

In cases of major discrepancy it is always the reality that has got it wrong. Douglas Adams

SERIOUS GAMING	SERIOUS GAMES	EDUCATION	RESEARCH
SERIOUS GAMES ARE EXPERIENTIAL LEARNING ENVIRONMENTS	Exploring the effect of decisions in a safe environment	Transferring the knowledge and enabling the skills required for change	Creating new insights and knowledge required for change

LEARNING

Natural
Case based
Failure driven
Goal directed
Incidental
Explorative
Accommodative



SERIOUS GAMING	ANALOGUE	DIGITAL	ALTERNATE	AUGMENTED
SERIOUS GAMING CAN TAKE DIFFERENT TECHNOLOGY RELATED FORMS	Multi player social interaction games, mostly at a higher level of abstraction	Single or multi player interactions within 2D or 3D virtual worlds	Multi player interactive narratives using real-life systems as a platform	Interaction through the overlap of the perceived reality with the virtual reality

Determined by the nature of the problem, objectives, intended players, and the expectation of experiences

SERIOUS GAMING	WHAT	WHY	HOW	WHEN
SERIOUS GAMING ENSURES LEARNING OUTCOMES NEEDED FOR CHANGE	Holistic view provides a big picture of what is needed	Shared awareness leads to socially constructed meaning	Memories of the future lead to actionable insights	Experience of benefits leads to a commitment to act

SERIOUS GAMING

HOLISTIC VIEW PROVIDES A BIG PICTURE OF WHAT IS NEEDED

BIG PICTURE

- Effective learning is a gestalt event with learners having first to comprehend the whole before they can deal with the particulars
- Parts are merely a pattern in an inseparable web of relationships that can only be understood from the dynamics of the whole
- When dealing with complexity we have to first create a gestalt understanding (big picture) of the problem at hand

CASE

Objective: Providing a holistic view on the constraints of a traditional supply chain and the benefits of implementing a blockchain technology

Properties of the parts can only be understood from the dynamics of the whole. Fritjof Capra

SERIOUS GAMING

AWARENESS LEADS TO SOCIALLY CONSTRUCTED MEANING

MEANING

- Effective learning is about learning together with shared learning experiences providing a forum for socially constructed meaning
- Through the multiple perspectives, the changes in the initial images of a given situation occur within participants themselves
- By 'sharing of intelligence' the issues are re-perceived, resulting in synergy and synthesis that would not be otherwise possible

CASE

Objective: Increasing the collective insight into the impact of default behaviors on effective communication, cooperation, and customer focus

We owe almost all our knowledge not to those who have agreed, but to those who have differed. Charles Caleb Colton

SERIOUS GAMING

MEMORIES OF THE FUTURE LEAD TO ACTIONABLE INSIGHTS

INSIGHT

- Learning is about building an understanding of possible futures. Focusing on the past knowledge will not prepare us for the future
- Natural selection has designed our brain to be driven by the 'if-then-else' process and not by 'thou shalt' imperative
- Our brain constantly attempts to make sense of the future by creating a large number of plans for the anticipated future

CASE

Objective: Building knowledge, skills, and behavior that are needed to perform tasks (in a variety of possible future scenarios) in a safe manner

Alternative hypothetical (future) behavior patterns, like memories of past events, can be remembered, often in great detail. David Ingvar

SERIOUS GAMING

EXPERIENCE OF BENEFITS LEADS TO A COMMITMENT TO ACT

ACTION

- Effective learning is about developing the ability to make judgement calls and act in ever-changing circumstances
- Without experience of failure while acquiring a new skill or behavior, the likelihood of success is doubtful – no pain, no gain
- Learning without experiencing success is also bound to fail. The whole evolution would not have taken place

CASE

Objective: Experiencing the benefits and building confidence in a variety of measures stakeholders can take to reduce the CO2 emissions in their city

Experience tells you what to do; confidence allows you to do it. Stan Smith

SERIOUS GAMING	WE LEARN FASTER	WE LEARN MORE	WE PAY LESS	WE DECIDE BETTER
SERIOUS GAMING CAN DELIVER VALUE IN DIFFERENT WAYS	Compressing time to impact results in faster performance improvement	Higher retention of what was learned leads to sustainable improvements	Solutions for when it is too costly for testing our abilities in real life and real time	Embracing complexity allows experimentation with multiple futures


Change experience

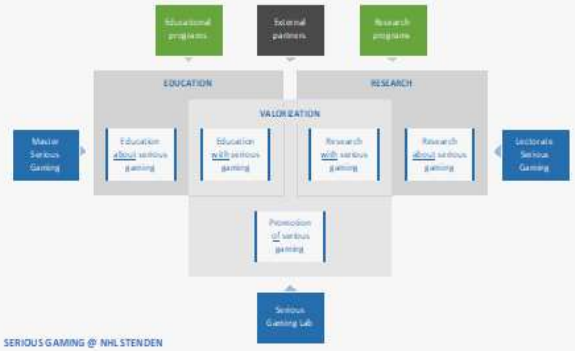

Change journey


Ship simulator


Value quest

SERIOUS GAMING

SERIOUS GAMING EDUCATION AND RESEARCH @ NHL STENDEN



Webinar - 03

Day, Date & Time: Saturday, 31-10-2020, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Elyssebeth Leigh,** 2017 Ray Page Award - for Lifetime Achievement in Simulation

Country: Australia

Title: If Simulation is So Useful Why Isn't There More of it in Use?

Webinar Topic

If Simulation is So Useful Why Isn't There More of it in Use ?

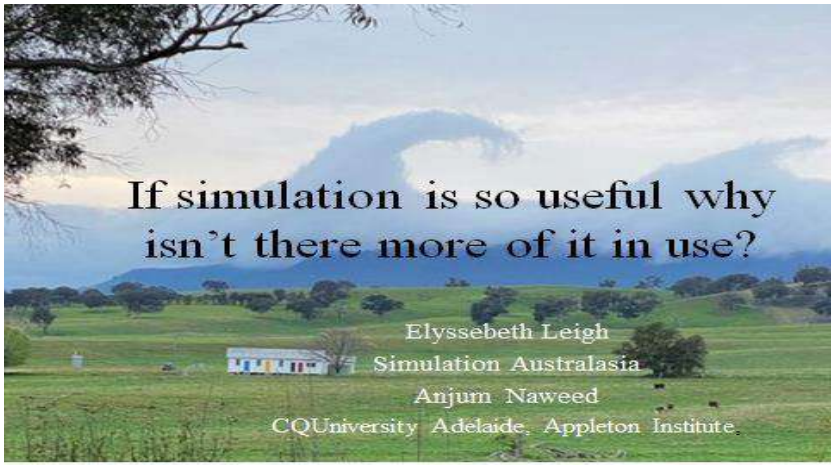
Abstract

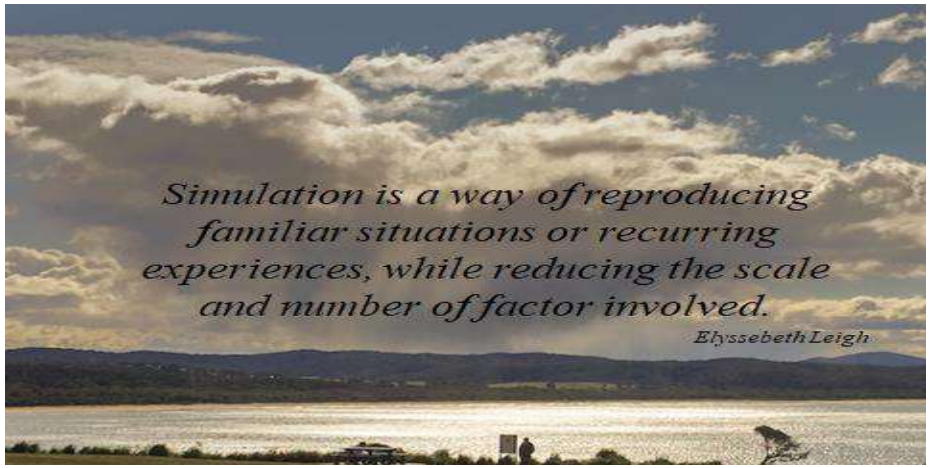
Dedicated simulation users still have much to explain about its value as an educational tool and strategy. At its simplest, simulation is a way of reproducing familiar situations or recurring experiences, while reducing the scale and number of factors involved. For example, Chess, one of the most enduring simulations in human usage, began in India where tradition says it was a representation of a military setting and used to explain how certain events occurred.

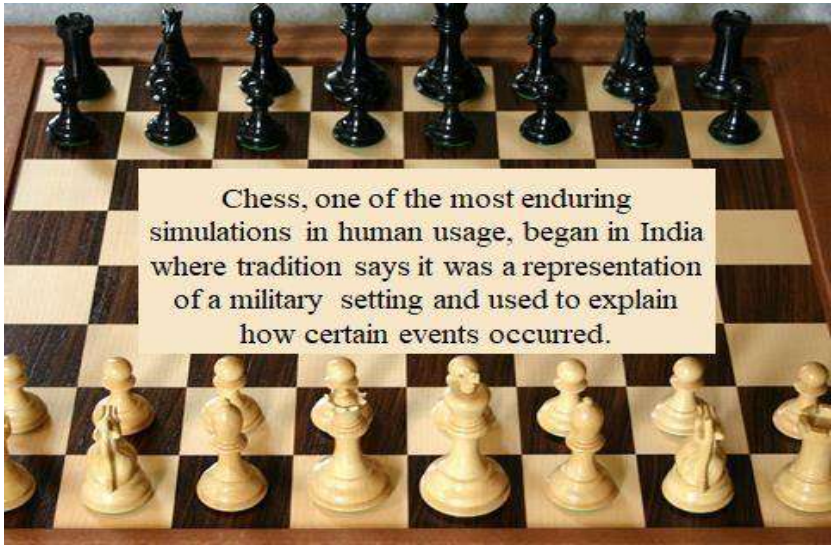
While some domains like the military and health use simulation extensively, others like education find it a complex tool and process to use. There is much in its favour and also much against it. In this webinar, Dr Elyssebeth Leigh guided participants on an exploratory journey to discover the reasons why the concept of simulation continues to be an essential part of human activity and also a problematic one. They begin with a dialogue to create the scene for a broader exploration of the benefits and barriers with participants who were invited to bring their questions to this conversation.

Speaker Profile

Elyssebeth is a professional educator working with adult learners in business and academic contexts and has provided educational programs in many countries. She researches ways that simulation can be used for education and research, including modelling of complex adaptive systems, and skills and knowledge required for effective use of adult learning principles and constructivist approaches to academic education. Elyssebeth is on the Board of Simulation Australia and has published widely on educational uses of simulation.







Why use Simulations

- Integrate 'knowing' and 'doing'
- Understand contextual relationships
- Build multi-tasking capacity
- Examine emotional factors
- Develop emotional flexibility
- Explore alternatives for action
- Learn to anticipate possibilities
- Draw on 'fun' as a learning element
- Extend capabilities for creativity

Why avoid simulations?

- Emotional volatility
- Unpredictability
- Complexity
- Time consuming
- 'Unreal'
- Artificial
- Difficult to design and hard to manage
- Uncertainty
- Knowledge is not fixed –so unpredictable

Essential Components

The Gordian Knot game

Sequence
- Briefing
- Action
- De-briefing

Relationships
- Power
- Learning
- Experience

Elements
- Rules
- Roles
- Scenario
- Recording

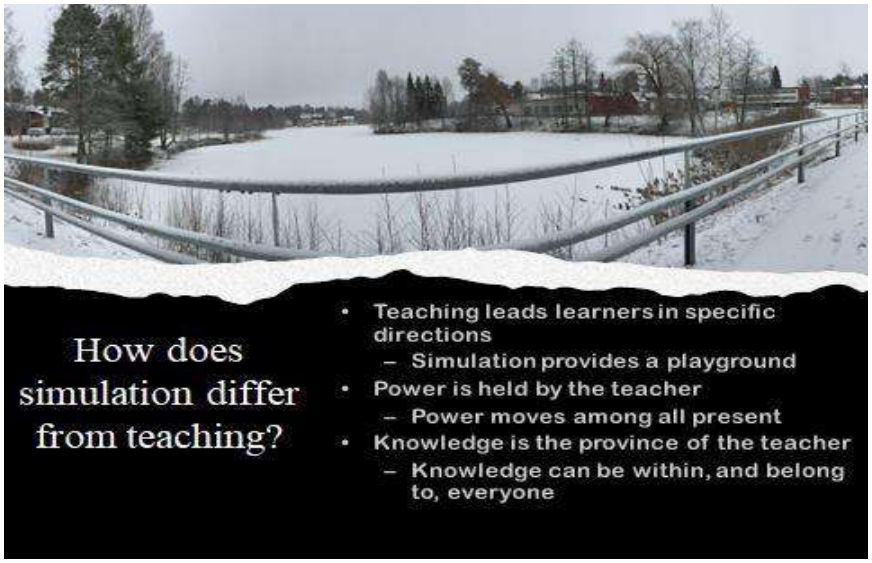
How does simulation work?

- *It does not teach*
- *It does not tell*
- *It does not direct*
- *It doesn't depend on a teacher*
- *Not all outcomes can be pre-defined*

- It assists learning
- It asks
- It encourages exploration
- It creates a learning context
- Outcomes often emerge from the action

"Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught."

Oscar Wilde

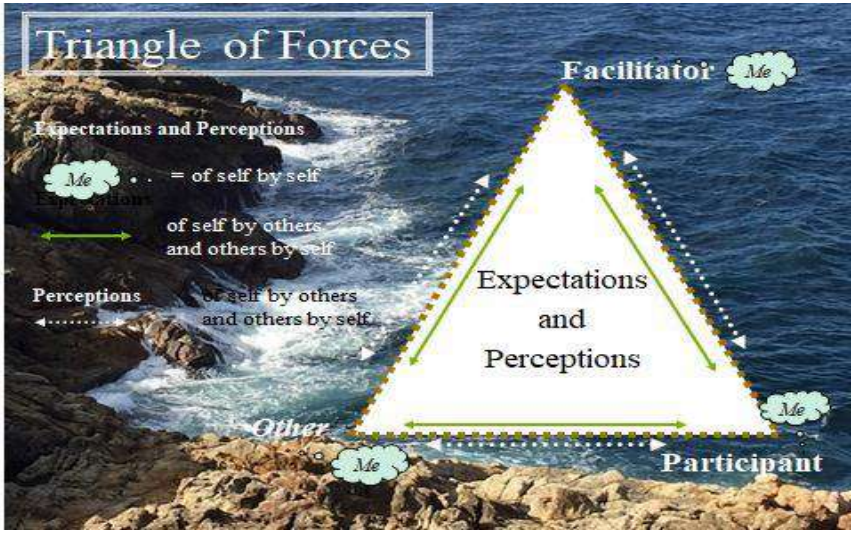


How does simulation differ from teaching?

- Teaching leads learners in specific directions
  - Simulation provides a playground
- Power is held by the teacher
  - Power moves among all present
- Knowledge is the province of the teacher
  - Knowledge can be within, and belong to, everyone

From the perspective of conventional teaching

- Roles of teacher/ taught become unstable
- 'Unscientific'
  - An opinion often held by those who have not looked
- Outcomes not obvious
  - linked to perceptions of 'play' as 'casual' and not planned
- 'Learning' is hard to measure
  - Mostly because tools are not equipped to do so
- Challenges what is known
  - About *'how to teach'*
- Learners control too much of the action



How does this influence the uptake of simulation?

- Simulation challenges underlying assumptions about knowledge ownership and transmission
  - Education as a form of transmission of information *from* teacher *to* student is no longer so relevant
  - Learning is everyone's task and teaching is everyone's role
  - Knowledge – and knowing – is everyone's business
  - There is no a priori 'ownership' of knowledge/ knowing
  - Teacher's pride in knowledge ownership may be challenged by these conditions

What happens for 'teachers'?

- Knowledge needs to be relevant to immediate experience not merely abstract concepts
- When things become unfamiliar dominant feelings may be uncertainty and even fear
- "Who is in control?" is no longer clear or obvious
- The "familiar" is no longer a reliable ground to stand on
- An urge to regain authority may overtake intentions to share it
- There may be storms ahead

How did I become the 'target'?

- What did I do wrong?
- Why are they angry?
- What else did I need to know?
- What was my objective?
- Can I retrieve it?
- How do I avoid retaliating?
- What do I do next time? (if I can do this again?)

"I don't know what to do!"

- How did I get here?
- What did I need to know before I got here?
- What are my options now?
- What was my objective?
- Why did I do it this way?
- What do they expect of me?

What happens for 'students'?

- Learners also are no longer on familiar ground
- Having been led for so long there may be little understanding of how to be independent
- Where 'dependency' is a norm there may be a (sometimes urgent) demand for return to that state
- Disbelief in personal capability when in unfamiliar conditions may be dominant
- Emotions may 'escape' usual constraints

The rainbow "beyond the strain" can herald -

- Engagement with learning as a lifelong process
- Ability to share knowledge as collaborators
- Increased awareness of how to manage complexity
- Understanding of connections among disparate elements
- Celebration of shared learning
- Improved awareness of links between theory and practice

It worked!! How do I do it again?

- What did I do right?
- How can I repeat this?
  - Everything will be different
- What did I learn this time?
- How can I record and build on this knowledge/

Theory into Practice

- Why don't the books say it will be messy?
- How did that logical plan go astray?
- How do I manage the process – when I feel out of control?
- Why would this be 'better' than teaching – at least I feel OK when I'm in charge?

For educators this means . . .

- Knowing more and knowing less than participants
- Having the power to use no power
- Waiting not acting
- Listening not telling
- 'Engaging with' rather than 'teaching to' learners

The wise deals with things through non-interference and teaches through no words.

Dao de JOng

Anticipatory Action

- "Feedforwardness"
- "Beginning with the end in mind"
- Well-formed intentions
- Standing outside the action
- Lead – Follow – Lead
  brief – action – debrief
- Know thy self
- Walk in their shoes

A Facilitator's Equation

$(Q^2)LO <> I (F + Pa + Pr + M)$

Facilitator

Learning **O**utcomes

Quality

Interactions

Materials

Processes

Participants

Quantity

<> = appear/s to depend

Webinar - 04

Day, Date & Time: Saturday, 07-11-2020, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Eric Treske,** Owner, Intrestik

Country: Germany

Title: Participation with Simulation Games - Conflict and Other Conditions

Webinar Topic

Participation with Simulation Games - Conflict and Other Conditions

Abstract

If you are developing a simulation game for a university, you want to convey a subject matter to your students or test one of your hypotheses. In companies, the simulation of alternative scenarios is sometimes added. All these simulation game developments are based on the fact that they happen on theoretical assumptions and models.

You cannot simulate a system if you do not understand it. (Cathy Greenblatt).

If I want to develop a business game for citizen participation, this approach becomes a problem for me! Because with the used model I also define the solution space or to put it another way, the question determines the answers. I use three examples from the mobility turnaround for inner-city neighborhoods to concretize my question. I then try to point out possible solutions to solve this dilemma. This collection does not claim to be exhaustive, so I would like to invite you to think about and discuss this together.

Speaker Profile

Eric Treske studied sociology at the LMU in Munich. After working in Ingolstadt, Regensburg and Augsburg, he founded the company intrestik in Munich in 2004. His office supports and accompanies cities and communities w in the development of social innovations: How does a public space become a lively square? What do people need to try out new forms of mobility in the region? What could the transition to a neighborhood without cars look like? He likes to use playful approaches, because a good game reduces the complexity of a topic without simplifying it. Concrete projects revolve around upgrading inner-city squares, placing bicycle stations or introducing an urban cable car in the north of the city of Munich.As a social scientist he is fascinated by people, how everyone follows his own plan and from this something bigger, common whole is created. Cities are a wonderful example of this. What does he appreciate about the game? Playing together means

sharing an experience. This experience motivates the participants and forms the basis for further cooperation. For several year he is now speaker of the Swiss Austrian and German Simulation and Gaming Association (SAGSAGA) and of course connected to the international association ISAGA.

intrestik

intrestik

1| Büro intrestik - further with gaming

Deniz Köse architecture

2004
2014
founding

people

Eric Treske sociology

USP: games

participation

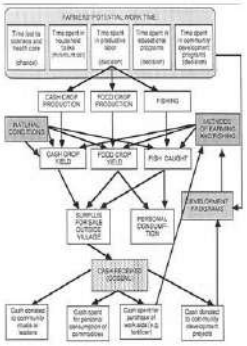
intrestik

2| Participation & Gaming |ground thesis

Thesis

You cannot simulate a system if you do not understand it.

Cathy Greenblat 1988



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2| Simulation Games |traditional use cases

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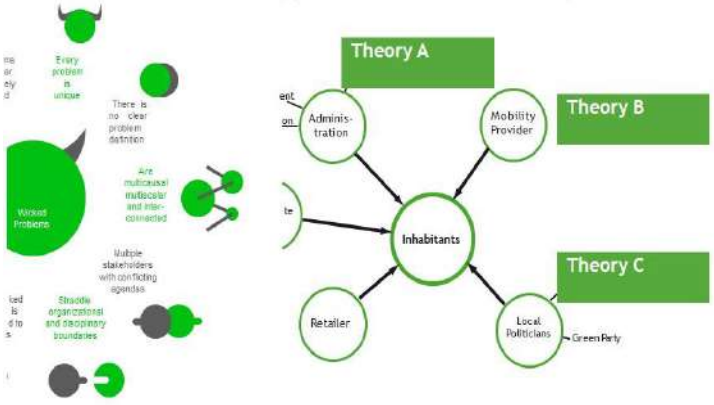
2| Wicked Problems |big problems around mobility



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2| Simulation Game |mobility turnaround (I)

Category
Speed

Theorie I
Speed determines the way the street space in a neighbourhood is used.

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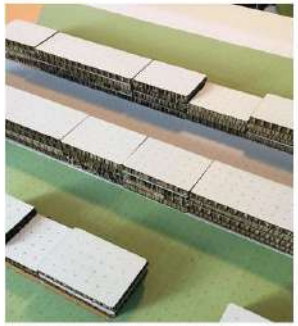
2| Simulation Game |mobility turnaround (II)



Category
Area

Theorie II
The awareness of area consumption determines the willingness to change mobility behavior.

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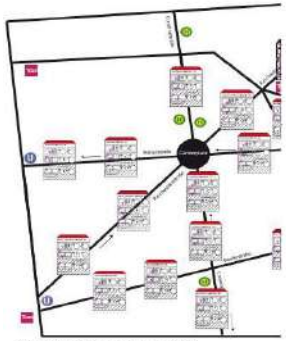
2| Simulation Game |mobility turnaround (III)



Category
use, influence & power

Theorie III
Changed use of road space and its enforcement determines the willingness to change mobility.

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3| Simulation Game | participation and game design

Question
How can we use simulation games in the area of participation if the object of the game already determines the result? What could be a solution?

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3| Wicked Problem | mobility turnaround in a city districts

How we see together the **presence?**

How we see together the **future?**

What could or should be the **rules to reach the future?**

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3| Presence | is unclear

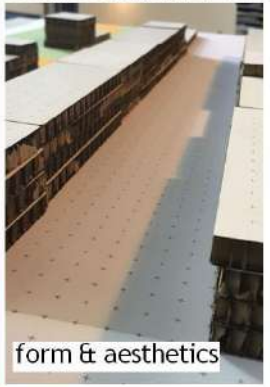

Planning or Real


What-a-Game


Traffic Planning

intrestik

3| Presence | balance of free and fixed decisions


form & aesthetics


board game

intrestik

3| Future |rules to reach the future

Re-Engineering, try to find solutions from other cities and try to find together the paths to this solutions for the concrete city.

Try to think as if you would design an **entry game**. What are the riddles your participations should solve?

Talk to different **groups of the customer** before you develop the game.

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4| Roles |the next aspect

abstract or concret

the group of personas

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5| Reflection | the next aspect

It´s a difference to design simulation games for teaching or participation.

It is possible to design a simulation game together with the participants.

You have to find the right balance between prepared parts of the and the parts which you design in the process.

? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

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intrestik | Thank you very much!

If you want to know more about our work, please contact us.

Eric Treske

intrestik | further with gaming
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D - 80469 Munich

Tel. +49 89 8208 6471

www.intrestik.de | info@intrestik.de

Or follow us on Twitter
@intrestik

Boardmember of the German-speaking professional association of simulation and gaming SAGSAGA

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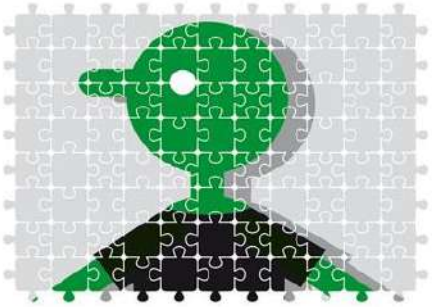
SAGSAGA - page 16



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Webinar - 05

Day, Date & Time: Saturday, 21-11-2020, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Yusuke Toyoda,** Professor, Institute of Disaster Mitigation for Urban Cultural Heritage Research and Development Institute of Regional Information

Country: Japan

Title: Simulation & Gaming for Community-based Disaster Management

Webinar Topic

Simulation & Gaming for Community-based Disaster Management

Abstract

Important roles of local community for disaster management have been iterated, whereas building community resilience against disaster is still in progress. In this webinar, advantages of Simulation & Gaming (S&G) for building community resilience were explained by the speaker. First, increasing importance of community resilience against disaster was introduced. Then, the process and functions of S&G for disaster management in general were deprected, and how they are connected to building elements of community resilience were demonstrated. In the end, some S&G practices were introduced for community-based disaster management and disaster education.

Speaker Profile

Dr. Yusuke Toyoda is an associate professor of the College of Policy Science, Ritsumeikan University JAPAN. He is also working as Deputy Director, Office of International Affairs and Director, International Center at Osaka Ibaraki Campus. He is the Member of Institute of Disaster Mitigation for Urban Cultural Heritage and Member of Research and Development Institute of Regional Information Ritsumeikan University, JAPAN

He utilizes S&G for study and practice on community-based disaster management and disaster education.

RITSUMEIKAN

ISAGA2021
52nd ANNIVERSARY CONFERENCE
September 6-10, 2021

Simulation & Gaming for Community-based Disaster Management

by Yusuke Toyoda (College of Policy Science, Ritsumeikan University)

SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE – INDIA
INTERNATIONAL SIMULATION AND GAMING ASSOCIATION (ISAGA)

ISAGA

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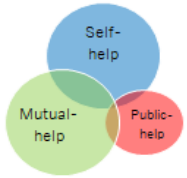
Community: **Residents** in certain geographically-defined areas (often defined officially by public administrations)

a. First responders
b. Who know their unique living areas the most
c. Mutual-help (Helping among residents)



1.a. First responders

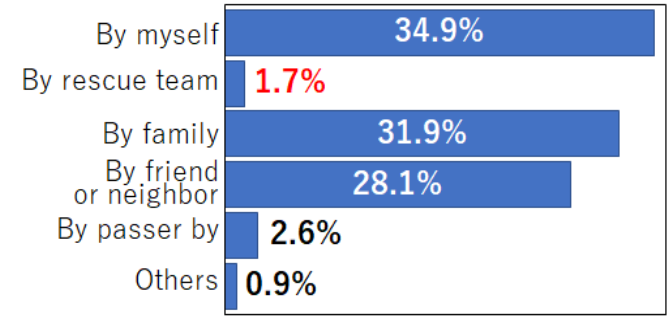


Figure: Actors rescuing those who were buried alive in the Great Hanshin Earthquake

Source: Adapted from Japan Association for Fire Science and Engineering "A Report on Fire Caused by the Great Hanshin Earthquake" Japan Association for Fire Science and Engineering, Tokyo, 1996.

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1.a. First responders

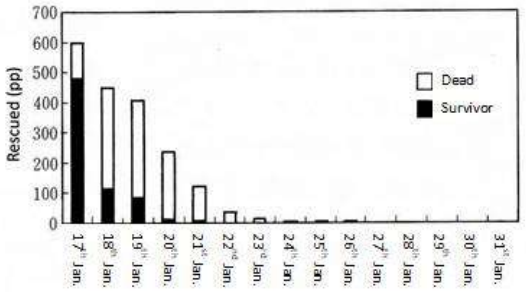

Figure: The number of the rescued by fire fighters of Kobe City and their survival ratio in case of the Great Hanshin Earthquake happening on 17th January

Source: Adopted from Hayashi H. 'Disaster Response Systems' "Practice of Regional Disaster Management Plan" Kajima Institute Publishing, Tokyo, 1997, 151-164. ISBN: 978-4306072039.

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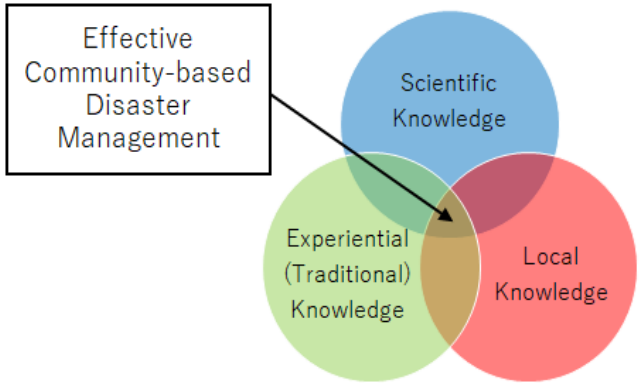
1.b. Three Types of Knowledge for DM



7

1.b. Process of Risk Management

8

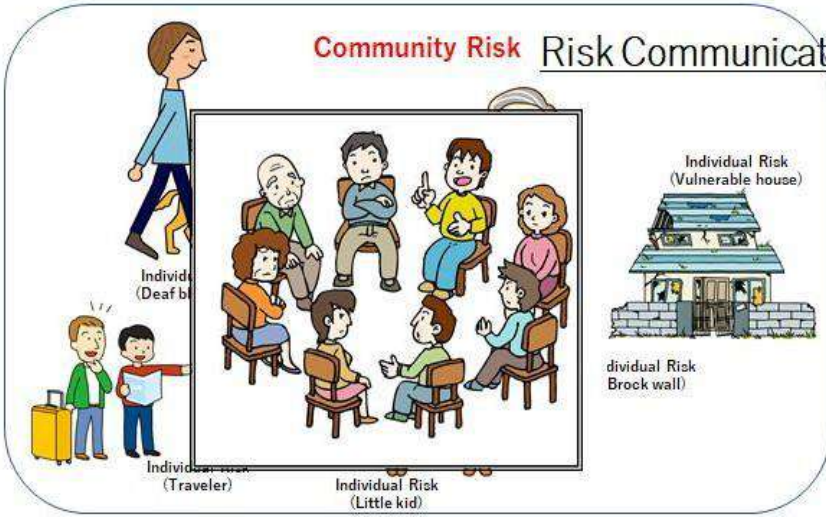
Risk Assessment

9

Community Risk Risk Communication

10

Community Risk Risk Communication



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Risk Management

~~Community Risk~~

12

1.b. Process of Risk Management

13

1.c. Mutual Help for Crisis Management Cycle

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1. (Summary) Importance of Community for DM

a. First responders (themes for S&G)
→Rescue, evacuation, shelter management, etc.

b. Who know their unique living areas the most (knowledge Integration)
→Process of risk management

c. Mutual-help (coping and adaptive capacity)
→Crisis management

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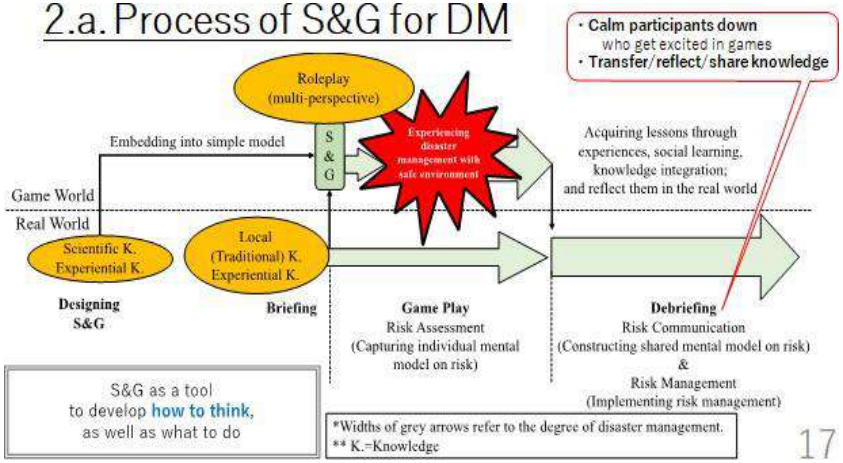
2.a. Process of S&G for DM



2.b. Main Functions of S&G for DM

Main Functions of S&G	S&G for Coping Capacity	S&G for Adaptive Capacity	Expected to be promoted/attained by S&G
Virtual experience Role play	Providing virtual experience to understand the importance of collective actions, would-be leading to motivated to enhance social capital, and social network for recovery through checking preparedness using available resources with interacting with other participants or roles	Role-playing in game world supporting more feasible consensus for building collective actions and decision-making	Collective action Decision making (enhancing social capital, and social network for recovery)
Knowledge integration	Sharing information and knowledge by knowledge integration	Knowledge integration for shared narratives	Sharing knowledge Narratives
	Critical reflection and problem solving by trial-and-error for using available skills and resources, to face and manage adverse conditions, emergencies, or disasters.	Integrating knowledge as sharing knowledge for problem solving for considering how communities can transform the existing systems for transformation in a manner appropriate to the local area	Problem solving
Trial-and-error		Reflecting from trial-and-error on what they experience in the game world for challenges they are facing	Critical reflection
Learning (all functions)		All process for enabling to learn how to transform their systems and leading to behavioral change	Behavioral change (based on social capital, cooperation and trust)

2. (Summary)
Simulation & Gaming (S&G) for DM

a. Process of S&G for DM

→Game design, briefing, gameplay, debriefing

b. Main Functions of S&G for DM

→Virtual experience, role play, knowledge integration, trial-and-error for coping and adaptive capacity

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3. Evacuation Simulation Training (EST) for university students

The goal of players:

To reach the **designated evacuation shelter** after a mage-earthquake

Process:

1. It randomly assigns certain **roles** to participants that evacuees might be expected to face in an earthquake evacuation.
2. The players evacuate from their own houses; however, they encounter various **situations** on their way to the evacuation shelter.

It can create **situations similar to real disaster conditions**. It is not a training for individuals but for communities as a whole.

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3. Game World of the EST

Role F

You are buried alive under your house. You cannot start evacuation. You need three residents (including the injured) to rescue you. Then, you can start evacuation. Fortunately, you did not get injured.

You remember that the leader of community said the temporary evacuation site was the place indicated by X.

3rd floor

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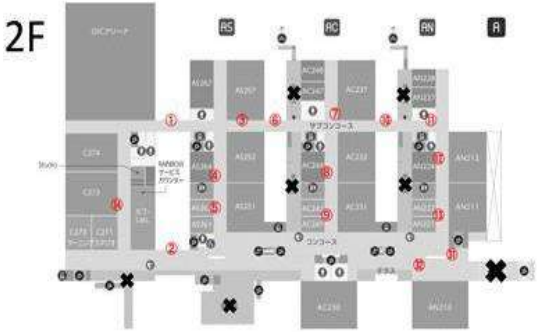
3. Game World of the EST

2F



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3. Situations and Roles of EST

Situations	Roles about initial situation*	Roles about knowledge*
1. Block walls Fall down! The street is shut down and **you cannot pass.**	1. **You are fine** without furniture falling down. You can start evacuation.	1. **You do not know the location of an evacuation shelter.**
2. Because of an after shock, a house collapsed! If you are done, **you got stacked by the collapsed house.** If you are two or more, another resident rescue you and you can pass.	2. **You are the injured by furniture falling down.** But you can start evacuation.	2. You have heard by chance neibors talking that the location of an evacuation **site is A** (room number).
3. Block walls fall down! If you are injured on your leg, **you can pass after 5 seconds.** If being with one player without injuries.	3. **You are the buried under your collapsed house.** You cannot start evacuation without three or more residents' support. As you are pressed by heavy debris, you cannot make voice until rescued. But you did not get injured.	3. You have heard from the neighbor the location of an evacuation **site is at A** (room number).
4. Because of an after shock, a house collapsed! If you are done or two, **you got stacked by the collapsed house. You need three or more residents to get rescued.** You need to wait them. If you are three or more, you can escape but it takes 30 seconds. You can pass after 30 seconds.		4. You have heard from the leader of Jisyubosaikai (community-based DRR group) the location of an evacuation **site as B** (site name).
5. **The area seems dangerous** by surrounding wooden houses standing closely. But it seems safe and you can pass.**	4. **You are the community leader.** You are the build under your collapsed house. You cannot start evacuation without three or more residents' support. As you are pressed by heavy debris, you cannot make voice until rescued. You decided with the leader of Jisyubosaikai (community-based DRR group) the location of an evacuation site at B (site name) three years ago. But you are worried as many residents do not know it.	
6. This way seems **safe** and you can pass.		

*Roles distributed to participantas are combination of initial situation and knowledge.
**This situation is located near the situation number 2.

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3. Process of Risk Management in the EST

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3. Playing the EST to JP and Int'l Students

Japanese students
Time: May 2017
for 4 hours with **2 rounds**
Venue: University building
Class Name: Simulation & Gaming (play S&G and develop S&G)
Style of Class: Intensive
Students: University students who are not interested in DM
Number: 10 students

International students
Time: November 2017
for 1.5 hours with **1 round**
Venue: University building
Class Name: Sustainable Urban Policy I (learning about DM)
Style of Class: Semester
Students: University students some of whom have experiences of S&G
Number: 13 students

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3. Results of the EST for JP Students

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	Challenge/Problem as Input	Their suggestion
1st Round	Necessity of reinforcing houses	
	Finding out where other residents live	Sharing information about where residents live
	Communicating with residents on normal days for rescuring the buried alive	Promoting neighborly communication by conducting events
	Quickly finding the injured and the need to move in a group	Training some residents in rescue techniques
	(With different information on the evacaution site)	Developing a smartphone application which identifies evacuation site locations
2nd Round	Several people searched the same place where other survivors had checked before separation.	
	It was not enough to merely make a resident housing map as all people sought to evacuate after the disaster so if they went to the house, there were no residents.	A note could be attached after evacuation to indicate whether they were at home or not.

3. Results of the EST for Int'l Students

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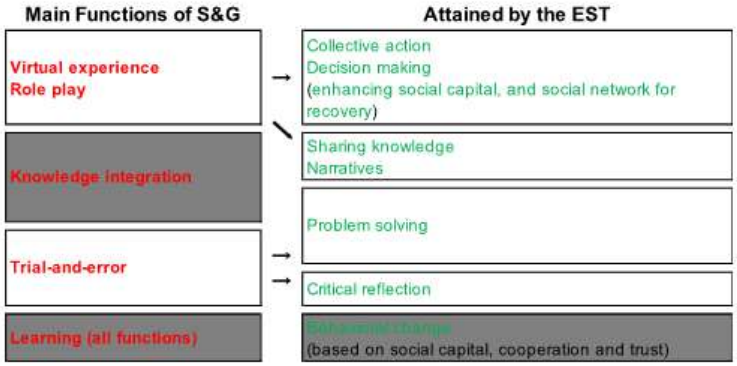
Challenge/Problem as Input	Their suggestion
Buried alive and no one was around and I think that's the biggest problem.	Community help/effort (mutual help) is very important by unifying residents and participating in drills.
I walked alone and got injured which needs more persons to help me.	Making sure where neighbors live and members of community by emergency contact list making, and screaming (if you can)
Aftershock but at that time we had five people together, so it was solved.	
The location of evacuation sites/shelters should be known by everyone (without rumor)	Attaching signboards with pictures
Fake information about evacuation site	

3. (Summary)
Example: Contribution of S&G to DM



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RITSUMEIKAN

ISAGA2021 52nd ANNIVERSARY CONFERENCE September 6-10, 2021

Simulation & Gaming for Community-based Disaster Management

by Yusuke Toyoda (College of Policy Science, Ritsumeikan University)
toyoday@fc.ritsumei.ac.jp

Thank you very much for kind attention.

SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE – INDIA
INTERNATIONAL SIMULATION AND GAMING ASSOCIATION (ISAGA)

ISAGA

Webinar - 06

Day, Date & Time: Saturday, 12-12-2020, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Paola Rizzi,** Professor of Techniques of Urban and Regional Planning at University of Sassari

Country: Italy

Title: Between Utopia and Ucronia: Gaming Simulation as a Construction of the Future

Webinar Topic

Between Utopia and Ucronia: Gaming Simulation as a Construction of the Future

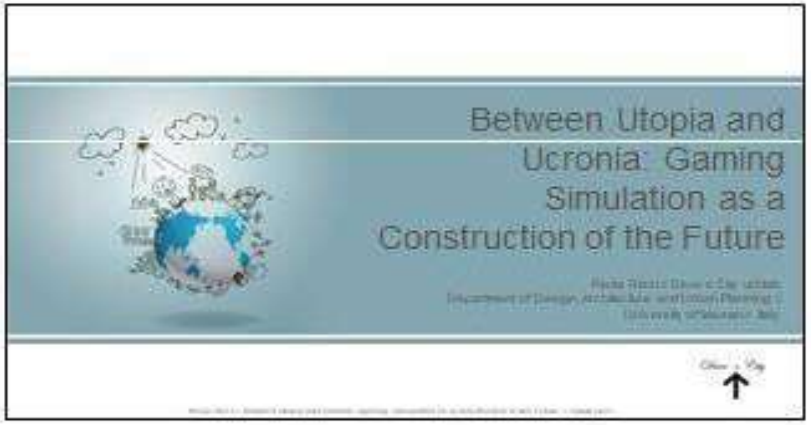
Abstract

Gaming simulation has a hybrid nature by definition: putting it in a coarse way it combines naturality with rationality through its two souls: play and simulation. But game and simulation are joined by two dimensions: space and time. Through the gaming simulation we face the process of designing of time and space. In order to do it, we construct utopias and also alternate histories. This is the starting point to face the topic of gaming simulation not as a language but as the mediator or generator of language. "The understanding of the gaming simulation as the future's language gave rise to some interesting considerations which slowly detached themselves from the linguistic concept in order to become a design concept. On the other hand, historical forms of the future are independent innovations in the development of single languages, (the entry Tempo, Enciclopedia Treccani online, 2014). Thus, the modalities in which the design process develops are independent in their various shades and technical fields. Moreover, to make the most of the communicative capacity of gaming simulation as a learning technique related to design is one of its most promising boundaries and applications in the short-term and long-term future". Gaming simulation in some of its forms can also be organized as a structure which allows designing one's own gaming simulation, You will find some examples among the classical, game-generating-games. The contribution is intended to confront the evolution of the topic of gaming simulation design as a learning technique for the design practice and the construction of future scenarios, in the field of territory and urban planning in particular.

Speaker Profile

Paola Rizzi is Urban Planner and Designer, her realm are Urban Gaming Simulation in Participatory Design/Planning and Disaster Mitigation. She is also a Professor of Techniques of Urban and Regional Planning at University of Sassari, Italy. She is also working as Visiting professor in universities in Japan, Thailand, Indonesia and Europe. She is Member of different Boards and Scientific Committees as

Advisory Board of Directors of CUPUM – Computers in Urban Planning and Urban Management. She is Founder and former director of ISAGA summer school from 2004 to 2013. She is Honorary member of ISAGA and SAGSAGA. She designed Urban Gaming simulation as VADDi for Italian Ministry of Environment, and many of her UGS were used in Urban Planning.



2020-12-12

Utopia…new WAVe

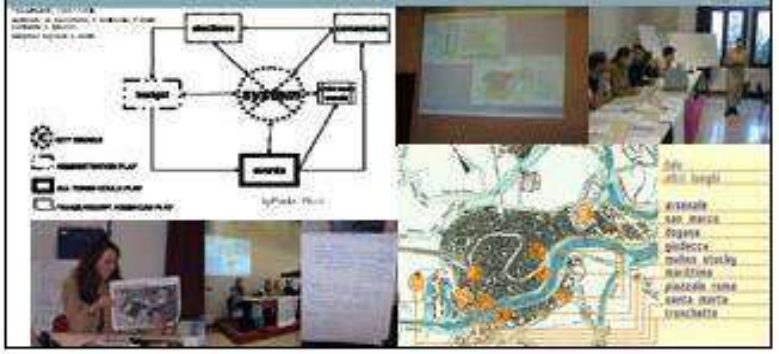
The term "utopia" is not to be understood in relation to its geographical inexistence but in relation to its nature as a virtual reality.

For example, New WAVE is a gaming simulation where utopia is not the absence of geographical coordinates, as Venice is a real place, but it is the capacity to construct an ideal city of Venice, which does not exist and it is what results from that alternative reality of Venice which is to be discussed by reconstructing possible courses to work for and to design a desirable Venice.

Utopia…

To play means to enter the world where the **rules** are pre-established, but once you are in that world, you can interpret these rule **redefining also the scenario**. Gaming simulations are machines which **generate utopias**: they allow to construct worlds, which, even though they are based on models which simulate reality, they detach from reality as much as the constructions of Plato, More or Bacon.

Utopia…new WAVe



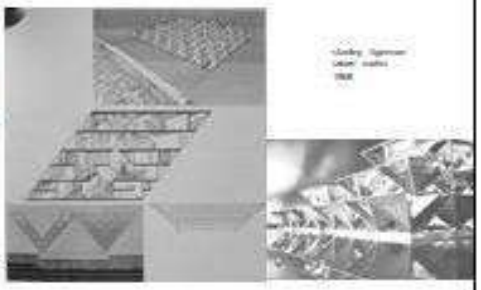
2020-12-12

Utopia…

The primary objective of a gaming simulation is not to **simulate** the real world, but rather to try to obtain relevant information by creating a **simulated world** that participants can enter.

The term simulated world refers to any **scenario, background** or element constructed for the purposes of the game simulation.

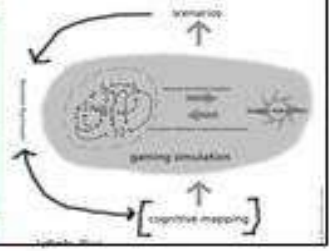
Since the main purpose is not to **imitate** the real world, it can also be metaphorical and therefore completely fictitious.



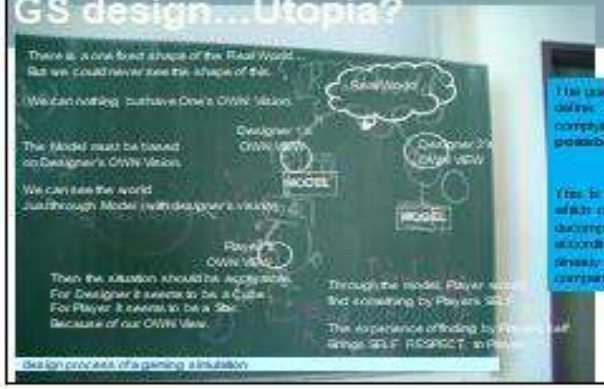
GS design…Utopia?

The design of a GS requires the definition of a **theme or problem**, and therefore perception and understanding of these by the designer become crucial.

His task is: not to pre-define specific and rigid behaviours but to define the boundaries within which participants can act and interact.



GS design…Utopia?



The case of gaming simulations is to define, solve or design a situation, company… with its **potentiality** and **possible future** evolution.

This is the definition of utopia, which complex design is analysed, decomposed and recomposed according to the process of the already mentioned process of comparison.

design process of a gaming simulation

GS design…RP & CS…

The role-play RP is, in a certain way, the dynamics of the case study because it involves not only the examination and the discussion of elements, but seeks the direct involvement of the participants who change their role from spectators of the case study to performers, its characteristics:

1 *information and personal expectations on society (observe yourself);*
2 *interpersonal relations and ways of living (watch the other people's behavior and actions);*
3 *relations with data and the knowledge of daily situations (watch the world in general and social life in particular).*

The case study CS is a systematic record of an event or a series of events that has the aim to teach a lesson and is based on experience. CS has three characteristics:

1. it allows the identification with specific persons or defined roles,
2. lives in motion emotions and dynamics proper of an evolutionary dynamic,
3. separates description from theorization and generalization.

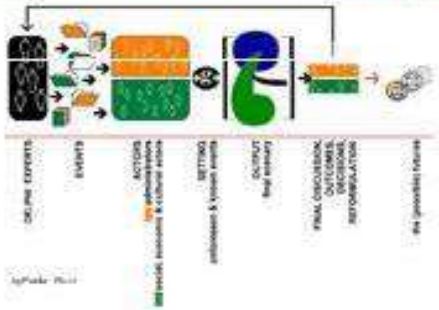
(Taylor and Walford, 1987)

2020-12-12

GS design / Scenario

Last but not least, among the objectives is to allow the creation through interaction between participants/players and participants/play-simulation of scenarios that are possible and at the same time are shared at least at a generic level.

Basically the GS helps the designer and participants in analysing and confronting more or less problematic situations, while illustrating the complexity of outcomes by providing a *co-exploratory platform* for solutions and definitions.



Gaming Simulation is…

The concept of gaming simulation used to see a *gestalt* (Duke, 1974) that includes a significant model of reality (**simulation**) put in action (**rules** of the game) by decisions of the participants (players/**roles**).

According with Duke (1974) gaming simulation is a "*situation room*" where usually a physical or iconic or conceptual map is provided and is kept current so the dynamic of the process is maintained by the updating. But GS in addiction to the referred system "*will have a series of scenarios depicting possible courses of action. Various decision-makers will be represented by humans acting out significant roles. By acting out "what if" situations alternatives futures can be explored.*"

(Duke, 1974)

Gaming Simulation & language

The method used by Jan Klabbers deserves deep attention as it is exactly through a gaming simulation that he constructs a common language in order to design environments or to face and solve problems.

It is a structured confrontation, in which the participants, following the rules, contribute to the definition of a common linguistic basis, according to one's own background and competences. This method allows to avoid misunderstandings, but it also promotes alternative visions of reality.

Even though apparently there is a contradiction, construction of a utopia is intrinsic to the gaming simulation and in the same time it adds pragmatic implementation to the visionary.

Gaming Simulation is…

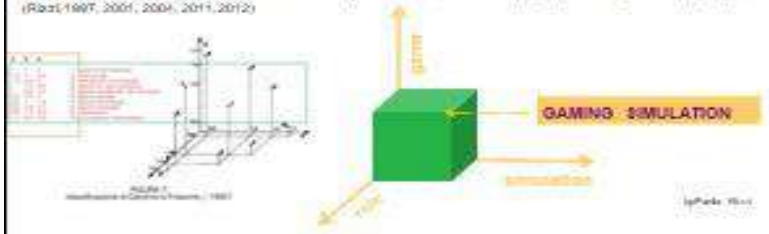
GS is the *simulation* of the effects of decisions made through a role playing subject to rules, a more or less balanced mix of ROLE, SIMULATION and GAME.

simulation=model's manipulation, that is a static model transformation in a dynamic situation;

game=set of rules, which means less than a real game (play);

role=actor function played in dynamic situations subjected to rules, that is: role playing turns a game in a played game.

(Ricci1997, 2001, 2004, 2011,2012)



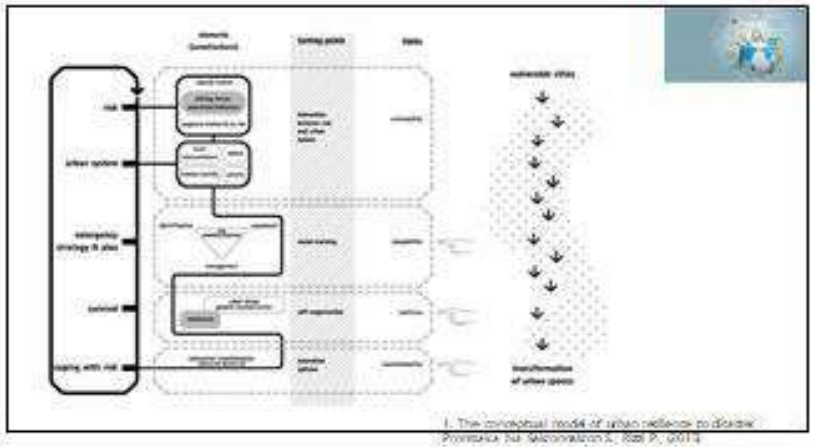
Gaming Simulation and Participatory Planning

The practice of urban design is characterised by this hybrid process and is one of major problems which have to be faced in teaching, in designing and in the practice of the so called participatory planning.

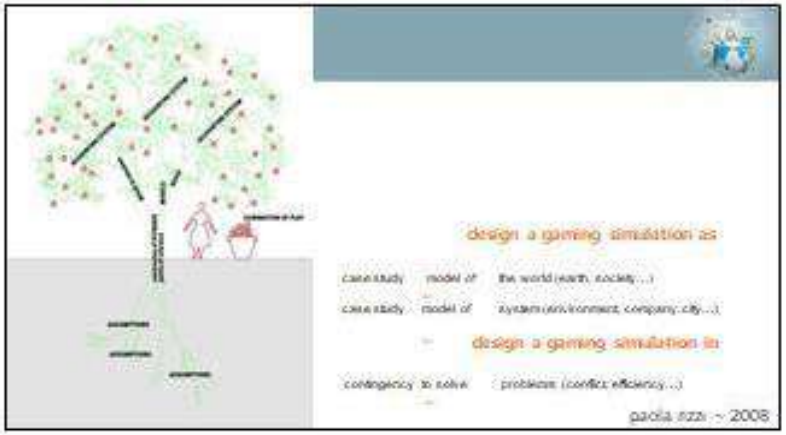
The main problem to face is that of the use of highly expert and specialised languages with non-experts. Therefore also the presentation of "utopian" or pre-defined models seems of little effectiveness.

Teaching and research are in fact characterised by the necessity to exchange information. In a situation of communicative imbalance between interlocutors, this exchange of information encounters a difficult obstacle to overcome.

Improve responsibility // increase bottom-up approach



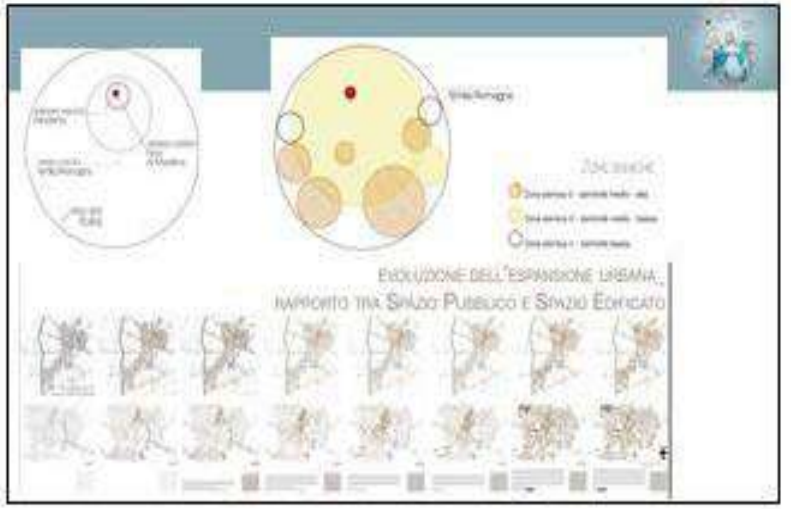
1. The conceptual model of urban resilience to disaster.



2020-12-12

UGS Urban Gaming Simulation...why?

goals	expected results
stimulate involvement	individual involvement
stimulate communication	inter-personal/intra-groups
stimulate participation	groups of actors/stakeholders are involved in active participation
information and training	trough explicit description of inter-intra-relationships, connections, links and processes of complex socio-economical and ideological systems...
research	to find possible "frequencies" of the components of the social behaviour in the context of different multi-layered systems
planning (the plan)	design and development of strategical master plan
planning (evaluation of the plan)	Evaluate and verify the possible application and development of the master plan



Case Study: NOVI DI MODENA

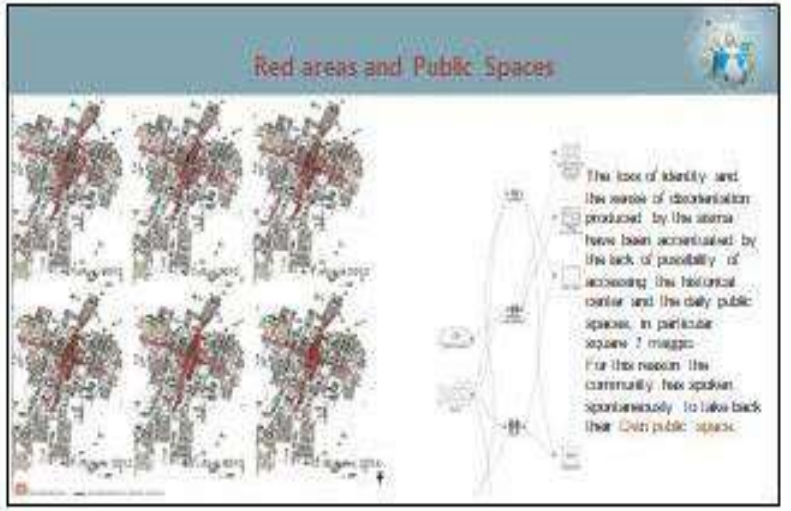
EMILIA EARTHQUAKE

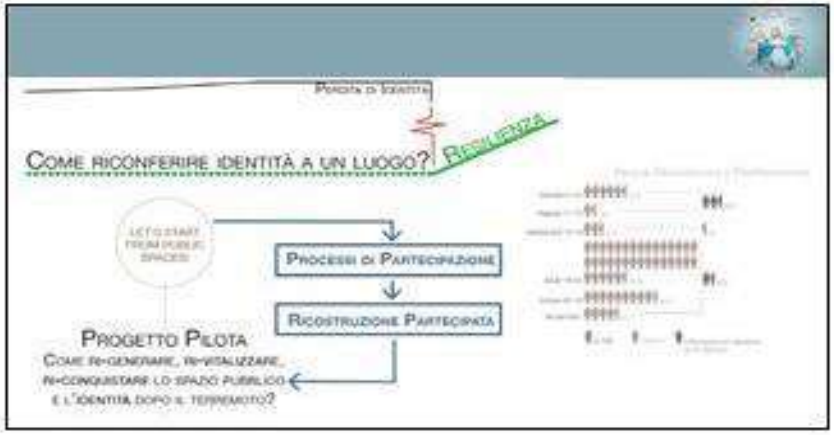
20th May 2012
29th May 2012
3rd June 2012

- Magnitude: 20th May 2012 5.9
  29th May 2012 5.8
  3rd June 2012 5.1
- Buildings destroyed: 7700
  Homeless: 41000
- Affected people: 550312
- Dead people: 25
- Secondary deaths: 300

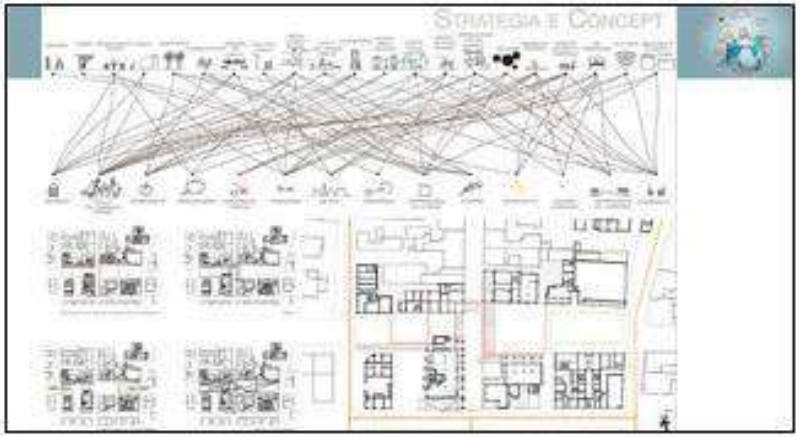
NOVI DI MODENA

- Foundation: IX sec. ca.
- Population 2011: 11'476
- Medieval architecture
- Demographic increase due to economical activities




Perdita di identità
Resilienza
Come riconferire identità a un luogo?
Processi di Partecipazione
Ricostruzione Partecipata
Progetto Pilota
Come re-generare, re-vitalizzare, re-conquistare lo spazio pubblico e l'identità dopo il terremoto?

2020-12-12

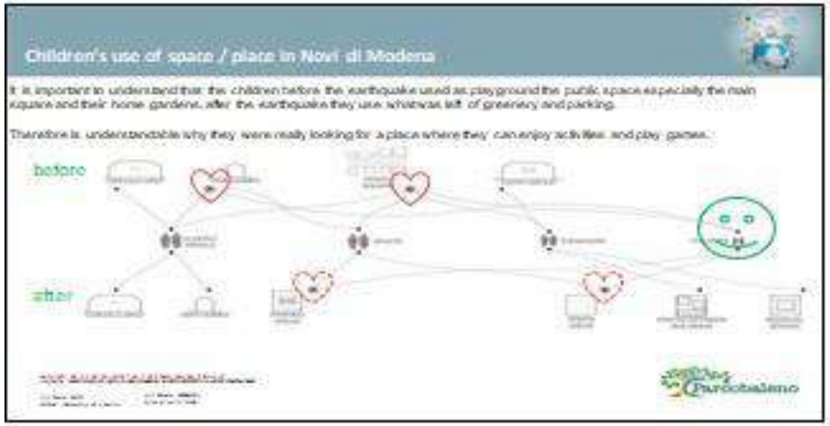

Strategia e Concept


SINAPSI
Connessioni urbane e territoriali
L'ACQUA LA VIA A LA BASA
Specificità architettoniche
TUTTI I COLORI DEL VERDE
Trame verdi e naturali
RITORNO AL FUTURO
Rigenerazione urbana
RIPARTIAMO DALLE PIAZZE
BIOLE TRA IL VERDE
Usi provvisori ed eventi
INCONTRARSI NEL FARE
Legatoria sociale
SERVIZI 3.0
Innovazione dei servizi e governance
CULTURE IN CIRCOLO
Reti culturali e artistiche

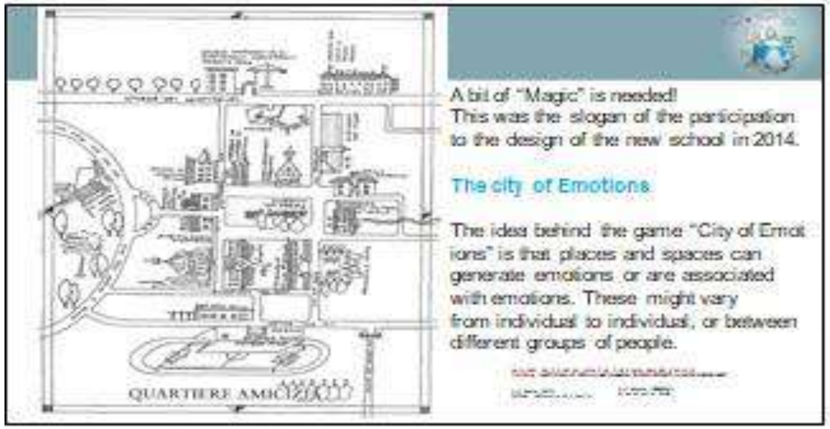

Il Piano di Rigenerazione Urbana
Urban Regeneration Plan

2020-12-12


FATTI IL CENTRO TUO!
percorso partecipativo per la
RICOSTRUZIONE


Children's use of space / place in Novi di Modena
It is important to understand that the children before the earthquake used as playground the public space especially the main square and their home gardens, after the earthquake they use whatever was left of greenery and parking.
Therefore is understandable why they were really looking for a place where they can enjoy activities and play games.
before
after
Parcobaleno


Parcobaleno


QUARTIERE AMICIZIA
A bit of "Magic" is needed!
This was the slogan of the participation to the design of the new school in 2014.
The city of Emotions
The idea behind the game "City of Emotions" is that places and spaces can generate emotions or are associated with emotions. These might vary from individual to individual, or between different groups of people.

2020-12-12


The "City" shifted into "Park" and
The Park of Emotions project started.
The park of emotions was used in
three phases:
- identification of the feeling/emotion
-composition of the different corners
designed
-discussion and evaluation on the
final scenario


The 2nd phase was
Composition
Evaluation of 3 hypotheses of
how to put together all of the
different corners:
-a shape as a star
-distributed along the path
-merged;
Discussion and selection of
the most suitable solution


The 1st phase
was to work on emotions given to
a future life after reconstruction
With the support and suggestion of the
teachers the children were divided into
groups according with their sensitivity.
The children:
-draw a map of the corner
-made a presentation to the
-other teams
-discussed and select the features
of each corner.


The third phase Discussion
and final model.
After the discussion of the pro
posed scenario each class de
signed a physical model that
was composed with the other
s in one big model.
Each corner was designed fol
lowing the suggestions origin
ated from an emotion or value
identified by children as funda
mental for community life.

Last but not least: give the name to our new Park!

The first model was presented to the parents and children of third and a referendum to give to it a name was launched.

An "urban picnic" was organized in the main square and all the families of the pupils and all the citizens were invited.

The name chosen was Parcobaleno, a combining the words Parco (Park) and Arcobaleno (Rainbow).

2020-12-12

Aim of Park of Emotions - Project:

1. to overcome the social "trauma" generated by earthquake
2.reactivating places and giving and creating new reference points for the community life.
3to enhance the creative competencies of children accommodating c n the Park design- their original contents without manipulation.

Challenges:

The facilitators and designers had to accompany the long time of desi gn and work in progress procedures without losing or dimming the enthusiasm and interest fully grown during the participation.

Strengths:

-the guidelines shared and decided by the entire community
-originality and feasibility of the project proposals
-the attention and care of future users with different needs and abilities
-finally, the innovation and sustainability of the materials used.

Parcobaleno

The UCIS "City of Emotions" has proven to be a powerful tool for

initiating and emphasizing participation in real life urban planning processes especially in healing social trauma after disasters.

As result, the process achieved two important goals:

1.
to increase the collaboration and cooperation
in
of citizens including the youngest.

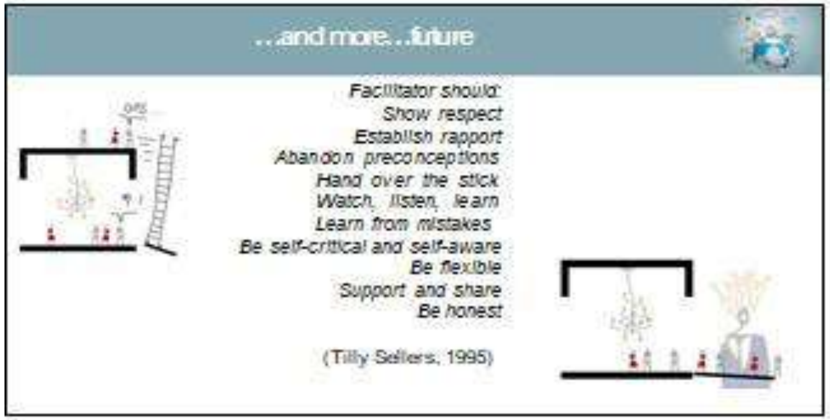
2.
the guidelines are applicable to other similar situations

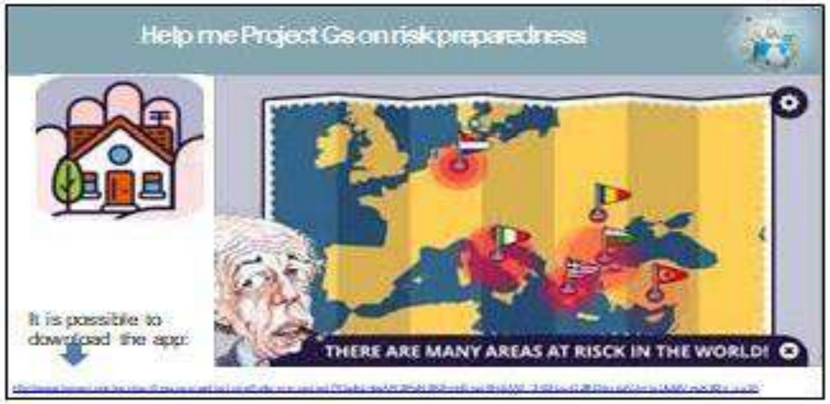
At the opening, the children recognized that all the emotions were recognizable in the settings and features of the new park.

For the children the logo of a tree and the flowers on the tree in the park, were the means of a new safe start.

VADDI Vallo A Dire Al Dinosauri – An urban gaming simulation on climate change


VADDI Vallo A Dire Al Dinosauri–
An urban gaming simulation on climate change


...and more...future
Facilitator should:
Show respect
Establish rapport
Abandon preconceptions
Hand over the stick
Watch, listen, learn
Learn from mistakes
Be self-critical and self-aware
Be flexible
Support and share
Be honest
(Tilly Sellers, 1995)


Help me Project Gs on risk preparedness
It is possible to download the app:
THERE ARE MANY AREAS AT RISCK IN THE WORLD!


Thank you for your attention
16. the content of physics concerns only physicists, its effects concern everyone.
17. what affects everyone can only be solved by everyone.
18. every attempt by an individual to solve on his own what concerns everyone is doomed to failure.
Friedrich Dürrenmatt, 21 points on "the physicists", 1962

Webinar - 07

Day, Date & Time: Saturday, 09-01-2021, 15:00 - 16:00 hrs (IST)

Invited Speaker: **Nicolas Becu,** Geographer, French National Center for Scientific Research - Specialized in Participatory Gaming Simulation

Country: France

Title: Simulation and Gaming for Participatory Approaches to Environmental Issues.

Webinar Topic

Simulation and Gaming for Participatory Approaches to Environmental Issues

Abstract

Since it was first conceptualized and defined by authors such as Dick Duke in 1960s, part of the simulation and gaming community has used games (e.g., policy games) to help decision makers, managers, or other types of actors, to conceptualize, analyze and share their understanding about complex issues, and eventually come up with a shared vision of how to solve them and/or advance forward. "In the late 1990s another research domain emerged, known as participatory modelling. In this approach, the modelling process is considered as a learning process in which local stakeholders can take part and therefore learn about the issues they are facing in their territories". "This action research domain, benefits from lessons and good practices coming from participatory approaches, such as whom to invite to the participatory modeling process, how to articulate the process with current policy plans, how participants with different social status can contribute at the same level to the modelling process and benefit from it". At the intersection between simulation and gaming and participatory modelling, we find a common practice which is the use of gaming/simulation that explicitly model the functioning of a system, and which is explicitly made for stakeholders to learn and get empowered on the issues they face. This type of application of games is called participatory simulation and will be the topic of this webinar.

Speaker Profile

Nicolas Becu is a researcher in geography at CNRS – French National Research Center. He is specialized in the design, use and evaluation of participatory modelling and gaming simulation applied to environmental issues. He currently conducts and leads research programs at the LIttoral, ENvironment and Societies laboratory (LIENSs) based in La Rochelle – France. His research topics include the analysis of the use of simulation and games to support social and organizational transformations, at the territorial scale. Applications are in the domains of coastal risk management, marine natural resources and marshlands and land use planning.

Simulation and Gaming for Participatory Approaches to Environmental Issues

Nicolas BECU
National Center for Scientific Research – France
LIENSs Lab - Coastal area, environment and societies. La Rochelle

Origins and background

Where it all started

System analysis studies (1930)

Complex systems (1970)

Operational models to deal with complex problems (1960/1970)

Gaming as an analytical method :
flexible & adaptable,
experimental & handling
communication & feeling

Computation :
mathematical formalization
and computer simulation of
complex policy problems

gaming/simulation (1960th to today)

Improve the quality of decision making

- Assimilate/Internalize concepts and principles of action
- Emotional & collective intelligence
- Acquire tacit knowledge

To better communicate about complex issues

- *Free-play during seminar gaming*
  -> positions, objects and rules can be changed, created or improved by the players during the game

To produce meaningful changes

Environmental issues and socio-ecological systems governance

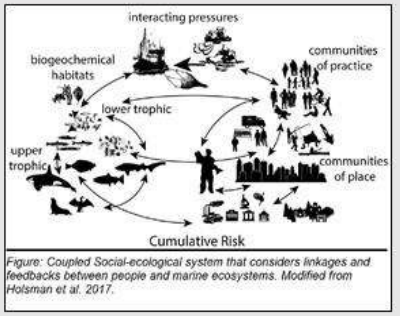
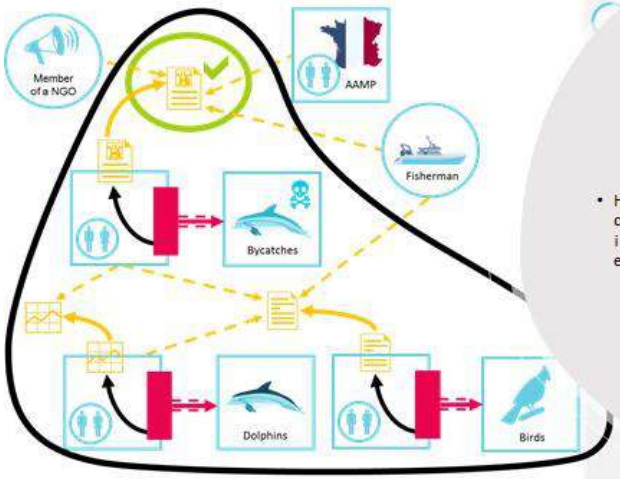
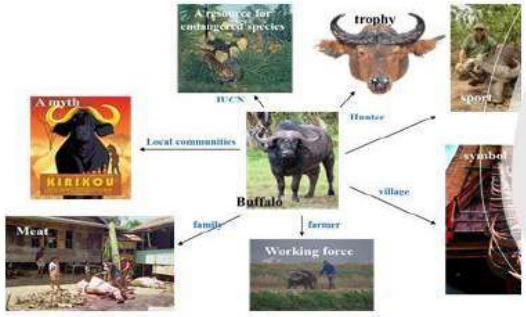


Figure: Coupled Social-ecological system that considers linkages and feedbacks between people and marine ecosystems. Modified from Holsman et al. 2017.

Environmental issues involve ecological dynamics and human activities



- Human are plural and have different goals and objectives in relation to these environmental issues



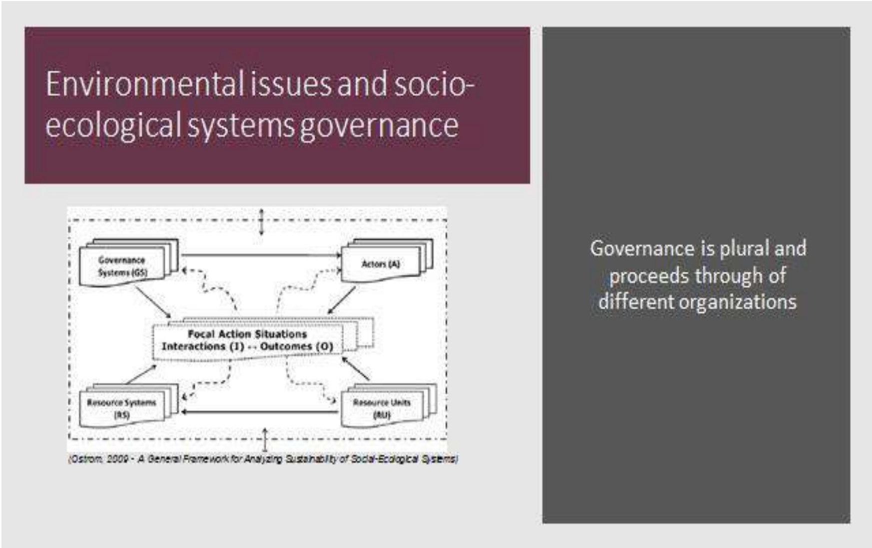
- Human are plural and have different perspectives (linked to their habitus) and different representations of Human-Nature relationship

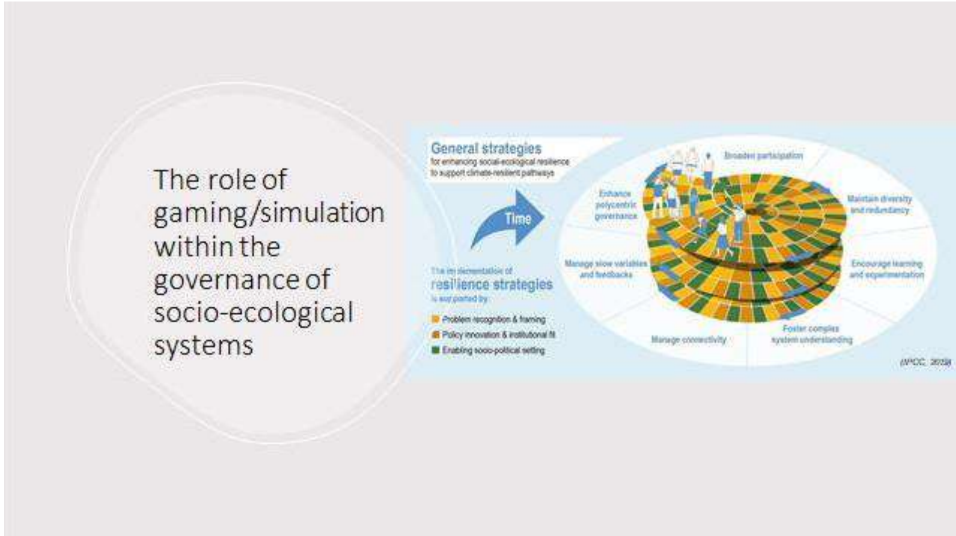
Environmental issues and socio-ecological systems governance

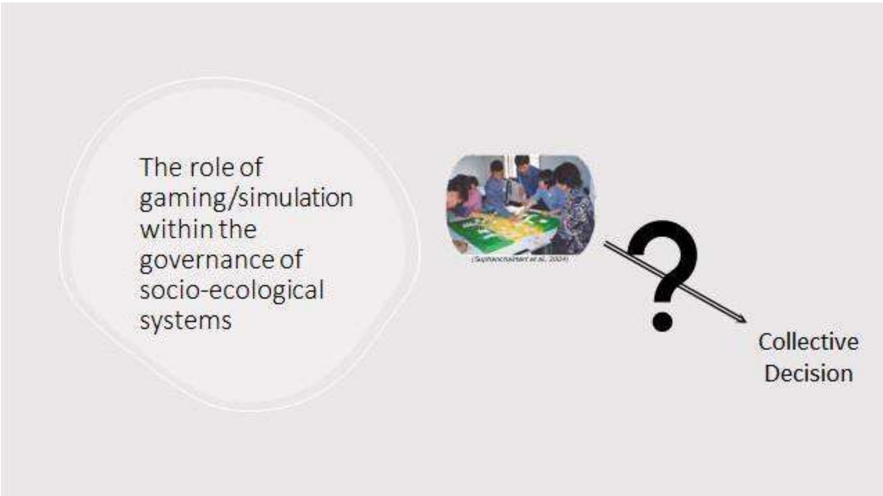
Governance : Decision-making process that creates and enforces rules about what people may, must, and must not do in interactions with one another and with the rest of the social-environmental system

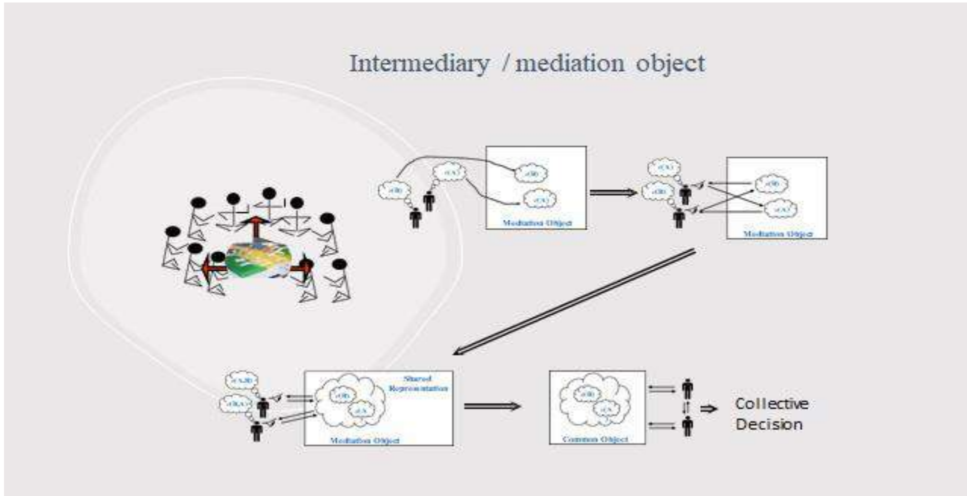
(Matson et al. 2016 - Pursuing sustainability: A Guide to the Science and Practice)

Governance is plural and proceeds through of different organizations


Environmental issues and socio-ecological systems governance
Governance Systems (GS)
Actors (A)
Focal Action Situations
Interactions (I) → Outcomes (O)
Resource Systems (RS)
Resource Units (RU)
(Ostrom 2009 - A General Framework for Analyzing Sustainability of Social-Ecological Systems)
Governance is plural and proceeds through of different organizations

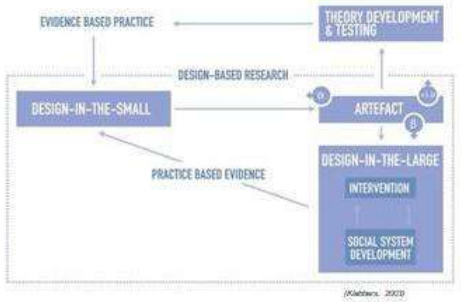

The role of gaming/simulation within the governance of socio-ecological systems
General strategies
Time
resilience strategies


The role of gaming/simulation within the governance of socio-ecological systems
?
Collective Decision


Intermediary / mediation object
Mediation Object
Shared Representation
Common Object
Collective Decision

Fundamentals of participatory gaming/simulation

Fundamentals of participatory gaming/simulation



Understanding
DIS (Design In the Small)
& DIL (Design In the Large)

Design In the Small → Observability

What should we take into account when designing a game dedicated to participation ?

- Usability

Design In the Small → Observability

What should we take into account when designing a game dedicated to participation ?

- Usability
- Fun

Design In the Small → Observability

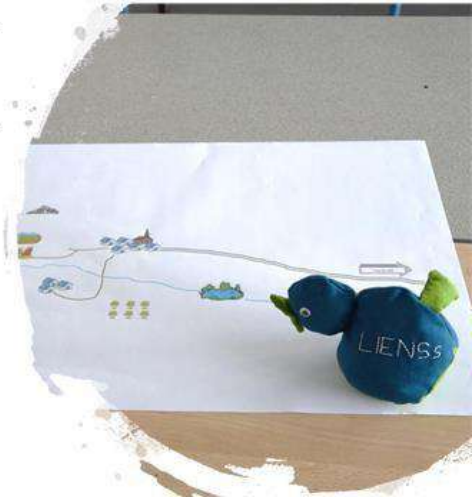
What should we take into account when designing a game dedicated to participation ?

- Usability
- Fun
- Flow

Design In the Small → Observability

What should we take into account when designing a game dedicated to participation ?

- Usability
- Fun
- Flow
- ....
- Observability !



Design In the Small → Observability

What should we take into account when designing a game dedicated to participation ?

- Usability
- Fun
- Flow
- ....
- Observability !

Design In the Small → Observability

What should we take into account when designing a game dedicated to participation ?

- Usability
- Fun
- Flow
- ....
- Observability !

- Design of participatory gaming is not about realism

  "realism is too subjective a notion"
  (Klabbers 2009)
  (see also constructivism)

- It's about allowing users to mentally create links between the game and their reality !

The one question of game designers

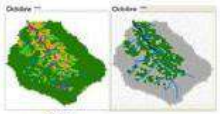
What are the elements of the simulation that allow users to be able to observe the modelled reference system?

Design In the Small → Observability

The one question of game designers

What are the elements of the simulation that allow users to be able to observe the modelled reference system?

- Accommodation

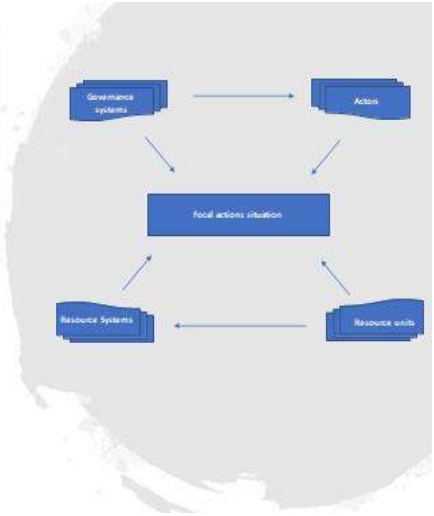


- Adaptability

- Free-play

Design In the Large → Connecting with the governance systems

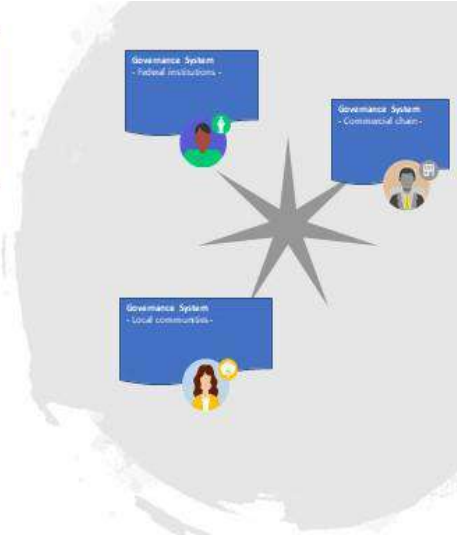
Factors that contribute to the success of the integration of the participatory gaming process in the SES governance?



Design In the Large → Connecting with the governance systems

Factors that contribute to the success of the integration of the participatory gaming process in the SES governance?

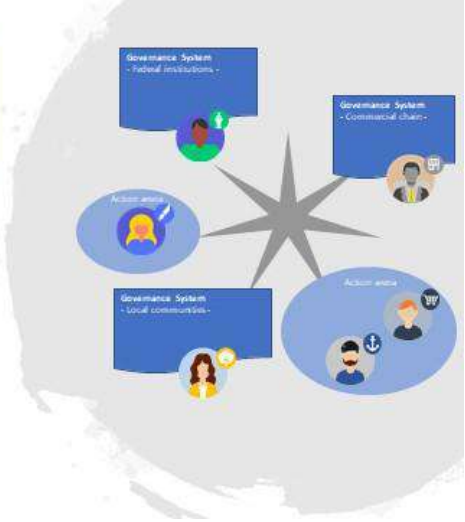
- •Relation with the different governance levels



Design In the Large → Connecting with the governance systems

Factors that contribute to the success of the integration of the participatory gaming process in the SES governance?

- •Relation with the different governance levels
- •Association of participants with different action arenas



Design In the Large → Connecting with the governance systems

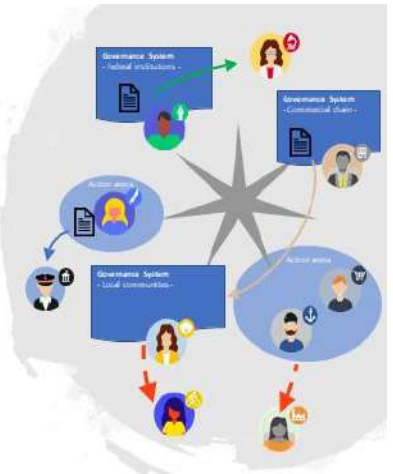
Factors that contribute to the success of the integration of the participatory gaming process in the SES governance?

- •Relation with the different governance levels
- •Association of participants with different action arenas
- • Spreading inscriptions

Design In the Large → Connecting with the governance systems

Factors that contribute to the success of the integration of the participatory gaming process in the SES governance?

- •Relation with the different governance levels
- •Association of participants with different action arenas
- • Spreading inscriptions
- • Repurpose for different projects



Example of application

Marine flooding prevention How to adapt?

Xynthia storm in 2010

- A lack of risk culture from local political bodies
- Concrete dikes are the dominant, and almost only, prevention strategy
- Objective : **raise awareness about alternative strategies**

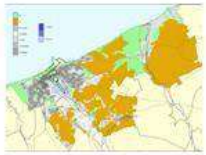
LittoSIM game

Players are divided into teams
Each team controls one municipality

LittoSIM participatory simulation workshops

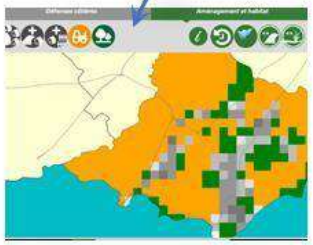
LittoSIM Observability

Different archetypes for the same game



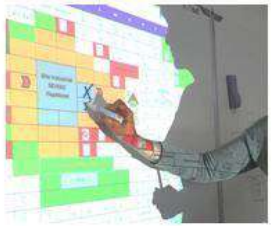
LittoSIM Observability

Incorporating new features



LittoSIM Observability

Let participants redefine and add new elements into the game



LittoSIM connections with the governance systems

- Local steering committee gathering different partners

LittoSIM connections with the governance systems

- Local steering committee gathering different partners
- Series of workshops with different groups of stakeholders
- Mixing participants

LittoSIM connections with the governance systems

- Local steering committee gathering different partners
- Series of workshops with different groups of stakeholders
- Mixing participants
- Evaluate, write reports and diffuse them
- Disseminate, train to the method and let others repurpose *(open-source)*

Concluding remarks

Participatory simulation/gaming
An opportunity for social and environmental transition

- It's not about persuaded people to change their behavior
- It's about providing tools and means of communication for people to think about the complexity of environmental issues and change the rules of the game

More training to facilitation

More free-play game kits

More game designers

Thank you for your attention

nicolas.becu@cnrs.fr

Webinar - 08

Day, Date & Time: Saturday, 16-01-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Pieter van der Hijden,** Management Consultant, Sofos Consultancy, Amsterdam

Country: The Netherlands

Title: Gaming/Simulation and the UN Sustainable Development Goals

Webinar Topic

Gaming/Simulation and the UN Sustainable Development Goals

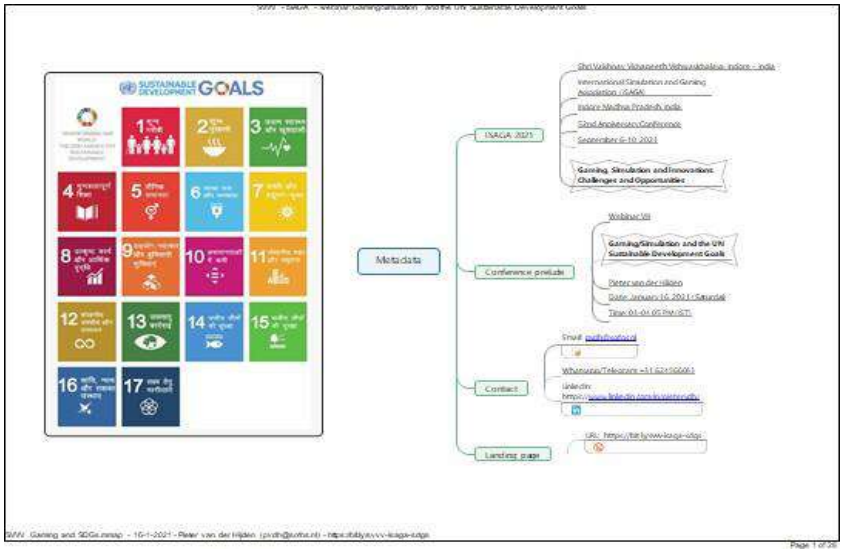
Abstract

The speaker gave a short introduction to the 2030 Agenda of the United Nations, i.e. the Sustainable Development Goals (SDGs). Participants, created their own SDG profile through a short exercise. Subsequently, it was discussed with examples that how gaming / simulation can methodically support the implementation of the SDGs. Finally, the contents of certain SDGs and underlying targets were highlighted and the added value that gaming / simulation can have for this.

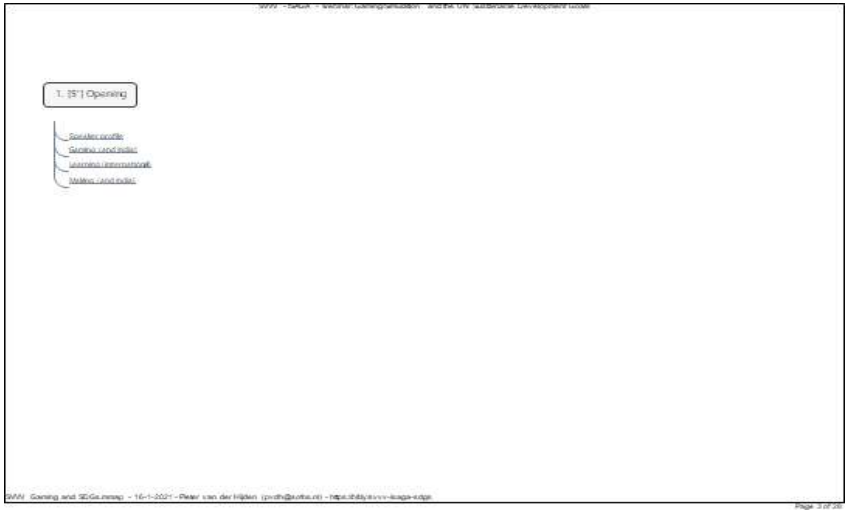
Speaker Profile

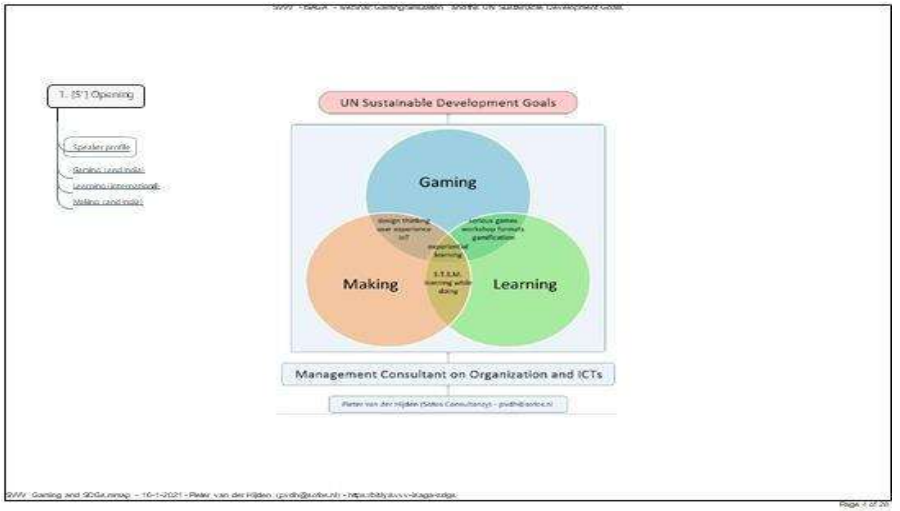
Pieter van der Hijden works as an independent management consultant through his own Sofos Consultancy in Amsterdam (The Netherlands). He is active in the field of "ICT for Sustainable Development Goals (SDGs)" and specializes in gaming / simulation, digital fabrication (fablabs, S.T.E.M. education) and e-learning (distance learning, Moodle). He regularly works abroad, often in Suriname (South America) and is active in various global communities. He was a board member of ISAGA for many years and is a regular speaker at ISAGA conferences. In India Pieter was a teacher at the ISAGA SummerSchool at the Institute for Integrated Learning in Management (IILM) in Gurgaon. Together with his students, he developed an online roleplaying game, Dharadam - the flourishing slum, to prepare students for social work for working in the slums. Pieter and Vinod Dumblekar (his co-director at ISAGA) are preparing a conference track on "Gaming / simulation and the SDGs" for the ISAGA 2021 conference in Indore. Together with Yogesh Kulkarni (Vigyan Ashram, Pabal) Pieter works on management issues of fablabs (workshops for digital fabrication) and aligning fablabs with the Sustainable Development Goals so that they can increase their social impact. He works with Pradnya Kunal (Global Fab Academy, branch India/Pakistan, Lanja) on learning by

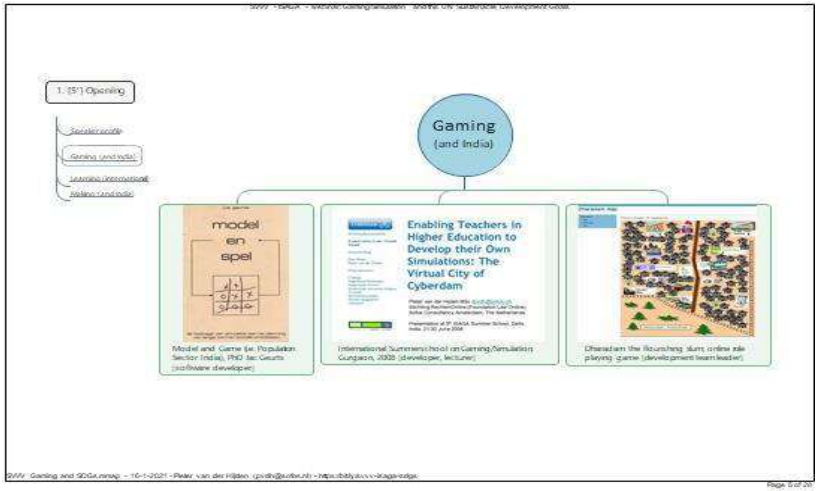
doing in the field of STEM, with Sibu Saman (Kerala Flood Relief) on disaster risk reduction and with Nishtha Kaushik (Fablab Chandigarh) on knowledge sharing with Suriname about mobile fablabs. In all his projects structuring communication processes plays an important role; gaming/simulation is the fuel.

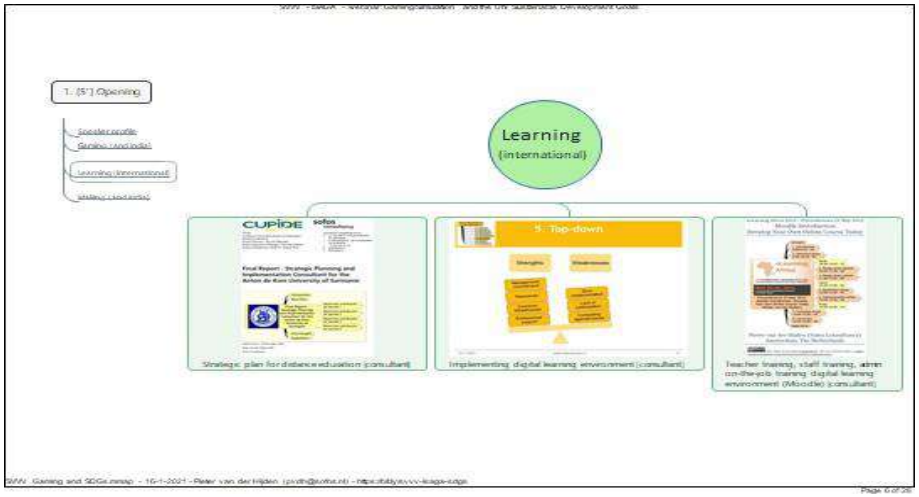

SUSTAINABLE DEVELOPMENT GOALS
Metadata
ISAGA 2021
Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore - India
International Simulation and Gaming Association (ISAGA)
Indore Madhya Pradesh, India
52nd Anniversary Conference
September 6-10, 2021
Gaming, Simulation and Innovations: Challenges and Opportunities
Conference prelude
Webinar UN
Gaming/Simulation and the UN Sustainable Development Goals
Pieter van der Hijden
Date: January 16, 2021 (Saturday)
Time: 01:-04:-05 PM (IST)
Contact
Email: pvdh@xs4all.nl
Whatsapp/Telegram: +31 624150061
LinkedIn:
https://www.linkedin.com/in/pietervdhijden
Landing page
URL: http://bit.ly/www-isaga-xdgs


SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE – INDIA
INTERNATIONAL SIMULATION AND GAMING ASSOCIATION (ISAGA)
ISAGA
SAGA2021
52nd Anniversary Conference
September 6-10, 2021
WEBINAR
On
Gaming/Simulation and the UN Sustainable Development Goals
Mr. Pieter van Der Hijden
Date : January 16, 2021 (Saturday)
Time : 02 - 04.05 p.m. (IST)
Contact : +91 94066 61558
Agenda
1. [5'] Opening
2. [10'] Sustainable Development Goals
3. [10'] Exercise: Create your profile
4. [10'] Gaming as part of SDG process
5. [10'] Gaming as part of SDG outcomes
6. [10'] Discussion
7. Closing


1. [5'] Opening
Speaker profile
Gaming (and India)
Learning (International)
Making (and India)


1. [5'] Opening
Speaker profile
Gaming (and India)
Learning (International)
Making (and India)
UN Sustainable Development Goals
Gaming
Making
Learning
Management Consultant on Organization and ICTs


1. [5'] Opening
Gaming (and India)
Learning (international)
Making (and India)
Gaming
(and India)
model en spel
Enabling Teachers in Higher Education to Develop their Own Simulations: The Virtual City of Cyberdam
Model and Game (ie. Population Sector India), PhD (ec Geurts (software developer)
International Summerschool on Gaming/Simulation Gurgaon, 2008 (developer, lecturer)
Dharavi: the flourishing slum: online role playing game (development team leader)


1. [5'] Opening
Learning
(international)
CUPIDE
5. Top-down
Strategic plan for distance education (consultant)
Implementing digital learning environment (consultant)
Teacher training, staff training, admin on-the-job training digital learning environment (Moodle) (consultant)


1. [5'] Opening
Gaming (and India)
Learning (international)
Making (and India)
Making
(and India)
FAB LAB
Fablab lifecycle management (input based on game sessions) (chair)
Fablab alignment with SDGs (chair)
Fab for Kerala (participant)


2. [10'] Sustainable Development Goals
What are the SDGs?
Why important?
How is India doing?

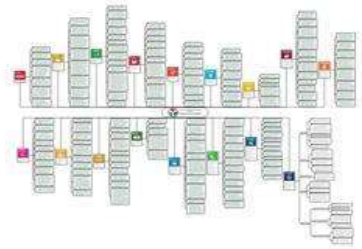
2. [10'] Sustainable Development Goals

- What are the SDGs?
- Why important?
- How is India doing?

- What are the SDGs?
  - Successor to the 8 Millennium Goals 2000-2015 Basically developing countries
  - 2015 UN Resolution Transforming our world the 2030 Agenda for Sustainable Development
    - Global Socio-Economic Progress 2016-2030
    - 193 countries (all UN member states)
    - 17 Goals, 169 targets
    - incl. Paris Climate Agreement
    - Principle: Leave No One Behind (UNDP)
  - Annual costs "trillions of dollars" ... new ways of financing

2. [10'] Sustainable Development Goals

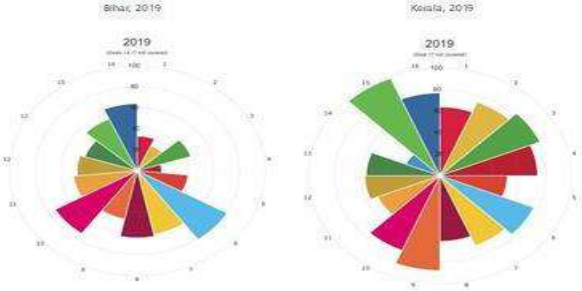
- What are the SDGs?
- Why important?
- How is India doing?



- Why important?
  - understand the interconnections intrinsically
  - Agenda 2030 forms the worldwide policy framework
  - CSR - Corporate Social Responsibility
    - SDGs appeal to almost all sectors of society
    - Provides reporting framework
  - business opportunities
    - Agenda 2030 determines direction and provides facilities for socio-economic innovative mass processes in all countries

2. [10'] Sustainable Development Goals

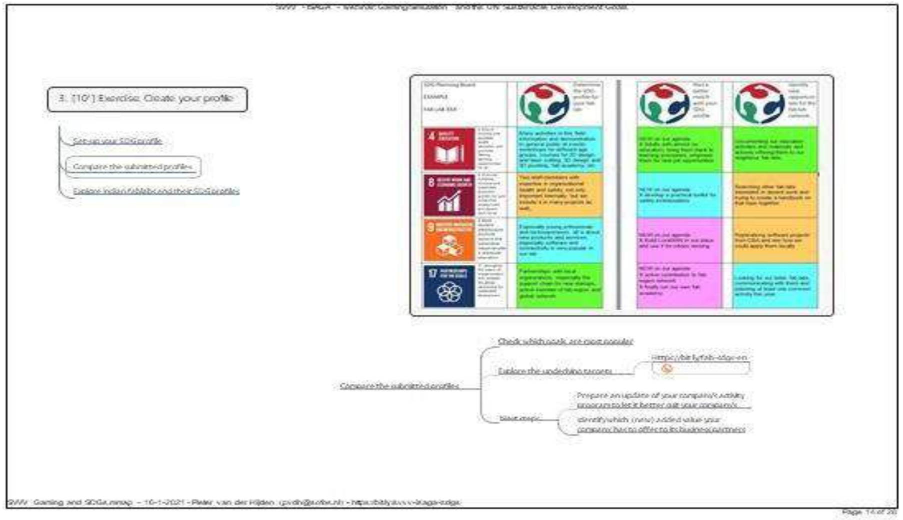
- What are the SDGs?
- Why important?
- How is India doing?

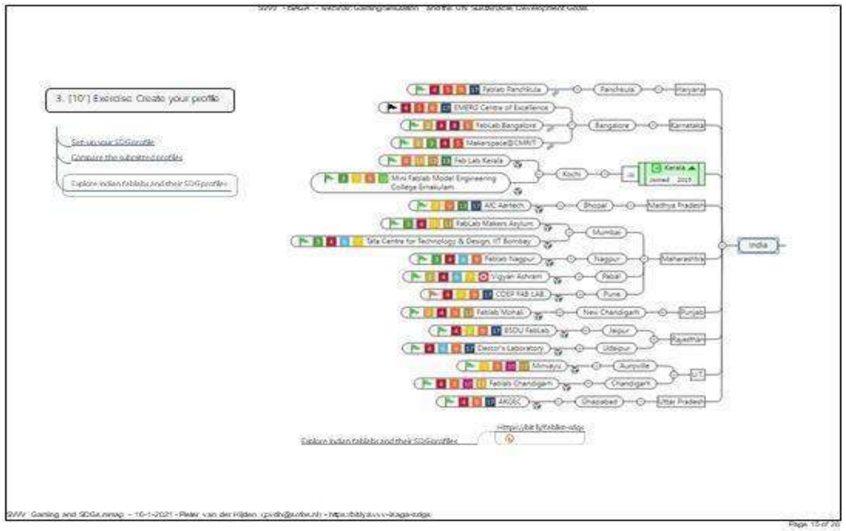


3. [10'] Exercise: Create your profile

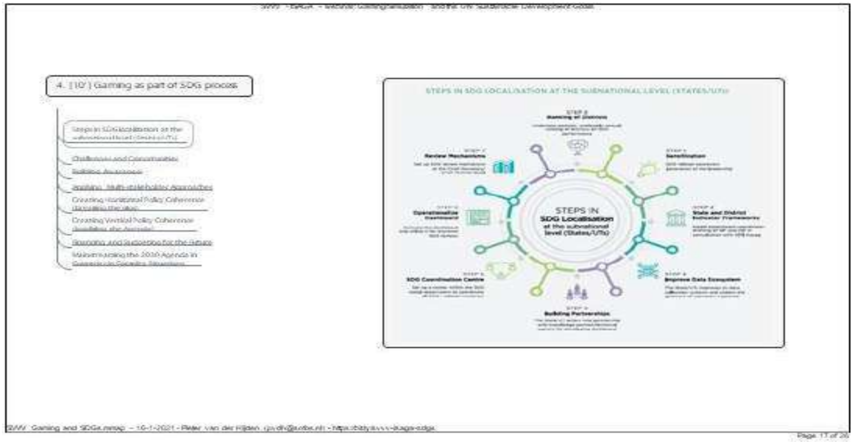
- Set-up your SDG profile
- Compare the submitted profiles
- Explore Indian Fablabs and their SDG profiles

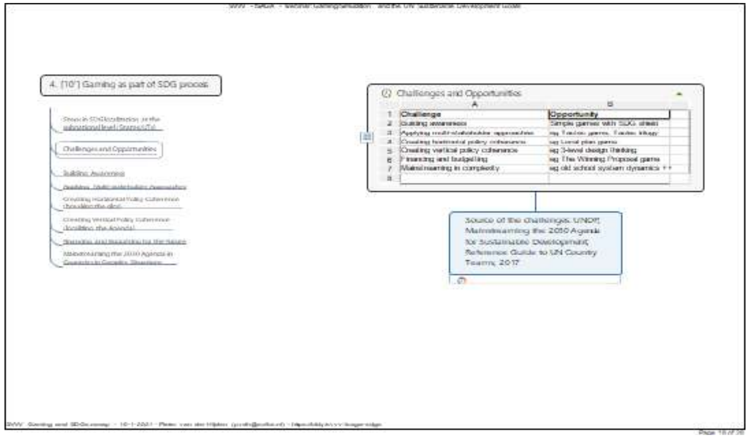

3. [10'] Exercise: Create your profile
Set-up your SDG profile
Compare the submitted profiles
Explore indian fablabs and their SDG profiles
Create an SDG profile for your organization (or for yourself)
Open the form: http://bit.ly/svvv-isaga-profile
Check the 17 SDGs
Choose 3-4 SDGs that best suit your company and fill in the form
Set-up your SDG profile
Personal interest
Conceivable to make a concrete contribution
In line with your knowledge and expertise
Convinced of the urgent need
Submit the form


3. [10'] Exercise: Create your profile
Set-up your SDG profile
Compare the submitted profiles
Explore indian fablabs and their SDG profiles
Check which goals are most popular
Explore the underlying targets
Compare the submitted profiles
Prepare an update of your company's activity program to let it better suit your company's
Next steps
identify which (new) added value your company has to offer to its business partners

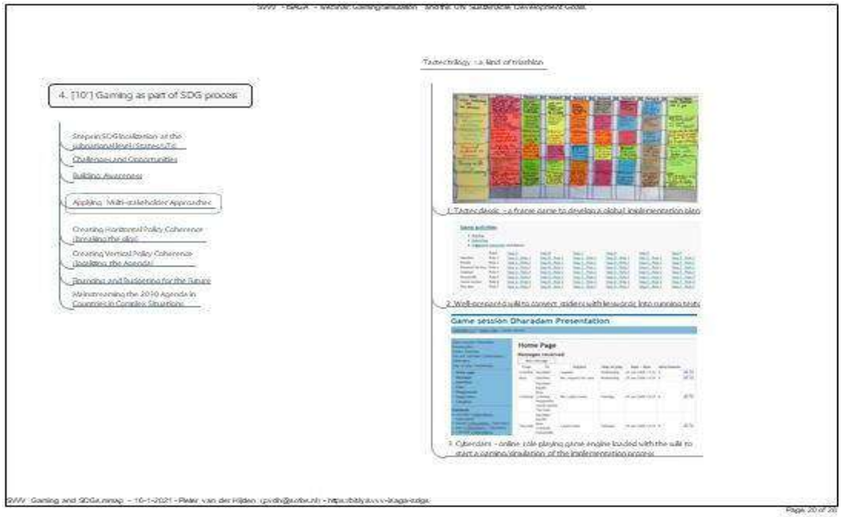

3. [10'] Exercise: Create your profile
Set-up your SDG profile
Compare the submitted profiles
Explore indian fablabs and their SDG profiles
Fablab Panchkula
EMERG Centre of Excellence
Fablab Bangalore
Makerspace@CMRIT
Fab Lab Kerala
Mini Fablab Model Engineering College Ernakulam
AIC Aertech
FabLab Makers Asylum
Tata Centre for Technology & Design, IIT Bombay
Fablab Nagpur
Vigyan Ashram
COEP FAB LAB
Fablab Mohali
Fablab Chandigarh
AKGEC
Panchkula
Haryana
Bangalore
Karnataka
Kochi
Kerala
Bhopal
Madhya Pradesh
Mumbai
Maharashtra
Nagpur
Pabal
Pune
New Chandigarh
Punjab
Jaipur
Rajasthan
Udaipur
Auroville
UT
Chandigarh
Uttar Pradesh
India

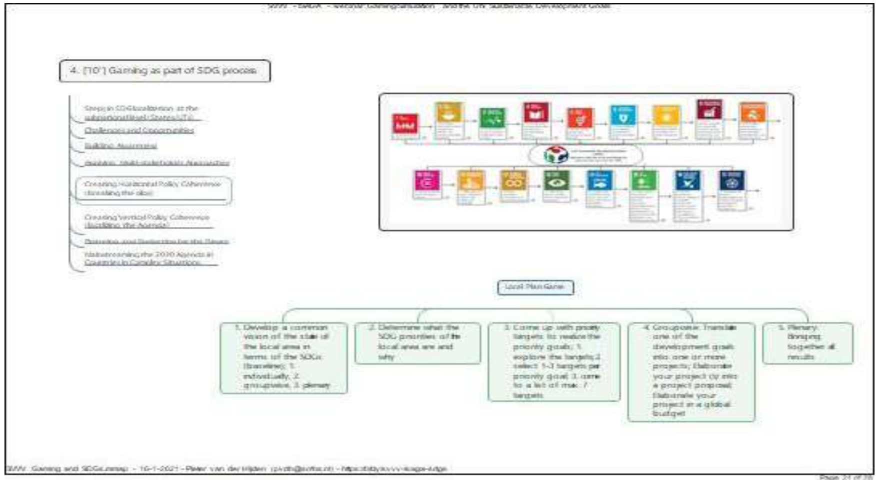

4. [10'] Gaming as part of SDG process
Challenges and Opportunities
Building Awareness
Applying Multi-stakeholder Approaches
Creating Horizontal Policy Coherence (breaking the silos)
Creating Vertical Policy Coherence (localizing the Agenda)
Financing and Budgeting for the Future
Mainstreaming the 2030 Agenda in Countries in Complex Situations

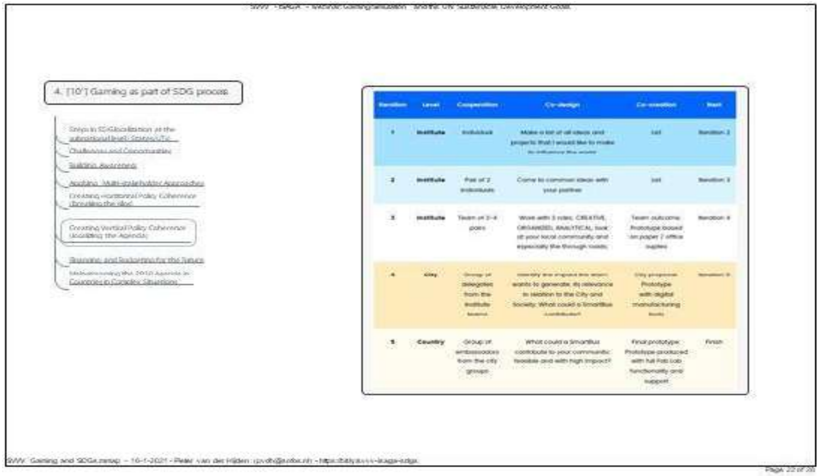

4. [10'] Gaming as part of SDG process
Challenges and Opportunities
Building Awareness
STEPS IN SDG Localisation at the subnational level (States/UTs)

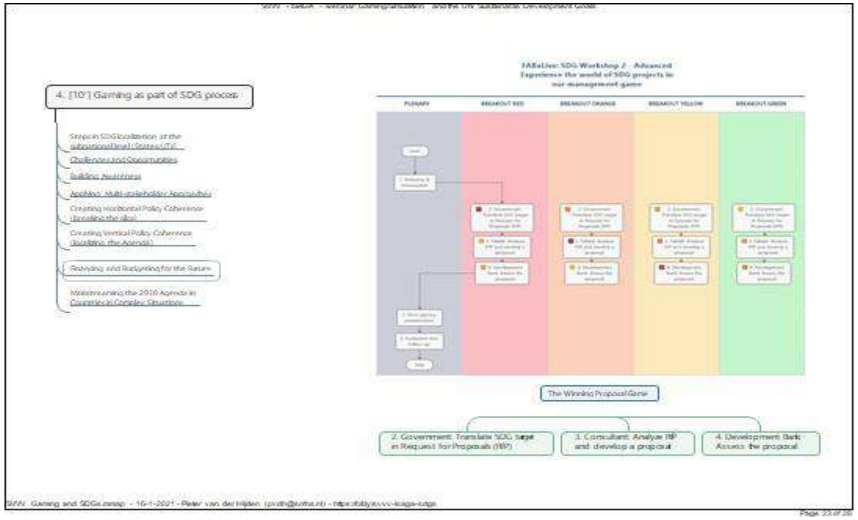

4. [10'] Gaming as part of SDG process
Challenges and Opportunities
Building Awareness
Challenges and Opportunities
Challenge
Opportunity
Building awareness
Simple games with SDG sheet
Creating vertical policy coherence
eg 3-level design thinking
Financing and budgetting
eg The Winning Proposal game
Mainstreaming in complexity
eg old school system dynamics
Source of the challenges: UNDP, Mainstreaming the 2030 Agenda for Sustainable Development, Reference Guide to UN Country Teams, 2017

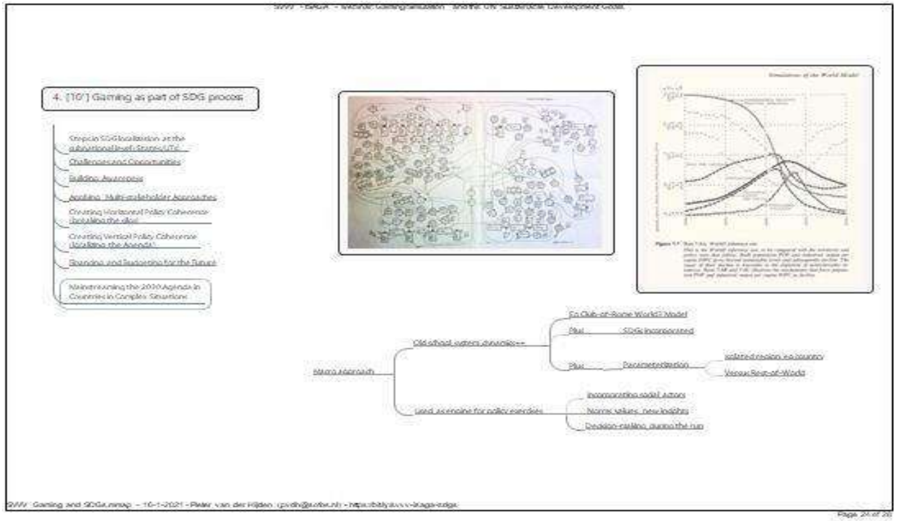

4. [10'] Gaming as part of SDG process
Challenges and Opportunities
Building Awareness
START

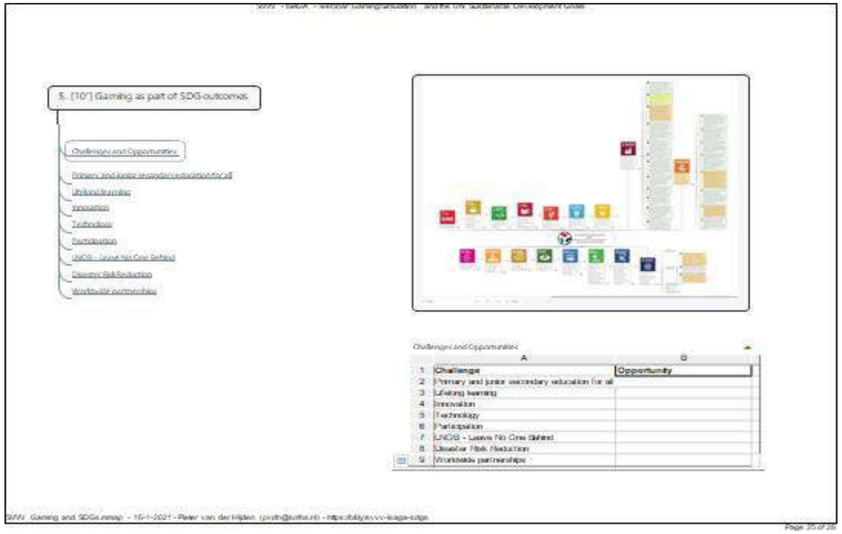

4. [10'] Gaming as part of SDG process
Challenges and Opportunities
Building Awareness
Game session Dharadam Presentation
Home Page


4. [10'] Gaming as part of SDG process
Challenges and Opportunities
1. Develop a common vision of the state of the local area in terms of the SDGs (baseline); 1. individually, 2. groupwise, 3. plenary
2. Determine what the SDG priorities of the local area are and why
5. Plenary: Bringing together all results

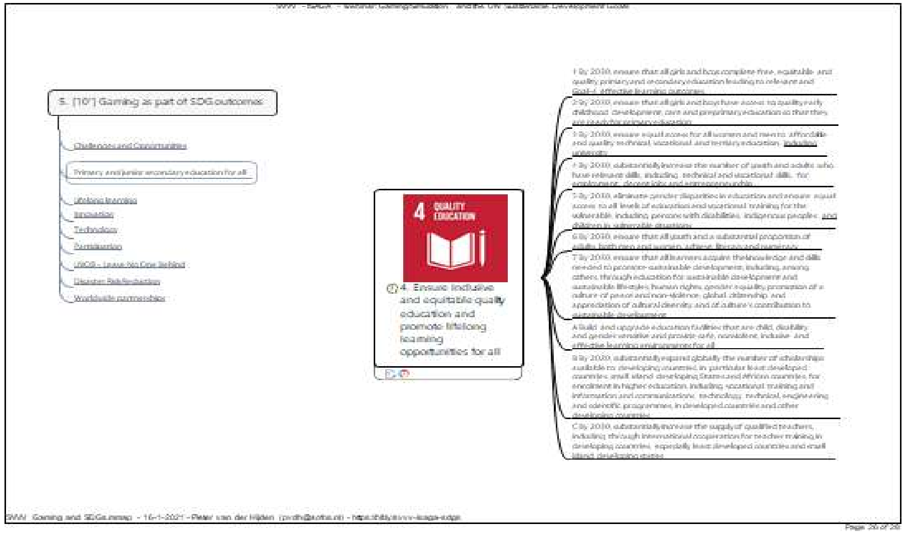

4. [10'] Gaming as part of SDG process


4. [10'] Gaming as part of SDG process
The Winning Proposal Game
2. Government: Translate SDG target in Request for Proposals (RfP)
3. Consultant: Analyse RfP and develop a proposal
4. Development Bank: Assess the proposal

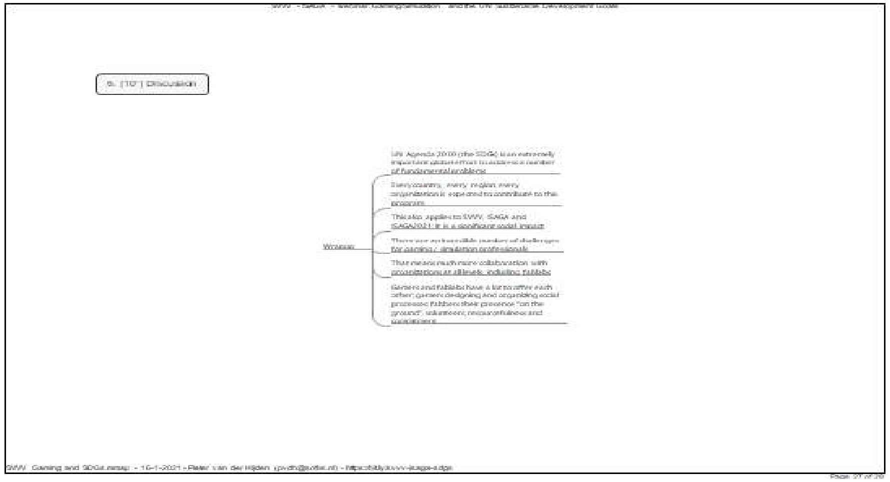

4. [10'] Gaming as part of SDG process
Challenges and Opportunities
Versus Rest-of-World



5. [10'] Gaming as part of SDG outcomes
Challenges and Opportunities
Challenge
Opportunity
Primary and junior secondary education for all
Lifelong learning
Innovation
Technology
Participation
LNOB – Leave No One Behind
Disaster Risk Reduction
Worldwide partnerships



5. [10'] Gaming as part of SDG outcomes
Challenges and Opportunities
Primary and junior secondary education for all
4 QUALITY EDUCATION
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



6. [10'] Discussion

7. Closing
Please fill in our evaluation form; see https://bit.ly/svvv-isaga-evaluation
Thank you for your attention!
All materials and clickable links; see https://bit.ly/svvv-isaga-sdgs

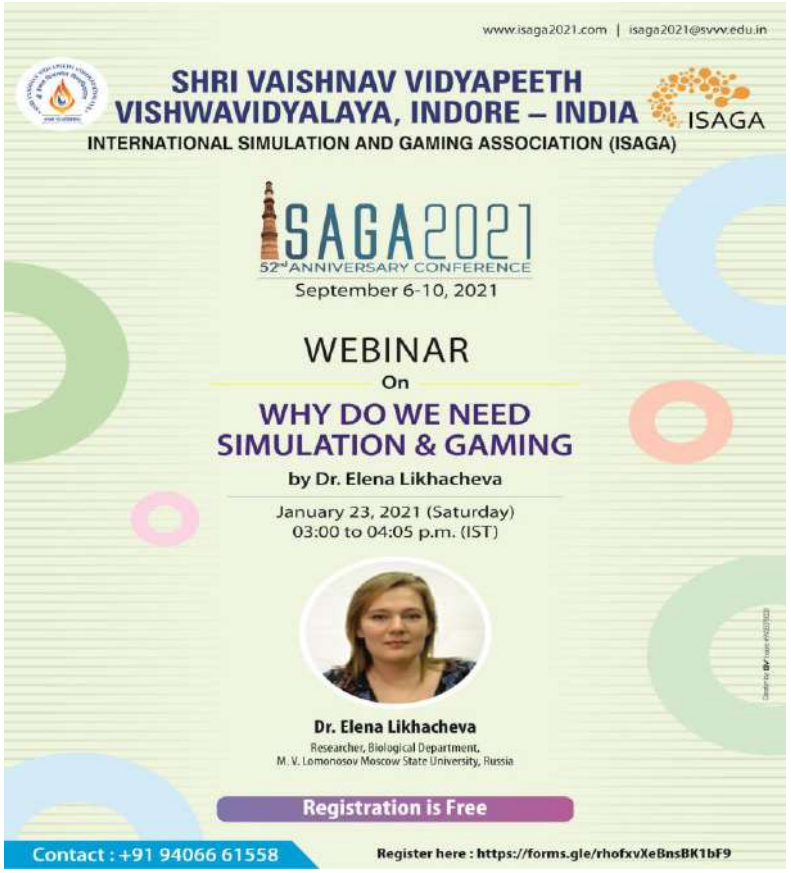
Webinar - 09

Day, Date & Time: Saturday, 23-01-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Elena Likhacheva,** Researcher at the Biological Department, M. V. Lomonosov Moscow State University

Country: Russia

Title: Why Do We Need Simulation and Gaming



Webinar Topic

"Why do we need Simulation & Gaming?"

Abstract

Simulation games often teach specific competencies (like renewable resources management, etc.) and we presuppose that our students will need them in their profession/activities. However, the most of the games are run for a much wider range of participants and are not directly related to their future activities. So why do they and we need simulation games?

Speaker Profile

Eleana is a Researcher at Biological Department, M. V. Lomonosov Moscow State University, Russia. With PhD in Psychology, she focuses on research into the effectiveness of simulation gaming as instruction method, processes of decision- making and traps of thinking of participants, and the role of facilitator in simulation and gaming. Her special scope is also at simulation games on sustainable development. She is a member of the ISAGA Executive Board, member of NASAGA.

Why Do We Need Simulation & Gaming?

Elena Likhacheva,
Biological Department
M.V. Lomonosov Moscow State University
ISAGA
likhacheva@mail.bio.msu.ru

Agenda

1. Opening
2. Our educational activities
3. Highlights from history of Simulation Games
4. Mastering of Simulation Games
5. Exercises
6. Conclusions

Winter Games for Kids

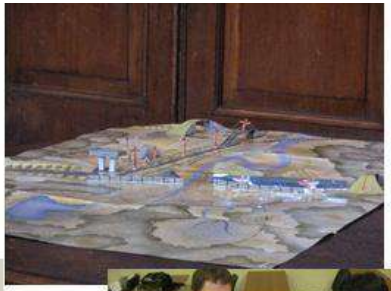
(riding the hills on sleds, trays; snowball fight)

... and more fun

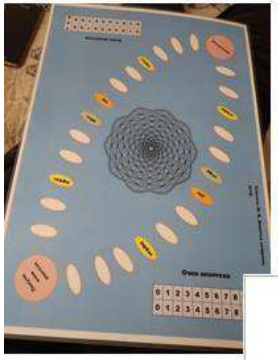
Biological Department

Instruction (Courses)

1. Environmental Protection
2. S&G in Complex Systems Management
3. Urban Ecology



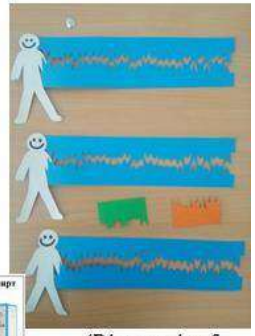
Educational Games of Our Students



'Apoptosis of Neuron' (Sizen', 2018)

'Stimulation of Plant Growth' (Sapun, 2018)

Вода	Дезинфицирующее средство	Искусственный	Этиловый спирт
водопроводная		стимулятор роста	
1,17 см	2,34 см	2,65 см	0,6 см



'Diagnosis of Infectious Diseases' (PCR-diagnostics) (Buyanova, 2018)

Interactive Sessions and Workshops

- Conferences, Festivals of Science, Exhibitions
- Schools and Workshops

Collaboration With Partners

What is the Game?

Multiple definitions

The game is a symbolic reality that gives a sense of **security**

«I'm not responsible»
(and at the same time responsible)

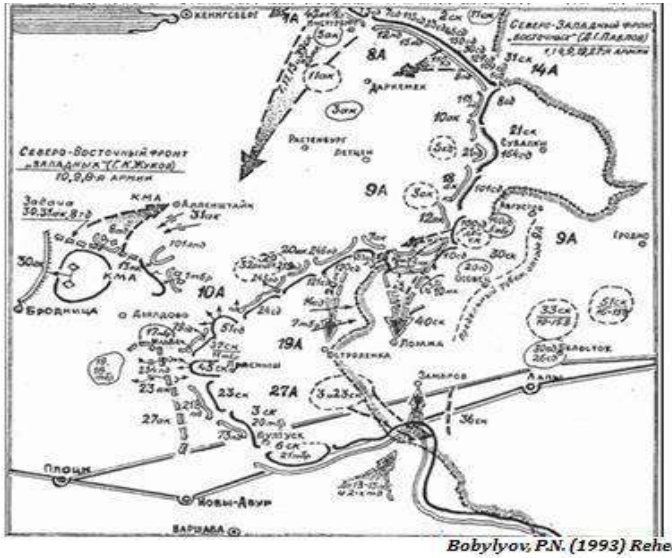
We can't give a non-user a good definition of what a Simulation Game is
... until he/ she takes part in it

Toy Army (Poteshnye Voiska) of Peter the Great

*Petrovskiy polk (*Peter's regiment) – a collection of young Peter's playmates, noblemen's sons and attendants of his father Aleksei's court.

War games of toy army of Peter the Great near the village Kozhukhovo (Alexey Kivshenko, 1882)

Little Wars



Bobylyov, P.N. (1993) Rehearsal of disaster

'Chapaev' Movie Scene (1934, G. & S. Vasilievy)

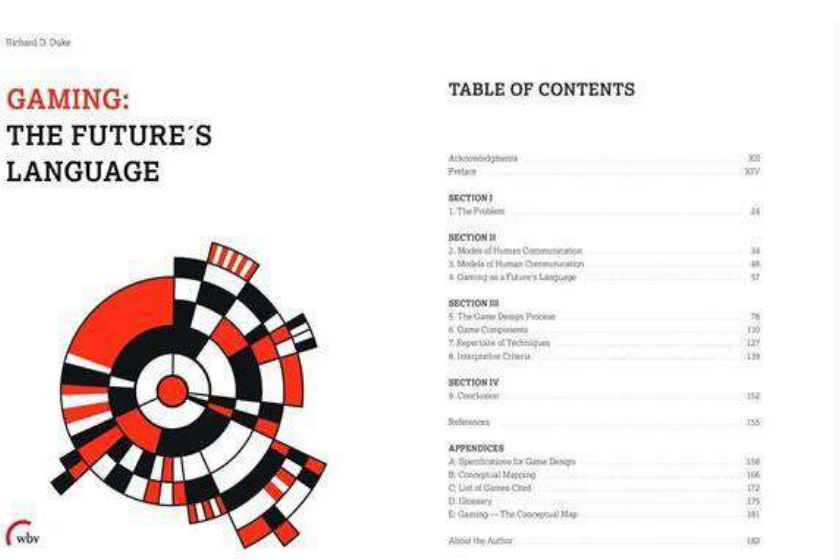
Simulation Games in USSR

First simulation game **'Pusk Tsekha' ('Organization of Production')**: Leningrad Institute of Engineering and Economics.

23 of June 1932, assembly shop at the Ligovo typewriter factory

Maria Mironovna Birshtein
1902-1992

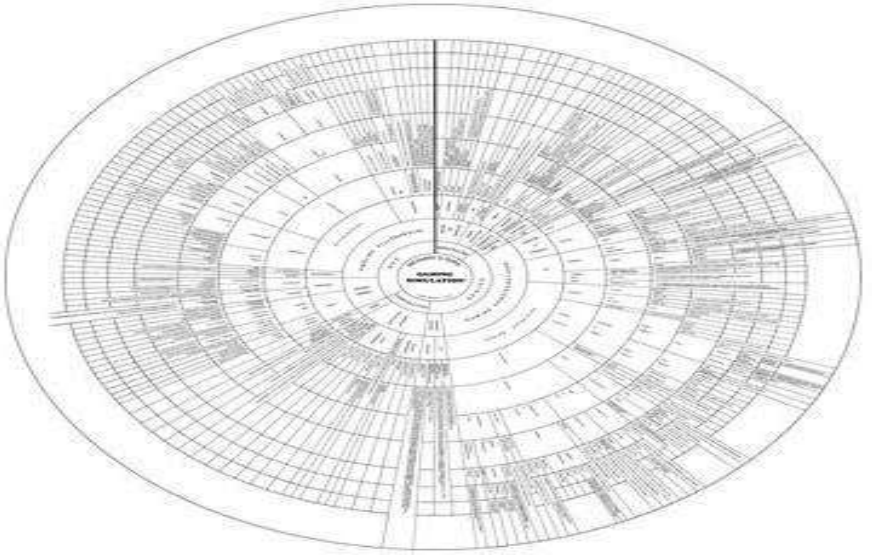
Timofey Pavlovich Timofeevskii
1902-1990


Richard D. Duke

GAMING:
THE FUTURE´S
LANGUAGE

wbv

TABLE OF CONTENTS



Gaming: The Future's Language by Richard Duke (1974)

- *Gaming/simulation* – A gestalt communication mode.
- It contains game-specific language, appropriate communication technologies, and the multilogue interaction pattern.

Simulation Games & Models We Use

- Instruction method / educational tool
- Approximate basis for professional activity
- Mastering of model of possible future

S&G designed at MSU biological department:
-CoMPAS, Bukvaryova et. al., 2004;
- Econet-ABC, Kavtaradze et. al., 2005;
-Island, Kavtaradze, Bukvaryova, 1982.

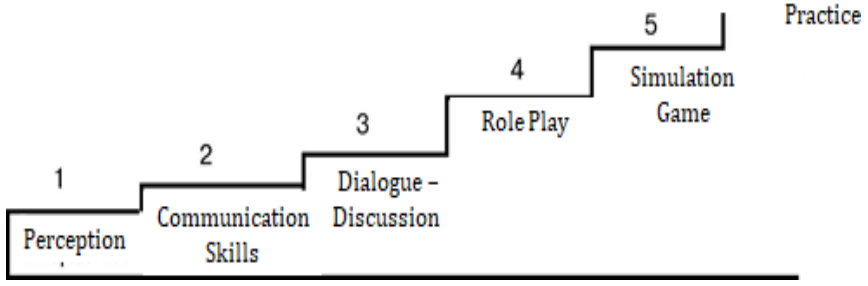
Simulation Model CoMPAS*

* Coastal management practices to achieve sustainability

Simulation Game Econet-ABC

Steps in Mastering of Active Learning Methods

(Kavtaradze, 2009)



What do I know about myself?

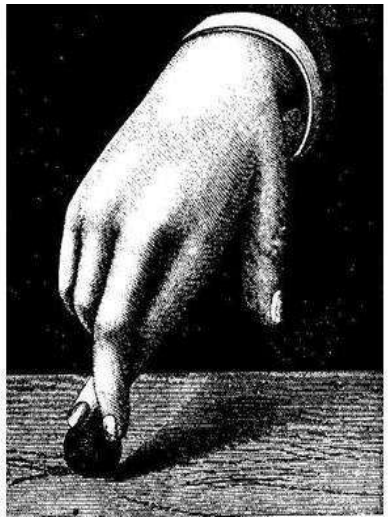
What Do You See?

My Wife and my Mother-in-Law

- German postcard (1888)

- Figure-shifter, dual or ambiguous image
- "Figure" – "Background"

- Put your index and middle fingers together
- Close your eyes
- Touch the tip of your nose, glide fingers over it
- What do you feel?



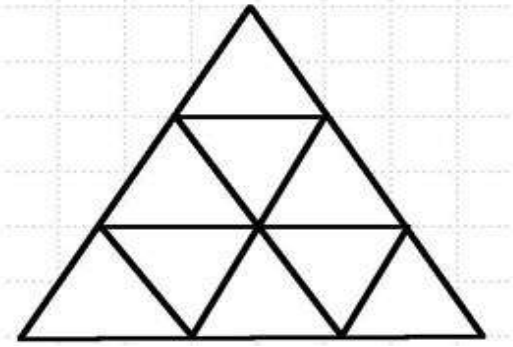
- Cross your index and middle fingers
- Close your eyes
- Touch the tip of your nose, glide crossed fingers over it
- What do you feel?

Aristotle's Illusion

Possible explanation:

- Our perception depends on the past experience
- We are touching the object with unusual places of our fingertips

How many triangles are formed when 9 small triangles are connected?



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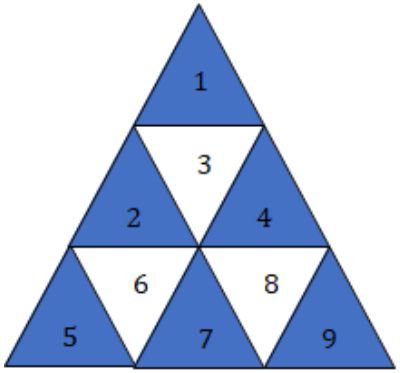
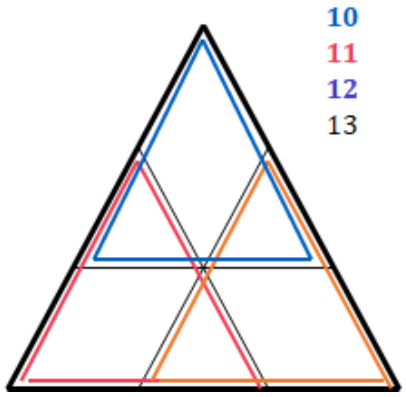
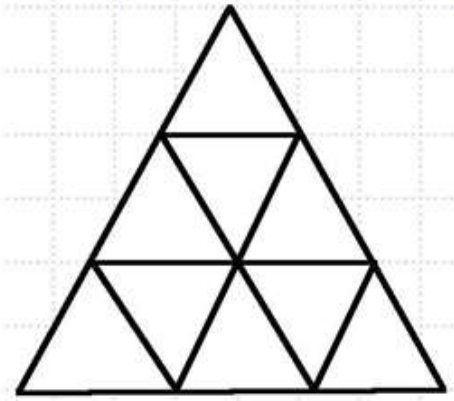
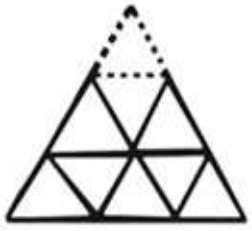




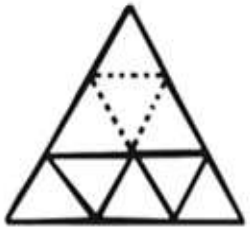
If you remove one of the smallest triangles, then how many of the 13 triangles will be left?



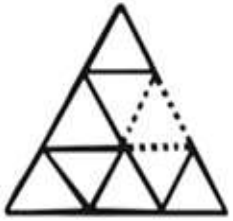
Only 7 or 9 triangles remaining
(depending on which you remove)



9 remaining



7 remaining

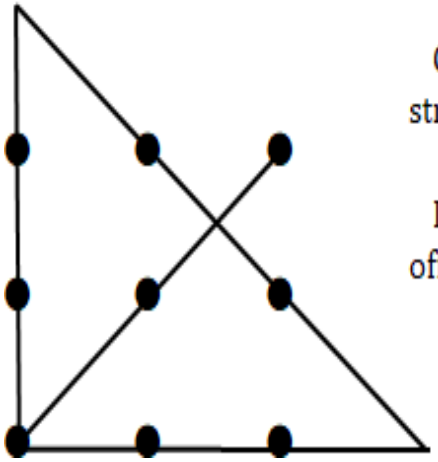


7 remaining

- Triangles are connected to each other – you can't reduce the number of triangles by only one. Taking away one, also eliminates 3 or 5 others.
- Species in ecosystems are more connected to each other than the triangles are.
- Serious mistake is to think that only a single species may be endangered. Whenever we lose one species, we inevitably lose many.

D. Meadows, L.B. Sweeney, G.M. Mehers (2016)

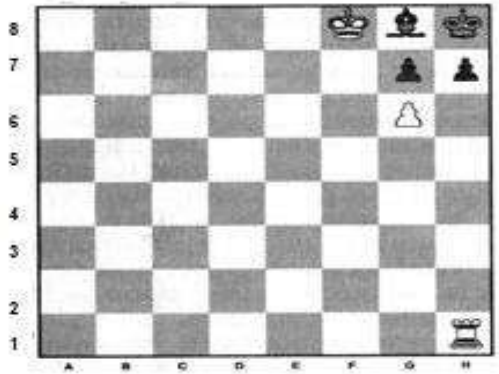
9 dots



Connect all the dots with 4 straight lines.

Don't lift your pencil / finger off the paper / screen.

Arrangement of Chess Pieces



How were the pieces arranged?

- Cards – 56 ps.
- Manual

Examples of Cards

Illusion 'My Wife and my Mother-in-Law'

- Expand the mind (Knowledge ≠ Understanding)
- Learning-by-doing, within joint actions
- Decisions with regard to their (long-term) consequences
- Knowing and understanding not only the content of game, but yourself and the world around you

Thank you for your attention!

Webinar - 10

Day, Date & Time: Saturday, 06-02-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Jegatheeswaran Manoharan,** Thought Catalyst, Team Effectiveness Consultant, Business Simulation Designer, Board Member of NASAGA, Selangor, Malaysia

Country: Malaysia

Title: Designing Closed Simulations for Corporate Learning

Webinar Topic

Designing Closed Simulations for Corporate Learning

Abstract

Simulations play a vital role in learning through discovery. They range in the spectrum from low fidelity to high fidelity simulations. There are several key considerations when choosing a point in the design spectrum based on the learning outcome and audience. While open simulations provide an excellent process for experimenting with outcomes, the use of closed simulation has its benefits to target specific learning outcomes predominantly in the corporate learning scenario. Limiting the design parameters allows for targeted experience and a more meaningful debrief. In order to maximize this learning, the crucial pivot point of simulation design has to be managed. One of the key ally and adversary to design in the corporate learning environment is time. This presentation revealed how balancing of considerations is done by designing simulations for corporate learning.

Speaker Profile

Jegatheeswaran Manoharan is a team effectiveness specialist, international speaker, and a game & simulation developer. He has developed several learning games and simulations for adult learning. His highly interactive games have been used in the corporate learning scene for team effectiveness, customer experience, culture transformation, and leadership training. Jega was the former Board of Directors of the North American Simulation & Gaming Association (NASAGA) and he is also the Approved Trainer for the NASAGA Learning Game Design Certification Program. Jega has shared his ideas on the application of games and simulation at NASAGA Conference 2017 in Reno, Nevada; ISAGA Conference 2018 in Thailand; and at the First Malaysian Simulation & Gaming Conference – MASAGA 2018 in Kuala Lumpur.

Designing Closed Simulations for Corporate Learning

accordia
TRAINING & DEVELOPMENT
Creating Revolutionary Results in Human Capital Development

Jegatheeswaran Manoharan
Co-founder
Simulation Designer
Member of NASAGA

Corporate Learning Landscape

- Targeted learning objective
- Demanding learners
- Limited time for engagement
- High levels of post learning expectations of clients

Activity, Game & Simulation

Activity
A learning strategy that gets learners to interact, challenge, theorize, reflect, plan, and suggest.

Game
An Activity with competition, playfulness, goals, rules, fun/engagement, and an endpoint.

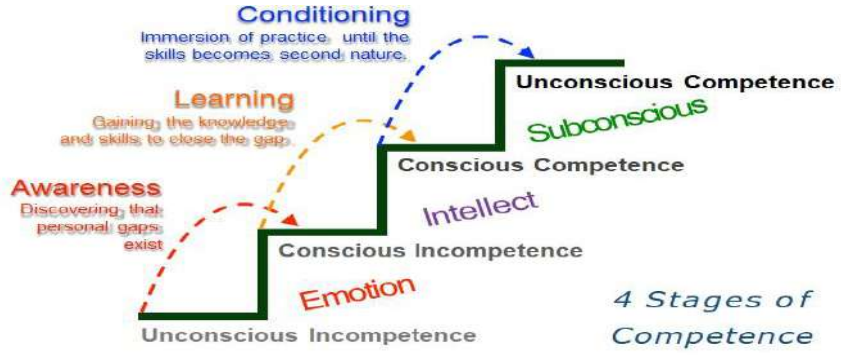
Simulation
An Activity or a Game that mimics reality from any one or more of these three dimensions: thinking process, emotions, or motor skills. Learners are engaged with less opportunity for cognitive, emotional, or physical harm.

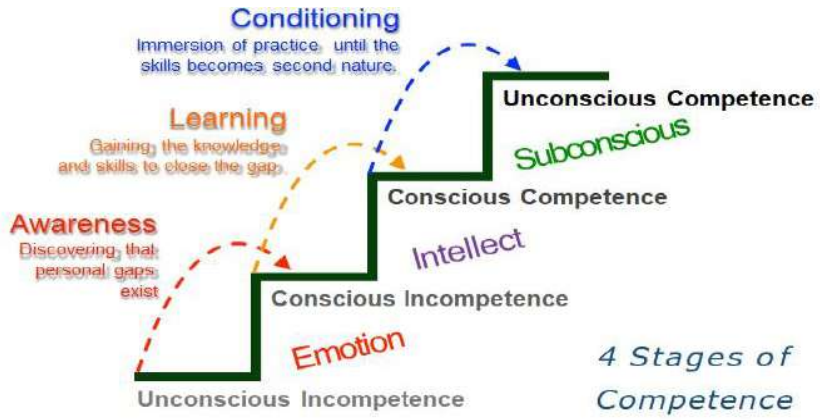
Jegatheeswaran Manoharan & Brian Remer

Using 20 wooden blocks, build a miniature house.

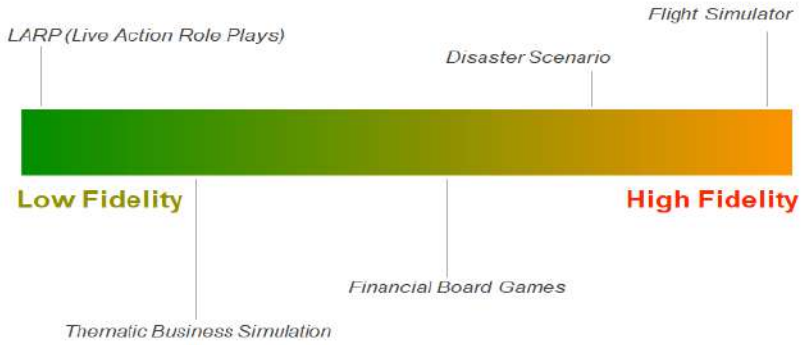
Using 20 wooden blocks, we like to find the fastest team that can build a miniature house.

You will buy, sell, exchange or produce your resources that will enable your team to build a miniature house with at least 20 wooden blocks.





Simulation Fidelity Spectrum



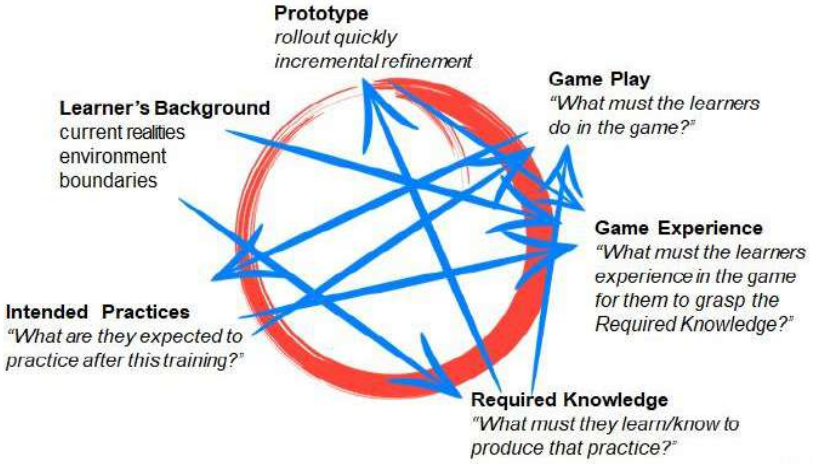
Open Simulation

- The outcomes has no boundaries thus may not be within the design parameters
- Player decisions within the simulation may or may not be confined
- Trust that the system will find its balance
- Use:
  - experiment to discovering possible outcomes
  - gaining deeper understanding of a condition
- Example:
  - social economic & environment simulation
  - trauma/emergency simulation

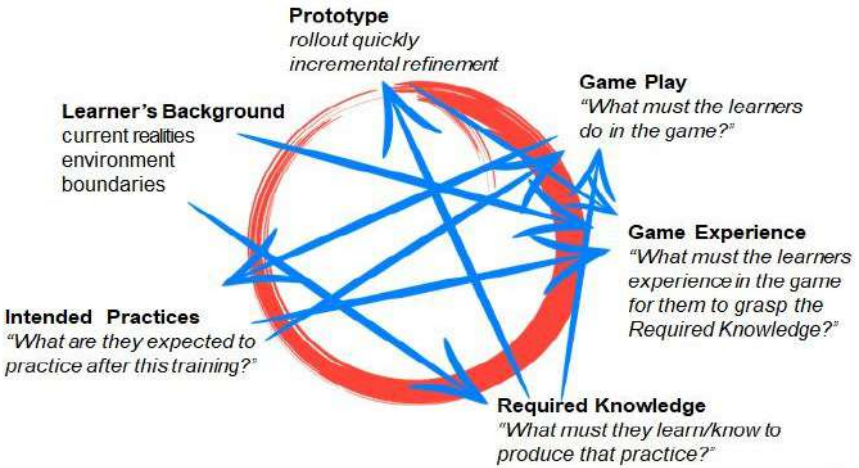
Closed Simulation

- The simulation has specific expected outcomes determined within the design parameters
- Decisions made by players are within a set of choices
- The rules within the game must provide the governance and balance for the system
- Use:
  - targeted learning outcomes
  - learning through repetition of specific practices
- Example:
  - financial board games
  - business simulations

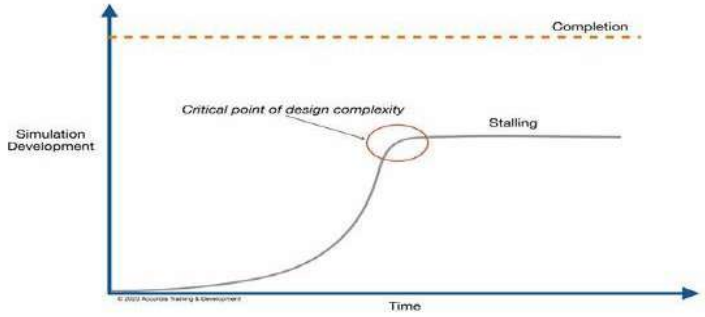
Design Considerations



Design Considerations

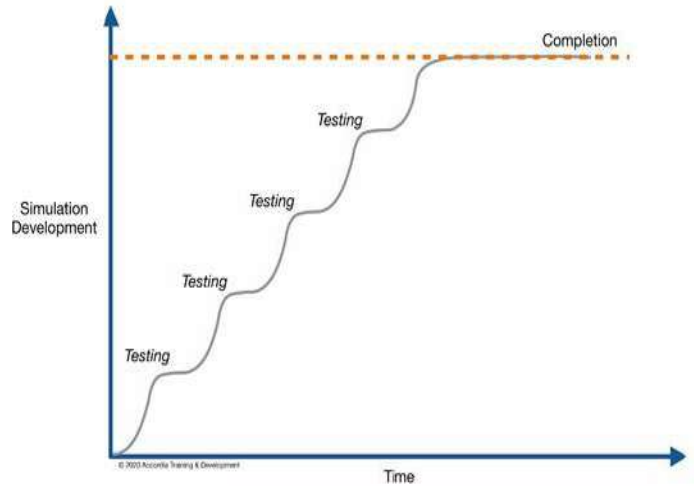


Game Stalling



Game Stalling Scenario

Game Prototyping



Prototype in Stages

Creating Revolutionary Results in Human Capital Development

accordia

Creating Revolutionary Results in Human Capital Development

accordia

Webinar – 11

Day, Date & Time: Saturday, 20-02-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Willy Kriz,** Professor, University of Applied Sciences Vorarlberg, Department of Management and Social Sciences Hochschulstr, Dornbirn

Country: Austria

Title: Gaming Simulation Design for Education and Social Impact

Webinar Topic

Gaming Simulation Design for Education and Social Impact

Abstract

Klabbers (2003, 2018) has pointed out that researchers, designers and facilitators who are contributing to the field of gaming simulation may represent two distinct branches of science: the design sciences and the analytical sciences. In this presentation I will discuss different forms of applications of gaming simulation (Kriz, 2017). I will use several case examples of simulation games that I have designed – e.g. SysTeamsChange® and KIKAtopia – to show how a simulation game artifact can be used for a variety of facets within the science of design approach with the focus of creating social impact (Kriz & Manahl, 2018). Additionally I will show how methods of gaming simulation design can be implemented for an innovative university curriculum (Kriz, 2003). The design of simulation game prototypes is part of the didactic approach and the framework of game development by Duke & Geurts (2004) is used. The presentation will explain the main phases and steps of this approach of simulation game design. Some examples of outcomes will support a deeper understanding of the methodology of "gaming simulation" for education (Duke & Kriz, 2014).

Speaker Profile

Willy Christian KRIZ, born 1968, earned his PhD 1999 in Psychology from University of Vienna. He is full professor for Human Resource Management, Organizational Behaviour, Leadership and Change Management at the FHV, Austria. He is working as a researcher, lecturer, trainer, consultant and designer with different forms of simulations and games for a whole range of purposes, including education in systems-management, personnel and team development and senior management training, facilitation of organizational change processes and support of managerial decision-making. He is author of 15 books and about 200 papers and received 4 best paper awards. He has presented more than 150 papers and keynotes at conferences worldwide. He is founder and was 15 years chairman of SAGSAGA (Swiss Austrian

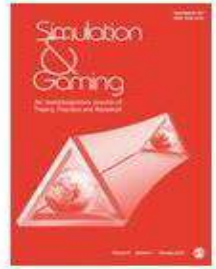
German Simulation and Gaming Association), and 2004/2005 and 2014/2015 president of ISAGA (International Simulation and Gaming Association), he organized two ISAGA conferences, he is founder and was 10 years director of the annual ISAGA Summer School on game design. From 2016-2020 he was editor in chief of the Journal Simulation & Gaming (Sage) and is jury member for the German Gaming Award. As researcher he works on the theory-based evaluation of gaming simulation effects. He was for example 2003-2005 scientific director of a European Union Project within the Leonardo-da-Vinci Program: "The Simulation of Economic Processes and Decision Making as a Training Module". 2007-2012 he was head of evaluation of the annual "exist-PriME-cup" (a national management and entrepreneurship gaming simulation contest for students of more than 150 participating German universities) for the German Ministry of Technology and Economy. Further research projects are for example "Realtime Business Simulations" for the German Ministry of Economy. Dr. Kriz has also years of practical experience. He is working as consultant and trainer in continuing education and business. He completed more than 200 assignments especially in gaming/simulation-based organizational development and leadership projects. He has designed several gamified education and training programs, system-dynamics models and scenarios, simulation games for general management, project management, change management, systems-thinking, HRM and leadership, sales and business ethics. 2016 a simulation and game-based personnel development program that he designed together with Dr. Schmidt and riva training & consulting for Allianz AG (sales force and insurance consulting service) received the "Innoward" award of the German insurance industry. Together with Dr. Eberle, several german schools and KIKA (German Children's Television Channel of Germany's public-service broadcasters) he developed 2018 a simulation game „Future of Living together in Germany". The development and play of the game was broadcasted nationwide as a documentary and educational game kits are available free of charge for school education programs.

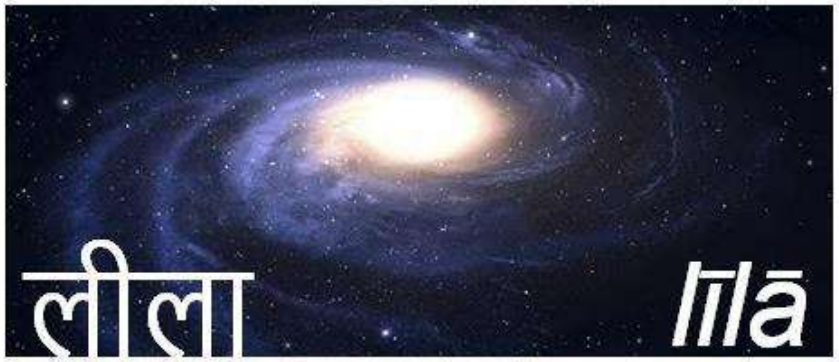
Gaming Simulation Design for Education and Social Impact

ISAGA S&G Webinar
2021, Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV), Indore - India

© Prof. Dr. Willy C. Kriz
FHV University, Austria

Gaming Simulation & Willy





Game of Senet, from 3500 B.C.

Senet for entertainment plus education about religion/philosophy
- Movement of Sun
- Relationship with Orion star system & Osiris
- Development of men in life and life after death
- Relationship with process of embalment rituals
- Player take role (judge) in the mythological trial of the soul after death

The Play Element of Culture

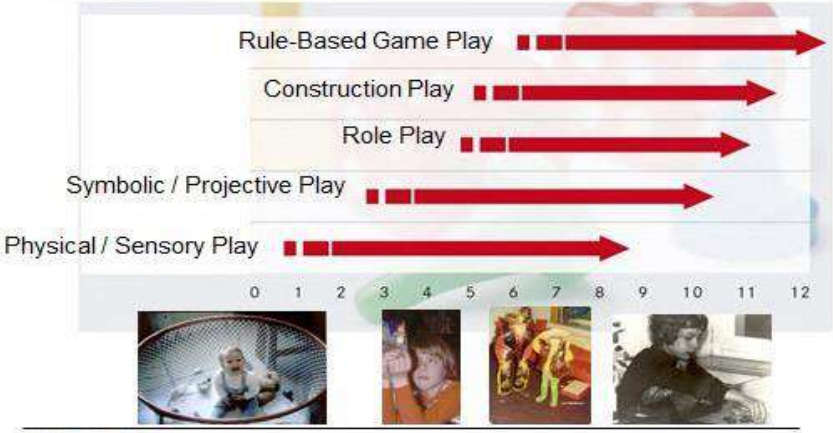
- Huizinga (1935): meaning of „seriousness" versus „play" in western culture
- „seriousness" is understood as antipode of „play"; paradox of a „serious game", education vs. entertainment?
- mammals and humans play, playing is in co-evolution with evolution of the brain, of cognitive and social skills and of consciousness
- play is an important element of culture
- human being is a playful species

Mammals play-fight in order to prepare for the case of emergency („Simulation")

Child Play

https://www.verywellfamily.com/types-of-play-2764587

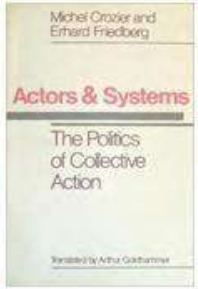
Child Play



kids role-play, learning autentic practice

role play, theater, actors, stories, narrative

competition, co-operation, challenge performance, skills, motivation, strategies, goals, measurement, scores, tracking progress



games of power, politics, micro-politics

Serious Games ? Serious Simulations ?

„Serious Game“ definition

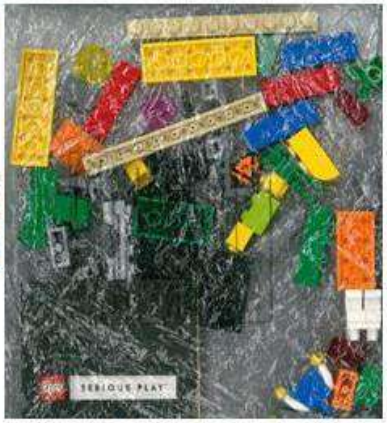
A **serious game** is a game designed for a primary purpose other than pure entertainment.

Game based learning: Although serious games can be entertaining, their main purpose is to train and educate.

Nowadays the term it is mainly used for **digital games using 3D video technology**.

Serious Games ?

Serious Games & Simulations ?...

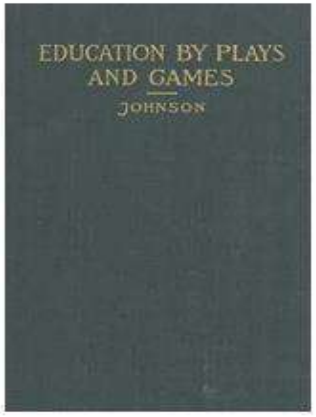


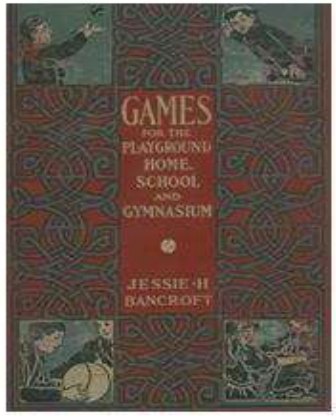
…are games & simulations with a serious debriefing for learning.

…are games & simulations with a serious effect/outcome in the „real" world.

Serious Games / Meaningful Play

The term "serious game" was actually used long before the introduction of computer and electronic devices into entertainment. Clark Abt discussed the idea and used the term in his 1970 book *Serious Games*, published by Viking Press. In that book, his references were primarily to the use of board and card games.

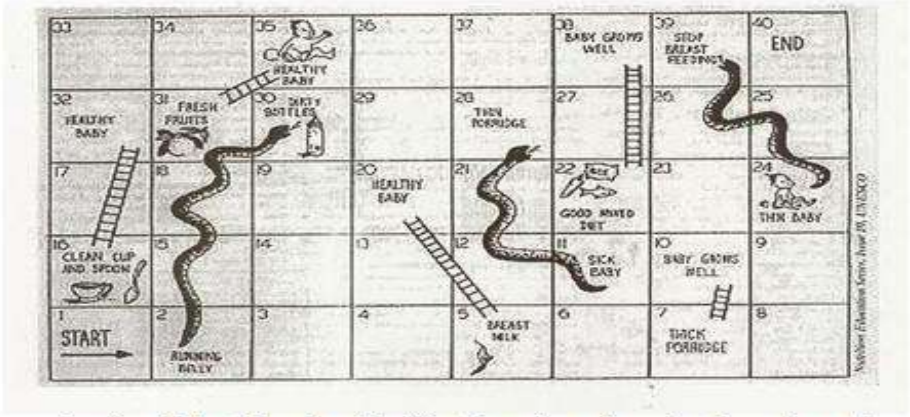




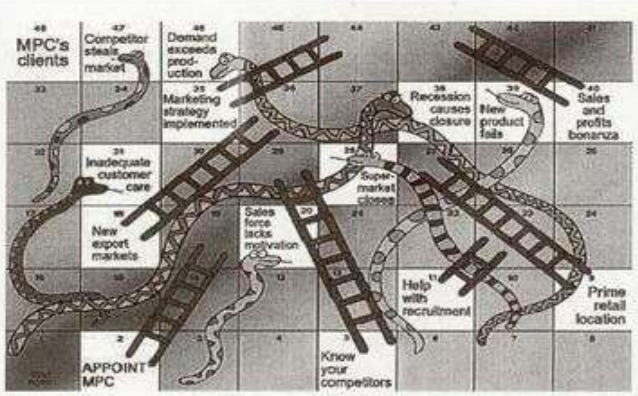
Books from 1907 and 1910

Gaming Simulation & Culture

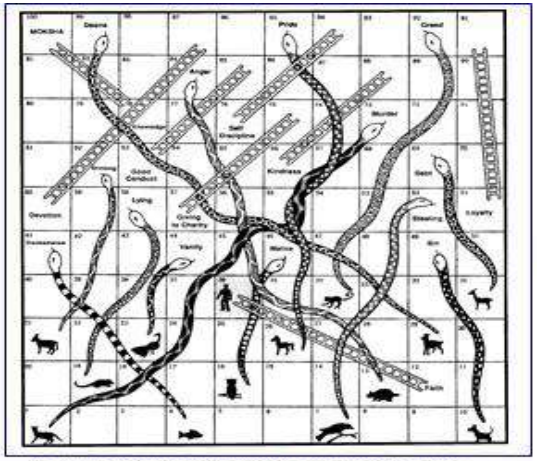
Snakes & Ladders for Fun & Entertainment → = „Game"



Snakes & Ladders for Health Education → = „Serious Game"
Adding Content / Cause & Effect Realtions in the Game

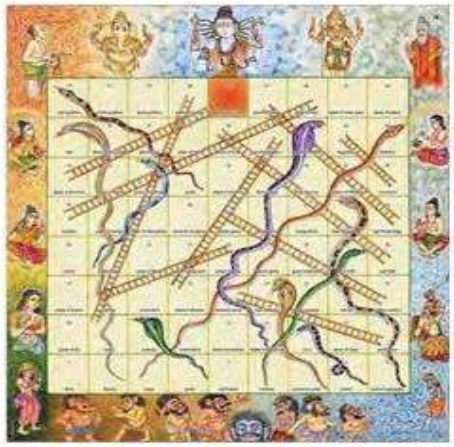


Snakes & Ladders for Business Education → = „Serious Game"



https://www.tes.com/teaching-resource/karma-and-reincarnation-snakes-and-ladders-11169435

Snakes & Ladders for
Moral & Ethics Education
→ = „Serious Game"

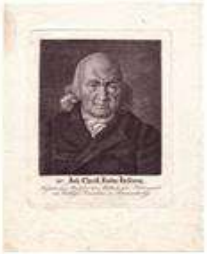


If Principles of Karma, Reincarnation and Moksha are part of your Reality then Snakes & Ladders = Simulation Game !

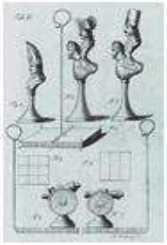
Chess

Chess based war games

Kriegsspiel (Hellwig, 1780)



- Professor for Mathematics, Teacher of Gauss
- Probability Theory
- Wargames for prussian army
- → training & education of military officers
- → decision making in real war situations
- → play of realistic war scenarios

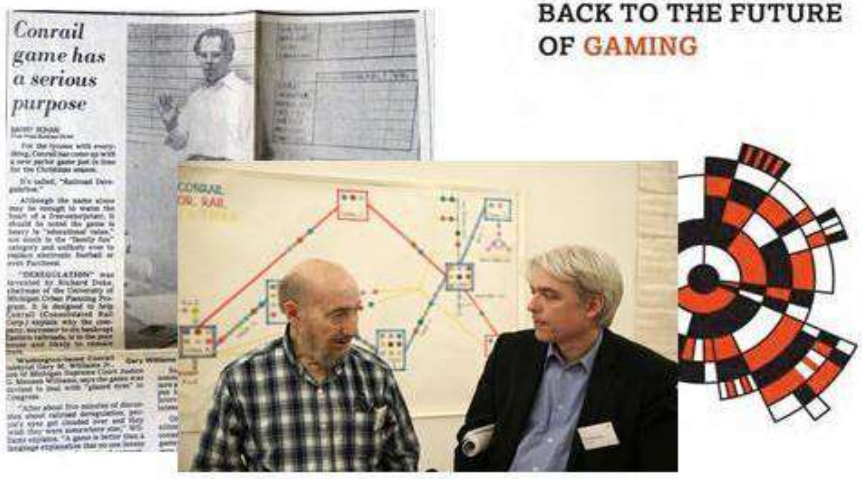


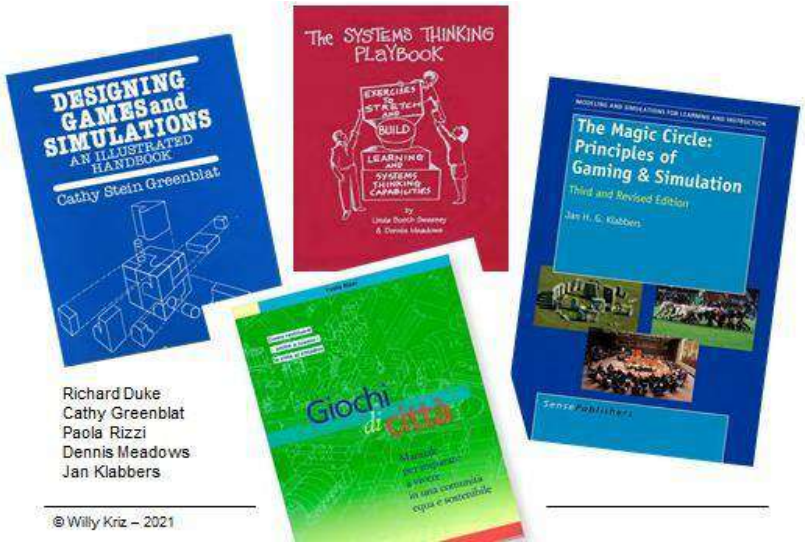
Simulation Game: (Strategy, Scenarios, Planning, Decision making)

Gaming as multilouge language for complex dynamic systems

'A picture is worth a thousand words, a game is worth a thousand pictures'
(R. D. Duke)

Gaming for serious purpose





Working Definitions

A **game** is a form of play. It is an activity involving one or more players who assume roles while trying to achieve a goal. Rules determine what the players are permitted to do (including interactivity, communication and feedback), or define constraints on allowable actions, which impact on the available resources. Games deal with well-defined subject matter (context and content).

Often players are engageged in an abstract challenge, they try to reach goals, their game-behaviour leads to quantifyable outcomes.

A **model** is a description / representation of a (real) system and/or process that can help to understand how the system and/or process works or how it might work.

A **simulation** is the process of simulating an existing real system and/or process and reproducing a set of conditions; often in a low risk-environment; „safe" and error tolerant, everything is real only the consequences are not real.
Time lapse, long term effects of decisions can be studied.

(Klabbers, 2008, p24)

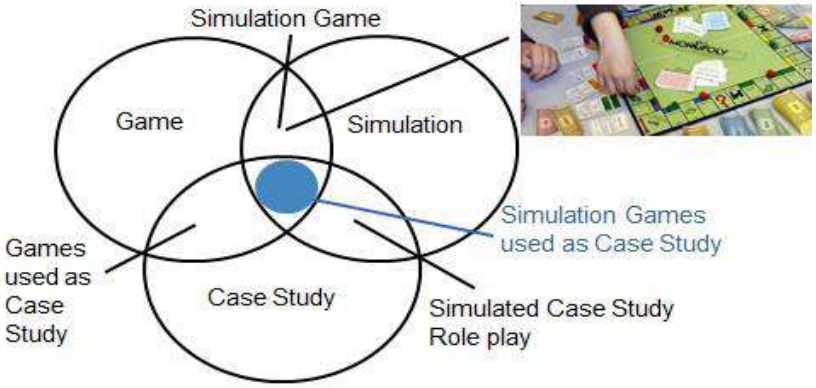
Working Definitions

Gaming Simulation uses a game for simulation (game artifact as a qualitative and/or quantitative model of a reference system of the real world; design-in the small). The play of the game is an exercise to practice behaviour and to experience the effects of decisions made by players in order to understand and transform the simulated system and to implement transformations later also to the real system (design-in-large). Players represent actors of the reference system and interact while playing different roles, applying rules and utilizing resources.

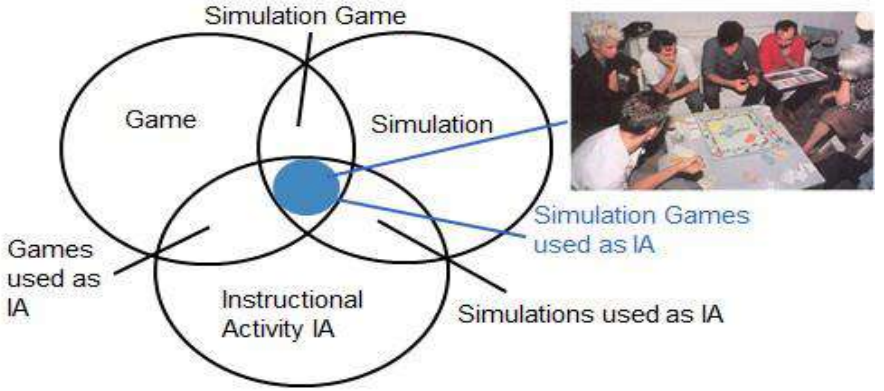
Gaming Simulation methods are used as experiential learning environments in order to eductate and train the players; for creating knowledge and enhancing competencies in an authentic way; for facilitating real problem solving and decision making by working out the consequences of different strategies for interventions in real systems and by exploring possible alternative futures. Through implementing and transfering results of the game play and debriefing gaming contributes to the transformation of organizations and other real life systems.

Monopoly

Taxonomy Ellington 1982

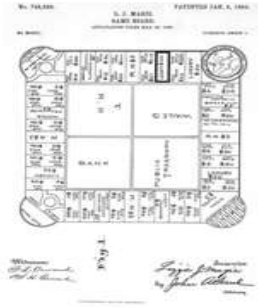


Taxonomy Thiagarajan 1993

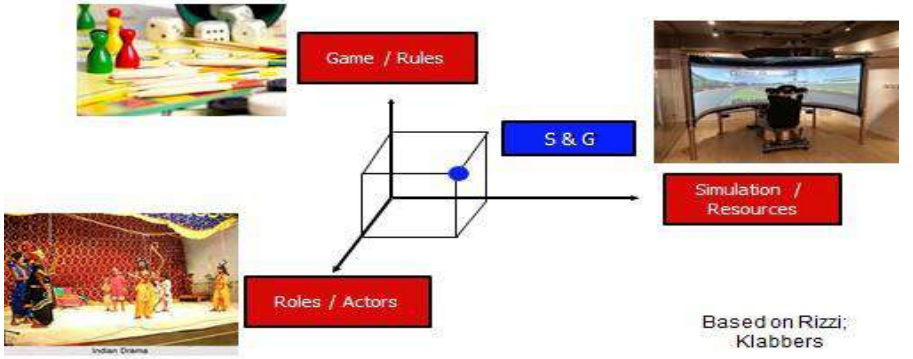


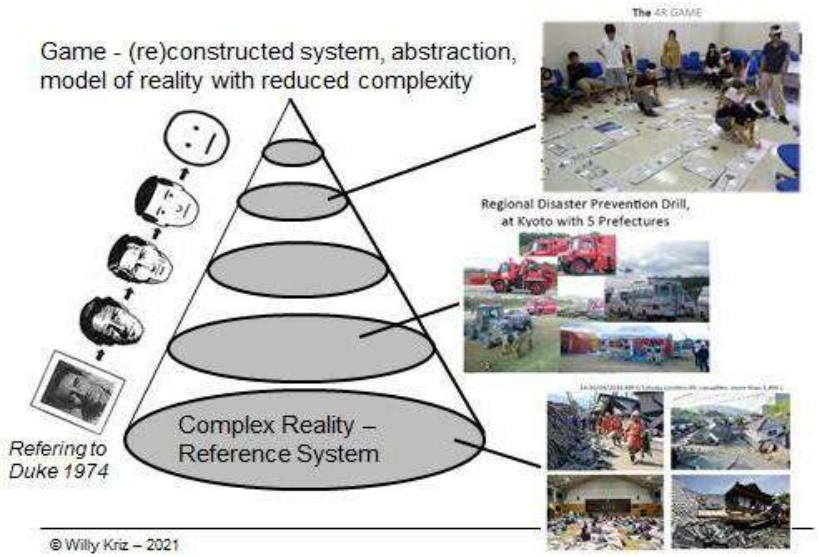
Original Purpose of Monopoly

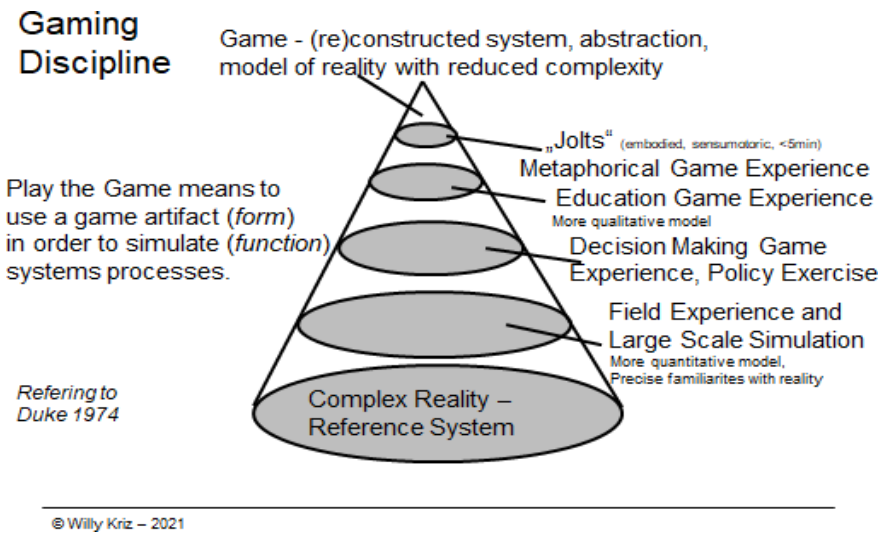
Elizabeth Magie designed in 1903 and patented in 1904 the board game "**The Landlord Game"** on realty and taxation. It is seen as direct inspiration for the well know game "Monopoly". Magie designed it as **a learning game with the goal in mind of demonstrating how rents enrich owners of properties and at the same time impoverish tenants. She intended to illustrate the negative aspects of concentrating land in private monopolies. Magie hoped that when played the game would lead to an understanding of unfairness.** From 1924 street names were added (first from streets in Chicago). In 1934/35 Magie sold the patent to Parker Brothers who started distributing "Monopoly", subtitled "The Fast-Dealing Property Trading Game", named after the economic concept of monopoly — the domination of a market by a single entity. Players move around the game board buying properties, developing their properties with houses and hotels, and collecting rent from their opponents with goal to drive all opponents into bankruptcy.



Gaming Simulation Taxonomy




Game - (re)constructed system, abstraction, model of reality with reduced complexity
Regional Disaster Prevention Drill, at Kyoto with 5 Prefectures
Complex Reality – Reference System
Refering to Duke 1974
© Willy Kriz – 2021


Gaming Discipline
Game - (re)constructed system, abstraction, model of reality with reduced complexity
Play the Game means to use a game artifact (form) in order to simulate (function) systems processes.
„Jolts" (embodied, sensumotoric, <5min)
Metaphorical Game Experience
Education Game Experience
More qualitative model
Decision Making Game Experience, Policy Exercise
Field Experience and Large Scale Simulation
More quantitative model, Precise familiarites with reality
Refering to Duke 1974
Complex Reality – Reference System
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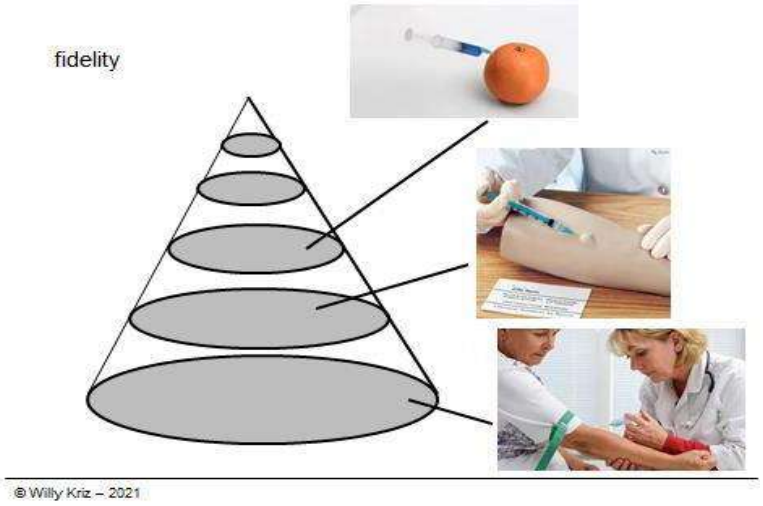
fidelity
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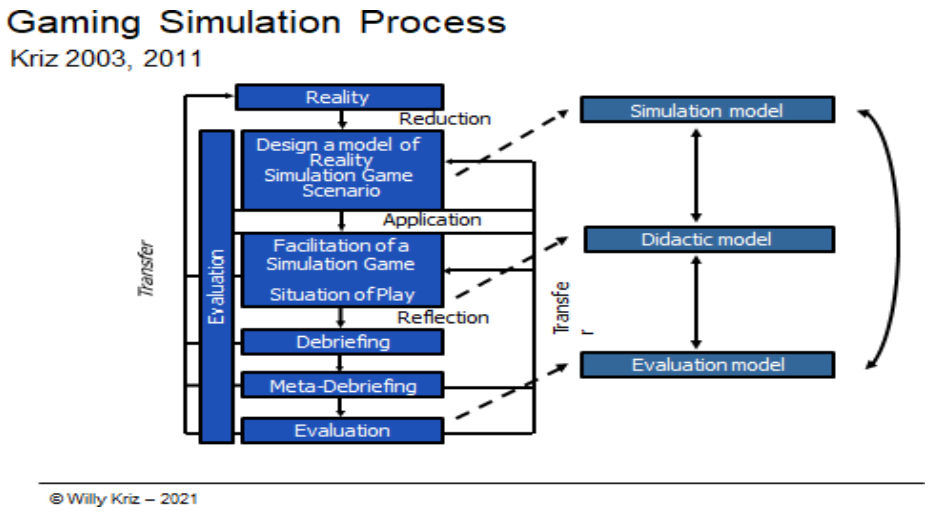

Gaming Simulation Process
Kriz 2003, 2011
Reality
Reduction
Design a model of Reality Simulation Game Scenario
Application
Facilitation of a Simulation Game
Situation of Play
Reflection
Debriefing
Meta-Debriefing
Evaluation
Transfer
Evaluation
Simulation model
Didactic model
Evaluation model
Transfe r
© Willy Kriz – 2021

5 Phases and 21 Steps – Duke & Geurts 2004

5 Phases and 21 Steps – Duke & Geurts 2004

Phase 1	Setting the stage for the project
Phase 2	Clarifying the problem – Define both the focus and the scope
Phase 3	Designing the Simulation Game
Phase 4	Developing the Simulation Game – Complete the rule of ten test runs
Phase 5	Implementation – Ensure proper use by the client

5 Phases and 21 Steps – Duke & Geurts 2004

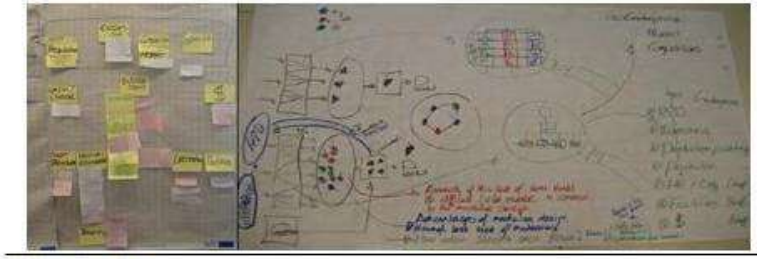
Phase 1: Setting the stage for the project

Step 1	Administrative set-up – Organize the project.
Step 2	Define the macro problem – What prompts this exercise?
Step 3	Define the goals of the project – What are the primary objectives?
Step 4	Project objectives/methodes employed matrix.
Step 5	Specification – Constrains and expectations.

5 Phases and 21 Steps – Duke & Geurts 2004

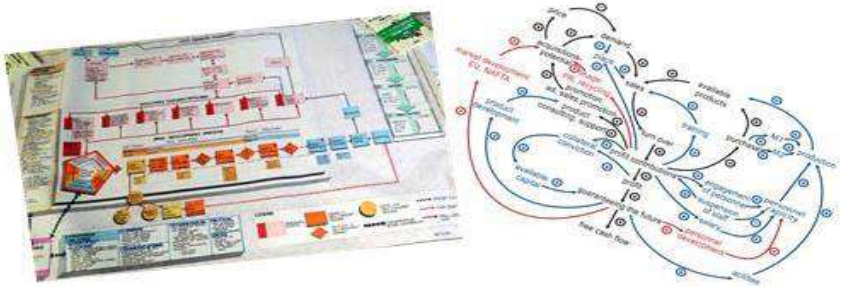
Phase 2: Clarifying the the problem

Step 6	Define the system – content, boundaries, interrelationships.
Step 7	Displaying the system – create a lucid cognitive map.
Step 8	Negotiating the focus/scope with the client.



5 Phases and 21 Steps – Duke & Geurts 2004

Phase 2: Clarifying the the Problem



5 Phases and 21 Steps – Duke & Geurts 2004

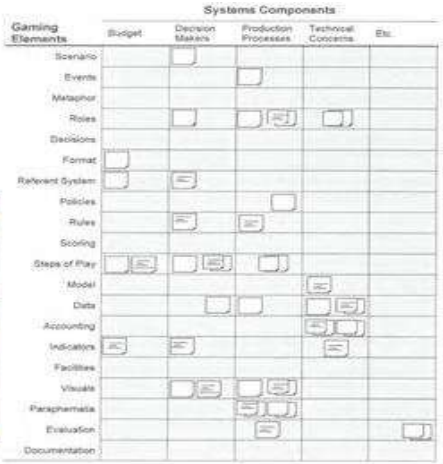
Phase 3: Designing the Simulation Game

- System components/gaming elements matrix – a model of the model.
- Definition of gaming elements – describe each module.
- Repertoire of techniques – don't re-invent the wheel.
- Select a format for the exercise.
- Concept report

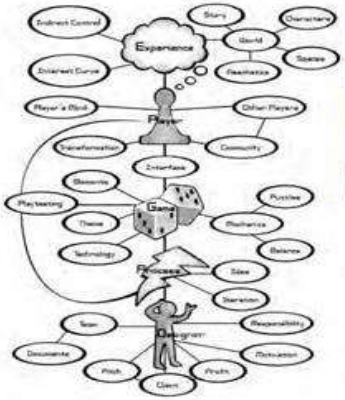
Example: Hybrid Simulation Game as mix of computer simulation, role play (real and simulated actors) and board game and other haptic elements. Simulation based on systems dynamics and/or agent based models.

Game Design

(Duke & Geurts, 2004)



Art of Game Design (J. Schell)



5
1

Wenzler, 2008, elements / dimensions of games

Components	Dimensions	Range of characteristics (mutations) for each dimension	
A. Content	Problem	understood	ambiguous
	Objective	knowledge transfer	knowledge creation
	Model	qualitative	quantitative
	Story	reality-based	metaphor-based
B. Players	Target	single individual	multiple groups
	Level	operational	executive
	Roles	own(real-life)	somebodyelse's(assumed)
	Culture	homogeneous	heterogeneous
C. Process	Sequence	real time	concentrated
	Interaction	directive	self-organizing
	Steps	sequential	iterative
	Indicators	qualitative	quantitative
D. Environment	Location	single	multiple
	Place	physical	virtual (IT-based)
	Material	static	evolving(transformable)
	Representation	realistic	symbolic

Game Concept Report (Greenblat 1980)

The report on the game concept

1. The objectives of the gaming simulation
2. The participants
3. The scenario
4. The objectives in the gaming simulation
5. The macro cycle
6. The micro cycle
7. The roles
   played roles, simulated roles, pseudo roles
8. Events
   foreseen, unforeseen and ad hoc events
9. Other elements
10. Rules
11. Indicators / performance criteria
12. Data
13. Means and paraphernalia

5 Phases and 21 Steps – Duke & Geurts 2004

Phase 3: Designing the Simulation Game

5 Phases and 21 Steps – Duke & Geurts 2004

Phase 4: Developing the Simulation Game – Complete the rule of ten test runs*.

Step 14 Built, test and modify a prototype exercise – put the pieces together.

Technical evaluation – ensure an efficient and effective tool.

Graphic design and printing

5 Phases and 21 Steps – Duke & Geurts 2004

Phase 5: Implementation – ensure proper use by the client

Step 17 Integrate the exercise into the client's enviroment – make it fit.

Step 18 Facilitating the Simulation Game – practical use by the client.

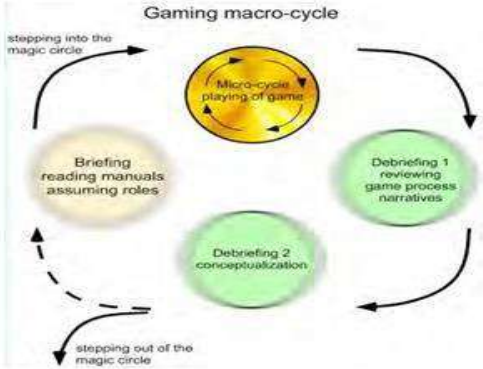
Step 19 Dissemination – deliver the Simulation Game to the client (and Train the Trainer).

Ethical and legal concerns – Protect the client and the designer.

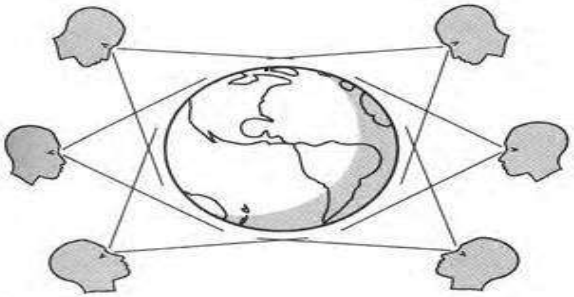
Final report to the client – ensure proper closure.

Gaming Macro Cycle

Klabbers, 2008

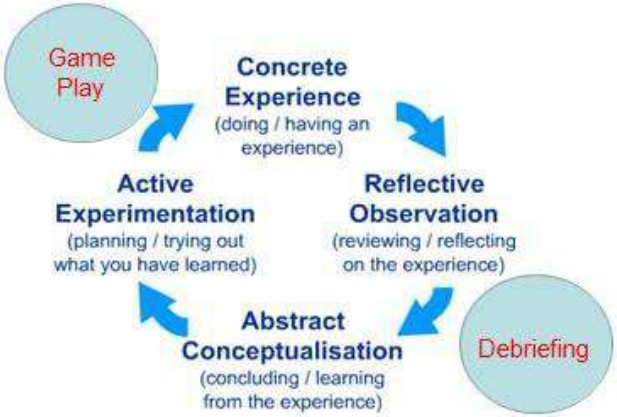


Change of perspecives & team learning

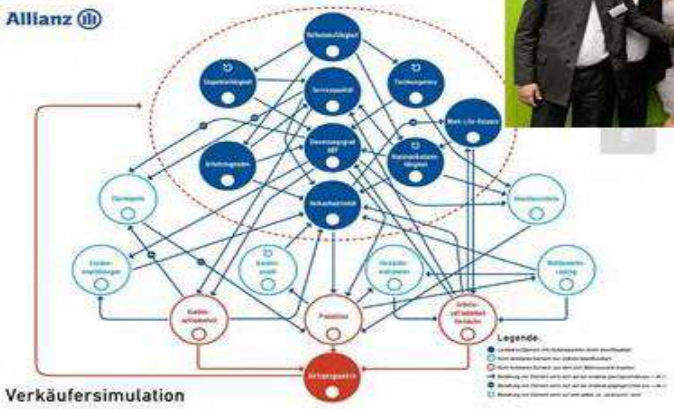


Experiential Learning Cycle

Kolb, 1984



"Verkäufersimulation"

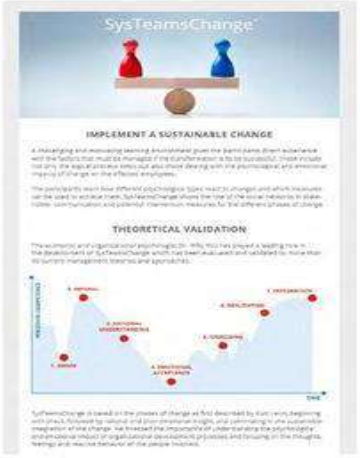


SysTeamsChange®

the leading simulation game in Change Management

riva

https://www.systeams-change.com



HOW OUR CUSTOMERS USE SysTeamsChange

To support the change
Advisory method prior to and during actual transformation processes

"In the context of management training, the simulation game SysTeamsChange is our methodical tool of choice for change management training. We use it at the Bundeswehr Command and Staff Academy so that our military and civilian course participants can get a close-up look at the diverse aspects that really matter in change processes – indeed in a very entertaining way and with lots of fun while we are learning!"

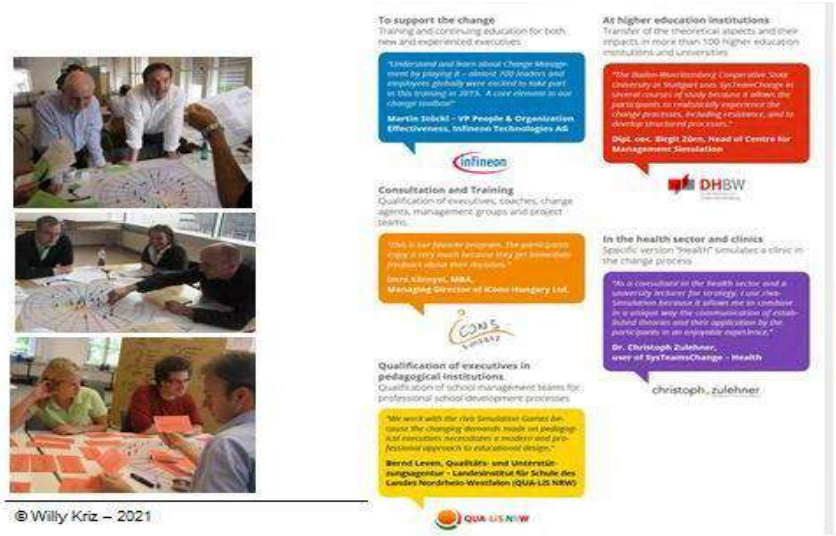
Oberst i. G Reiner Just,
Head of Resort Management Bundeswehr Command and Staff Academy

To support the change
Training and continuing education for both new and experienced executives

„I personally find this tool to be extremely effective, especially in today's workplace, where change is the only constant. We were able to apply the knowledge gained in the workshop to actual projects. Since the lessons were learned in an emotionally positive atmosphere, they were very sustainable."

Hartmut Hillar,
Head of Design Enabling and Services, Infineon

Infineon



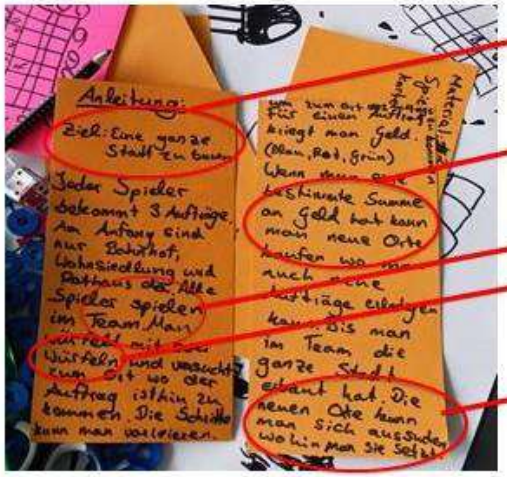
Example „Kikatopia“, Problem- and situation analysis

Data collection in the real word / system

Development of stories, scenarios and events

Game design / development

Kika Game



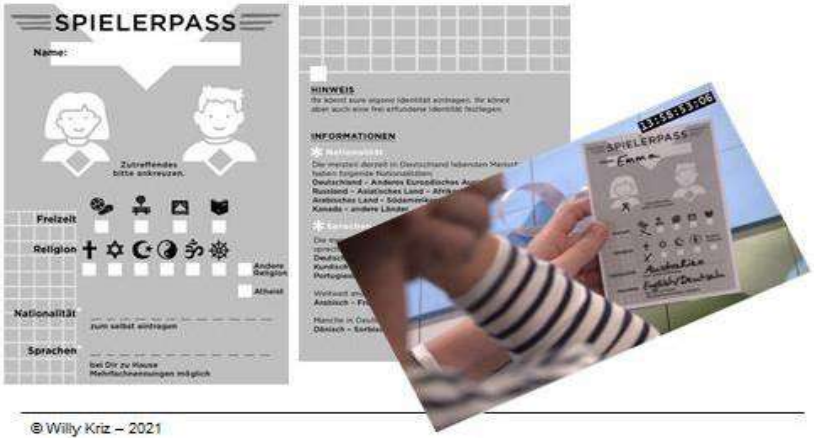
Testing and development of prototypes

Final game and use in the TV setting

System- and Game Elements (City Development, Finance System)

Dealing with realistic and challenging events and solving authentic problems

emotional embodiment, actor and role elements



Making decisions

Computer-based simulation and feedback of effects

University Master Degree; Module System Dynamics Modeling and Gaming & Simulation

3 x 3 ECTS, 3 Semester, real projects for regional partners (= 250 hours)

1st semester: Fundamentals of Systems Thinking / Systems Dynamics / Modeling

2nd semester: Simulation / Fundamentals of G&S / Gamification

3rd semester: Simulation and Gaming Design

Seminar 1

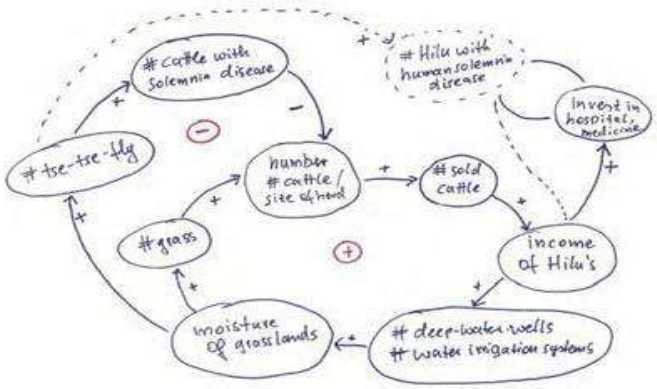
Educational Case

The Hilu-tribe

The African Hilu tribe breeds cattle. The income of the Hilus depends upon the number of animals they can sell per year. The bigger the herd, the more animals are sold and the higher the annual income of the Hilus becomes. The more money they earn, the more they can invest in their recently built bush hospital for medicines and instruments.
Since rainfalls are rare, the Hilus have drilled a deep-water-well and had installed a water irrigation system. Increasing watering raises the moisture of the grasslands. This has pros and cons: More moisture lets the grass grow better and the cattle can grow, too. On the other hand the moisture supports the propagation of the dangerous tse-tse-fly. This fly spreads the dangerous cattle solemnia disease, which every year infects a part of the herd. With an increasing number of tse-tse fliese more cattle die on this disease. If the irrigation is reduced, both the food supply of the cattle and the propagation of the tse-tse-fly are reduced.

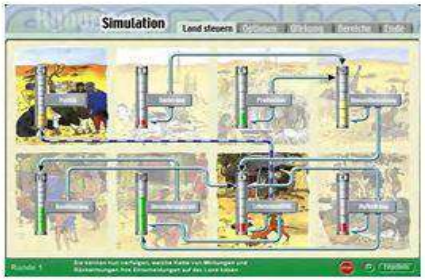
Try to sketch the interrelations described here in a diagram in such a way that one can see the most important aspects at a glance!

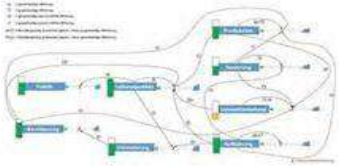
Possible Systems-Diagram



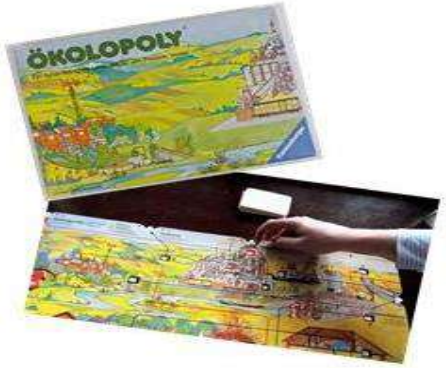
Creating own systems models

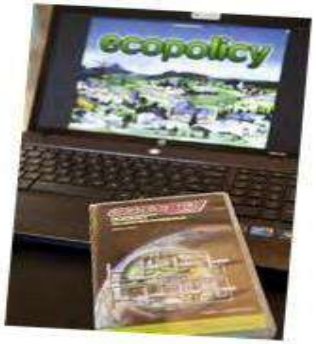
Play of games as examples for gaming simulation and as example for system dynamics models…





…and different media formats





Stratagem © Dennis Meadows
Simulation of a developing nation

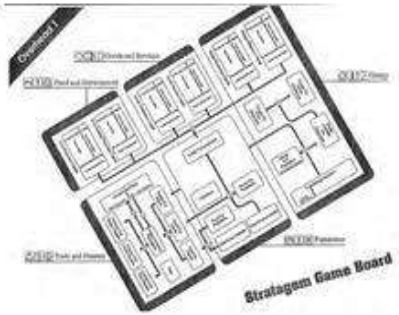
WORLD-3:

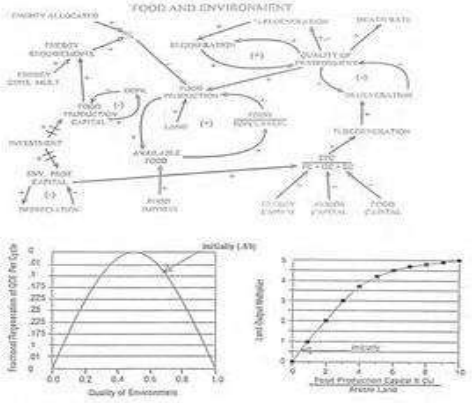
- Model of the world economy
- Complex model with many variables
- Extrapolation of trends: • natural resources
  • economy
  • social dynamics
- Time span of 200 years

STRATAGEM:

- Model of a developing country
- Simplified model with 16 variables
- Interactive • feed backs
  • social dynamics
- Time span of 60 years: 2 generations

- fast growing population
- little food / caput, so a high death rate
- few goods / caput
- energy shortages
- bad environmental quality
- low level of human services
- high foreign debt





Stratagem – Briefing / Study / Roletaking





Stratagem - Play / Decisions

Stratagem – Feedback

Stratagem – Team-Competence

Stratagem – Team-Competence

Stratagem – Systems-Competence




Stratagem – Systems-Competence






Stratagem – Debriefing

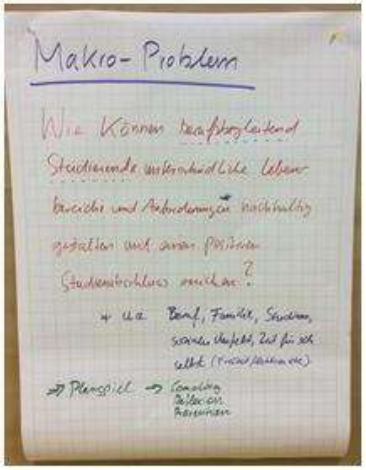

Seminar 2

Duke and Geurts (2004) steps of game design		Kriz and Manahl – university curriculum for systems management education with simulation game design
I-1	Administrative set-up. Organize the project.	Seminar II. A real problem is chosen by every team of 4-5 students. 4-5 teams are working on different projects.
I-2	Define the macro problem.	Seminar II. This step is done intensely combined with a stakeholder analysis. Result is an analysis of all relevant stakeholders and their different interests and perspectives.
I-3	Define the goals of the project – What are the objectives?	Seminar II. This step is done intensely. Result is a final definition of the macro problem and all objectives.
I-4	Project objectives/methods employed matrix.	Not done (the goal of this step is to find out if a gaming approach is appropriate or if alternatives have to be used. For us the gaming approach is a pre-condition)
I-5	Specification – Constraints and expectations.	Seminar II. This step is done in form of a quick check with all students and clients. The main part of this step is already integrated in I-2 and I-3.

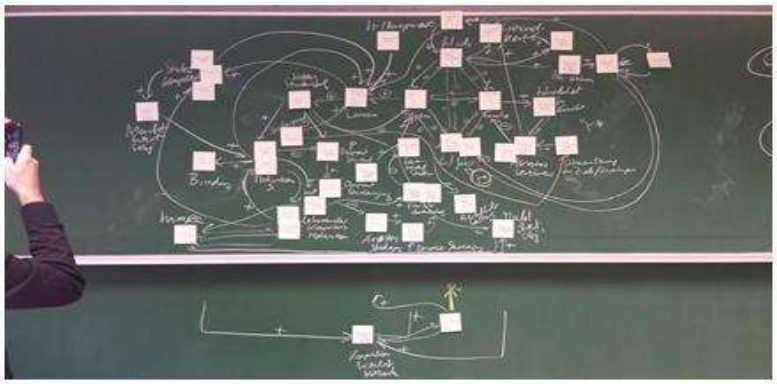
Duke and Geurts (2004) steps of game design		Kriz and Manahl – university curriculum for systems management education with simulation game design
II-6	Define the system – content, boundaries, interrelationships.	Seminar II. This step is done very intensely. It is one of the main foci of our approach. In difference to Duke and Geurts we use a system-dynamics model that can be simulated. This model is developed according to Vennix (1996) group model building approach and results in a multi-relational cause-and-effect didagrams. (Duke and Geurts „only" use an approach with creating so-called schematics.)
II-7	Displaying the system – create a lucid cognitive map.	Seminar II. This step is done very intensely in an iterative process of continuous improvement. A final systems model is defined and implemented into a simulation model supported by modelling software. Simulation tests are performed and again lead to a further elaboration and improvement of the systems model. A written systems simulation report is the main part for the academic assessment.
II-8	Negotiating the focus/scope with the client.	Seminar II. This step is done in form of a quick check with all students and clients.

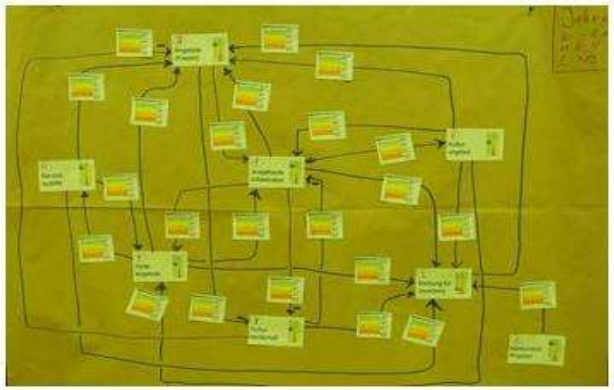
Stakeholder Analysis

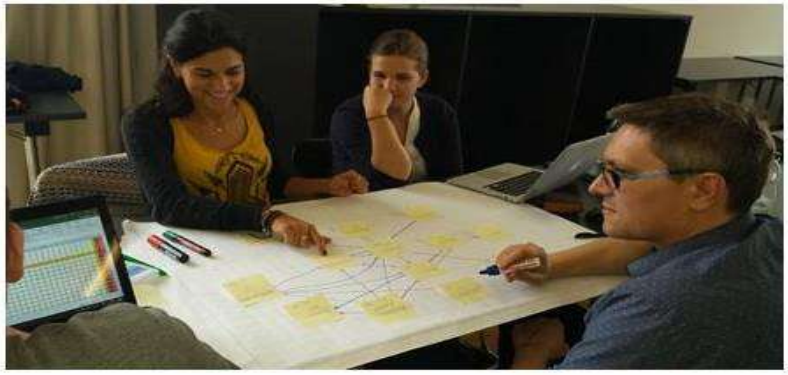
Macroproblem



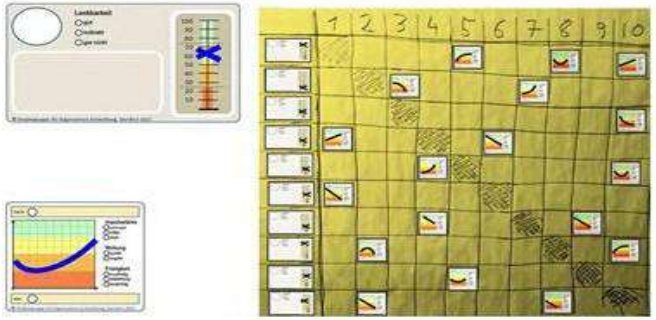
Causal Loop Diagrams / Systems Model



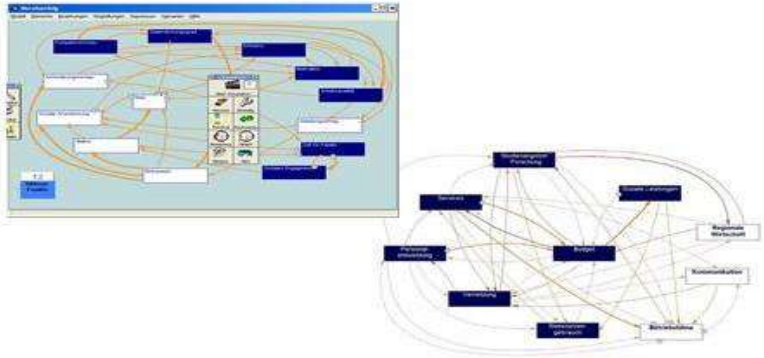




Using methods like „functions matrix“



Transfer systems model in software for simulation



Presentations & Discussions & further Development

Testing the Model, Simulation of different Scenarios

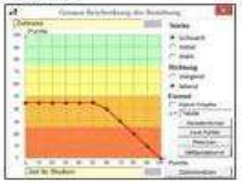
Refining the model

Original

next step

Original

next step



Seminar 3

III-9	System components/gaming elements matrix – a model of the model.	Seminar III. This step is done very intensely in an iterative process of continuous improvement. It is one of the main foci of our approach. We use the matrix technique described in Duke and Geurts (p. 291) and add some further definition of „gaming building blocks" from Klabbers (2008) and Greenblat (1988).
III-10	Definition of gaming elements – describe each module	Seminar III. This step is done intensely together with step 9. The simulation game model must relate to the systems model of seminar II.
III-11	Repertoire of techniques – don't re-invent the wheel.	Seminar III. This step is not done very intensely. We mainly give some recommendations in the coaching phases during seminar III. Here we allow a maximum of creativity in the teams.
III-12	Select a format for the simulation game.	Seminar III. In our approach, this step is integrated in step III-11.
III-13	Concept report	Seminar III. This step is done by the students (if necessary supported by some coaching). The written concept report is the main part for the academic assessment. The main focus is the development of a simulation game model and its usability and much less emphasis is given to the didactic model of the application. Nevertheless, also some basic ideas for the debriefing and facilitation of the game have to be described.

Seminar 3

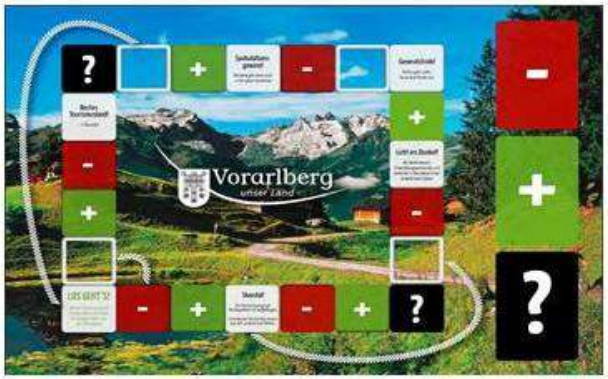
IV-14	Built, test and modify a prototype exercise – put the pieces together.	Seminar III. This step is done very intensely in an iterative process of continuous improvement. It is one of the main foci of our approach. Hybrid simulation game are built and tested. Students have degrees of freedom which gaming methods and media they want to use. They may use a combination of computer simulation, role play (real and simulated actors, agent based modelling), board game and other haptic elements.
IV-15	Technical evaluation – ensure an efficient and effective tool.	Seminar III. This step is only partly done. We evaluate the first prototype together with all students and clients. We are not performing the „rule of 10" test iterations.

Seminar 3

IV-16	Graphic design and printing, develop a professional presentation	Seminar III. The graphic design is not done or only in form of a first prototype layout. A short presentation of the concept report is done and part for the academic assessment.
V-17 to V-21	Integrate the exercise into the client's environment – make it fit; facilitating the simulation game – practical use by the client; dissemination – deliver the simulation game to the client (and Train the Trainer); ethical and legal concerns – protect the client and the designer; final report to the client – ensure proper closure	These steps are not done in our university curriculum. Only the ethical concerns (step V-20) are discussed integrated in step III-9 to IV-14

Designing Hybrid Gaming Simulation Models

Mix of simulation (systems dynamics and/or agent based), board based game, role-play



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Contact

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Webinar - 12

Day, Date & Time:	Saturday, 13-03-2021, 15:00 - 16:05 hrs (IST)
Invited Speaker:	**Dr. Tuomas Harviainen,** Associate Professor of Information Practices at Tampere University
Country:	Finland
Title:	The History of Simulation/Games and What it Denotes Serious Gaming, Gamification, and Learning with Games Movements

Webinar Topic

The History of Simulation/Games and What It Denotes Serious Gaming, Gamification, and Learning with Games Movements

Abstract

In this webinar, the resource person delved into the ways in which the learning potential of games keeps being re-discovered. He drew early examples from military and medical simulation, and then moved to games in mathematics and operational planning, from which in many ways arose the pre-ISAGA community. Finally, he deliberated about dissonances between simulation/gaming, gamification designers, the Serious Games Movement, and Game-Based Learning. He concluded with positive examples of how the groups are now finding each other more and more often – and why they are doing so.

Speaker Profile

J. Tuomas Harviainen, PhD, MBA is Associate Professor of Information Practices at Tampere University, Finland He is a former co-editor of Simulation & Gaming and an ISAGA Advisory Board member. Harviainen's work spans several disciplines, and has been published in channels such as Organization Studies, Journal of Business Ethics, Journal of Documentation, and Games and Culture.

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The history of simulation/games - and what it denotes to the serious gaming, gamification, and learning with games movements

J. Tuomas Harviainen, PhD, MBA. *ISAGA Webinar Series*, 2021

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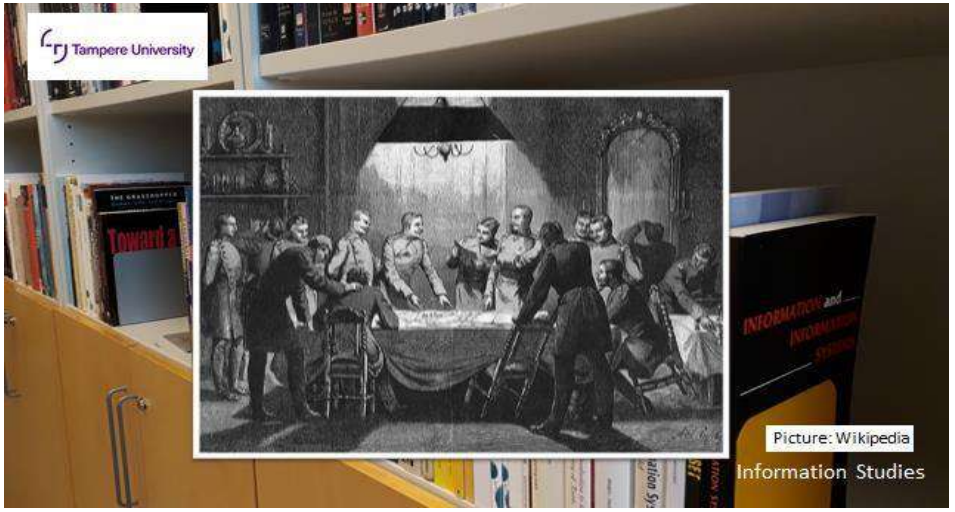

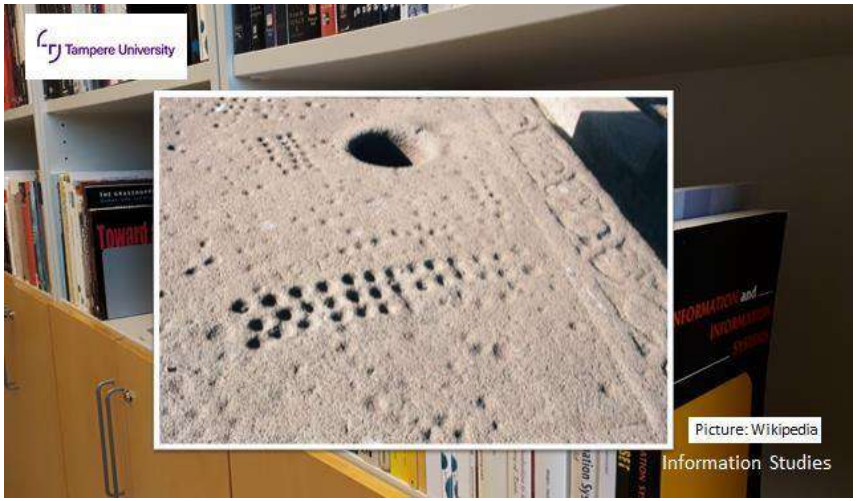

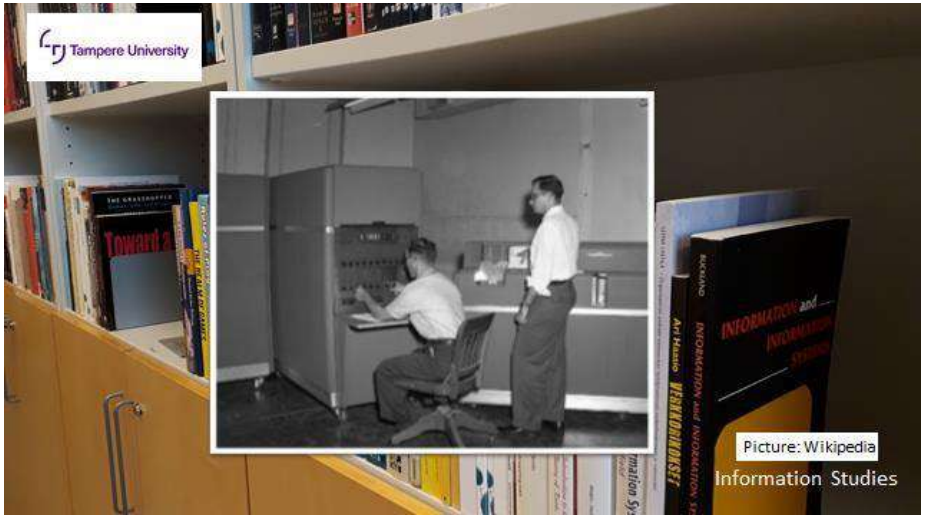
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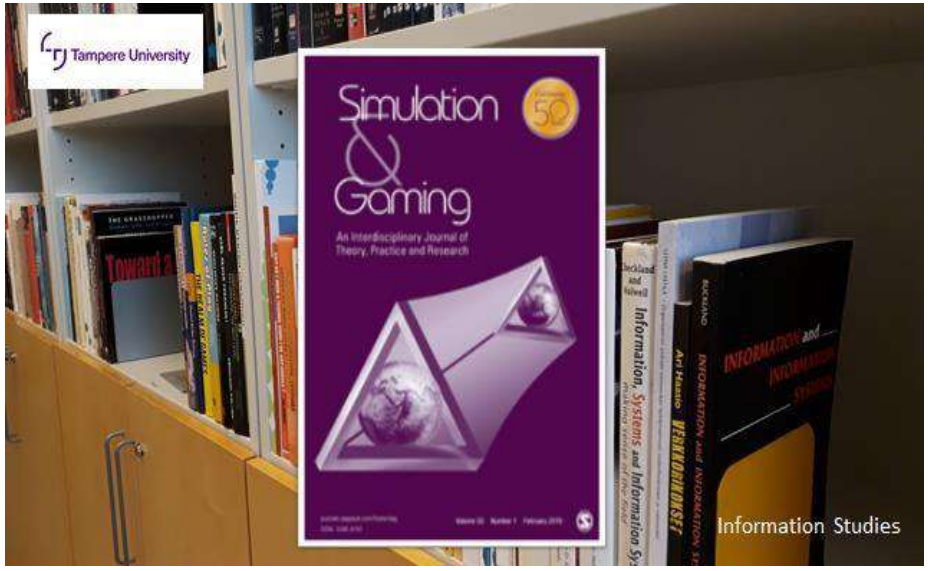
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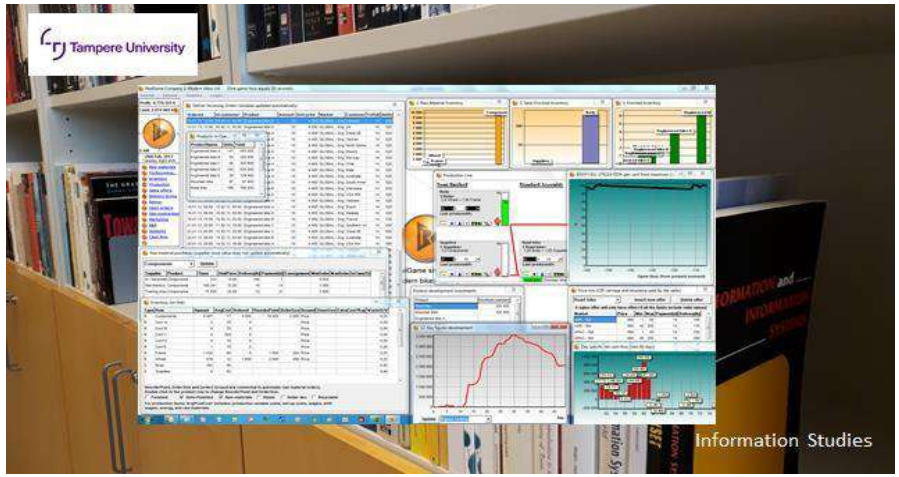
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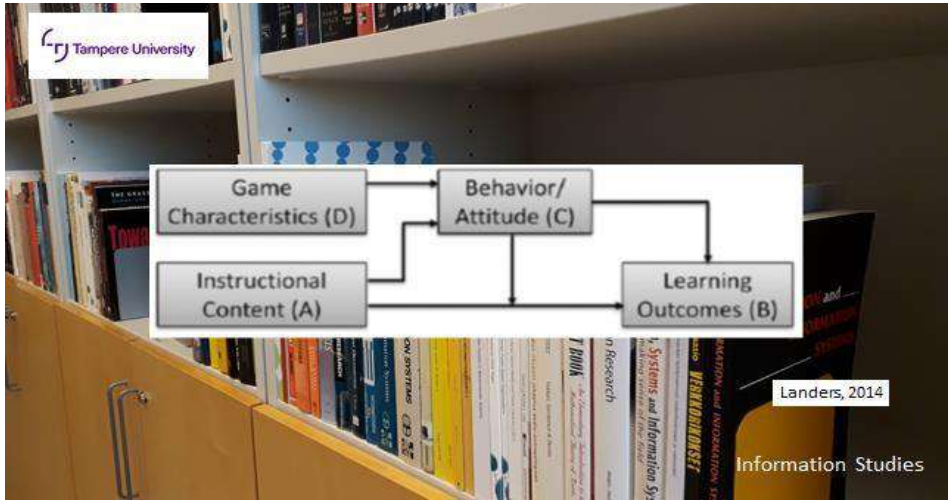
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Game Characteristics (D)
Behavior/ Attitude (C)
Instructional Content (A)
Learning Outcomes (B)
Landers, 2014
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Educational content
Challenge
Engagement
Reflection
Learning
Harviainen & Meriläinen, 2019
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Teaching something new?
Providing chances to experiment?
Or anchoring for retaining?

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Core Facts

- A tradition at least 5500 years old
- Computerized since the 1940s
- Research since 1960s, systematic research since 1970
- Wheel re-invented twice in the early 2000s
- Growing trend: jams and other production forms as learning
- Still in many ways a black box

Information Studies

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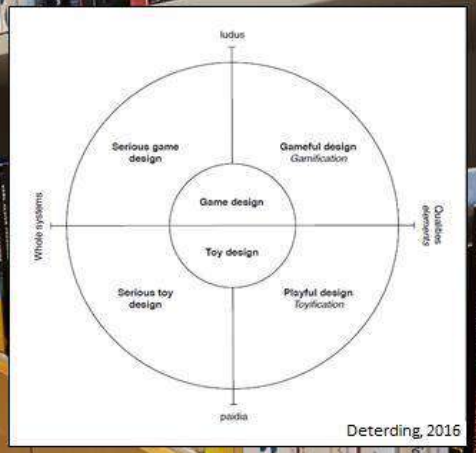

Information Studies


Tampere University
Questions?
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Information Studies

Webinar - 13

Day, Date & Time: Saturday, 17-04-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Jayanth Raghothama,** Assistant Professor, KTH Royal Institute of Technology, Stockholm

Country: Sweden

Title: Designing Simulation Games: Trade-offs between Realism, Fidelity, and Abstraction

Webinar Topic

Designing Simulation Games: Trade-offs between Realism, Fidelity, and Abstraction

Abstract

Simulations and games are powerful tools to understand, describe and intervene in real world settings. However, their design and development involve difficult trade- offs and design decisions with respect to their representation of the real world, around the dimensions of realism, fidelity, and abstraction. These essentially deal with the questions of: what do you include in your model and game, how detailed should these elements be, and how should your player interact with these elements? Making the wrong choice(s) with these dimensions could be the difference between an effective game session and a bad one. For games to be able to contribute to tangible outcomes, ideally within the time frame of a gaming session, the architecture and form of the game must address this trade-offs. Through a few examples in urban planning, strategic decision making and systems modeling, the resource person elaborated on these trade-offs and provided insights on how to design effective games.

Speaker Profile

Jayant is Assistant Professor of Health Care Logistics at KTH Royal Institute of Technology, Stockholm. He works on developing systems models, simulations, and games of and within large complex systems, to design and develop interventions and programs in an inter-disciplinary and holistic way. He also co-ordinates Digitalization research within the university. Prior to his PhD at the same university, he worked for CSTEP, a non-profit policy research organization in India, and in the software industry. He has over ten years of experience in building models, small and large, covering simulations, games, and artificial intelligence and in applying them in real-world decision-making settings.

Jayanth Raghothama
ISAGA 2021
April 17

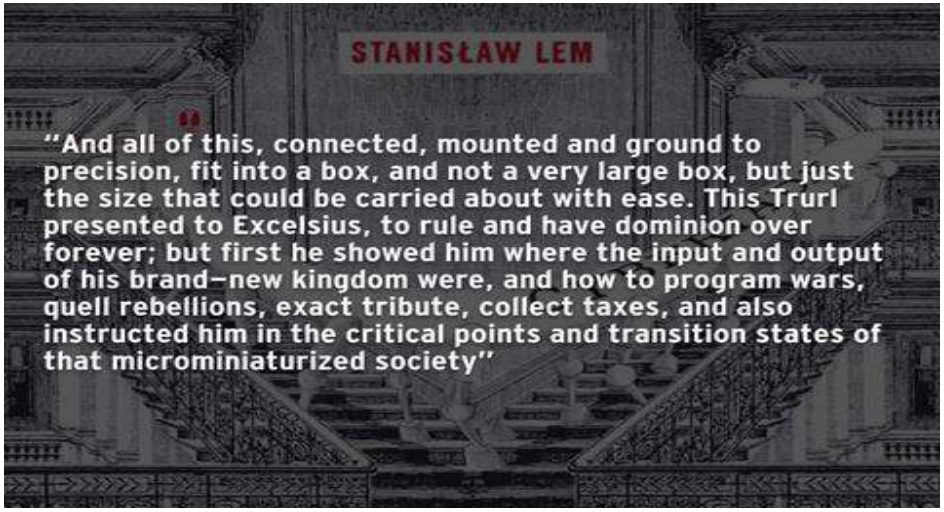
Designing Simulation Games: Trade-offs between Realism, Fidelity, and Abstraction

Today's Talk

- Simulations vs Games
- Main differences, blending the two

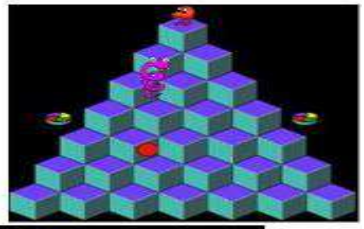
The Seventh Sally or How Trurl's Own Perfection Led to No Good

From Cyberiad by Stanislaw Lem (1965)

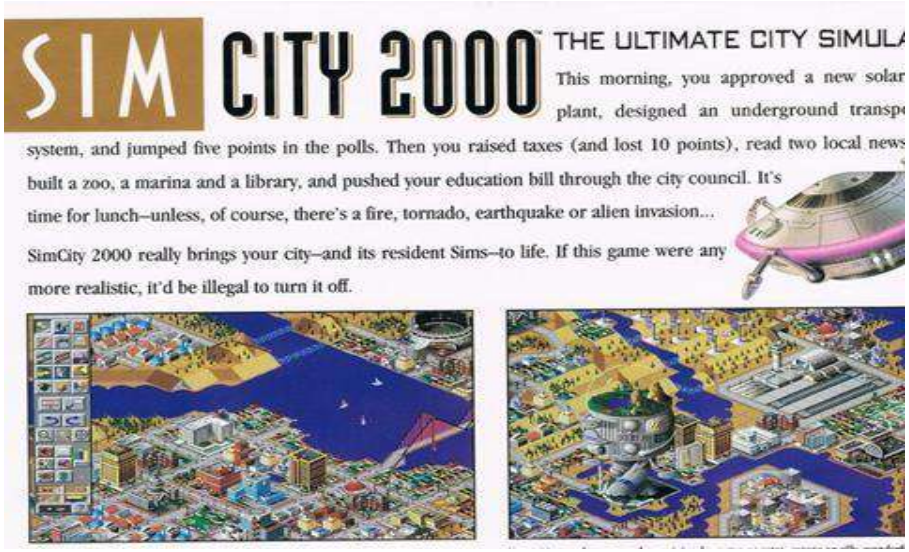


Main Difference

Abstraction and Fidelity

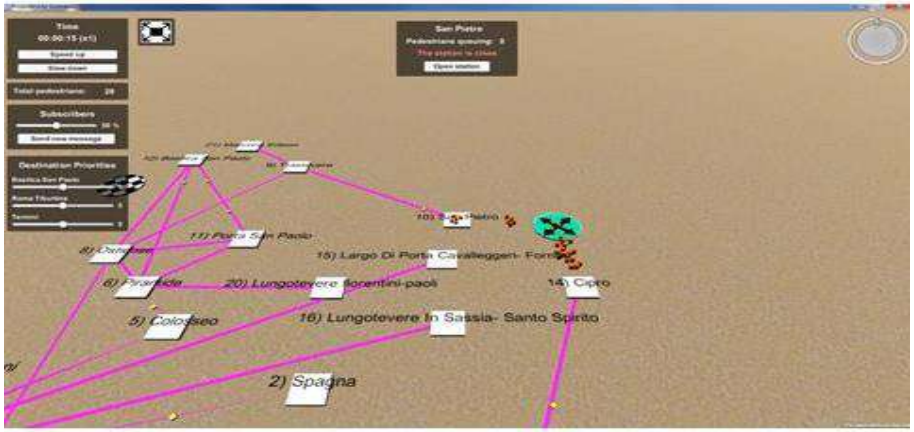


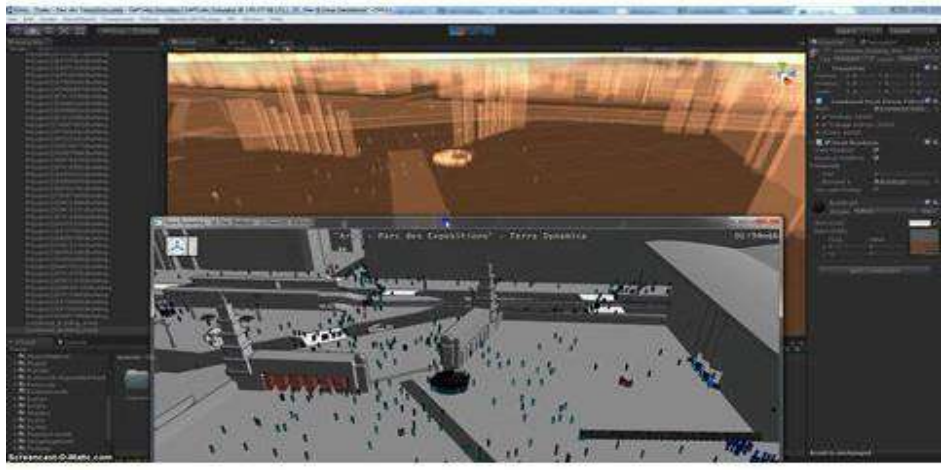

Your level: 8
Full lines: 4
Score 241
H E L P
F1:Pause
F7:Left
F9:Right
F8:Rotate
F6:Dpsau next
F5:Dpred up
4:Drop
SPACE:Drop
Next:
STATISTICS
Sum : 14
Play TETRIS !

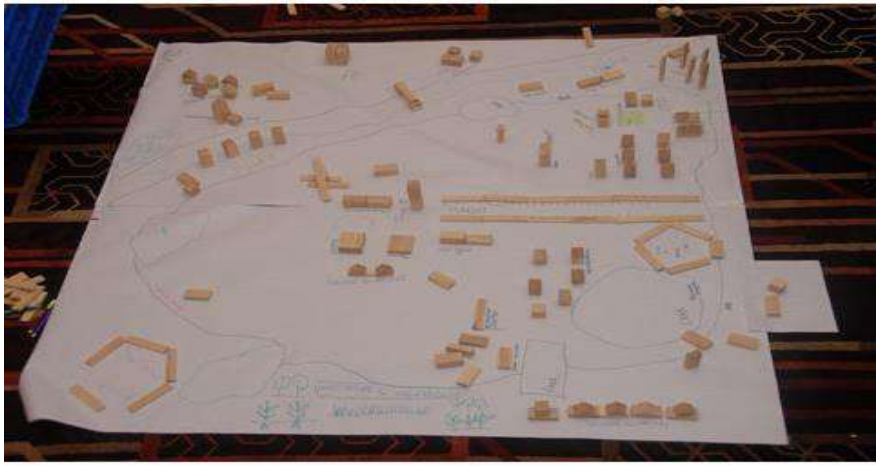

SIM CITY 2000
THE ULTIMATE CITY SIMULA
This morning, you approved a new solar
plant, designed an underground transp
system, and jumped five points in the polls. Then you raised taxes (and lost 10 points), read two local news
built a zoo, a marina and a library, and pushed your education bill through the city council. It's
time for lunch--unless, of course, there's a fire, tornado, earthquake or alien invasion...
SimCity 2000 really brings your city--and its resident Sims--to life. If this game were any
more realistic, it'd be illegal to turn it off.

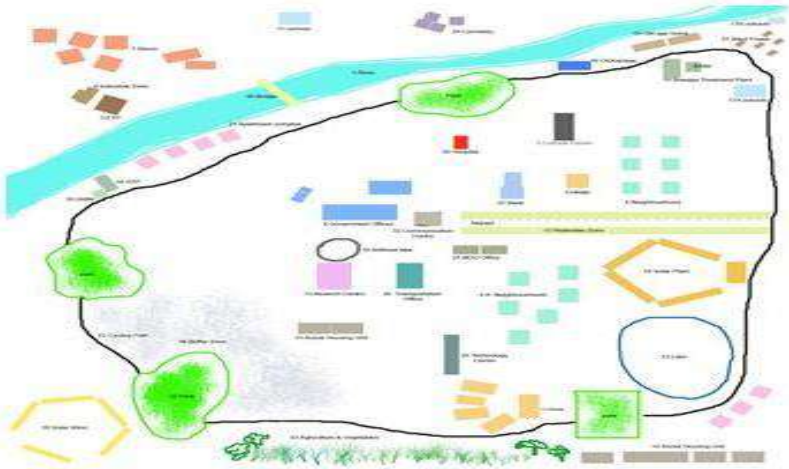
- https://vimeo.com/gapslabs

PROTO.WORLD
gamifying urban & transport planning









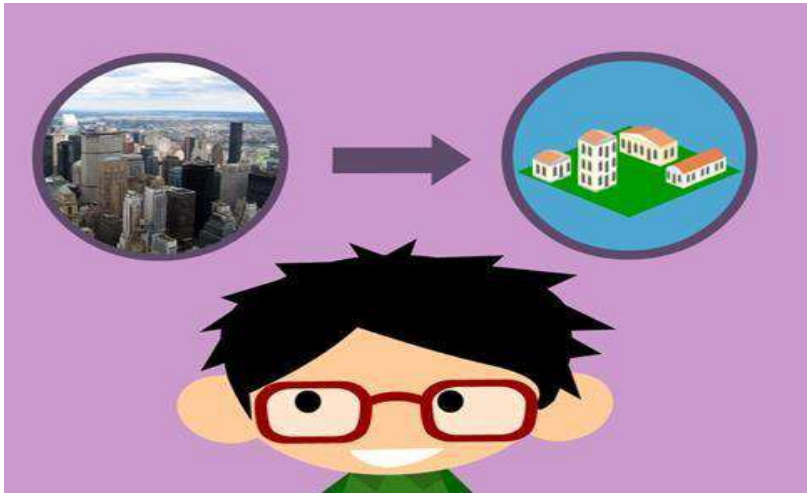

Transport Planning
Eric Treske, Intrestik

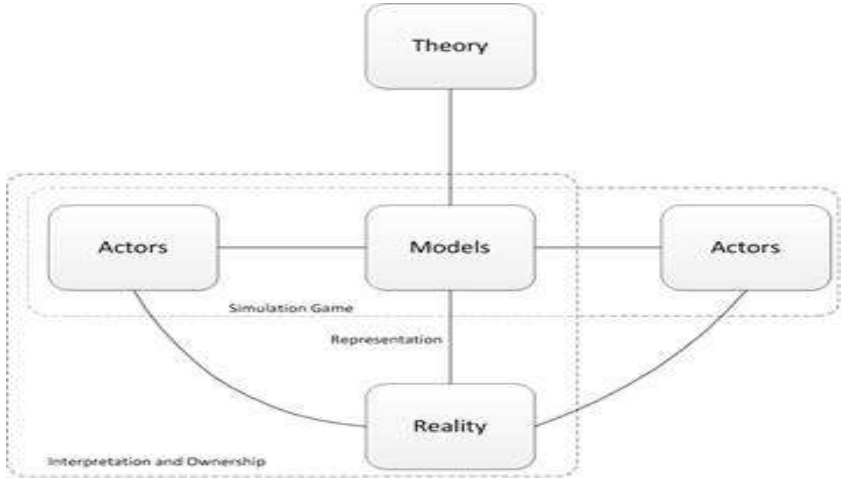

Minecraft

Why? Fidelity

"A two-way street runs between mental models and computer models. Mental models contribute much of the input for computer models... From the computer simulations come new insights about behavior that give new meaning to mental models."

Jay W. Forrester
Learning through System Dynamics as preparation for the 21st Century (1994)





Identification and Interpretation

- Do your players identify *with* the model?
- Can your players interpret the dynamics *within* the model?

Modeling

- Abstraction of which object?
- Fidelity to how much realism?

Final Reflections

- Abstraction is a key lever – use it
- Avoid greenfield, god-like games
- Curate your players' experience in the game
- Use pre-built models for computer simulations – gives credibility and scientific validity
- As a discipline, we sit in the middle of game design and simulation
- Use best practices from both

Webinar - 14

Day, Date & Time: Saturday, 24-04-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Sivasailam Thiagarajan ("Thiagi"),**

Country: USA

Title: Simulations and Training Games through Live Online Delivery

Webinar Topic

Simulations and Training Games through Live Online Delivery

Abstract

The resource person shared that he has been designing and delivering simulations and training games for face-to-face play during the past 50 years. For the past 15 years, he had delivered simulations and games through live online platforms. Based on his field research in 26 different countries, he had designed; field tested, and published a set of techniques called Live Online Learning Activities (LOLA) for delivering gaming simulation through webinar platforms. In this hands-on session, Thiagi, introduced the participants to 22 different categories of online simulations and took them through a specific activity of their choice.

The resource person assured the participants that they will be able to design and deliver simulations and games through any webinar platform and their new skills will be supported by two books and hundreds of online resources.

Speaker Profile

Sivasailam Thiagarajan ("Thiagi") has been designing and delivering interactive training workshops in 52 locations around the world. For the past 15 years, he has been working on live online training. He is the author of 40 books and the designer of hundreds of simulations and games including the award-winning cross-cultural simulation, BARNGA. Thiagi has been the seven-time president of the North American Simulation and Gaming Association (NASAGA) and two-time president of International Society for Performance and Instruction (ISPI). He has presented several keynotes at ISAGA and is a member of the Association for Applied and Therapeutic Humor (AATH).

LOLA: Live Online Learning Activities Workshop

Sivasailam Thiagarajan, PhD (Thiagi)

- https://www.thiagi.com
- thiagi@thiagi.com
- LINKEDIN:
  - Thiagi- The Thiagi Group
  - THE THIAGI GROUP
- TWITTER: Thiagi

the thiagi group
improving performance playfully

Are You Ready?

- Paper and pencil
- A glass of water
- Enthusiasm
- Imagination
- Resilience

Objectives

- 60y. Become rich and famous by using LOLAs in all your webinar sessions.
- 60m. Include a variety of LOLAs in all your live online training.
- 60w. Use different LOLAs whenever appropriate.
- 60m. Impress everyone with your ability to describe different LOLAs.

Structured Sharing LOLAs

Prediction

Question

- Why are most training webinars so b-o-r-i-n-g?

Prediction

- Predict the most frequent response to the same question from the earlier participants.

Earlier Response

1. No interaction: with the content, among the participants, or between the participants and the facilitator.

Earlier Response

2. The participants respond to questions, that are unrelated the training objective.

Earlier Response

3. The facilitator merely reads the slides displayed on the screen.

Earlier Response

4. Technical glitches disrupt the session.

Earlier Response

5. The content presented in the session is not related to the participants' workplace.

Earlier Response

6. The participants suffer from physical discomfort from sitting still too long.

List of Earlier Responses

1. No interaction with the content, among the participants, or between the participants and the facilitator.
2. The participants respond to questions, but these questions are unrelated the training objectives.
3. The facilitator merely reads the slides displayed on the screen.
4. Technical glitches disrupt the session.
5. The content presented in the session is not related to the participants' workplace.
6. The participants suffer from physical discomfort from sitting still too long.

Flow of the *Prediction* LOLA

1. Ask an open question.
2. Invite the participants to type different responses.
3. Explain you have a collection of earlier responses.
4. Ask the participants to predict high-frequency responses.
5. Display and discuss earlier responses.
6. Relate the activity to the online training session.

Game Plan

Prediction

Thought Experiments

Green Monkey

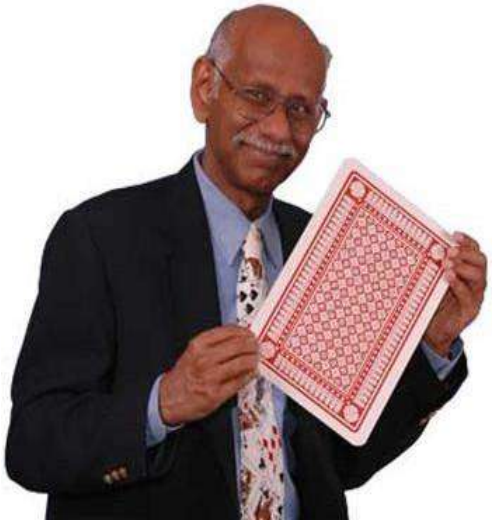
Instructions

- Don't do anything for the next 30 seconds.
- Think of anything you want.
- But DON'T think of green monkeys.

Get Rid of Rumination

- Focus on your breathing
- Keep repeating a mantra
- Postpone the thinking
- Use paradoxical therapy
- Accept your obsession

Card Sort Experiment



LET THE INMATES RUN THE ASYLUM

- Trust your participants.
- Accept everything that is offered to you.
- Keep your eyes on the prize.
- Treat useful and useless inputs the same way.
- Incorporate all relevant inputs.
- Modify irrelevant items.

Interactive Lectures

Mixed-Up Sentences

Sidewalk Cafe

Sidewalk Cafe

- Waiter's behavior
- Paid orders
- Unpaid orders

Zeigarnik Effect

- Unfinished things keep rattling in your brain for a long, long time.
- People remember incomplete events longer.

Applications

- Charles Dickens
- TV dramas

Training

- Objectives
- Abrupt endings
- Breaks
- Multi-day training

Summary Sentences

1. Zeigarnik effect was discovered in a sidewalk café.
2. People remember incomplete events longer.
3. The Zeigarnik Effect is a psychological principle.
4. Bluma Zeigarnik was a student of Kurt Lewin.
5. Don't bring your training session to a logical conclusion.
6. The Zeigarnik effect can help you hook your audience.

Game Plan

Mixed-Up Sentences

Flow of the *Mixed-Up Sentences* LOLA

1. Create summary sentences.
2. Present your lecture.
3. Display the summary sentences.
4. Ask to remove fake sentence.
5. Ask to type replacement sentences.
6. Ask to identify top two important sentences.

Jolt LOLAs

Say it in Sequence

Say it Sequence 2

- Say the same numbers 1 to 10 in English.
- Say the numbers in alphabetical sequence if they are spelled out in English.
- Do not use paper and pencil.
- When finished saying all 10 numbers in the alphabetical order, please sit down.

Say it Sequence 1

- Count aloud the numbers 1 to 10—in English.
- Stand up when you have finished counting.

Why?

- Why was it easier to say the numbers in numerical order
  (1, 2, 3, 4, 5, 6, 7, 8, 9, 10)
  than in alphabetical order
  (8, 5, 4, 1, 9, 7, 6, 10, 3, 2)?
- After all, they are the same numbers.
- And you know the alphabetical order.

Learning Points

- Overlearning is hazardous to making changes to learned behavior.
- You need to unlearn before you can learn new habits.

ABLA LOLAs

True or False?

Build a Product

If you build a high-quality product, the customers will come to you.

- ❑True
- ❑False

Build a Product: Follow Up

- Here is the result.
- Let's have a debate.

Passion

Follow your passion. Money will follow you.

❑True
❑False

Passion: Follow Up

- Here is the result.
- Let's have a debate.

Confidentiality

When starting a business, keep your plans and ideas hidden from the others.

❑True
❑False

Confidentiality: Follow Up

- Here is the result.
- Let's have a debate.

More Pieces of Conventional Wisdom

- Give lots of choices to the customer.
- People buy the lowest-priced item.
- Speed up your business by hiring more people.
- The customer is always right.

Game Plan

True or False?

Flow of *True or False* LOLA

- Prepare a list of statements based on conventional wisdom.
- Display the first statement.
- Conduct a poll to determine whether the statement is true or false.
- Announce the results.
- Conduct a debate about the statement.
- Repeat with other statements.

Puzzle LOLAs

Extrapolate

Study This Set of Three Numbers Carefully

- 8
- 16
- 17

Study This Set of Three Numbers Carefully

- 11
- 22
- 23

Study This Set of Three Numbers Carefully

- 2020
- 4040
- 4041

Your Turn Now

- Give a set of three numbers.
- I will give you immediate feedback.
- Your goal is to discover the pattern that connects the three numbers in the set.

Let me Nag You

- You are trapped by *confirmation bias.*
- You are not thinking like a scientist.
- Try to refute your hypothesis.

This Gets a "No"

- 92,613
- 800
- 7,000,000,000

This Gets a "Yes"

- 800
- 92,613
- 7,000,000,000

What's the Pattern?

- Take a guess.

Learning Points

- Don't jump to conclusions.
- Don't get trapped by *confirmation bias.*
- Try to disprove your hunches.

Interactive Stories LOLA

Debriefed Story

Listen ...

Thiagi Tells a Story...

Thiagi's Story

- Request from a client
- Advice from a mentor
- Choice of a story
- Telling the story
- Evaluation data
- More evaluation
- Good news
- Bad news

Debriefing

❖ What is the key learning point of this story?

Code

- | = Move up or down
- b = Blue
- - = Move left or right
- r = Red
- / = Move diagonally

Textra LOLAs

Catchphrase

Read This Piece of Advice

Be a flexible facilitator. Shift between being playful and being serious. Very often, people ask us whether a facilitator should be playful or serious. Our answer is always, "Yes." An effective facilitator should be capable of being both playful and serious, depending on the situation. Alternating between these two approaches keeps the participants on their toes.

Now Do This

- Reflect on this piece of advice.
- Summarize the key point in a brief catchphrase.
- Make it memorable and meaningful.
- Set your ***chat*** to *facilitator.*
- Submit your catchphrase.

Which Catchphrase Do You Like Best?

A. Be a blender. Mix it up!
B. Be Bipolar.
C. Facilitation is fun. Seriously?
D. Play with purpose.
E. Silly serious speakers systematically switch styles.

Type your letter of choice in ***chat***.

The Winner!

Game Plan

Catchphrase

The Flow of *Catchphrase* LOLA

- Display the reading assignment.
- Ask the participants to summarize the key point as a catchphrase.
- Display alternative catchprases.
- Conduct a poll to select the best catchphrase.
- Use the selected catchphrase as the base for action planning.

Graphic LOLAs

Graphic Metaphors

Graphic Metaphor

Which photo best reflects the concept of LOLA?

A. Cheetah
B. Kitchen
C. Coffee
D. Ballerinas

Type the letter associated with the selected photo in ***chat***.

Game Plan

Graphic Metaphors

The Flow of *Graphic Metaphors* LOLA

- Display four photo.
- Announce the concept.
- Conduct a poll to identify the best photo metaphor.
- Discuss the shared features between the photo and the concept.

Closer LOLAs

Anagram

Anagram?

- A word or phrase formed from another by rearranging its letters.
- Example: ***wine bar*** is an anagram of ***webinar***.

Instructions

- We created a set of anagrams of words associated with LOLAs.
- Your task is to rearrange the letters to form a single word that is associated with LOLAs.

Example

- **Anagram**
  NAG IN EGG

Solution
ENGAGING

Words Associated with LOLAs

- NAG IN EGG
- AD RIP
- ELECT FIVER
- IN LONE
- NO NOSY CRUSH
- VISIT AT ICE

Unscrambled Anagrams

- NAG IN EGG → engaging
- AD RIP → rapid
- ELECT FIVER → reflective
- IN LONE → online
- NO NOSY CRUSH → synchronous
- VISIT AT ICE → activities

Dr. Sivasailam "Thiagi" Thiagarajan is the founder and Resident Mad Scientist at The Thiagi Group. Thiagi has written over 50+ books on training and development. Most of his books have been translated into Chinese, French, and German. Specific to this program, Thiagi wrote ***LOLA: LIVE ONLINE LEARNING ACTIVITIES- HOW TO INCREASE AND IMPROVE INTERACTIVITY IN VIRTUAL CLASSROOMS.***

Thiagi has served as the editor of ISPI's *Performance & Instruction* for more than 10 years. He has written a monthly online GameLetter for 25 years It currently appears as the GameBlog on this website.

the thiagi group
improving performance playfully

LOLA: Live Online Learning Activities Workshop

Sivasailam Thiagarajan, PhD (Thiagi)

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Webinar - 15

Day, Date & Time: Saturday, 24-04-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Bhimaraya Metri,** Director at Indian Institute of Management (IIM) Nagpur, India

Country: India

Title: Business Games: Powerful Tools to Develop Mindset for Future of Work

Webinar Topic

Business Games: Powerful Tools to Develop Mindset for Future of Work

Abstract

The world of work is changing due to digital disruption. Adapting to this new way of working is important for businesses to grow and stay globally competitive. The future belongs to liquid workforce with exclusively human skills like creativity, curiosity, enthusiasm, leadership, empathy and compassion. Business games and simulations are powerful tools to acquire such skills to build capabilities and develop the mindset to lead the roles in future businesses. The presentation, firstly, focuses on business games and simulations as an emerging pedagogical tool with great impact in management education. Secondly, it focuses on applications of games to develop the mindset in addition to improving motivation, engagement, and the learning experience. Thirdly, it describes the key benefits. Finally, it recommends that business games and simulations are the way forward to lead the unknown roles in business of the future.

Speaker Profile

Dr Bhimaraya Metri is Director at Indian Institute of Management (IIM) Nagpur. Earlier, he was the Director at IIM Tiruchirappalli. He has held Dean Positions at leading management institutes. He received his PhD from Indian Institute of Technology Bombay and is a member of Decision Sciences Institute, USA. He has served on the editorial boards of journals, and has held leadership roles in professional associations. Deeply committed to executive education, he has taught management courses, advocated simulation games as a learning pedagogy, and conducted professional programmes for Board of Directors, Vice Chancellors, Senior Executives, Government Officials in more than 60 countries.

Business Games

Powerful Tools to Develop Mindset for Future of Work

Dr Bhimaraya Metri
Director
IIM NAGPUR

Introduction

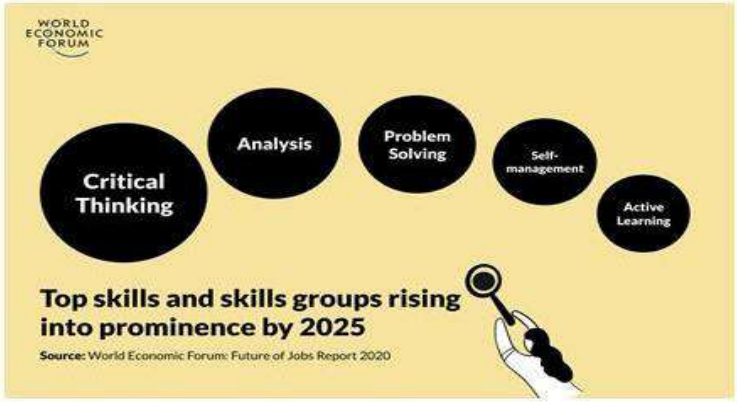
Top Skills of WEF for 2025

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative

Top Skills of WEF for 2025

- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

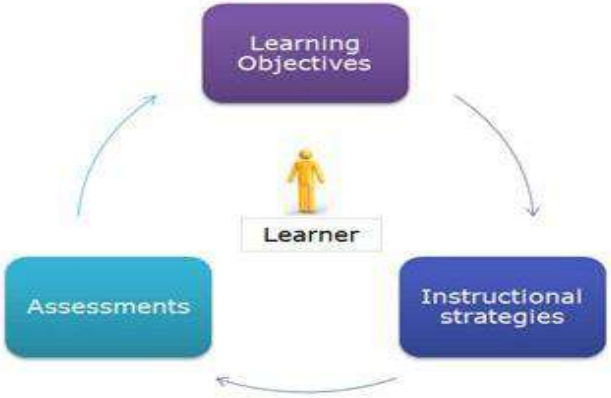
Top Skills of WEF for 2025



Rethinking of Learning: Radical Shifts

- Learning Goals
- Learning Methods
- Learning Institutes

Current Pedagogical Approaches



Games: Learner Centric Pedagogical Approach

Seven Cs of Business Game Players

- Capabilities of players ignited by a game:
  - Competence
  - Creativity
  - Connectivity
  - Communications

Seven Cs of Business Game Players

- Capabilities of players ignited by a game:
  - Collaboration
  - Cooperation
  - Competitiveness

New Role of Teachers in GBL

GBL Context: Moving Beyond the Theory

- Dynamic context
- Disciplined and organised
- Highly focused on learner
- Independent and critical thinking
- New and unexpected directions
- Culture of trust

The Paradigm shift in Learning
21st Century Skills with GBL

- Pedagogical shift
- Active learning
- Positive attitude
- Innovative learning
- Instructor as motivator

Future Ready Skills through Games

Business games create …

1. Collaborative Skills
2. Communication Skills
3. Leadership and Team building Skills
4. Decision Making Skills

Developing Mindsets/Capabilities

1. Build capabilities - develop entrepreneurial mindsets
2. Build capabilities - develop innovators
3. Build a growth mindset - knowing what you don't know

Recommendations

- Business and simulations games are relevant in all present and future contexts.
- Build competencies and capabilities
- Phenomenon Based Learning
- Prepare learner for future readiness

Thank you

Dr Bhimaraya Metri

Director

IIM NAGPUR

भारतीय प्रबंध संस्थान नागपुर

Indian Institute of Management Nagpur

Webinar - 16

Day, Date & Time:	Saturday, 08-05-2021, 15:00 - 16:05 hrs (IST)
Invited Speaker:	**Mr. David Wortley,** Vice President of the International Society of Digital Medicine (ISDM)
Country:	United Kingdom
Title:	360-degree Immersive Technologies for Medical Simulation, Digital Therapeutics and Clinical Education and Training

Webinar Topic

360-degree Immersive Technologies for Medical Simulation, Digital Therapeutics and Clinical Education and Training

Abstract

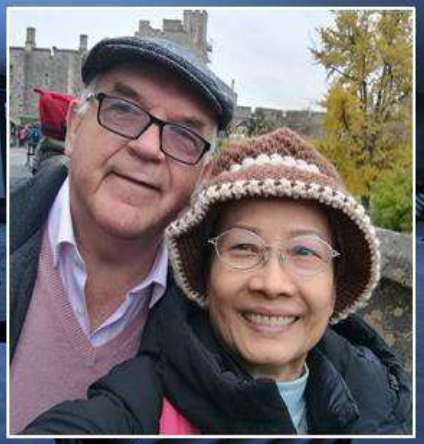
The COVID-19 pandemic has accelerated the use of consumer 360-degree technologies for a whole spectrum of clinical applications and medical practitioners, to overcome the challenge of delivering high quality healthcare remotely. Simulations and serious games play an important role in not only developing the skills needed in today's high-pressure environment but also, increasingly, in preventive healthcare and digital therapeutics. This presentation explores how 360-degree consumer technologies are being applied to tackle medical training and education at scale through hyper-realistic virtual, augmented and mixed reality devices, including the Hololens and consumer VR devices such as the Oculus Quest. It also illustrates the examples of how serious games can tackle the global problem of lifestyle related medical conditions such as obesity, diabetes and certain mental health conditions.

Speaker Profile

David Wortley is a Vice President of the International Society of Digital Medicine (ISDM), CEO & Founder of 360in360 Immersive Experiences and former Founder Director of the Serious Games Institute (SGI). His involvement in the use of serious games and simulation for education and training began over 40 years ago when he was a management tutor at the Post Office Management Training College in the UK. Since then, he has pioneered the use of digital communications technologies and helped to establish serious games and simulation initiatives in Singapore, Malaysia (at University Putra Malaysia), Thailand (through Thaisim), Korea and China.

360-DEGREE IMMERSIVE TECHNOLOGIES FOR MEDICAL SIMULATION, DIGITAL THERAPEUTICS AND CLINICAL EDUCATION AND TRAINING

DAVID WORTLEY
CEO & FOUNDER
360IN360 IMMERSIVE EXPERIENCES



Songsri Soronastaporn

R.I.P.

TAKEAWAYS

- An understanding of what 360 degree immersive technologies are
- What digital technologies are involved
- The range of potential applications in medicine and healthcare
- Gamified immersive learning applications in health & wellbeing
- How gamified immersive learning applications are created
- How to access more information

360 DEGREE IMMERSIVE TECHNOLOGIES

360 DEGREE VIDEO

360 Degree Cinema at EPCOT Theme Park USA 1980s

DIGITAL CONSUMERISATION OF 360 CAMERAS

360 Degree Cameras are now consumer items

ISAGA 2018

ISAGA 2018


DIGITAL CONSUMERISATION OF 360 DISPLAYS
Virtual Reality experiences are now more affordable


AUGMENTED AND MIXED REALITY
Factory Floor
Mixing the real and virtual worlds


DIGITAL CONSUMERISATION 1990 - 2021
Developed by Consumers
Mobile and Online Games
Console Games
Developed by Professionals
Proprietary "Dumb" Unconnected Expensive
Technology Characteristics
Generic "Smart" Connected Inexpensive


THE ENABLING TECHNOLOGIES
Computer processor power
Memory storage
Sensor technologies
Video and audio capture and output technologies
Nano technologies
Wireless technologies
Mobile device technologies
Battery technologies
Haptic technologies
A cocktail of inter-dependent technologies is needed for commercial viability


MEDICAL EDUCATION AND TRAINING


INTERACTIVE IMMERSIVE MEDICAL EDUCATION
CATEGORIES
MODULES
DETAILS
LEARNING HUB
Otolaryngology
Orthopaedic Surgery
Neurosurgery
Cardiothoracic Surgery
Urology Surgery


INTERACTIV 360


GAMIFIED LAPROSCOPIC SURGERY
A combination of gamification, immersive experience & haptics


WHAT IS GAMIFIED IMMERSIVE LEARNING?


WHAT IS GAMIFICATION?
REALITY
Worst game ever.
Every Human Activity can be Viewed as a Game !!
20

GAMIFICATION IS A LIFE SKILL



Gamification and the ability/motivation to Gamify is embedded in the genetic make up of every living creature.

21

THE GAMIFICATION LENS VIEW OF HUMAN ACTIVITIES

Growing Influence and Ability to Achieve Goals

Strategist
Tactician
Motivator
Coach

Skill
Ability
Motivation
Self-Esteem

Games Master
Player
Pan
Spectator
Hermit

Loyalty
Passion
Engagement
Support

Interest
Awareness
Knowledge

Unaware
Independent
Self-sufficient

22

HOW DO GAMES INFLUENCE BEHAVIOUR?

START POINT

The Game Journey

Challenge
Uncertainty
Motivation
Same but Different
Choice
Influence
Measurement
Feedback

GOAL
OBJECTIVE

GAMIFYING HEALTHCARE

Where you are | The Journey | Where you finish up

START POINT

DESTINATION

Gamification Prescription

Challenge
Uncertainty
Motivation
Same but Different

Choice
Influence
Measurement
Feedback

Great Journeys lead to Unexpected Destinations

GAMIFICATION & ENABLING TECHNOLOGIES (2013)

MEASUREMENT & FEEDBACK (2013)

MEASUREMENT AND FEEDBACK (2013)

Snapshot d

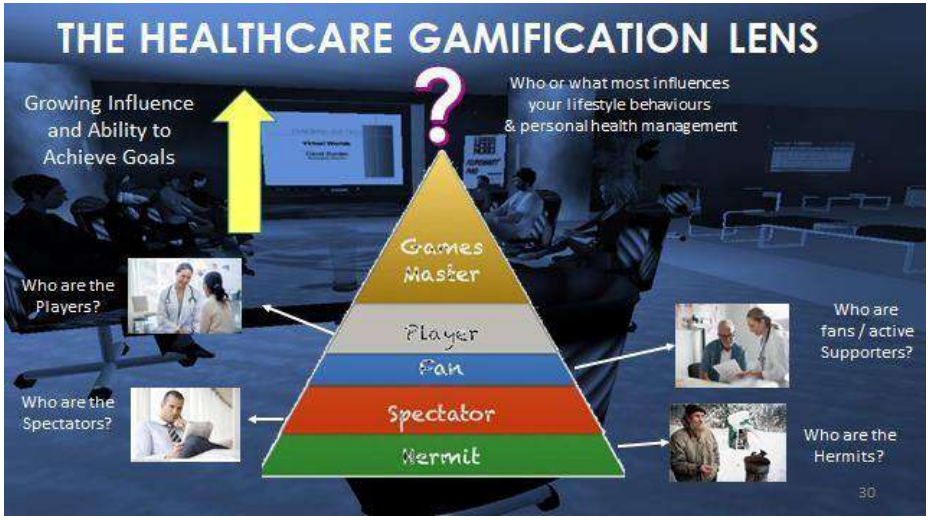
Real Time data

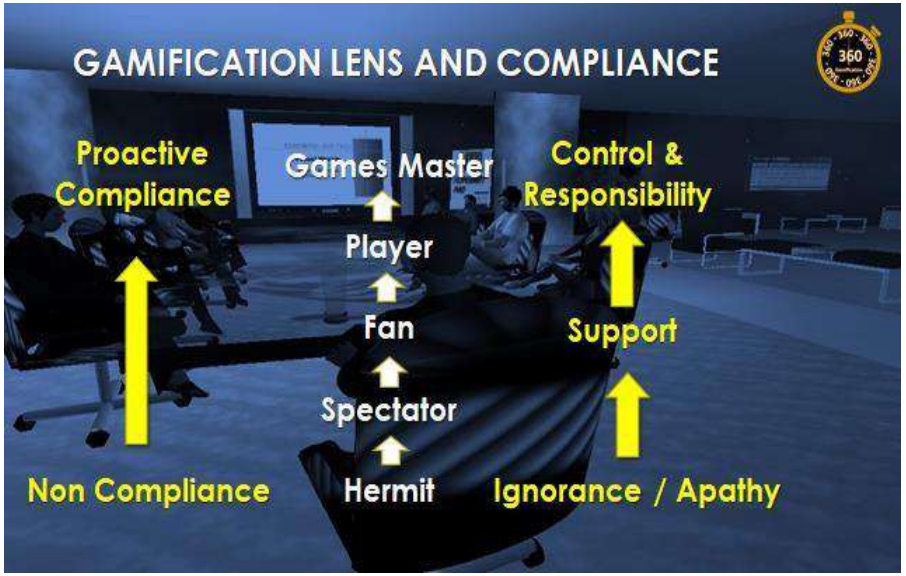
27

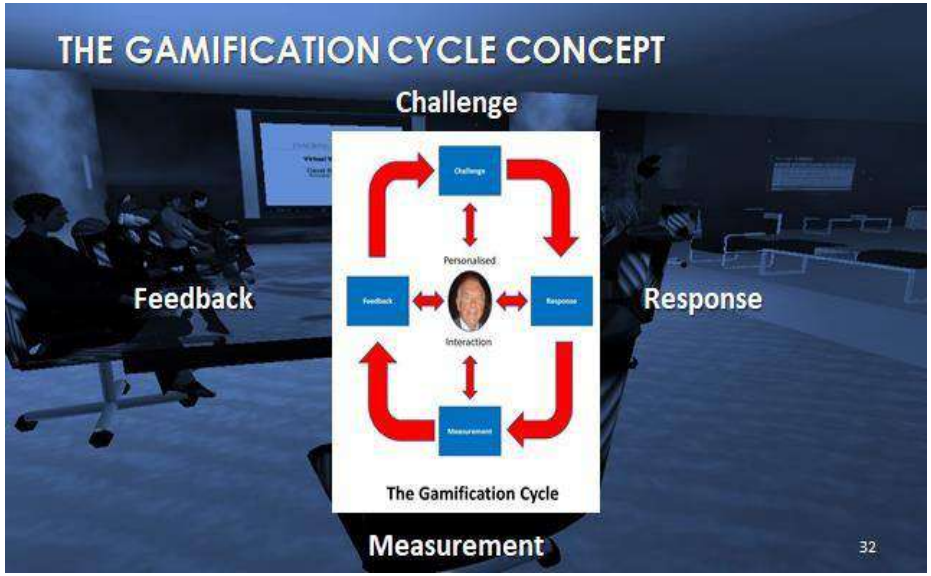
LEARNING OUTCOMES

- 10,000 step target improves physical & mental wellbeing
- Diet is more important than exercise
- Diabetes can be prevented/reversed
- Protein prevents muscle loss
- Drinking Water & Sleep Quality are important
- Living alone brings easier compliance


RECIPE FOR EFFECTIVE GAMIFICATION
Challenge
Risk / uncertainty
Motivation
Choice
Influence
Measurement
Feedback
Technologies
Drive
Enable
Behaviours
Gamification
Influence


THE HEALTHCARE GAMIFICATION LENS
Growing Influence and Ability to Achieve Goals
Who or what most influences your lifestyle behaviours & personal health management
Games Master
Player
Fan
Spectator
Hermit
Who are the Players?
Who are the Spectators?
Who are fans / active Supporters?
Who are the Hermits?
30

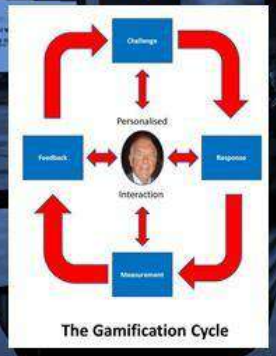

GAMIFICATION LENS AND COMPLIANCE
Proactive Compliance
Games Master
Control & Responsibility
Player
Fan
Support
Spectator
Non Compliance
Hermit
Ignorance / Apathy


THE GAMIFICATION CYCLE CONCEPT
Challenge
Feedback
Response
Measurement
The Gamification Cycle
32

THE HEALTHCARE GAMIFICATION CYCLE

You have a medical challenge

Feedback
How am I doing?



The Gamification Cycle

Response
What can I do?

What can I measure?

33

HEALTHCARE GAME ELEMENTS

Scenarios/Narratives
Challenges
Rules
Chance/Uncertainty
Risks
Rewards/Incentives
Penalties
Competition
Exploration
Success/Achievement

Failure
Discovery
Leaderboards
Learning
Development
Skill/Ability
Action/Reaction
Measurement
Feedback
Reflection

Gamification introduces some or all of these elements into everyday situations
https://www.slideshare.net/dwortley/gamification-and-enabling-technologies-white-paper

THE "A LIST" INFLUENCERS

Every Individual responds to different influencers in making decisions or choices

35

HEALTHCARE GAME INFLUENCERS

Authority
Who will you listen to?

HEALTHCARE GAME INFLUENCERS

Adjacency (Peer Influencers)
Do you know anyone else with the same condition?

TECHNOLOGY, GAMIFICATION & COMPLIANCE

Technologies	Gamification Elements	Compliance Barriers
Wearables	Challenge	Denial
IOT	Uncertainty	Cost
Cloud Computing	Motivation	Difficulty
AI	Same but different	Side-effects
Big Data	Choice	Trust
Smartphones	Influence	Apathy
Virtual Reality	Measurement	Bad experience
5G	Feedback	

DEVELOPMENTS SINCE 2013

- Wearable devices becoming clinical grade
- Smartphone apps more sophisticated
- Artificial intelligence more embedded
- 3G wireless improved to 4G
- Emergence of tech-enabled ecosystems
- Lifestyle changes arising from relationship
- Pandemics, lockdowns and social distancing

TECHNOLOGY, GAMIFICATION & COMPLIANCE CASE STUDIES

- Wearable devices and mobile apps
- Technology enabled ecosystems
- Telehealth and remote patient care
- AI and Big Data Analytics
- Virtual Reality
- Immersive Technologies & Games

GAMIFICATION + IMMERSION = EFFECTIVE LEARNING

All games have learning outcomes and are inherently immersive
How can technology enable gamification and immersion?

IMMERSIVE TECHNOLOGIES AND GAMES





These technologies enable immersion and include gamification elements

DEMO IMMERSIVE LEARNING APPLICATION

TECHNOLOGY COMPONENTS

- 360 degree cameras
- Drones
- Interactive immersive experience software



COSTS AND BENEFITS
High spec desktop computer £800
High Spec Smartphone £800
High Spec 360 Degree Camera £800
Drone £600
Broadband Connectivity (Router etc) £400
Development Software £600
Ongoing Monthly costs for connectivity etc £100 per month
For a modest outlay, anyone can create and publish professional gamified immersive learning experiences


THANK YOU
For more information, please contact me at david@davidwortley.com

Webinar - 17

Day, Date & Time: Saturday, 15-05-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Claudia M Schmitz,** Owner, Cenandu Learning Agency

Country: Germany

Title: The Art of Facilitation

Webinar Topic

The Art of Facilitation

Abstract

A facilitator is the master of large group learning. Some use games or simulations for a purpose and it became a guided process. For a facilitator, it is important that the participants get into the game, enjoy it and reach a flow and play "without" the facilitator. But the experience is only successful, when they see the relevance to their reality and have the will to take learnings home and implement them. Facilitation sometimes is more the ART of a magician than of an academic teacher or consultant. There is always the dilemma: If you offer too much details and information, you ruin the game. If you stick too much to the structure of the game and behave like a referee in a football game, you miss the point. They enjoy the game, but where is the learning? The facilitator needs to feel and sense the moment and give space for the participants for their view. It is an act of balancing. The way a facilitator designs a workshop with a game shapes the behavior of participants, while at other points the facilitator needs to adapt the design spontaneously in order to respond to the group. Listening to the participants and their needs is the mindset.

Speaker Profile

Claudia worked in the field of Public Relations and Corporate Communication for nearly 15 years. From Automotive to Waste-Management, from Banking to Telecommunication – the field was wide. In 1999 she became Facilitator of board games with Celemi, a Swedish Company who designs learning in organisations at their office in Belgium.) After 9/11 she founded her own company Cenandu learning Agency in Germany in 2002, using the simulations for her workshops. She enlarged her facilitation knowledge with more learnings around large group intervention, systemic consulting, cultural analysis, deep facilitation and personality types. Claudia works with large companies, most of them in the Tech Sector. She works with corporate development in change programs and is specialized in finance topics and business

mindset. Beside all business she has a strong Non-Profit Engagement: Member of the management network EWMD since 1991 and Member and board advisor of SAGA Simulation and Gaming Association since 2005. Since 2020, she has been involved in a local organisation that supports biodiversity and fruit trees.

The Art of Facilitation

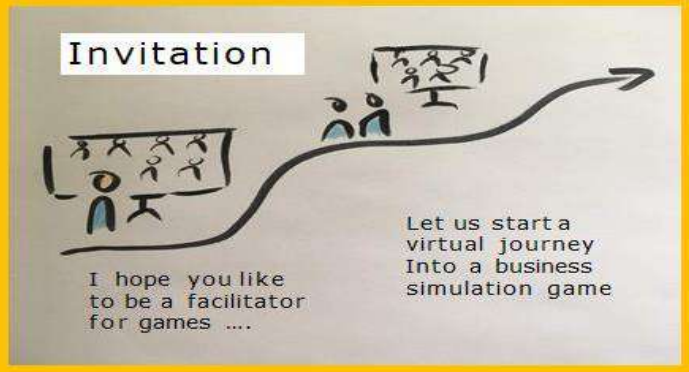
Experiences lived through by Claudia Schmitz

Master Facilitator - Cenandu Learning Agency

Hello
Everyone
Out
There

I am
In
Germany

And
You?



20 years ago – I started my new life with Celemi
A swedish company – with the European Office in Brugge/Belgium

They did business simulations for large companies
And I had to learn to facilitate large groups.

I was not confident in finance ....
I was not perfect in English
I was unable to remember all these steps

I was scared

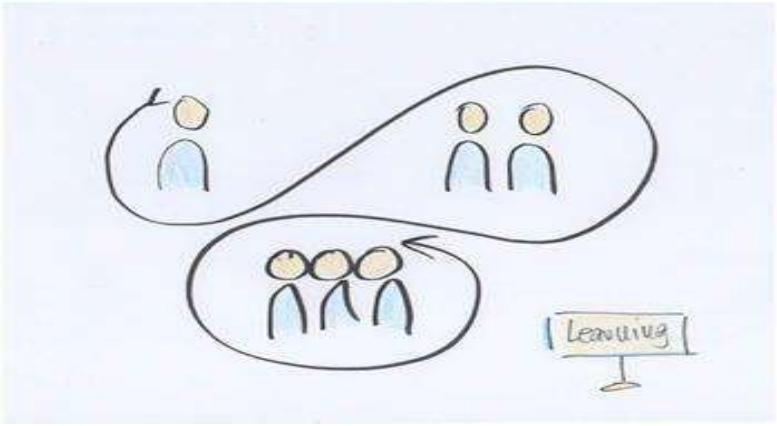

The Helium Stick
Wiedergabe (k)

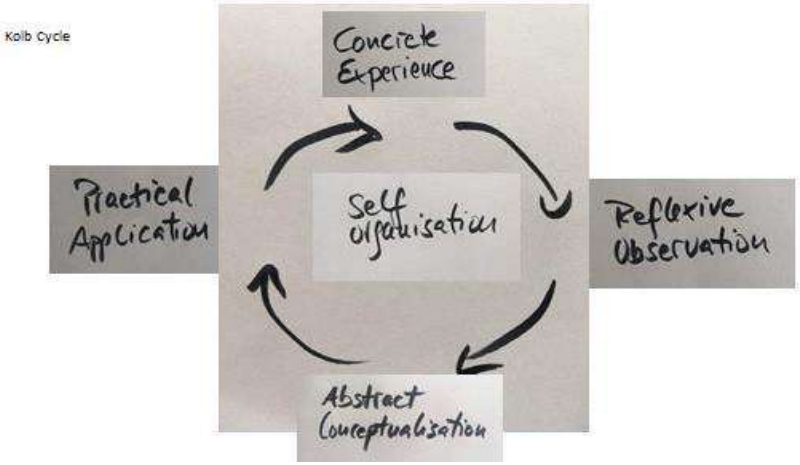


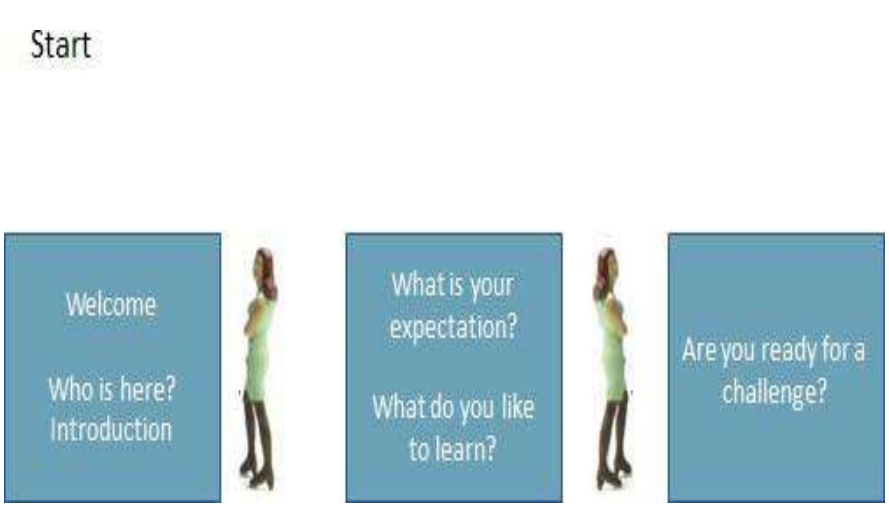


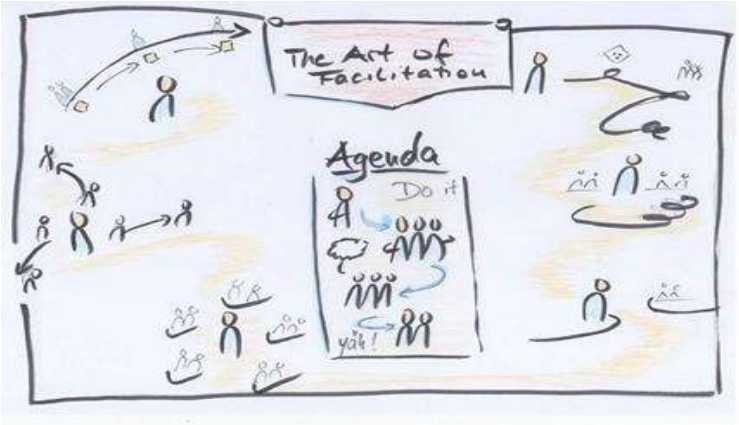
- Before you ever will facilitate by yourself
- You will be a player and enjoy it

- The next step is
- To play again and observe the facilitator
- Than you are the Co-Facilitator
- Only if you feel ok – you will do it yourself


Learning


Kolb Cycle
Concrete Experience
Practical Application
Self organisation
Reflexive Observation
Abstract Conceptualisation


Start
Welcome
Who is here?
Introduction
What is your expectation?
What do you like to learn?
Are you ready for a challenge?


The Art of Facilitation
Agenda
Do it
yak!

Take notes

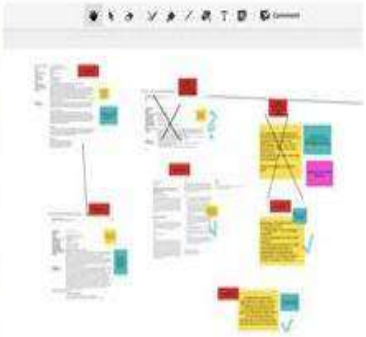
What is a simulation and what a board game?	*Is there a difference with students?*	*Do we learn about the business model and strategy*
What might come up? How to prepare?	*What if I do not know ?*	

Who is here ?

Icebreaker-Excercise:
Tell 3 activities you do and one is a lie
.... The others guess, what is the lie

Storytelling:
Your beloved place in your town.

Agenda about what they will do



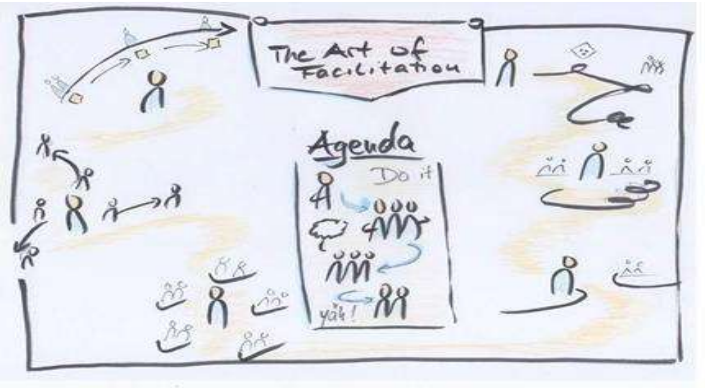
Use Whiteboards to visualise

Set up the teams

- Try to be as divers in the individual teams as possible

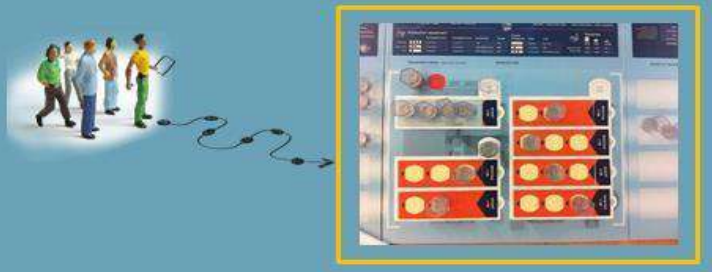
What is your expectation – and what came to your mind when getting the invitation?

Align with the second facilitator



What are we up against? Start with a story about the game

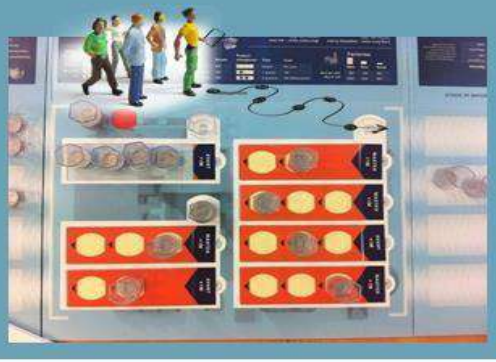
What can you see from outside the company?



SWOT – bring together what you know

	helpful	harmful
internal	S	W
external	O	T

Now the board – deep dive - process



Step by Step

Sense – observe – feel the group – avoid discussion – answer questions

Take your roles – and your tools

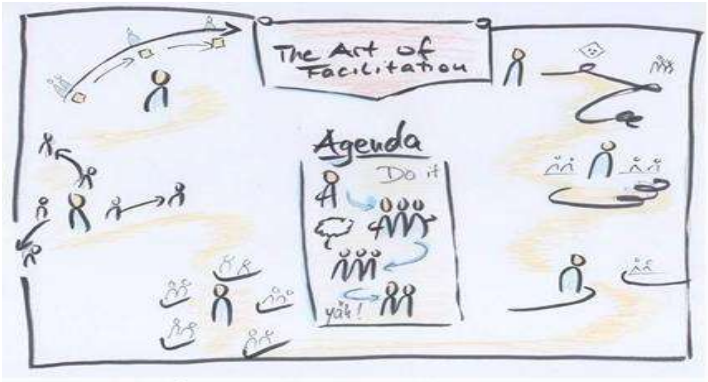
Data Analysis

Market Intelligence

Coming together as a group

What is the result after round 1 ?

Facilitator is the Master



Planning – Thinking – Decision making

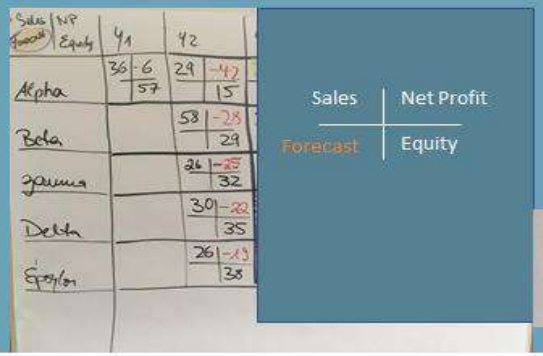
What is the result?

Profit & Loss Statement

Balance Sheet

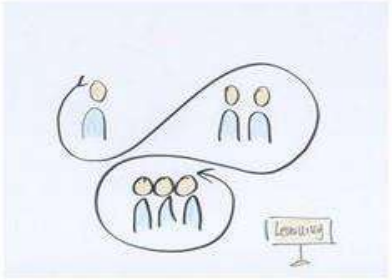
Market forecast

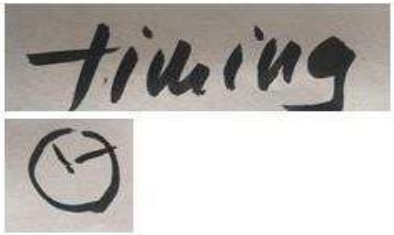
What is the result after round 2 ?



Abstract Conceptualisation

Concept about learning





Personality types

Conflict by role

The market place

Active Decision Maker
Sales people

Observer

Behaviour Observer

Create Tention

Who makes the decision?

Quick learning curve
Which data is missing?

Do we have enough?

Can I take one more customer?

Use second room for real reflection

Alpha

Beta

Gamma

Delta

Epsylon

Zeta

Sleep

Do a recap

- What happened yesterday – and how do you feel about it?
- What was still on your mind this night?
- What would you like to look at today?

Observation

Break Team dynamic – new player - integration

She needs a new role – to get new perspective

Swop jobs – new learning

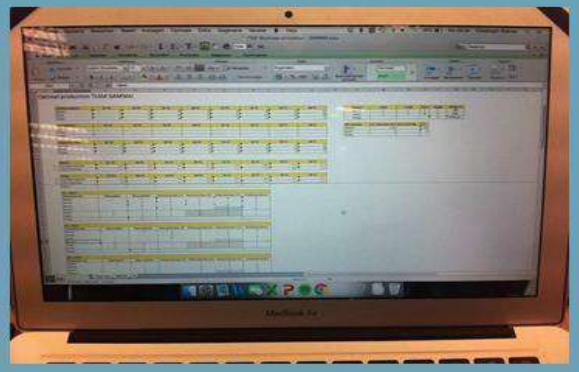
Production

Finance

Analyse Data - easy

	Cash flow		Start	Q1	Q2	Q3	Q4	End
A	Cash at beginning of period	=						
	Cash flow from operations							
	Accounts receivable paid in period*	+				26		64
	R&D	–		1	1	0	0	
	Market establishment	–	2					
	Marketing and sales	–	5					
	Purchase of materials	–		4	0	8	0	
	Product changeover	–				0		
	New production orders	–						
	Quarterly overhead	–						
	Rental costs	–						
	Department overhead costs	–						
	Other	–						
	Taxes paid	–						
B	Total cash flow from operations	=						
	Cash flow from investments							

Give it to them



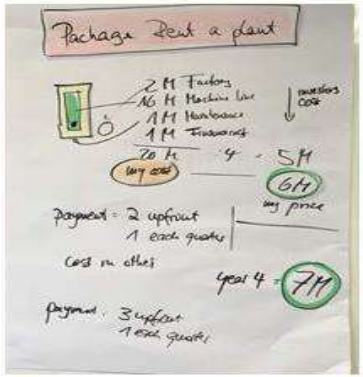
self organisation

They will make their own tools

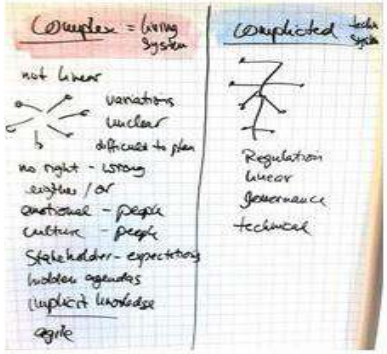
Breaking Rules

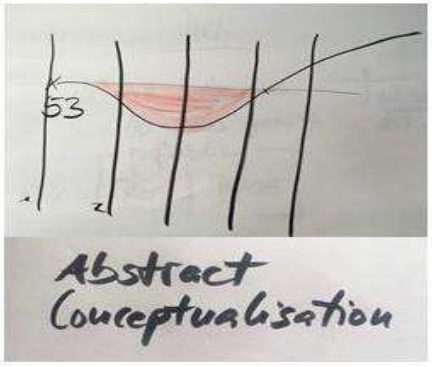
Welcome ideas and model the new ideas into the game

Rent a plant with machine instead of buying it

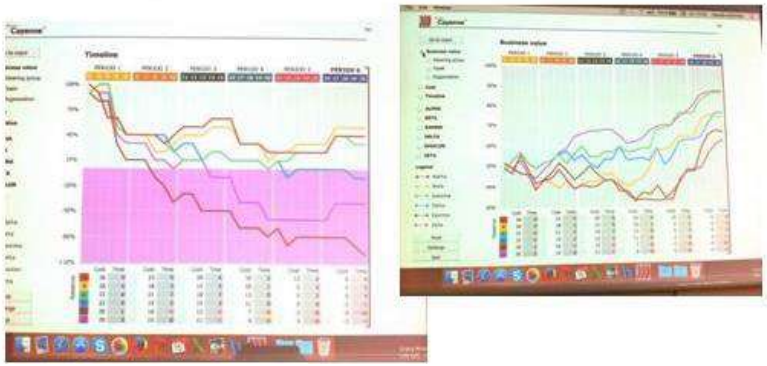


Job is business angle



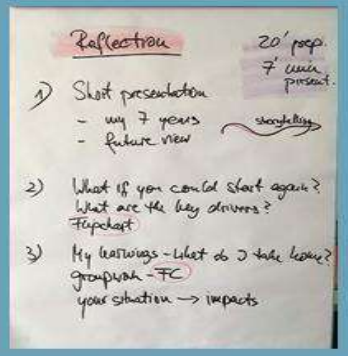


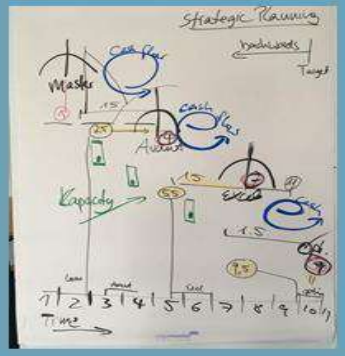
Feedback of participant



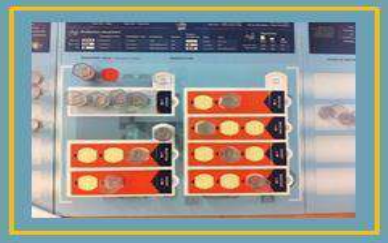
Genchi Genbutsu (現地現物) literally translates "real location, real thing" and it is a key principle of the Toyota Production System. Go and see

Reflexive Observation





How to guide them out of the game?



What is there take home?

Homo Oeconomicus ?

- Rational, egoistic, utilitaritic – Human behaviour
- All ready for automatisation?

Homo Ludens ?

- Emotion, Empathy, Mindful, social , purpose, selfdevelopment

Why learning with a board game?

It is a model of a company or a sub-areas. You play in a protected environment you are allowed to make mistakes

Participants take on the role of company management – a "new" one

Making decisions in a team under time pressure and experiencing typical conflicts of objectives – avoid some by better planning

Business management methods and information tools are used

Dealing with uncertainty in decision making work with scenarios

Practical application of "theoretical knowledge" and "your own experiences" enables sustainable learning. You will remember

Customer Expectation

What is the goal of the boardgame Workshop?

I thank all my teachers

Thank you all for your interest

Try it out for yourself – ok ?

Webinar – 18

Day, Date & Time: Saturday, 22-05-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Bharath Palavalli,** Co-Founder, Fields of View and Ashoka Fellow, Bangalore Urban, Karnataka

Country: India

Title: Gaming-Simulations to Design Better Public-Policy

Webinar Topic

Gaming-Simulations to Design Better Public-Policy

Abstract

The session focused on the use of gaming-simulations in the world of public-policy. Often, gaming-simulations are used in the space of learning and training, both as a classroom training tool and as special aids for specialized audience who require specific training. However, gaming-simulations provide an environment that is amenable to use in public policy. Well-designed gaming-simulations can reduce entry barriers in public policy and allow people from diverse backgrounds to interact through the game, thereby greatly increasing inclusion and participation in public policy. The "sandbox" environment of gaming-simulations allows participants to explore, fail and therefore test various strategies that are critical elements to eliminate undesired consequences and at the same time arrive at mutually agreeable formulations of policies.

The complexity in public policy is discussed as a class of problems widely known as "wicked problems". In such a multi-stakeholder situation, all the preferences and biases are either not captured in policy formulation or are misrepresented due to the reasons arising from lack of methods to capture these needs, to the inability to comprehend these needs. Gaming-simulations bridge this gap by allowing these preferences, biases and needs to be captured and then used in the policy formulation process. In this webinar, Invited speaker drew upon a decade of work by Fields of View in the Indian context in the areas of poverty, transport, energy, disaster management and urban planning to talk about the use of gaming-simulation as tools in public policy.

Speaker Profile

Bharath M. Palavalli researches and designs tools such as games and simulations to help make better public policy. For nurturing this innovative idea of designing tools and methods to allow different stakeholders to collaborate on creating relevant and usable policy, Bharath

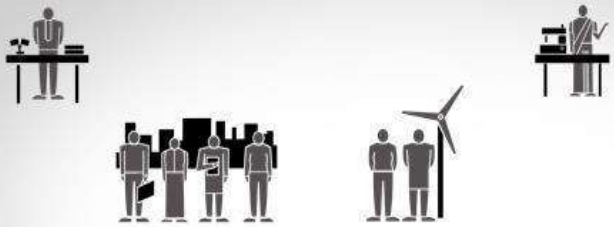
was elected to the prestigious Ashoka Fellowship in 2018. His current work focuses on policy design and planning in the context of developing countries.

GAMING-SIMULATIONS TO DESIGN BETTER PUBLIC POLICY

Bharath M. Palavalli

ISAGA
Shri Vaishnav Vidyapeeth Vishwavidyalaya
2021

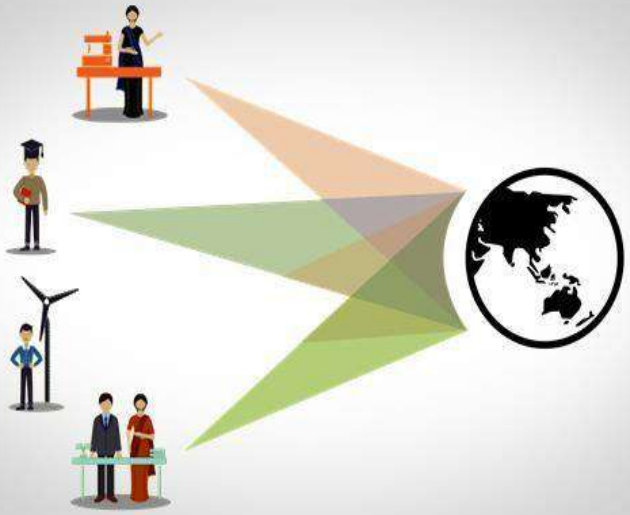
We design games and simulations
to help make better public policy

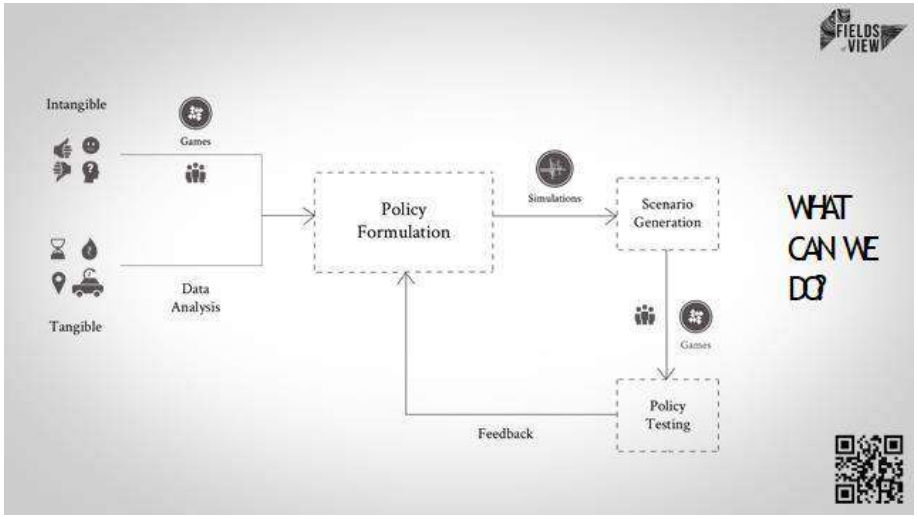


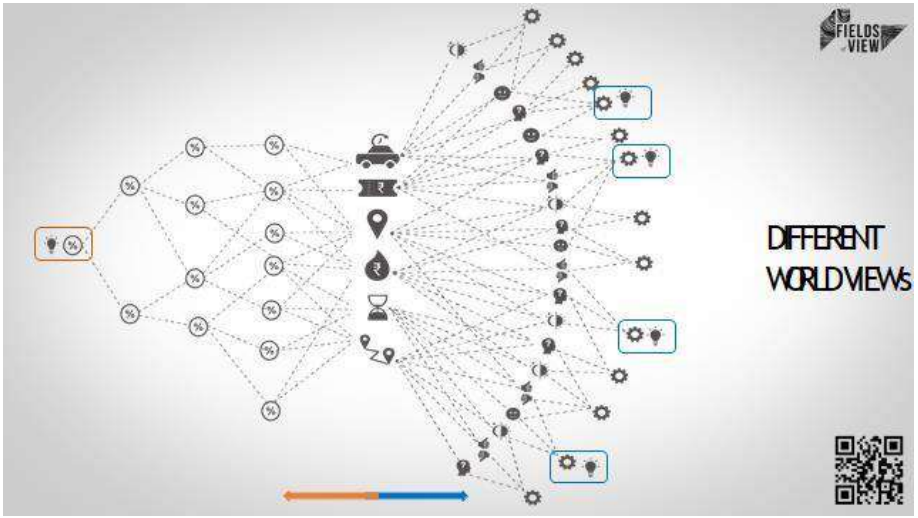
We need policies that are relevant to the lives of people.

We need rapid policymaking.

We need policies responsive to changing social, political, and environmental situation.







THEMATICS

- Fidelity vs Abstraction
- Modelling conflicts
- Validity of results
- Fallacy of the 'Magic Circle'
- Where does the game fit?
- Art of facilitation or Science of facilitation


CITY GAME


MADE
TO
ORDER


Fields of View


THEMATICS
Modelling conflicts
Conflicts
Within self
Within the players
Players & System
Collective winning & loss Vs. Individual winning and loss

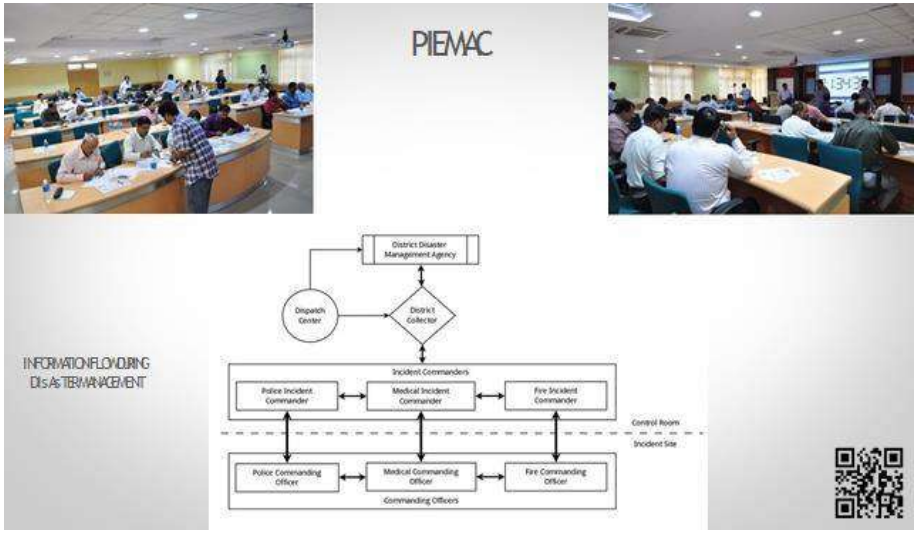
THEMATICS

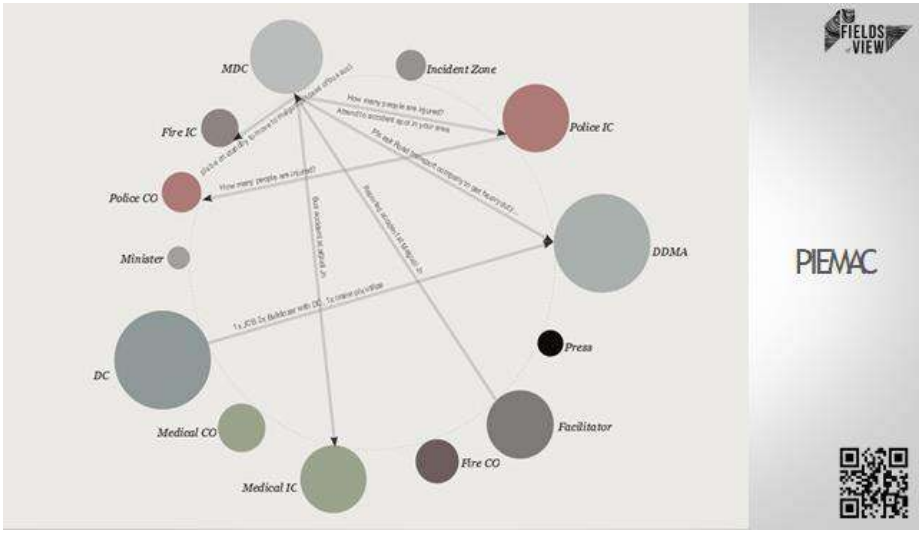
Validity of results

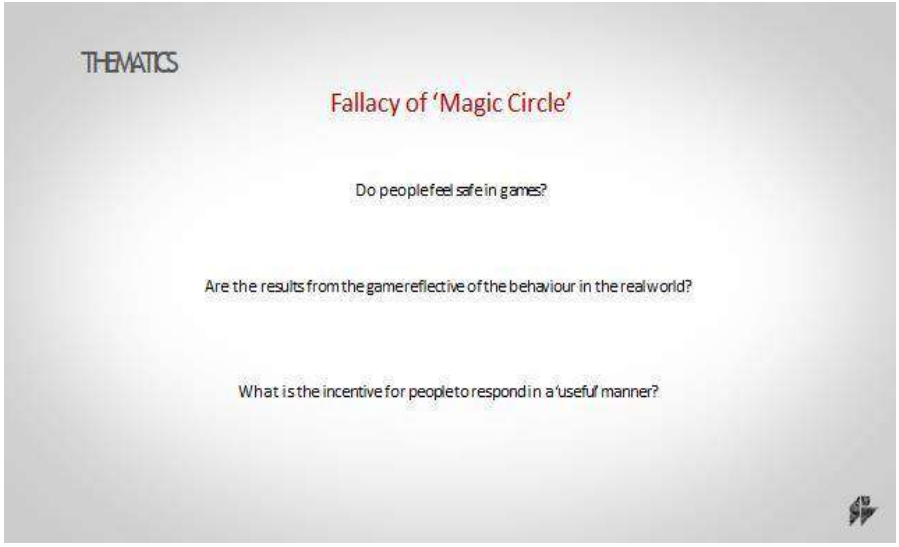
Are the results from game sessions biased?

Can the results from game sessions be compared with results from other means?

Are these results consistent?


PIEMAC
INFORMATION FLOW DURING DISASTER MANAGEMENT
District Disaster Management Agency
Dispatch Center
District Collector
Incident Commanders
Police Incident Commander
Medical Incident Commander
Fire Incident Commander
Control Room
Incident Site
Police Comenanding Officer
Medical Commanding Officer
Fire Commanding Officer
Commanding Officers


MDC
Incident Zone
Fire IC
Police IC
Police CO
Minister
DDMA
Press
DC
Medical CO
Facilitator
Fire CO
Medical IC
PIEMAC


THEMATICS
Fallacy of 'Magic Circle'
Do people feel safe in games?
Are the results from the game reflective of the behaviour in the real world?
What is the incentive for people to respond in a 'useful' manner?


INDIAN ENERGY GAME

INDIAN ENERG Y GAME

THEMATICS

Where does the game fit?

Describe rules of the game Hand out notes Hand out playing material	Briefing	Facilitator
Manage game session Observe interaction Take notes on progression & interaction	Game play	Facilitator, Observer and Co-facilitator
Discussion actions in the game Discuss interactions Questions for reflection	De-briefing	Facilitator, Observer

THEMATICS

Where does the game fit?

Oh! We have a problem

Who has the problem?

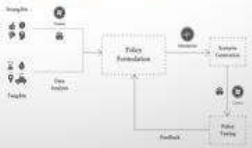
What is the problem?

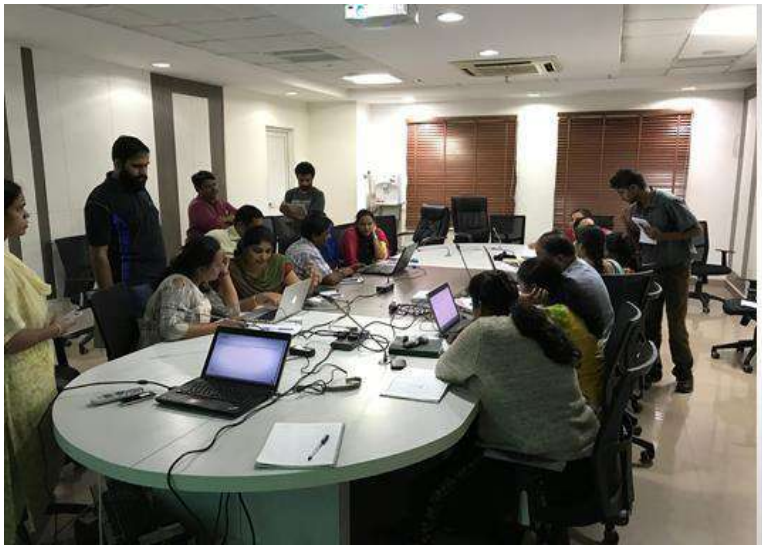
Can we use a game?

When is a game useful?

- Is there conflict because of differing goals/objectives?
- Are there different outcomes?
- Is there a conflict because of lack of or limited resources?

Where will it be used?





GOVERNMENT

CIVIL SOCIETY
AND AFFECTED
COMMUNITIES

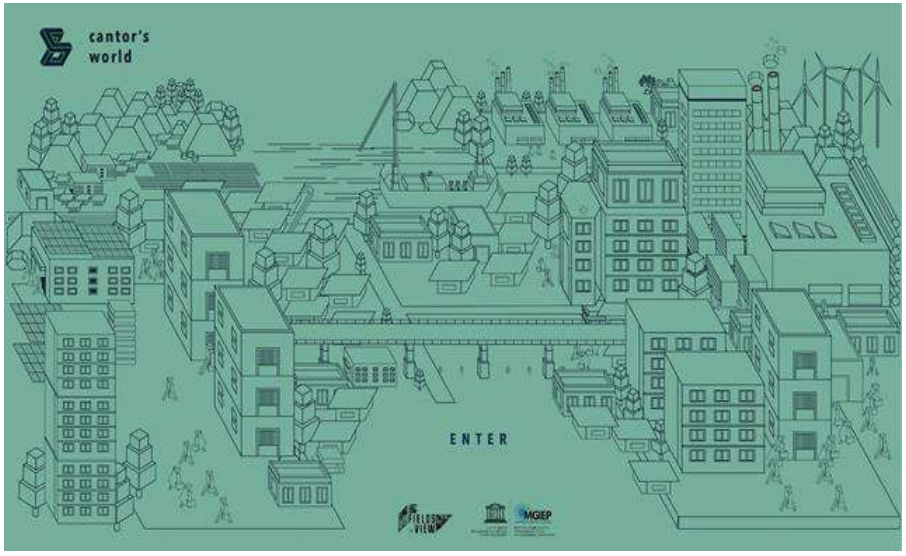
THEMATICS

Art of facilitation or Science of facilitation

Game Master or Facilitator?

Skills for observation, guiding, and people management

Debrief: Listen or probe or structured feedback?



UNLIKE TRADITIONAL THINK-TANKS

For the eighth consecutive year, Fields of View has been featured in the 'Global Go To Think Tank Index Report' by the University of Pennsylvania that ranks public policy research organisations worldwide in the 'Best New Idea or Paradigm developed by a Think Tank' category.

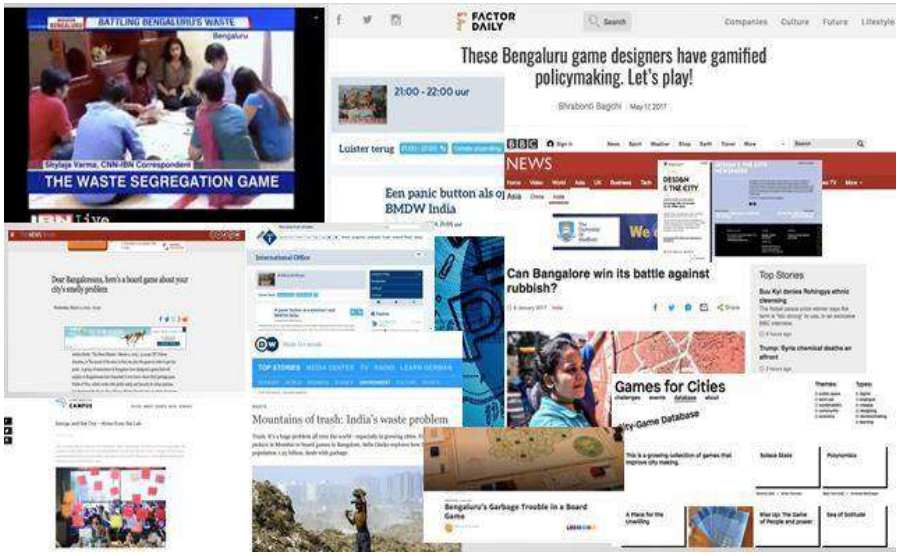
Since 2017, we have been featured in the "Top Think Tanks in China, India, Japan, and the Republic of Korea'.

TTCSP

http://repository.upenn.edu/think_tanks/

WHY ARE WE BEST SUITED TO BUILD SUCH A PLATFORM?

TISS · Carnegie Mellon University College of Engineering · TATA TRUSTS · mediaLABamsterdam · mit-b · Centre for Budget and Policy Studies · sahjeevan · Department of Science & Technology, Government of India · TARU · NWO · gender at work · MGIEP · UNDP · National Institute of Design · Computational Science Lab · TU Delft · eScience center · Goethe Institut · IFA



FIELDS of VIEW

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Webinar - 19

Day, Date & Time: Saturday, 29-05-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Ramesh Sharma,** Ambedkar University Delhi, New Delhi

Country: India

Title: Simulation Games through Virtual Worlds in Education

Webinar Topic

Simulation Games through Virtual Worlds in Education

Abstract

Simulation games using virtual worlds have high pedagogical significance in education. Virtual worlds are computer generated simulated spaces where the users interact with each other using an avatar, carry out activities and transactions, depending upon the kind of virtual world it is. Some of the examples of virtual worlds are Secondlife, Virbela, The Sims, Active Worlds, Kaneva, IMVU etc. These virtual worlds act as immersive environments where the students engage themselves in simulated conditions. Virtual worlds have been reported to enhance students' engagement and learning by reducing the cognitive load to process the information for the participants. The students can learn about concepts here by living them. They can transport themselves to new locations and learn by discovering things on their own. There are further benefits of adopting virtual worlds in education, like: no need for physical travel by people, reduction in performance anxiety, allowing synchronous and asynchronous communication, collaboration and cooperation on a project. An exact replica of real world can be created in virtual spaces. For example, an university, a museum or a fort. These serve a great purpose as the constructionist paradigm where experiences can be based on situated learning theory. Virtual worlds are highly interactive in terms of speed, range and mapping. Theory of cognitive fit has significant impact on the learning outcomes as users can make use of the senses of vision and sound. Task-Technology fit is quite high in virtual worlds as the sense of vision, orientation; sound creates an immersive environment enabling higher learning outcomes. This presentation will discuss various types of simulation games using virtual worlds and how these can contribute to higher learning attainments.

Speaker Profile

Dr Ramesh Sharma teaches Instructional Design at Ambedkar University Delhi, India. Earlier he has taught Educational Technology and Learning Resources at Wawasan Open University, Malaysia. He is an expert in simulation games, open and distance and technology

mediated learning. His team has got a patent on "Museu Virtual Teatro São João" from the Federal Republic of Brazil. This simulation game was created as RPG. He has served as a visiting Professor at Universidade do Estado da Bahia, UNEB, Salvador, Bahia, Brazil, visiting Professor at University of Fiji, Fiji, Commonwealth of Learning as Director of the Commonwealth Educational Media Centre for Asia, New Delhi, Regional Director of Indira Gandhi National Open University, India and Director of Distance Education at University of Guyana, Guyana, South America. He had been a member of Advisory Group on Human Resources Development for the United Nations Conference on Trade and Development (UNCTAD). While at University of Guyana he also collaborated with UNDP for its Enhanced Public Trust, Security and Inclusion (EPTSI) project, Volunteer Service Overseas (VSO) and United Nations Volunteer (UNV) to develop suitable educational opportunities for communities and youth.

He is editing Asian Journal of Distance Education since 2003 and has been associated with several other peer reviewed journals including SSCI / SCOPUS Journals as Reviewer, Editor and Editorial Advisory Board member in the field of Open and Distance Learning.

SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE - INDIA

International Simulation and Gaming Association (ISAGA)

Simulation Games through Virtual Worlds in Education

29 May 2021

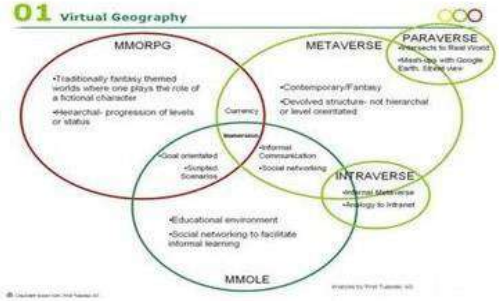
Ramesh Sharma

3 kinds of worlds

The Real World, the Digital World (2D Web, Internet), and the Virtual World (3D Web).

Susan Kish, 2007

Emerging Universes



- **MMORPGs** (massive multiplayer online games, such as World of Warcraft)
- **Metaverses** (Virtual Worlds that are primarily social vs. game oriented, such as Second Life)
- **MMOLEs** (focused on learning and training environments)
- **Intraverses** (putting up a virtual world inside the corporate firewall)
- **Paraverses** (often also called Mirror Worlds, such as Google Earth)

http://www.lunchoverip.com/2007/10/second-life-vir.html

What is a virtual world?

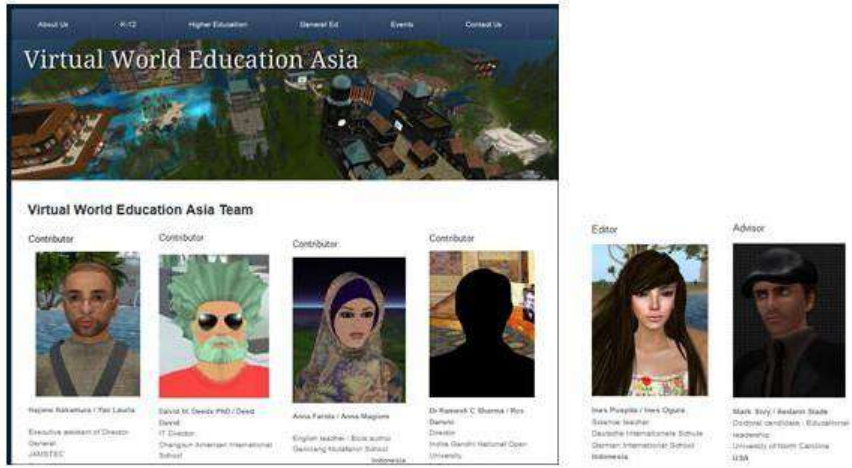
- A **virtual world** or **massively multiplayer online world** (MMOW) is a computer-based simulated environment.
- The term has become largely synonymous with interactive 3D virtual environments, where the users take the form of avatars visible to others.
- These avatars usually appear textual, two-dimensional, or three-dimensional representations, although other forms, such as live video avatars, are possible, with auditory and touch sensations.
- In general, virtual worlds allow for multiple users.

Source: http://en.wikipedia.org/wiki/Virtual_world

Chilbo Headquarters

Virtual Worlds: Simulations, Games, Social Learning and Pedagogy

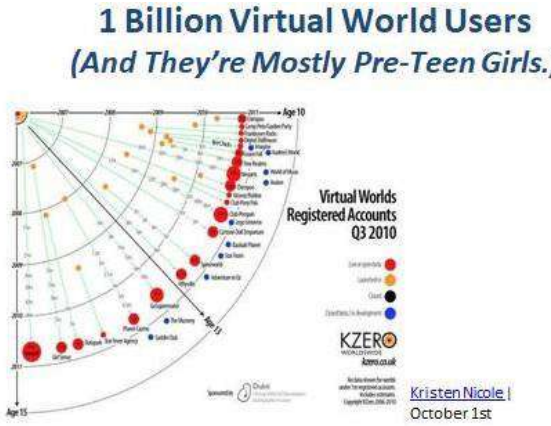
Thanks to Ines Setiawan for allowing to use images from her SecondLife album



https://virtual-world-education-asia.weebly.com/vweasia-team.html

https://helsinkixrcenter.com/our-first-virtual-conference-experience-at-laval-virtual-world-2020/

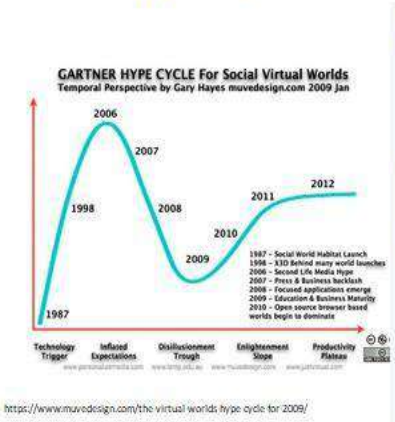
https://conf.seriousgamessociety.org/laval/



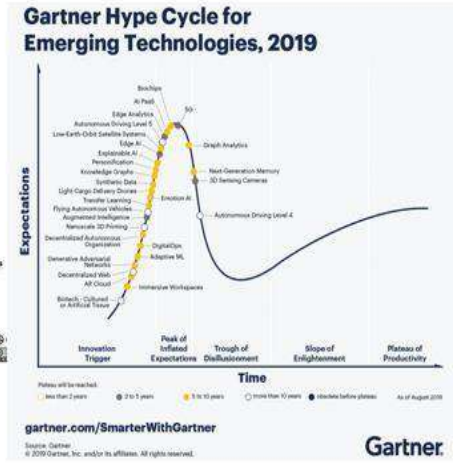
Kristen Nicole | October 1st

http://siliconangle.com/blog/2010/10/01/1-billion-virtual-world-users-and-theyre-mostly-pre-teen-girls/

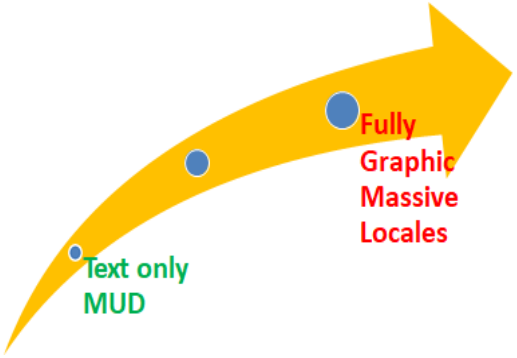
Technology adoption framework



https://www.muvedesign.com/the virtual worlds hype cycle for 2009/



Virtual Worlds and Metaverse Platforms: Evolution



Gods Unchained

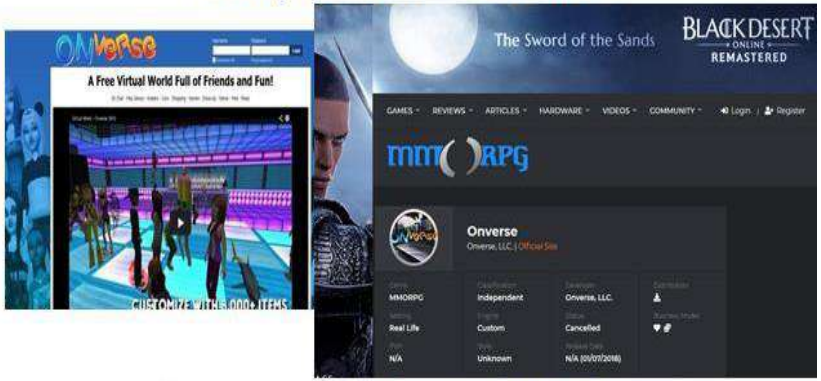
Gods Unchained is a turn-based digital card trading game that operates on the Ethereum blockchain.

Examples of Virtual Worlds

Examples of Virtual Worlds

https://www.activeworlds.com/

Examples of Virtual Worlds



Onverse, or Online Universe, is a new 3D virtual world and social network that offers players a virtual space to hang out, meet others, and play together.

Examples of Virtual Worlds

Twinity is a 3D online virtual world. Initially developed by Metaversum GmbH, it is currently held by ExitReality. The game offers its population, called Twinizens, to navigate around virtual versions of real-world cities, also called a mirror world or a Metaverse. Wikipedia

Initial release date: 5 September 2006
Engine: BigWorld Technology
Platform: Microsoft Windows

Examples of Virtual Worlds

SmallWorlds was an online virtual world and social network service created by Outsmart Games, a privately owned company based in Auckland, New Zealand. The virtual world used Adobe Flash and ran inside a web browser. It integrated with YouTube, Flickr, SoundCloud, and a number of other Web 2.0 services. Wikipedia

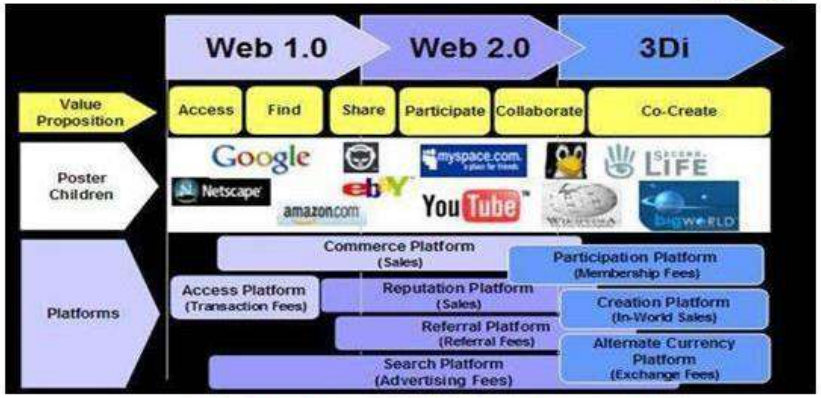
Initial release date: 1 December 2008

Examples of Virtual Worlds

Examples of Virtual Worlds

Virtual World and Game Change Update

Tony O'Driscoll

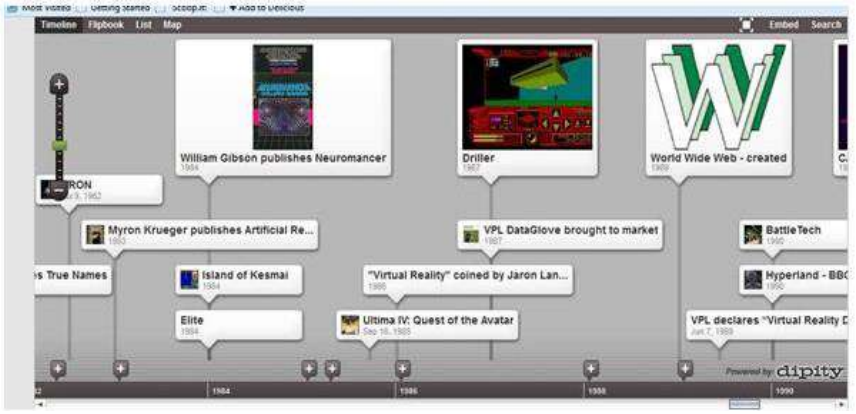


http://wadatripp.wordpress.com/2007/04/16/virtual-world-and-game-change-update/

History of virtual worlds

NASA's Virtual Environment 1985

"Virtual Reality" coined by Jaron Lanier of VPL 1986



World Wide Web - created 1989

The Matrix - 1999

Second Life, pre alpha (aka LindenWorld) Aug 2001

Second Life Jun 23, 2003

Second Life (SL) is a privately-owned, partly subscription-based 3-D Virtual world, made publicly available in 2003 by San Francisco-based Linden Lab, founded by former RealNetworks CTO Philip Rosedale. The Second Life "world" resides in a large array of servers that are owned and maintained by Linden Lab. The Second Life client program provides its users (referred to as "residents") tools to view and modify the SL world and participate in its economy.

World of Warcraft Nov 23, 2004

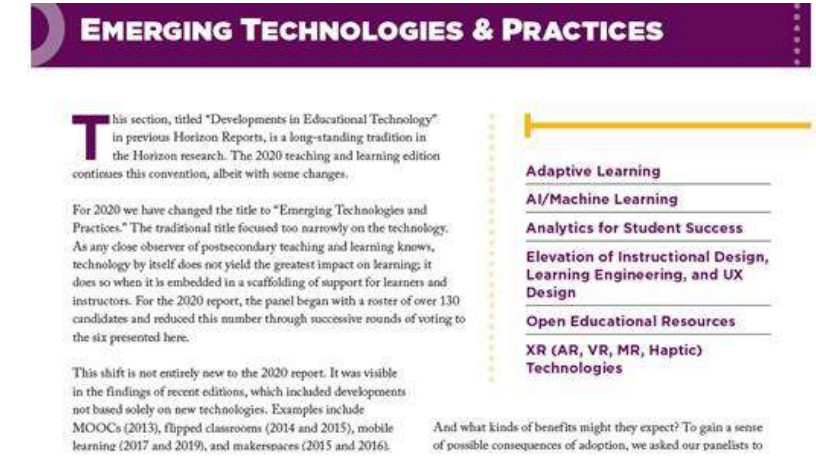
The NMC Horizon Report : Higher Education Edition

EDUCAUSE

The annual Horizon report started 16 years ago. The idea is that a panel of experts interact (using a Delphi Study format) to forecast short, medium and long term trends involving technology in Higher Education. The Horizon Report was started by the New Media Consortium (which was very active in Second Life in SL's early days). When the NMC went bankrupt in 2017, the Horizon Report was taken over by EDUCAUSE.. The report " identifies and describes the higher education trends, challenges, and developments in educational technology likely to have an impact on learning, teaching, and creative inquiry. "

https://wwer.info/2019/05/09/may-9-2019-horizon-report-2019/

https://library.educause.edu/resources/2021/4/2021-educause-horizon-report-teaching-and-learning-edition



https://library.educause.edu/resources/2020/3/2020-educause-horizon-report-teaching-and-learning-edition

https://vwer.info/2020/09/03/september-3rd-2020-ethnographic-exhibits-of-two-cultures-from-the-republic-of-panama/

VWER was founded in 2008 (initially with the name "Second Life Education Roundtable") and has been running continuously since then, developing a community of educators from around the world.

Social Learning

Natural history museum of Vienna

Wiki Loves Monuments: Photograph a monument, help Wikipedia and win!
Learn more

São João da Bahia Theater

From Wikipedia, the free encyclopedia

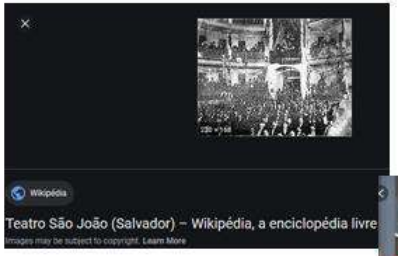
São João da Bahia Theater was a 19th Century Brazilian Theater located at Castro Alves Square (formerly Sé district) in the Salvador, Bahia. It was started to be built in 1806 and inaugurated in 1812.[1] It was a very large Theater in Brazil, with a seating capacity of around two thousand people.[2]

There is a virtual museum, the **São João da Bahia Virtual Museum**, that introduces this theater.[1]

References [edit]

1. ^ a b "Museu Virtual Teatro São João da Bahia". *www.teatrosaojoaodabahia.net.br*.
2. ^ Gupta, Priyanka. "Virtual Museum São João da Bahia Theater Through a Socio-Constructivist Paradigm".

http://www.teatrosaojoaodabahia.net.br/how-to-use.html



Radioactive dating class at Natural History Museum of Vienna in Second Life

https://secondlife.com/destination/natural-history-museum-of-vienna

2014 2 20 WWZY Natural History Museum Of Vienna, by European Architects , Second Life

55 views • Feb 20, 2014 1 0 SHARE SAVE ...

https://youtu.be/MAl9c6NI1Jw

Teacher teleporting

Studying Isotopes

Hajime Nishimura, Japan Agency for Marine-Earth Science and Technology. (JAMSTEC)

Study of polar animals

The U.S. National Weather Service monitors the virtual world:

NOAA Teaches About Weather in Second Life

Imagine...

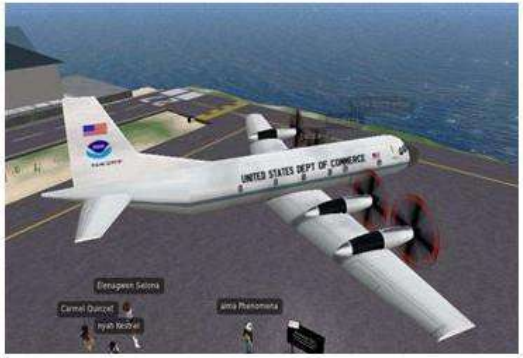
- *soaring through a hurricane on the wing of a research aircraft,*
- *rising gently through the atmosphere atop a weather balloon,*
- *searching a hidden underwater cave in a submersible watercraft.*

These and other virtual adventures are attracting large numbers of *avatars*, according to the U.S. National Oceanic & Atmospheric Administration (NOAA).

An avatar is a graphic representative of a person in a 3D virtual reality world. In this case, NOAA, which includes the National Weather Service (NWS), was one of the first United States government agencies to move onto an island in the rapidly growing online world of Second Life (SL).

http://www.spacetoday.org/NOAA/SecondLife/NOAA_SecondLife.html

Oceanographic studies



ResearchGate

Article PDF Available

Learning to teach in second life

January 2009

Authors:

Angelina Macedo
Agrupamento de Escolas Templários

https://www.researchgate.net/publication/228499875_Learning_to_teach_in_second_life

Basics of DNA Extraction

Inherited genetic disease tutorial using a virtual laboratory

This is a virtual laboratory activity conducted in Second Life, which can take from an hour to up to three hours complete. The Second Life laboratory is set out ready for students to use and work their own way through three case studies where they have to work out if the sample of DNA they are testing is positive or negative for a particular inherited disease.

https://www2.le.ac.uk/projects/vgec/highereducation/inherited-conditions-tutorial-using-second-life

Let's Talk DNA

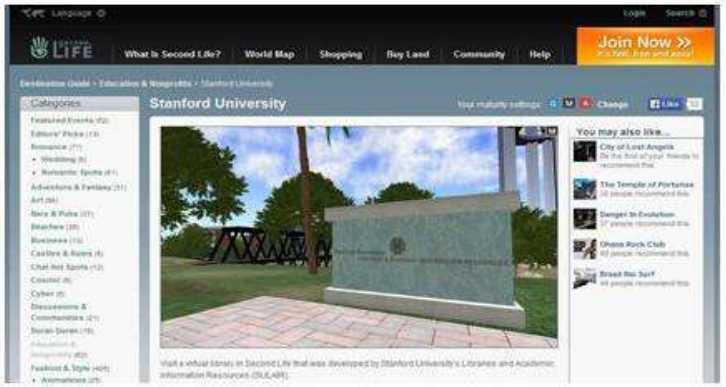
https://slvirtualgenealogy.org/dna-discussion-june/

students to edit the "iBook" in SL

Literature: https://vimeo.com/69791766

(Second Life reading)
In "Aurelia: Our dreams are a Second Life", the author´s avatar wanders through "Second Life" landscapes reading fragments of Gerard de Nerval´s text that begins with this sentence: "Dreams are a Second Life".
One of the leading figures of the French Romantic movement, his prose poem Aurélia gives an autobiographical account of his fall into madness. Nerval committed suicide at age 47, hanging himself from a lamppost with a rope that belonged to the Queen of Sheba. In his pockets the sheets with Aurélia´s manuscript were found. In them, the poet categorizes sleep as a "supernatural" state, a "second life".

Educational institutions in SL



Educational institutions in SL

Educational institutions in SL

Educational Institutions in SL

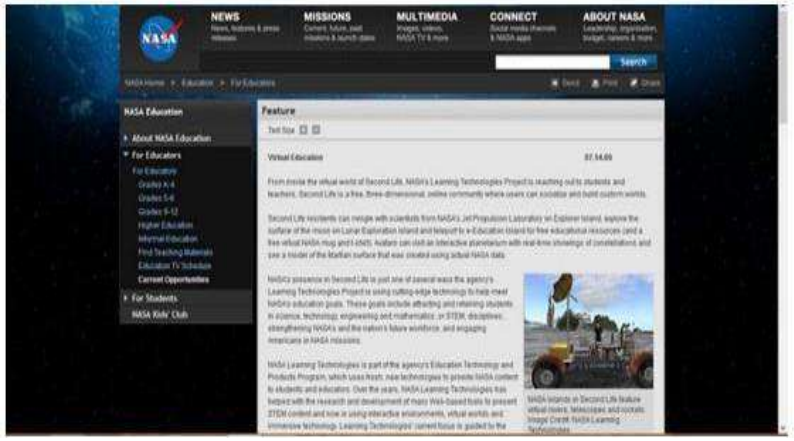
The Virtual University of Edinburgh

Vue is a virtual educational and research institute bringing together all those interested in the use of virtual worlds for teaching, research and outreach related to the University of Edinburgh.
[University of Edinburgh - Virtual Worlds for Education]

http://vue.ed.ac.uk/

Educational Institutions in SL

NASA in SecondLife



The Virtual University of Edinburgh: Successful Case Studies I

"Real Life" scenarios that are difficult in real life

- Managing major incidents
- Accident investigation and "triage"
- Court based scenarios for law students

"you can't replicate the sense of immersion that Second Life offers the students even with role play".

Source: Clare Sansom, University of London, Fellow of the Centre for Distance Education: Teaching in Virtual Worlds-A 2013 Snapshot http://www.slideshare.net/CdeLondon/ride2013-presentation-_teaching-in-virtual-worlds-a-2013-snapshot

The Virtual University of Edinburgh: Successful Case Studies II

Learning and Practising Methodology

- Procedural learning
- Preparation for field or practical work
  - Enabling students to make the best use of their time in field or lab
- Learning how to operate intricate and expensive equipment

Virtual Genetics Lab., University of Leicester

Source: Clare Sansom, University of London, Fellow of the Centre for Distance Education: Teaching in Virtual Worlds-A 2013 Snapshot http://www.slideshare.net/CdeLondon/ride2013-presentation-_teaching-in-virtual-worlds-a-2013-snapshot

The Virtual University of Edinburgh: Successful Case Studies III

Exploring Digital Identity

- More "open ended" scenarios work well in psychology and social science disciplines if the aim is to explore the students' own perception of their in-world identity
- These rely on student understanding more than the other case studies

Source: Clare Sansom, University of London, Fellow of the Centre for Distance Education: Teaching in Virtual Worlds-A 2013 Snapshot http://www.slideshare.net/CdeLondon/ride2013-presentation-_teaching-in-virtual-worlds-a-2013-snapshot

Loyalist College: Case Study


Case Study: Loyalist College

Success Stories

Case Study: Loyalist College

June 2009

Virtual World Simulation Training Prepares Real Guards on the US-Canadian Border: Loyalist College in Second Life

Executive Summary

Before September 11, 2001, Customs and Immigration students at Loyalist College spent three weeks closely tailing professional border guards to experience the daily routine of their future job. In a post-911 environment however, this was no longer allowed. Training suffered until the Director of Educational Technology at Loyalist College catalyzed a virtual border crossing simulation in Second Life for Loyalist students. The amazing results of the training and simulation program have led to significantly improved grades on students' critical skills tests, taking scores from a 56% success in 2007, to 95% at the end of 2008 after the simulation was instituted. The success of the program has encouraged over 650 students and 6 faculty to explore Second Life for mixed purposes. It has also generated enough interest and demand from other learning institutions that Loyalist established a Virtual Design Centre that employs former students with Second Life classroom experience to develop new virtual learning environments.

Loyalist College Emerging Technology Department Inspired by Second Life

Loyalist College is a mid-size community college in a rural setting approximately 200 kilometers east of Toronto, Ontario Canada. It was there that

Tony Bates

Tony Bates

- Virtual worlds are successful in education because students identify with the characters and the situations portrayed and so become active participants in the events on screen. The learning from these experiences carries over into real life applications. In an award-winning and educationally successful project, the staff in the Virtual World Design Centre created a virtual border crossing at which students' avatars take on the roles of border crossing guards, interviewing travellers who present challenges of documentation, prohibitions, smuggling, and difficult communication. The virtual traveler interviews take place in class and each encounter is then analyzed by the entire group so that best practices are identified. Applications for completely online learning are being investigated.
- - See more at: http://www.tonybates.ca/2012/05/04/examples-of-virtual-worlds-simulations-and-mobile-apps-from-ontario

Personality Development…

- The students at Loyalist found the virtual experience provided them with more than enhanced content learning; they also developed confidence, observational skills, and the capacity to respond to developing situations.
- - See more at: http://www.tonybates.ca/2012/05/04/examples-of-virtual-worlds-simulations-and-mobile-apps-from-ontario

Teaching with Virtual Worlds

Dr. Paul D Rudman (2011)
Four areas where virtual worlds can benefit teaching and learning

- 1) Environment (e.g. field trip)
- 2) Mediated environment
- 3) Interaction
- 4) Anonymity

http://www.slideshare.net/paulrudman/virtual- world-pedagogy-9439472

And what doesn't work?

- Virtual "chalk and talk" – replacing lectures for students at a distance
  - Immersion doesn't add value beyond more accessible technologies
- Unplanned open-ended "activities"
  - *"I just went into Second Life and wandered around, I didn't know what to do there"* (Disappointed student)
- Most explorations of molecular structure
  - Perhaps a surprising addition

Source: Clare Sansom, University of London, Fellow of the Centre for Distance Education: Teaching in Virtual Worlds-A 2013 Snapshot http://www.slideshare.net/CdeLondon/rid e2013-presentation- teaching-in-virtual-worlds-a-2013-snapshot

Pedagogy in Virtual Worlds

- Mark Childs (Coventry) identified four pedagogical approaches
  - **Associative** (transmitting information)
  - **Cognitive** (problem solving)
  - **Social constructivist** (forming ideas by discussion)
  - **Connectivist** (emerging from interaction between people)
- Most successful case studies fit into the cognitive or social constructivist categories
  - Using well defined contexts or situations
- Game-based scenarios offer benefits over both more restricted and more open-ended approaches

Source: Clare Sansom, University of London, Fellow of the Centre for Distance Education: Teaching in Virtual Worlds-A 2013 Snapshot http://www.slideshare.net/CdeLondon/rid e2013-presentation-teaching-in-virtual-worlds-a-2013-snapshot

Trends

https://bitcoinmagazine.com/articles/second-life-creator-uses-blockchain-tech-enhance-new-vr-gaming-experience

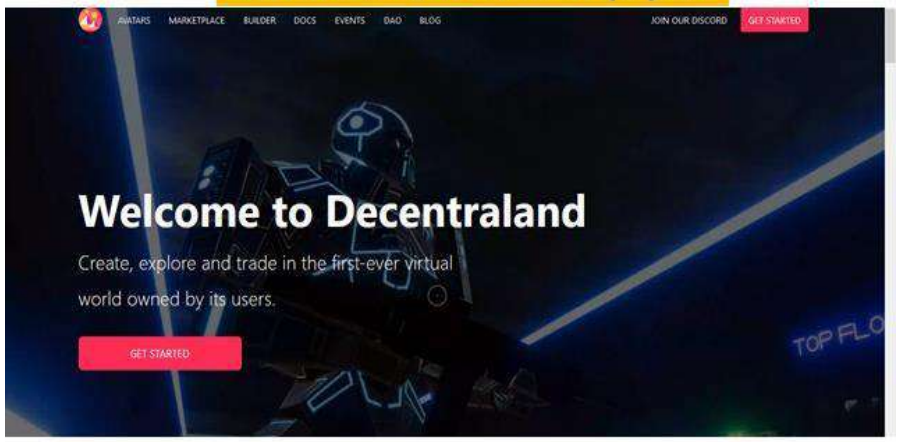
High Fidelity, a next-generation platform for virtual worlds currently in open beta, is the brainchild of Philip Rosedale, the creator of Second Life.

10 years ago Second Life was often hailed as the Next Big Thing in social media.

Then, Second Life faded into oblivion, sort of.

High Fidelity wants to change that by supporting highly immersive Virtual Reality (VR) interfaces, including VR headsets like the Oculus Rift, sensors for hand and body motion, and 3D audio.

blockchain-based virtual world projects



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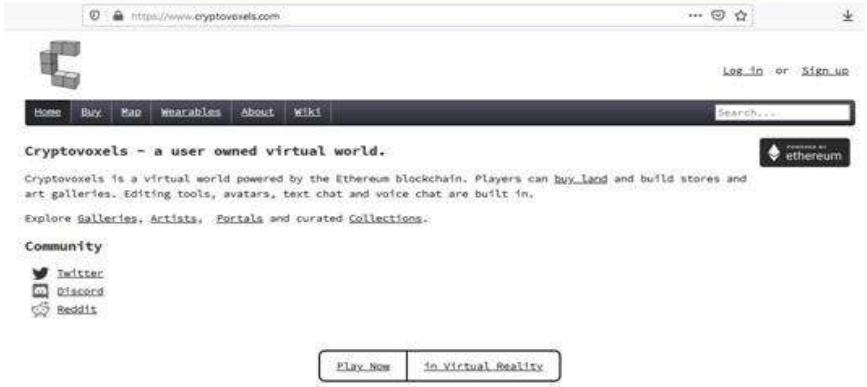
blockchain-based virtual world projects



https://www.cryptovoxels.com/

blockchain-based virtual world projects

Coming soon ...

Facebook Horizon

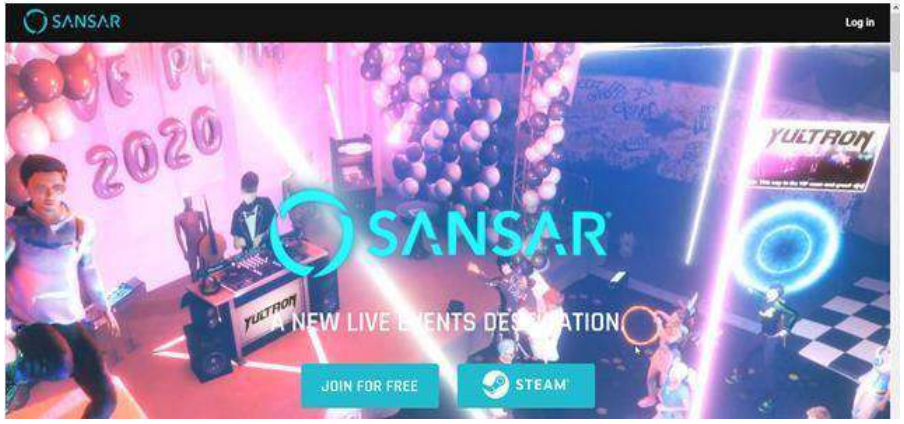
In **Facebook Horizon**, not only can you explore virtual worlds as they grow and change, but you can discover all sorts of new things that interest and inspire you. ... Connect with people from all over the world to solve puzzles, play team sports, test your imagination, and create new worlds together.

www.oculus.com › facebook-horizon

Facebook Horizon | Oculus

https://www.sansar.com/

THE FUTURE OF CONCERTS IS VIRTUAL.



The Educators in VR 2020 International Summit, February 17th-22nd, 2020, in AltspaceVR, ENGAGE, Rumii, and Other Social VR Platforms

https://ryanschultz.com/2019/12/23/the-educators-in-vr-2020-international-summit-february-17th-22nd-2020-in-altspacevr-engage-rumii-and-other-social-vr-platforms/

Social VR Company

VRChat Is Planning for a Virtual Economy, Currency, and a Marketplace for User Generated Content

VRChat just posted a tweet to let people know they're hiring:

https://ryanschultz.com/2019/08/23/vrchat-is-planning-for-a-virtual-economy-currency-and-a-marketplace-for-user-generated-content/

Thank you!

Webinar - 20

Day, Date & Time: Saturday, 05-06-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Ryoju Hamada, Visiting Associate Professor at Kumamoto University**

Country: Japan

Title: Student Power to Accelerate your Simulation Gaming

Webinar Topic

Student Power to Accelerate your Simulation Gaming

Abstract

When a new Simulation Gaming is developed, everyone wishes it works well. Compare with conventional one-way lectures; it is true Gaming has a magical power to promote learning. It accompanies great fun, joy, and communication while achieving learning objectives. However, in many cases, once Simulation Gaming is used, it is a moment to adjourn a game-based community. Within students who have just played the game, there might be marvelous ideas to improve the game. By engaging such motivated students, BASE, the speakers' Project to develop, operate, improve, and spread business games in higher education, has successfully created 19 types of simulation gaming over a decade. Saying in other words, Student-Teacher Collaboration is the useful way to make your Gaming more attractive. In this lecture, the speaker aims to explain those students' fantastic efforts in BASE Project, manage such community, and advise the audience to bring out students' talents.

Speaker Profile

Dr Ryoju Hamada, is a Visiting Associate Professor at Kumamoto University, Japan. He is one of the opinion leaders in simulation gaming-related academic community. He and his BASE project members started to develop business game in 2007 to utilize it as a part of entrepreneurship education in Tohoku University, Japan, and Thammasat University, Thailand. He hosted the ISAGA2018 with 160 participants from 21 countries. He worked as the President of ISAGA from 2018 to 2019. Currently, he serves at the National Institute of Technology, Asahikawa College, Hokkaido, Japan, as a Professor. He is an academic chair and vice president of JASAG, also serving to ABSEL as a Ready-to-Play track Chair.

100.Introduction

BASE

101 Ryoju Hamada's Profile

- Born: 1972 September 30
- Major: Business Simulation Gaming, Intellectual Property law, Privacy law, Entrepreneurship Education

- 1995.3 B. Law at Tohoku University
- 1997.3 M.I.S. at Graduate School of Information Sciences(GSIS), Tohoku University
- 2001.3 D.I.S. at GSIS
- 2003.4 Senior Assistant Professor at GSIS
- 2010.8 Visiting Professor, Sirindhorn International Institute of Technology (SIIT), Thammasat University, Thailand
- 2010.10 Visiting Associate Professor, Kumamoto University
- 2014.5 Associate Professor at GSIS
- 2014.7 Associate Professor at MT, SIIT
- 2016.3 Visiting Professor at EPITECH, Paris, France
- 2016.4 Project Professor at Nagoya Institute of Technology, JAPAN
- 2019.8 Professor, National Institute of Technology, Asahikawa College

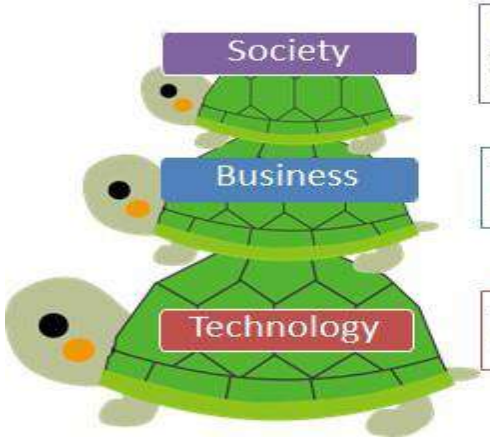
108.Awards

- 1. Best Poster Award, "Tangible Board Game for Learning Basic Inventory Control", 45th Conference of International Simulation and Gaming Association (ISAGA2014), 2014
- 2.Paper Award,"Development of Software Engineering Business Board Game", 41th Annual Conference, The Association for Business Simulation and Experiential Exercises, 2014 Autumn JASAG Conference (JASAG2014A)
- 3. Presentation with honor, WW.M. Ruvini M. Weerasinghe and Ryoju Hamada, "Idea 360 – Business Game for New Product Idea Screening", pp.434-443, Chonburi, Thailand, 2016, July 28-29
- 4. Presentation with honor, Ryoju Hamada, Pasawee Praiyontip, and Intuch Lodjanavanichcharkorn, "Operation of BASE Business Games in Thailand; The first step to spread gaming culture in developing country", pp.421-433, Chonburi, Thailand, July 28-29, 2016
- 5. Presentation with the highest honor, WW.M. Ruvini M. Weerasinghe, Ryoju Hamada, "Educational Game as an Active Leraning Strategy for University students", 9th Annual International Conference of Thai Simulation and Gaming (Thaisim2017), Bangkok, Thailand, June 29-30, 2017
- 6. Presentation with honor, Nalinee Chairungroj, Ryoju HAMADA, et al., "Development of BASE Mass Manufacturing Production Game", 9th Annual International Conference of Thai Simulation and Gaming (Thaisim2017), Bangkok, Thailand, June 29-30, 2017
- 7. Presentation with honor, Vara Engpraphunkorn, Ryoju Hamada,et al., "Development of BASE Agricultural Business Board Game", 9th Annual International Conference of Thai Simulation and Gaming (Thaisim2017), Bangkok, Thailand, June 29-30, 2017
- 8. Presentation with honor, Weerapong Peerasunprasert, Ryoju Hamada,et al. , "Development of BASE Jewelry Supply Chain Management Business Board Game", 9th Annual International Conference of Thai Simulation and Gaming (Thaisim2017), Bangkok, Thailand, June 29-30, 2017
- 9. Best Paper Award, Ryoju Hamada, Takashi Yokouchi, Tomomi Kaneko, Masahiro Hiji, "Development Of Base Life Planning Game To Learn The Balance Of Cost And Happiness," 46th Annual Conference, The Association for Business Simulation and Experiential Exercise (ABSEL2019), pp. 18-24, San Diego, California, USA, March 20-22, 2019
- 10. Best Reviewer Award, 50th Conference of International Simulation and Gaming Association (ISAGA2019), Warsaw, Poland, August 23-29, 2019

110. ISAGA 2014 (Dornbrin)
Awarded Officially!

113. Belief: TBS Principle

BASE

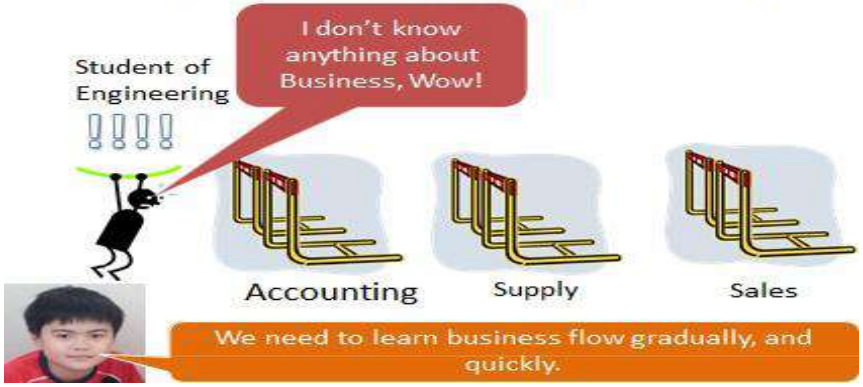


Business must be accommodated to society.

Technology can be sustainable in business.

Technology is the origin of innovation.

113. Engineering Students needs Business Learning Opportunity



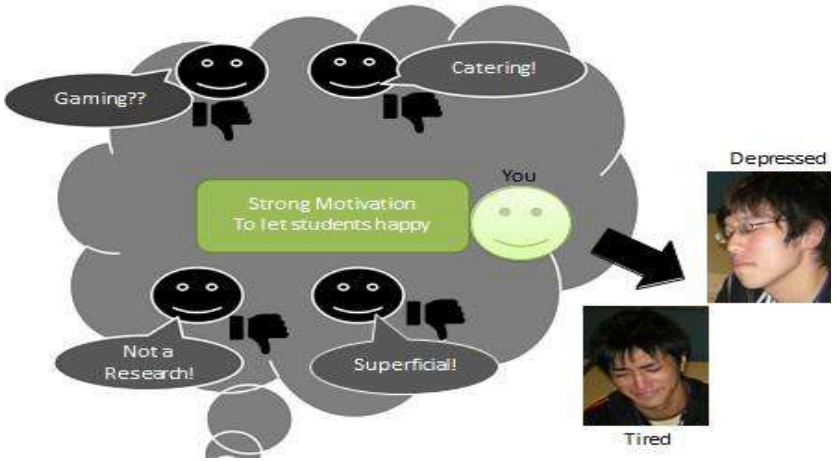
200. Traditional ways of Game Development

201. How to teach your idea

Gaming is a just one method.....

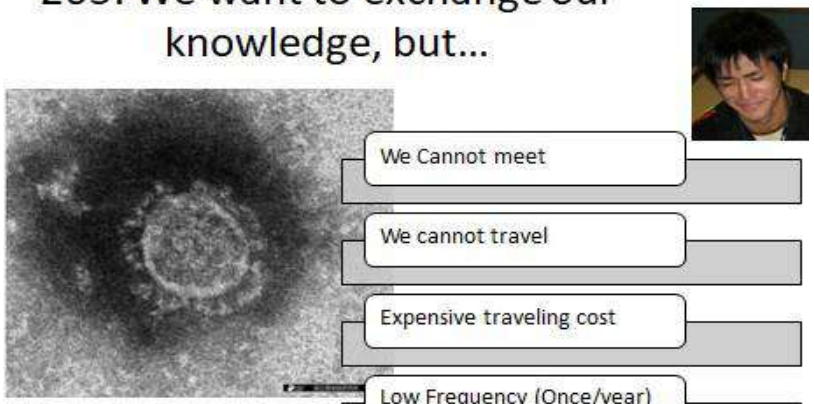
202. Which idea is suitable to develop great game?

203. Lonely Developer



204. You need a Communication outside your campus

205. We want to exchange our knowledge, but…



- We Cannot meet
- We cannot travel
- Expensive traveling cost
- Low Frequency (Once/year)

206. Endless Loop on Gaming

207. The value of Game

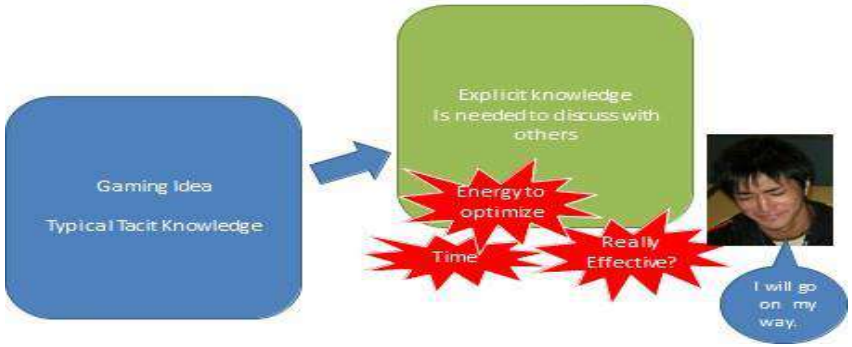
- Reality
- Gaming
- Easiness

208. Characteristics of Game Work

Book is always original
No need to adjust

- Author is alive
- Author continues teaching
- Author pursues reality
- Author takes care of students

209. Communication Difficulty



300. Students as a partner

301. Students are eager to join your work

302. Student might be a great partner

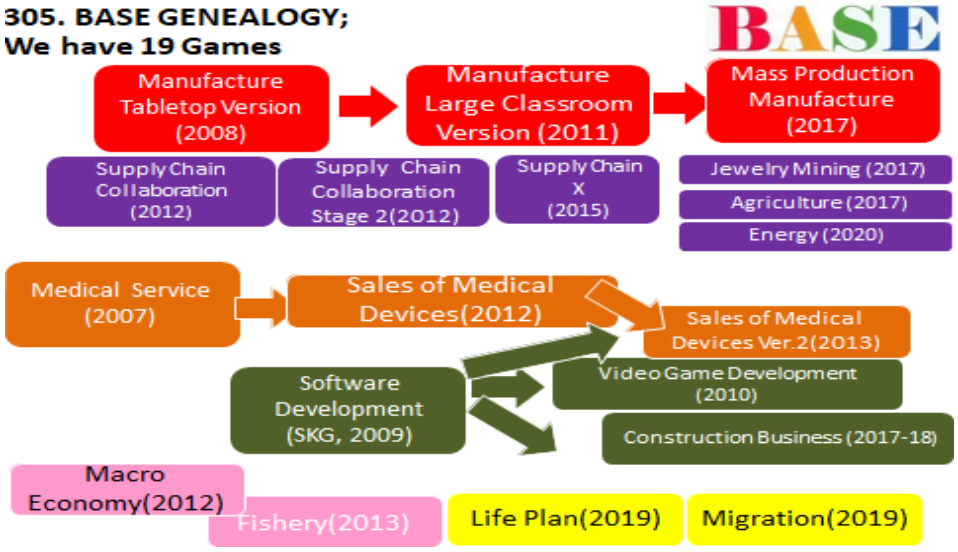
- Understand the rule
- Strong Interest to improve
- No Prejudice to target

303. Shared Emotion; Origin of Student-Teacher Collaboration

304. Overview of outcomes (2003-2020)

- 100 Workshops/Lectures
- 2000 Participants
- 9 Awards
- 19 Games
- 160 Game Developers
- 3 Companies
- 1 Master Degree

305. BASE GENEALOGY; We have 19 Games



322. ALL HAND-MADE


仮カード・ボードでテスト


北海道へ出張：工業試験場で製作


少しずつ形が見えて来た


完成した！！

323

Table 1 List of Major BASE Business Games

Year	Name	Approximate Efforts on Original Idea (%, Total 100)		Approximate Efforts for development (%, Total 100)		Approximate Accumulated Number of participants		
		Student	Teacher	Student	Teacher			
2007	Hospital	50	50	80	20	50		
2008	Manufacturer *1	50	50	50	50	2000		
2009	Software *2	90	10	80	20	1000		
2011	Supply Chain *3	0	100	0	100	500		
2011	Large Classroom Version	20	80	50	50	1600		
2013	Medical Device	30	70	90	10	50		
2016	Manufacture in Thai *4	50	50	100	0	80		
2017	Agriculture *5	80	20	90	10	40		
2018	Construction *6	50	50	90	10	60		

For the detail of individual games, see following publications. *1 Hamada et al. (2018), *2 Hamada et al. (2014) *3 Kaneko et al. (2016), Hamada et al. (2018), Kaneko et al. (2019) *4 Hamada et al. (2016), Chairungroj et al. (2017) *5 Engpraphunkorn et al. (2017) *6 Hamada et al. (2019)

400. BASE Project: Example of Student Teacher Collaboration

404. Missions

405.Requirement for Members

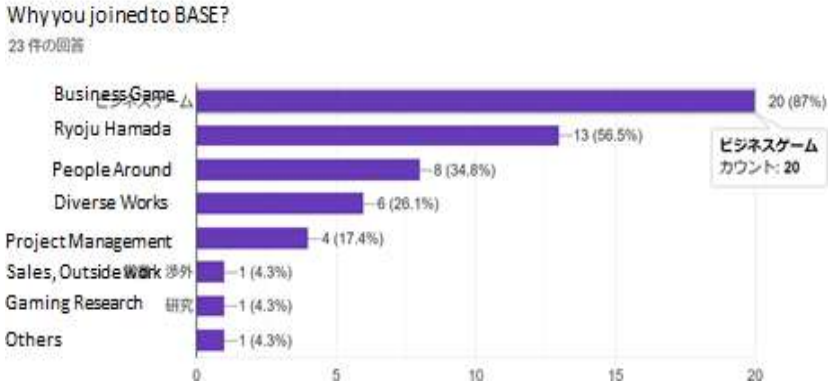
1. No Previous requirement for Simulation, Gaming, instead, soft mindset
2. Be able to love your Business Game
3. Positive, Ambitious, Collaborative, Tough, not too conservative on academics
4. Act as Business Personell
   - No Tattoo, No Smoking
   - Proper Dress
   - Come to School every day

Everyone is beginner. However, by committing BASE society, you will be able to understand shortly.

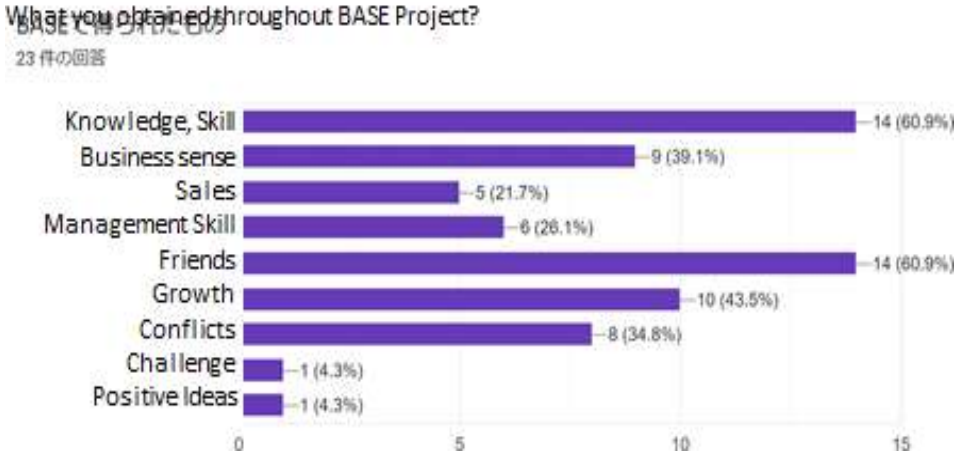
408. The Great Charter BASE

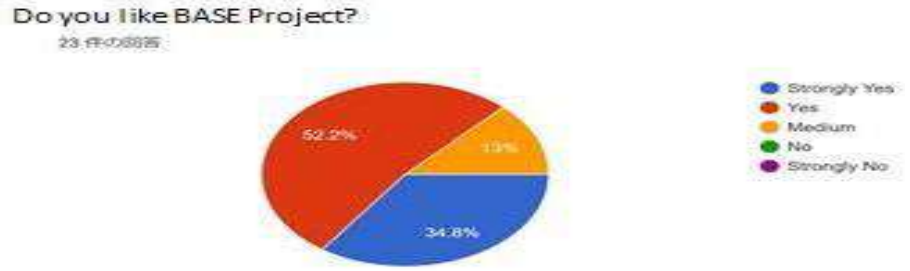
- 1. BASE develops world class analogue business games.
- 2. BASE contributes the society by spreading our business games to encourage industry.
- 3. BASE members have be ambitious, active, and innovative toward globalization.
- 4. BASE provides equal opportunity to members despite his/her affiliation.
- 5. BASE sustains by its own sales revenue and not rely on subsidy too much.
- 6. BASE merges social science and engineering to crop true interdisciplinary community.
- 7. BASE recognizes its high appreciation and responsibility in the world and behave as an example of Game Developers.

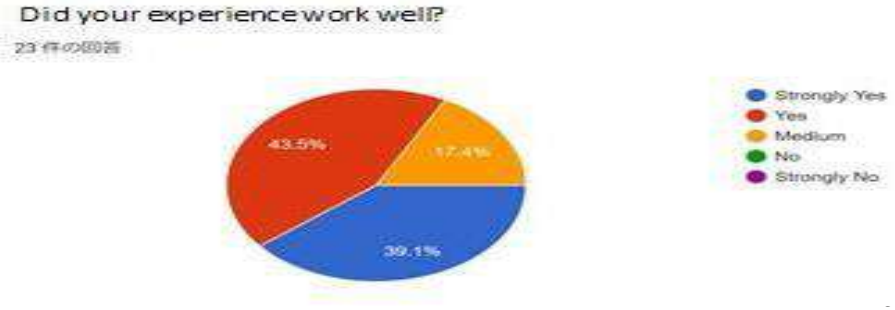
409-2. Student Questionnaire



409-3 Student Questionnaire







417. Visiting Professor at SIIT, Thammasat U.(2010-2013)

500. How to manage Student-Teacher Collaboration

500. Management of Student Teacher Collaboration

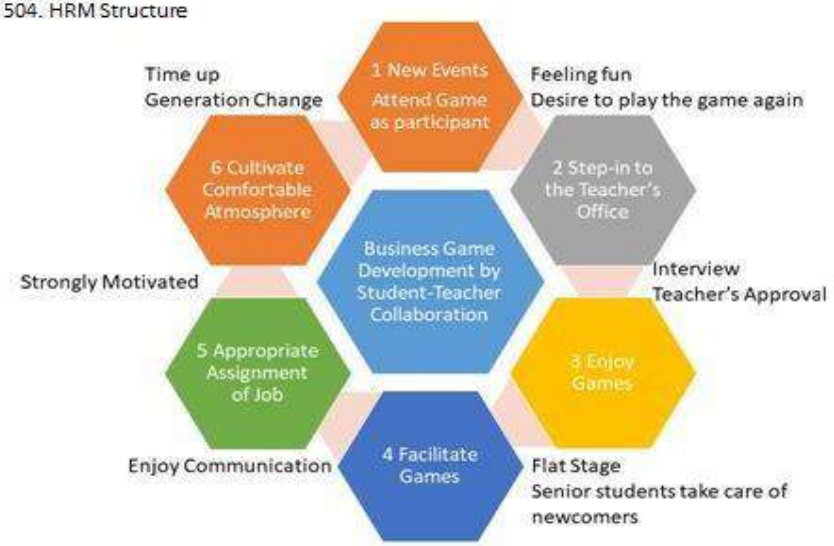
501.Step-in Student Principle

The author never called a student.

A person's own will is necessary to keep further motivation.

Because it was their decision first, no one expressed regret later.

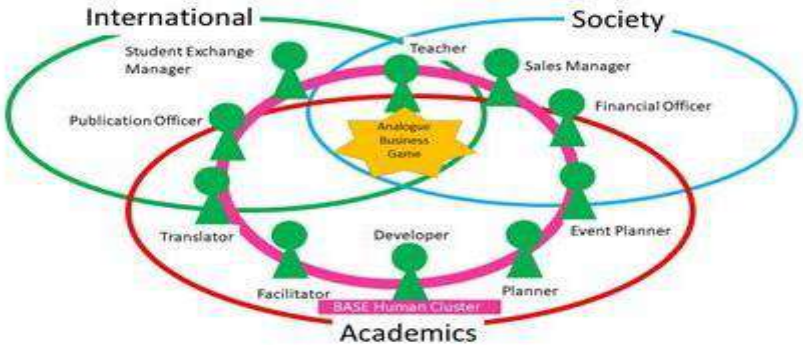
504. HRM Structure



505.Awakening

- Approximately 3–6 months after an orchestra starts to play a symphony, some students in the group show amazing progress.
- The phenomenon, which we call "Awakening", is not universal for all members, but it appears regularly in the group.
- The student is free from being nervous as a beginner, works as a leader, and acts with full confidence.

510.Right man in the right position
(Not only Gaming, but many learning opportunities)



513.Considerations

I afraid your story is just an accidental result.

If so, we cannot explain why BASE project sustained for 18 years while I am trying new job opportunities.

515.

BASE

I love games.
I love to try new thing.
I want to remain my
name in academics.

Yes. We can do it.
You will be a witness of
changing period of higher
education by your effort.

Webinar - 21

Day, Date & Time: Saturday, 12-06-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Marcin Wardaszko,** Head of the Department of Quantitative Methods & Information Technology, Kozminski University, Warsaw, Mazowieckie

Country: Poland

Title: Digital Game-Based Learning

Webinar Topic

Digital Game-Based Learning

Abstract

The simulation gaming is present in the digital space for quite some time, but the evidence of the effectiveness of Digital Game-Based Learning (DGBL) with usage of the different technologies is still sketchy. The rise of the pandemic speeded up the process of digitalization of many games with different results. In the webinar, the resource person talked about the opportunities and threats of simulation game design with technology in mind. He used his own case-studies and analyzed them looking at the advantages and disadvantages of different technologies for DGBL. The resource person focused on learning models, complexity design, validity and testing, and delivery of simulation games in digital spaces. He talked about learning effectiveness and future technology for DGBL. He touched on the evolution of the digital gaming space from online simulation games to the mobile gaming and also VR and AR for simulation gaming.

Speaker Profile

Dr. Marcin is Head of the Department of Quantitative Methods & Information Technology at Kozminski University and Adjunct Professor at University of Applied Science Vorarlberg. He is Collaborating Partner at HCD Learning Ltd, Shanghai, China. He is working as trainer and developer of simulation games and gamification systems for education, business and consulting since 2003. He is Author of many publication on games based learning and serious game design. He is Passionate game designer, author and co-author around 60 scientific publications. Dr. Marcin is Fellow at ABSEL and President of ISAGA (2019- 2020) and Member of SAGSAGA. Laureate of the CEEMAN 2019 Champion in Teaching Award for innovative VR game based learning program.

KOZMINSKI UNIVERSITY

Digital Game-Based Learning

Center for Simulation Games and Gamification

Marcin Wardaszko PhD

ISAGA 2021 Webinar

Dr Marcin Wardaszko

Center for Simulation Games and Gamification

Weronika Szatkowska

Michał Jakubowski

Małgorzata Cwil

Dr Błażej Podgórski

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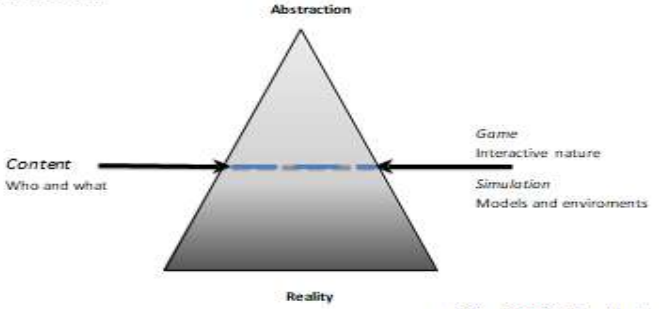
ROLE AND PLACE OF SIMULATION GAMES IN EDUCATIONAL PROCESS

Choice of the role, model and place of simulation games implementation in the educational systems have a great impact upon the way they are used:

- Games as a summary of knowledge and skills – at the end of the process
- Games as a motivation to learn and knowledge and skills gaps recognition – at the beginning of the process
- Games as a support to particular and specific field of knowledge or skills – in the middle of the process
- Games as an assessment and test center – separated from the process

Choice of simulation scenario

- Generic versus specific scenarios
- Level of realism



Kriz 2003 after Duke 1997

Choosing the solution

Licensing

- Scalable cost
- Short implementation span
- Many solutions on the market
- Training of the trainers
- Buying someone's idea
- Lack of local flavor

Own/custom solution

- High cost
- Long-term decision
- Unique solution
- Revenue generation potential
- Low trainer training cost
- Knowledge generation

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Types of games

- Free-form games
- Role-play games
- Serious board games – haptic games
- Hybrid games
- Serious computer games
- MLG – mobile games for learning
- ARG – alter reality games
- AR/VR/MR games

Technology

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Hotel Stars

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Unique interface

- Touch screen optimalized
- Single page design
- Interactive map and design
- Growing complexity along player's experience
- Rich tutorial and onboarding
- Storytelling thorough comic's
- Virtual advisor

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Simulation game

- Web browser-based game
- Played in the small (2-3 person) groups of students
- You create, run and manage hotels in a virtual city of Pekunia
- 17 decision rounds
- Growing complexity
- Dynamic scenario of the game will feature seasonality, random events, and competition
- Final boss fight

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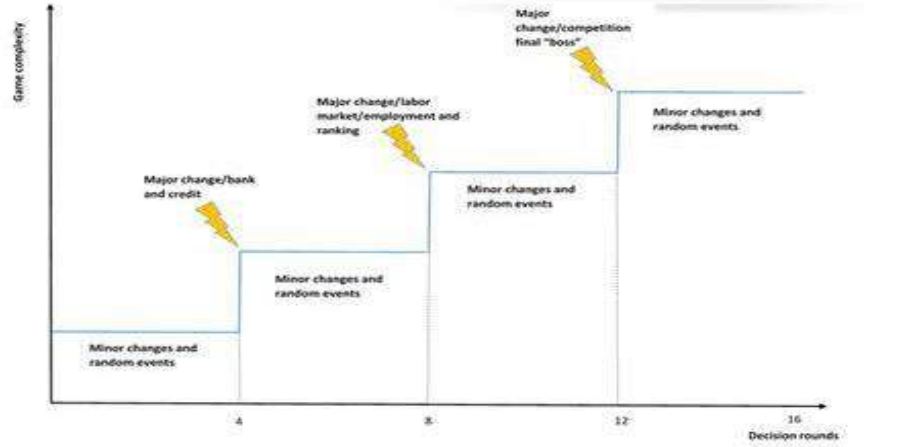
Flow-oriented experinece



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Teaching program

- overall game scenario
- teachers' manual
- students' manual
- program syllabi with 36 detailed lesson scenarios
- 23 presentations covering the simulation game and knowledge presented in the program
- 15 exercises for both in-class tasks and homework activities – with solutions
- 3 experience-based exercises

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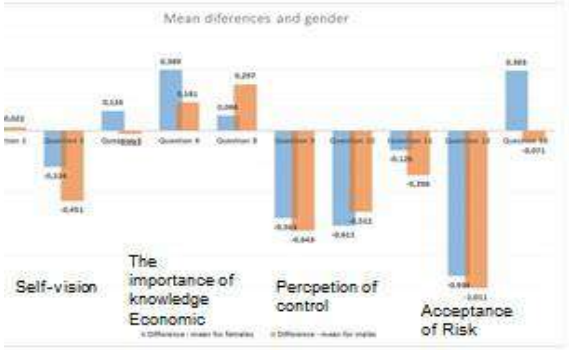

Differences in entrepreneurial attitudes among high school students before and after the game

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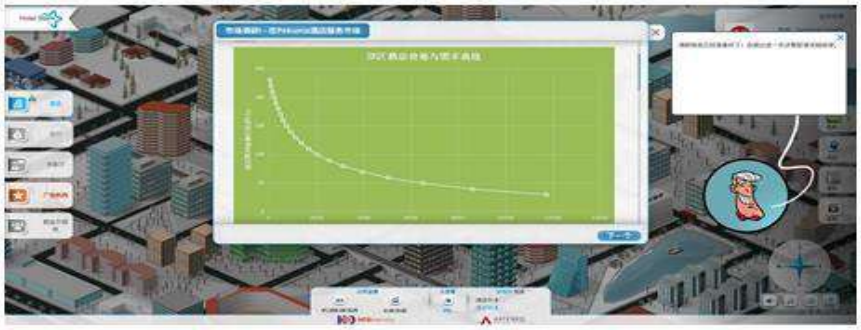

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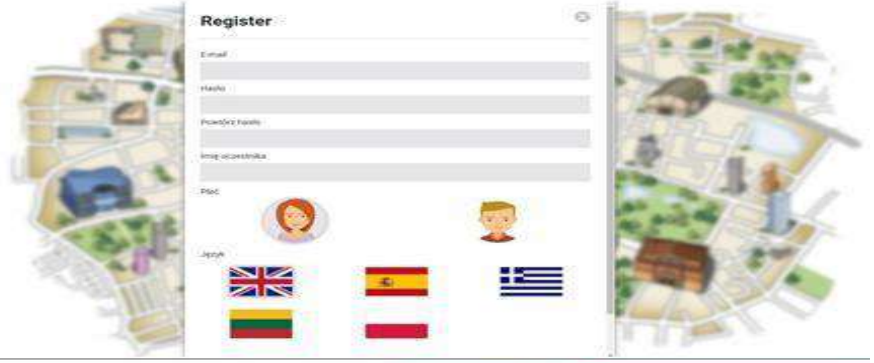
Pop-up Shop Helper

PUSH

https://push-project.eu/



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Pop-up Shop Helper

PUSH

https://push-project.eu/

- Target audience – creators and creative industry members
- Lightweight – casual gaming design
- Self-discovery and experiential learning loop
- Based on the real-life stories of entrepreneurs
- Robust real-time game engine
- In-game events based on stories and player agency

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Pop-up Shop Helper

PUSH

https://push-project.eu/

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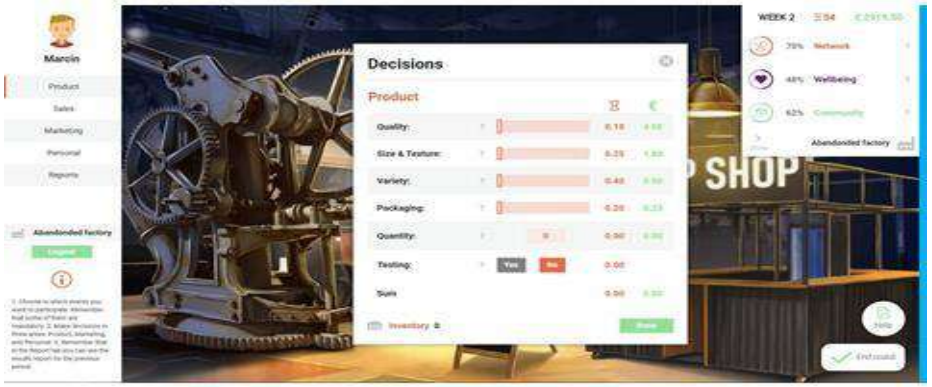
Pop-up Shop Helper

PUSH

https://push-project.eu/



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MLG

SmartLeo

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Smart Leo

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Game Layout

- Intro screen with choice of the knowledge area
- Short game instruction ahead of every level
- Level 1-5 quiz questions randomly chosen from database
- Mini-games every 7 questions
- This layout is repeated on the following five stages of the game
- Micro-learning perspective – learning any-time anywhere

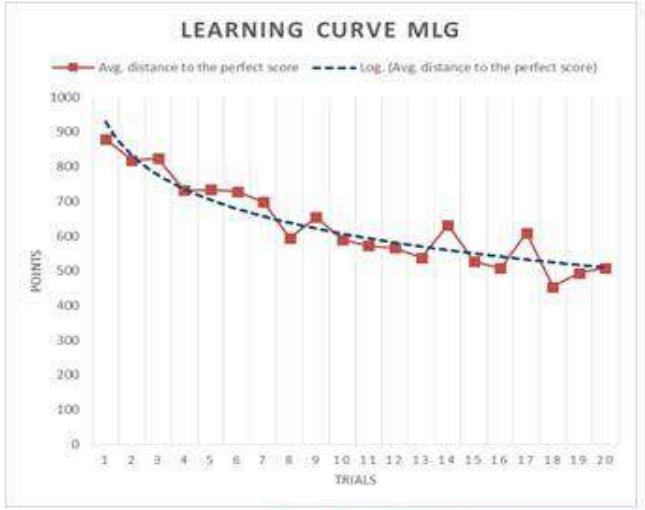
Database

- The questions' mechanism is flexible; you can add a new question at any time.
- In order to add any of categories it is necessary to have at least:
  - 30 questions with 4 possible answers
  - 4 passwords to cross-words
  - 4 images for matching images module
  - 4 passwords to group the category
  - 4 quotes a mini-game quotes

Game – CMS

The number of categories is unlimited, but due to operational capabilities of older devices it is recommended to set the Content Management System (CMS) max to 10.

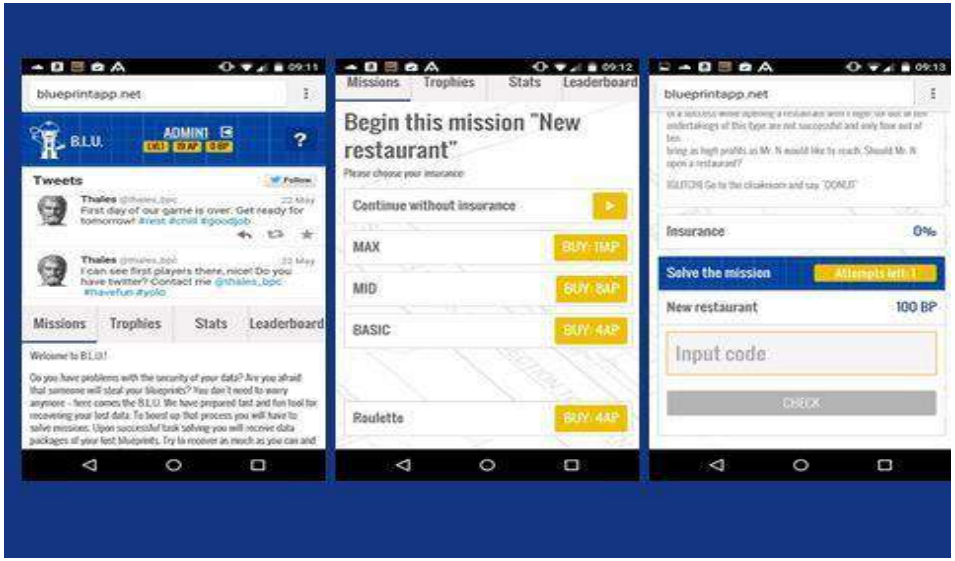
Categories can be flexibly turn on and off from CMS module

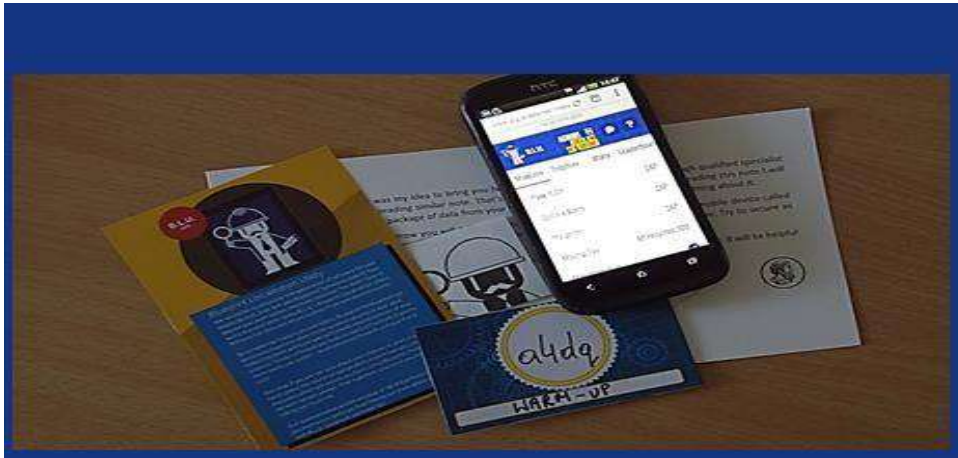


BLUEPRINT CONSPIRACY

Augmented Reality Game (ARG) mobile as a source of information and tasks for the players:

- Available missions,
- Status of the game and current tasks,
- Resource management,
- Rankings and position among other players.





BLUEPRINT CONSPIRACY

Areas of implementation:

- Acquaintance with buildings, campus or area,
- Content oriented games,
- Resources management,
- Risk management.

AR/VR/MR

- Growing number of applications
- Falling prices of hardware
- Mobile and cardboard solutions
- Ability to build visually rich immersive environments
- Future of Human-computer interface
- Low-cost simulator solutions
- Hard to transfer soft skills

Case-study – VR crime scene

Learning program content

CICERO VR

The learning program of CICERO VR has been designed with modern digital native in mind:

- ✓the VR simulation game with 2 modes of work and flexible build for more future scenarios
- ✓ Student instructions
- ✓Training video material – total amount of 2h distributed through private YouTube channel
- ✓Interactive mobile application for participants to vote.

Game system

CICERO VR

The game has been build with Unity 3D system. The CICERO VR works in two modes:

- ✓Practice mode – in this mode students train with prepared presentation on the selected business problem – with the help of the video material they goal is to mimic the master.
- ✓Challenge mode – in this mode students prepare their own presentation, upload to the system and present it in the VR environment.

Feedback visualization and measurment system

Player actions	Visual feedback icon	Measurement unit
Sight direction		Seconds per object or avatar;
Speaking speed		Number of words, words per minute, average words per minute;
Speaking sound volume		Voice loudness in decibels per millisecond;
Gestures		A number of hand gestures measured by the distance between HMD and haptic virtual controllers in the player's hands.

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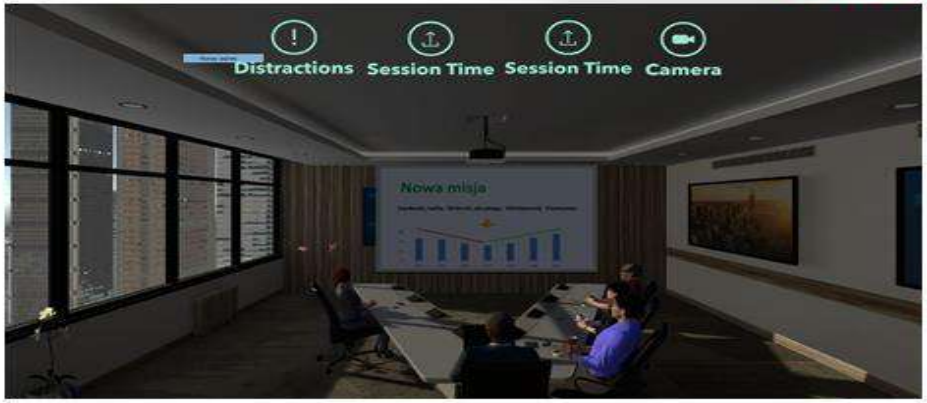

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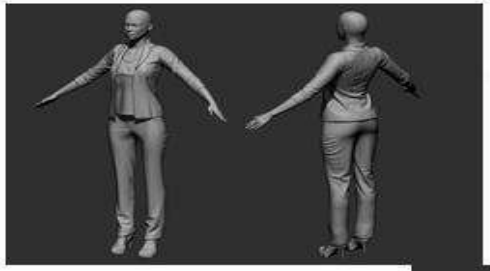
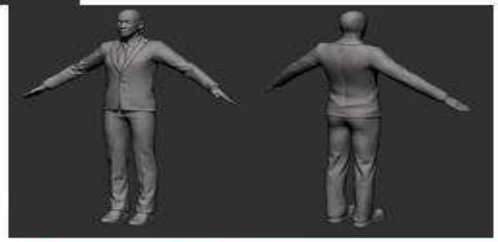


Randomized avatar creation system

System creates up to 5 avatars with gender and racial balance for diversified audience



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CEEMAN Champion Award 2019 for teaching

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AR/VR for training

- Ideal for on-the-job and on-the-site training and onboarding
- Future of job safety training
- The future of technological support
- Sales support systems

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Video games

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Video games

KLABATER
PUBLISHING

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Future of simulation gaming

- Modular design for more educational flexibility
- Individualized engagement loops and knowledge gap recognition
- AI powered mentoring and recommender systems
- Distributed VR learning environments
- Data-driven Machine Learning simulation models generation
- Interactive digital narratives for complexity dissemination

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Thank you for listening !!!

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Webinar - 22

Day, Date & Time: Saturday, 19-06-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Pongchai Dumrongrojwatthana,** Department of Biology, Faculty of Science, Chulalongkorn University, Bangkok

Country: Thailand

Title: Gaming and Simulation: Bridging Research and Teaching for Sustainable Development

Webinar Topic

Gaming and Simulation: Bridging Research and Teaching for Sustainable Development

Abstract

Sustainable development, dealing with environment, social and economic aspects, has been increasingly important in university research and academic curriculum. Bridging on-ground research and teaching via learning by doing is important to prepare students to work on sustainable development in the real world. This webinar discussed the use of gaming and simulations as learning tools to bridge research and teaching. Three gaming simulations: i) Green Roof Game, ii) Sathing Phra Millionaire Game, and iii) Soil Quality Assessment Game are presented. These games deal with ecosystem service of green roof in urban area, environmental problems in a rainfed low land rice-sugar palm cultural agroforestry system, and soil conservation in a forest-agro ecosystem respectively. The iterative and evolving process between classroom and field work is discussed. These case studies demonstrated that it is not difficult to adopt gaming simulations and for students to obtain diverse learning outcomes.

Speaker Profile

Dr. Pongchai Dumrongrojwatthana is a lecturer-researcher at the Department of Biology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand. He is an ecologist. His research fields are Integrated Renewable Resource Management using gaming and simulation and Urban Ecology. He has conducted gaming and simulation sessions with diverse group of stakeholders in several renewable resource issues, such as community forest management in Northern Thailand, blue-swimming crab and by-catch management at Kung Kra Baen Bay, Eastern Thailand, rainfed lowland rice landscape and melaleuca forest management in Southern Thailand, agricultural soil management in many areas in Thailand, adaptive water management in Lao PDR, and wetland management in Mekong region.

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FACULTY OF SCIENCE
Chulalongkorn University
SHRI VAISHNAV VIDYAPEETH
VISHWAVIDYALAYA, INDORE – INDIA
ISAGA
INTERNATIONAL SIMULATION AND GAMING ASSOCIATION (ISAGA)

Gaming & Simulation:
Bridging Research & Teaching for Sustainable Development

PONGCHAI DUMRONGROJWATTHANA, PH.D.
Department of Biology, Faculty of Science,
Chulalongkorn University, Bangkok, Thailand
pongchai.d@chula.ac.th
16 June 2021

Content

Introduction

- Sustainable Development (SD), SD Goals (SDGs), Univ. vs SDGs

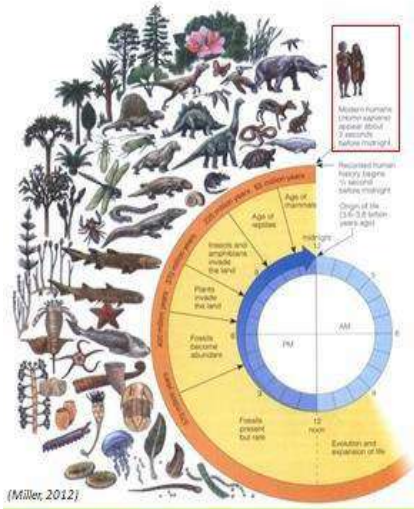
Shared case studies

- Research to Teaching: Sathing Phra Millionaire Game / Soil Quality Testing Game
- Teaching to Research: Green Roof Game / GenEd. courses

Lessons learned

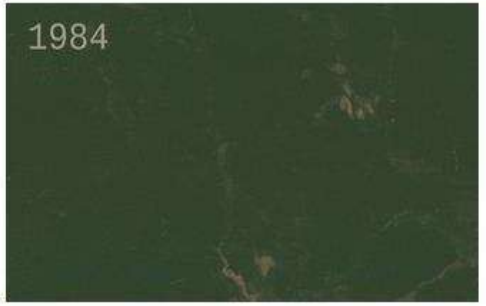
- Benefits to students & instructor/researcher

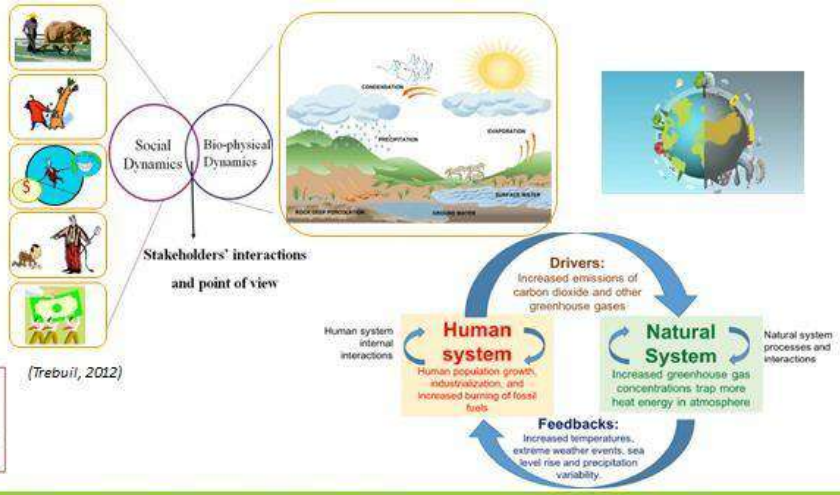
Conclusion


(Miller, 2012)

21st Century...

Modern humans appear about
2 seconds before midnight





(Trebuil, 2012)

*** Need to concern about... "Sustainable Development"

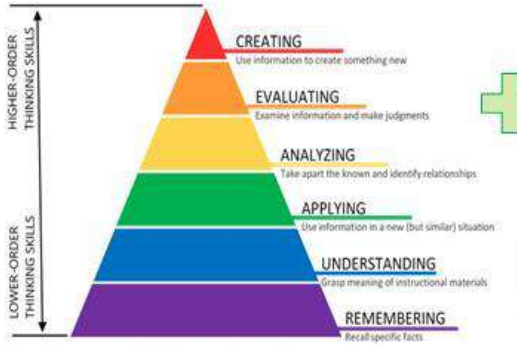
SD & SDGs

➢... development which "meets the needs of the present generation without compromising the ability of future generations to meet their own needs"

(The Brundtland Commission, Our Common Future, 1987)

Teaching

BLOOM'S TAXOMONY – COGNITIVE DOMAIN (2001)



https://cirt.ufl.edu/resource/the-learning-process/designing-the-learning-experience/blooms-taxonomy/blooms-taxonomy-graphic-description/

Top 10 skills of 2025

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative
- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

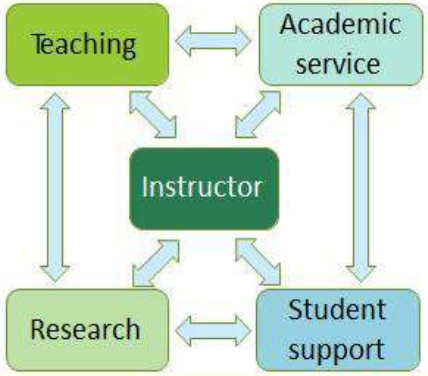
https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/

University Social Responsibility (USR)

University vs SDGs

http://www.sustainability.chula.ac.th

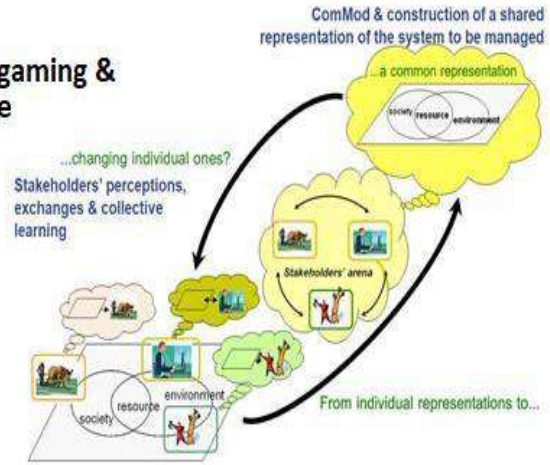
Chulalongkorn University is committed to meeting the United Nations' 17 Sustainable Development Goals (SDGs) via our policy and operation, research and innovation, teaching and learning, as well as outreach and engagement.



Objective

Share experience of using gaming & simulations (G&S) to bridge research & teaching

- Companion Modeling (ComMod) approach (Etienne, 2014): 2 objectives
  - Understanding system
  - Support decision making
- Focus on ecosystem/ natural resource management

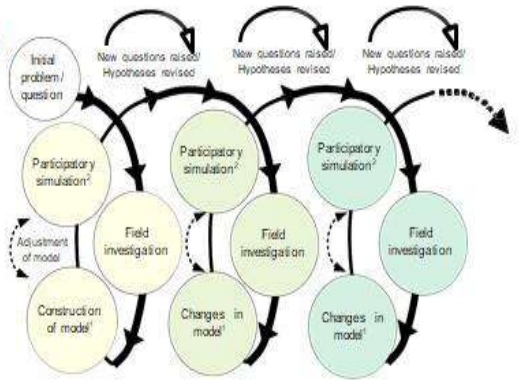


How to model & integrate different stakeholders' perceptions to support collective action?

Iterative & Evolving Process: Bridging R&T

Research & Teaching

- Learning outcomes
- Activity & Time (field trip, TA: big class)
- Coaching students to create/construct game



[1] Conceptual model, [2] Role-Playing Game or/and Agent-Based Model

Iterative & Evolving Process: Bridging R&T

	STPM Game	SQT Game	Green roof Game	Games: GenEd. course
Location	Songkhla (S)	Nong Bua Lamphu (NE)	Bangkok (C)	BKK, Many provinces
Area of study	Lagoon-farmland-coastal area, Envi. problems	Agricultural system surrounded by National Park	Urban Ecosystem	M&E: Envi. problems MDSR: Sust. Dev.
Initiator: Student:	Instructor MSc (+ BSc + PhD)	PhD student (+ Instructor) PhD (+ BSc + MSc + PhD)	BSc + PhD (+ Instructor) BSc (+ MSc + PhD)	BSc + other Undergrads. (+ Instructor + TA)

G&S 4 cases

1) Sathing Phra Millionaire Game (R to T)

Context: LUC vs Env. problems

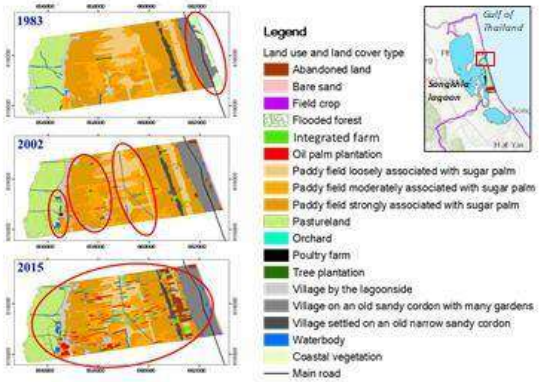
1983-2002:

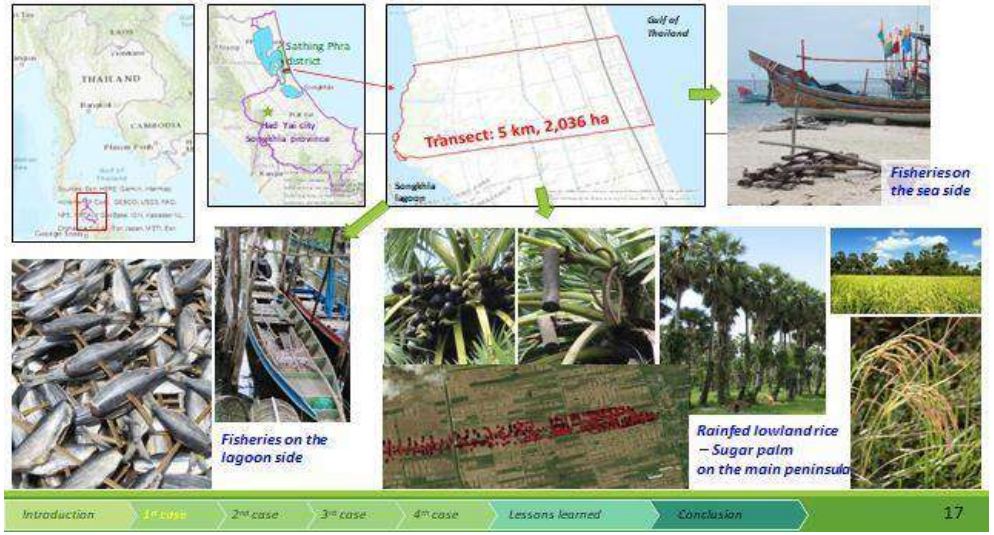
Coastal veg. (40 ha) >> Village

Rainfed lowland rice-Sugar palm (23 ha) & Pasture (22 ha) >> Village (33ha), Integrated farm (11 ha), Canals & ponds (6 ha), Oil palm (2 ha)

2002-2015:

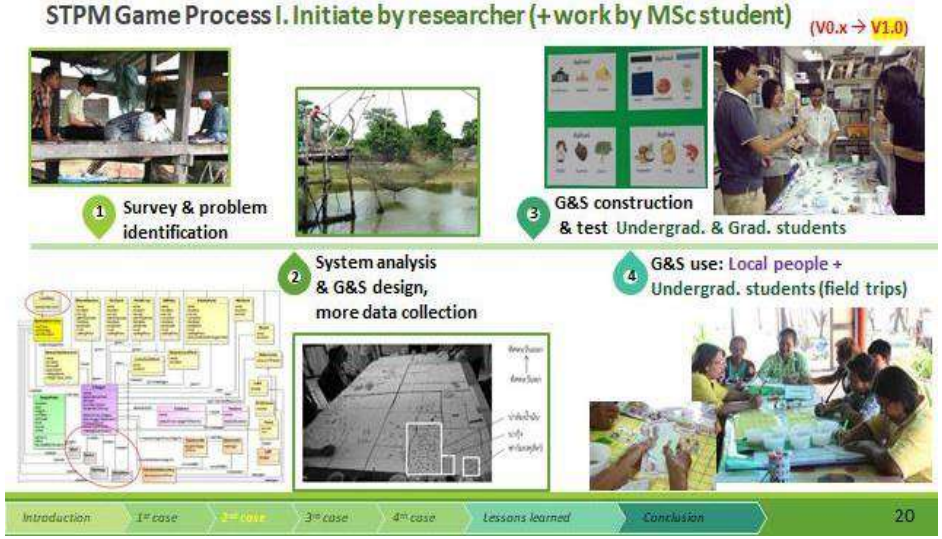
RLR-SP (88 ha) >> Oil palm (72 ha), Integrated farm (14 ha), Poultry farm (3 ha)

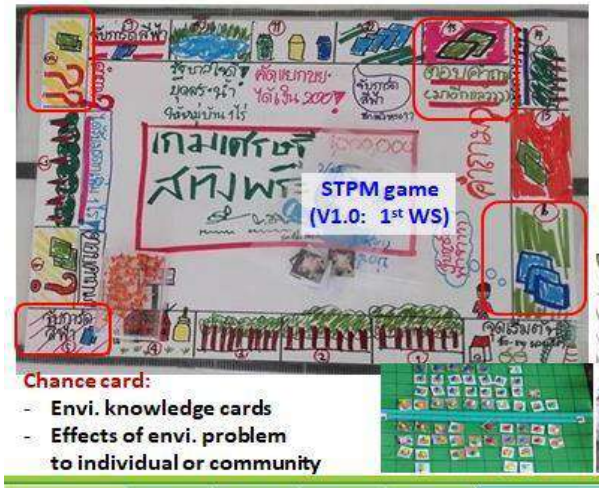



THAILAND
Sathing Phra district
Transect: 5 km, 2,036 ha
Gulf of Thailand
Songkhla lagoon
Fisheries on the sea side
Fisheries on the lagoon side
Rainfed lowland rice – Sugar palm on the main peninsula
Introduction
1st case
2nd case
3rd case
4th case
Lessons learned
Conclusion
17


Pasture on lagoon side
Village
Integrated farm
Tree plantation
Oil palm plantation
Rice field with sugar palm
Irrigation canal
Bare sand
Shrimp farm
Scattered house in central area
40mx40m pond
Abandoned deep water paddies
18


Environmental problems
Introduction
1st case
2nd case
3rd case
4th case
Lessons learned
Conclusion
19


STPM Game Process I. Initiate by researcher (+work by MSc student)
(V0.x → V1.0)
1 Survey & problem identification
2 System analysis & G&S design, more data collection
3 G&S construction & test Undergrad. & Grad. students
4 G&S use: Local people + Undergrad. students (field trips)
Introduction
1st case
2nd case
3rd case
4th case
Lessons learned
Conclusion
20



Role: Farmers
Grow crops
Gen. HH income
1 round = 1yr
5-6 rounds/game

Scenarios (cards):
Normal year,
Drought, Flood

Chance card:
- Envi. knowledge cards
- Effects of envi. problem to individual or community

Integrated with PNRM Course: Field trip (12 students: 1 Grad. + 11 Undergrad.)

Before using G&S with people:

- Field study at the site
- Field workshop (WS) preparation:
  - WS facilitation
- Assign task/role; observer photographer, farmers' assistant, etc.
  - In-depth interview after WS
- Debriefing at the end of the day, lessons learned, reflection to improve the game

Students work & share idea, Debriefing after workshop

STPM Game Process II. Adjust & use again

5 Adjust based on the comments & use with farmers

STPM game (V1.1; 2nd WS)

6 Use with more local people & new group of students

STPM Game Process III. From mutual understanding... To management plan setting

7 **Adjust G&S to support new objective: Mngt planning**

STPM game (V2.0)

- Enlarge spatial representation
- Include envi. problems in landscape

8 **Use again in 3rd WS with more people & new group of students**

- Discussion & voting to find common actions for envi. problem mitigation (to be implemented by local government)

Introduction | 1st case | 2nd case | 3rd case | 4th case | Lessons learned | Conclusion

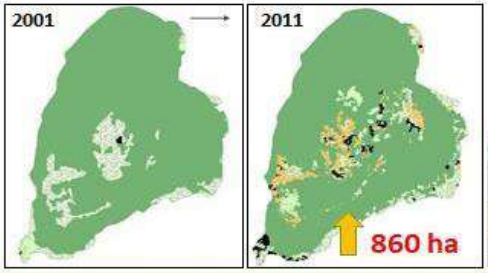
STPM Game Process IV. Knowledge dissemination: From south to northeast

STPM game (V1.1)

Introduction | 1st case | 2nd case | 3rd case | 4th case | Lessons learned | Conclusion

2) Soil Quality Testing Game (R to T)

Context: Farming in the area surrounded by national park: Phu Kao-Phu Pan Kham NP



- Poor soil quality
- Use a lot of chemical fertilizer

Introduction | 1st case | 2nd case | 3rd case | 4th case | Lessons learned | Conclusion

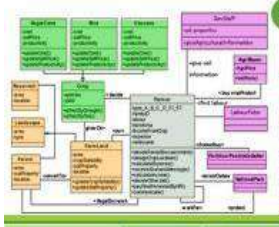
SQT Game Process I. Initiate by PhD student (+co-share idea by instructor)

(V0.x → Cropping game V1.0)

1 **Survey & problem identification**

3 **G&S construction & test** Undergrad. & Grad. students

2 **System analysis & G&S design, More data collection**



4 **G&S use:** Local people + Undergrad. students (volunteer)

Introduction | 1st case | 2nd case | 3rd case | 4th case | Lessons learned | Conclusion

Role: Farmers
- Grow crops
- -Gen. HH income: Calculate cost-benefit of agri. Inputs & HH expense
- 1 round = 1yr
- 5 rounds / session

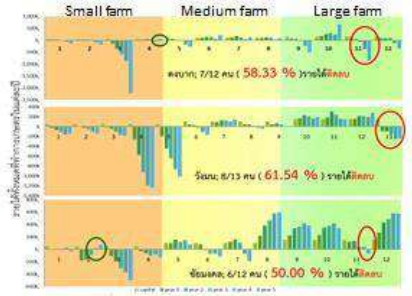
Scenarios:
- Business as usual (for practice/sensitizing)
- Climate change (yields)
- Open AEC market (-ve crop price)
- Population increase in the village

Cropping Game (V1.0: 1st WS)

X 3 Villages

***Role: Forester**
If farmer(s) encroach protect area, they draw a chance card to arrest farmer(s) >> fine OR jail

Debriefing: Simple indicator >> income in Excel
- Discuss feasibility of each scenarios & future possibility & uncertainty
- Identify possible solution >> soil qlt. improvement BUT, How???



SQT Game Process II. Create a new game

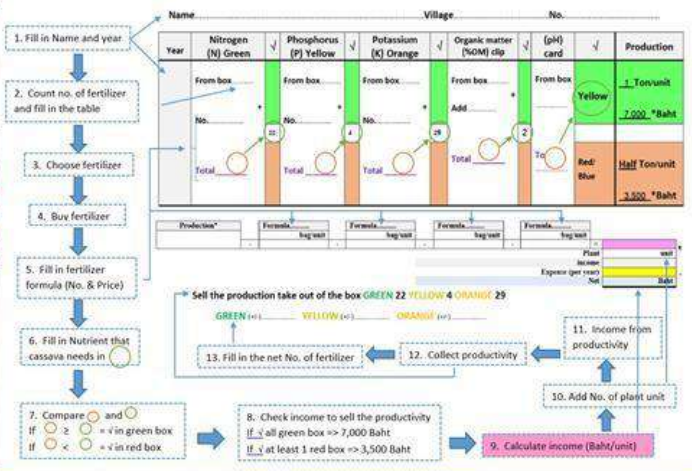
5 Create new related game based on the farmers' request (learn soil qlt. improvement)

(Cropping Game: V1.0)

"Cropping game"

Data collection: SQT game (V1.0)
- Farmer do not analyze their soil property
- Inappropriate use of fertilizer

Soil quality testing game



6 Use in the 2nd WS: 3 villages

Debriefing:

- Important of soil qlt. testing
- Appropriate use of fertilizer

Demonstration of soil sample collection

SQT Game Process III. Diverse use in many contexts

7 Use SQT V1.0 in PNRM class:
Learn about soil conservation
→ Assignment: Improve game
→ SQM V1.1 (record sheet)

8 Use SQT V1.1 with farmers & students at STP after planning WS Testing G&S genericity

SQT V1.1 → V1.2 (more crops)

9 Use V1.2 with students in Nan, northern Thailand:
Test G&S, Train new students

3) Green Roof Game (T to R)

Context: A group of students (who were inspired by PNRM course & field workshop) want to create a game and use for learning on "Ecosystem Services" of green roof (→ question from "Ecology" class)

Target: Chulalongkorn Univ. Academic Exposition

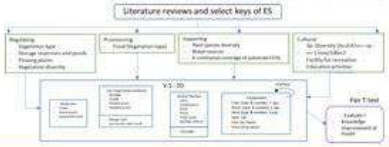
GR Game Process I. Initiate by students (Undergrad. + assisted by Grad. students)

1 Problem identification & data collection

3 G&S construction & test Undergrad. & Grad. students

2 System analysis & G&S design, (Instructor plays important role), more data collection (dif. plants, dif. ES score)

4 G&S use: Students & Parent, scholars + Undergrad. students (Chula Expo: Mar 2017, 295 visitors)



Role: Green roof designer
-Group play: 4-6 visitors (separate in to 2 sub-groups)
-Create green roof using provide materials to maximize ecosystem service score

Scenarios:
- No communication
- 2 sub-groups discuss & codesign

Knowledge assessment:
- Pre- & Posttest

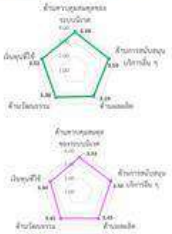


GR game (V1.0: 3D)


5 **Adjust to V1.1 based on players' comment (need more plants & request to include some animals)**

GR Game Process II. Adjust & use again

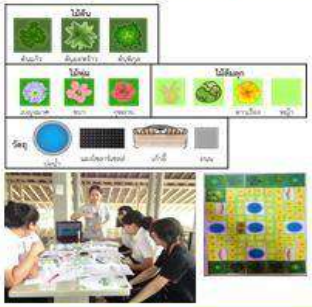
6 **Use again in the second-half of the expo**

Different ES & cost used from diverse groups

GR Game Process III. Adjust to 2D version for teaching

7 **Problem: 3D is difficult to use, need many facilitators**
Adjust to V2.0 (2D): Still keep interaction between users
More plants/objects, flexible use with lab manual & excel record sheet



8 **Use in "Ecology Lab" & "Man & Environment" classes (continue improving by a PhD student)**

Scenarios:
- Based on the students' experiences
- Create green roof with higher ES score


Scenario I: Students' experience


Scenario II: Think/ design: Higher ES score

4) General Education classes (T to R)

Context: Active learning using project-based activity

- Man & Environment: From me to we for sustainable living: Project in Bangkok (4-wk)
- Multidisciplinary Study for Rural Development: Project in Rural Area (5-d field study)
  - Use 3D GR game as an example + One-page proposal diagram

GenEd class Process I. Initiate by students (undergrad. students)

1 Survey & problem identification

3 G&S construction & test Undergrad students

2 System analysis & G&S design (Instructor plays important role), data collection (group work)

4 G&S use: Diverse group of users (local people, government officers, students, univ. staffs, etc.)

Within 3 days in fields (Multi. Rural.) & 4 weeks in BKK (Man&Envi.), students can create & use games with local people

AEC game: Treats & opportunities, played with Local administrators & villagers

GenEd class Process II. Present results using 'article' format (T to R)

Student practice to write an article

Millionaire game: An educational tool for learning on ASEAN Economic Community effects to daily lives

(Formal) Project title

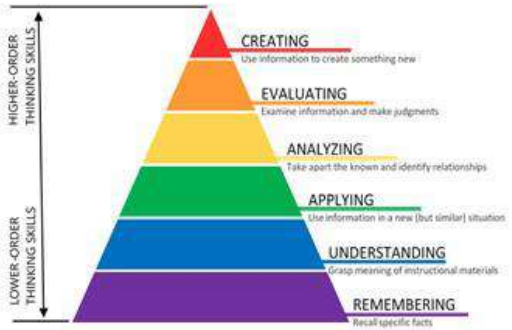
Lessons learned

Comparison: G&S 4 cases

	STPM Game	SQT Game	Green roof Game	Games: GenEd. course
Location	Songkhla (S)	Nong Bua Lamphu (NE)	Bangkok (C)	BKK, Many provinces
Area of study	Lagoon-farmland-coastal area, Envi. problems	Agricultural system surrounded by National Park	Urban Ecosystem	M&E: Envi. problems MDSR: Sust. Dev.
Research objective	Share learning about environmental problems from LUC & management plan setting	Share learning on future uncertainties of agriculture, learning on soil quality improvement & appropriate chemical fertilizer use	Share learning on 'Ecosystem Services' of green roof man-made ecosystem	Classroom project-based using G&S (support active learning)
Initiator: Student:	Instructor MSc (+ BSc + PhD)	PhD student (+ Instructor) PhD (+ BSc + MSc + PhD)	BSc + PhD (+ Instructor) BSc (+ MSc + PhD)	BSc + other Undergrads. (+ Instructor + TA)
Application	Acad. Service: Si Saket (NE)	Acad. Service: Songkhla (S), BKK (C), Ratchaburi (C), Nan (N)	Teaching: BBK, Eco Lab	Teaching: Some games
SDGs	Edu, Life on land, Life below water, Sust. comm.	Edu, No Poverty, Sust. comm.	Edu, Sust. city & comm.	Edu, Life on land, etc.

Students' learning

BLOOM'S TAXOMONY – COGNITIVE DOMAIN (2001)



https://citt.ufl.edu/resources/the-learning-process/designing-the-learning-experience/blooms-taxonomy/blooms-taxonomy-graphic-description/

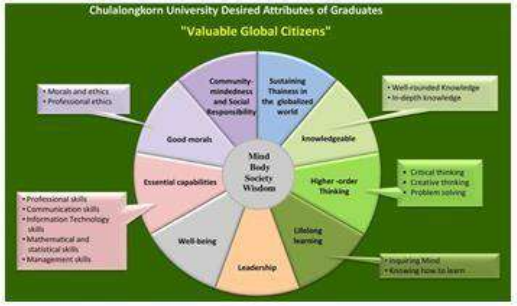
New games created by students
- Individual / group

Students' self esteem
- Usefulness of their games
  - Support SD for people
  - Use as learning tool for other classes
- Share learning with friends/ instructor/ local people

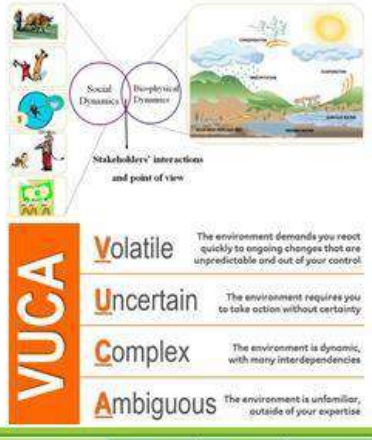
Top 10 skills of 2025

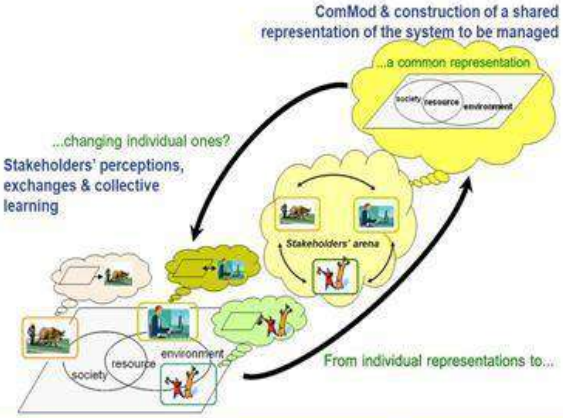
https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/

Learning by doing
- Learning from the real situation
- Diverse soft skills (21st Century skill)
- Life-long learning



SD of local communities: Adaptive capacity





Benefits to instructor/researcher

STPM Game: Publications

Learning the environmental impact from land use changes by Sathing Phra Millionaire game

Keerati Wanich
Chulalongkorn University, Thailand

Pongchai Dumrongrojwatthana*
Chulalongkorn University, Thailand

AEE-T Journal of Environmental Education 7 (14): xx - xx, 2016
ISSN 1906-8557
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Local people's knowledge and understanding of environmental problems in Sathing Phra district, Songkhla province

Keerati Wanich[1], Pongchai Dumrongrojwatthana[2,*]

Participatory Mapping to Share Ideas on Environmental Issues for Changing the Land in Sathing Phra District, Songkhla Province

Keerati Wanich[1]
Pongchai Dumrongrojwatthana[2]

Community and Social Development Review
Vol.1 No.2 July-December 2017

Sustainability Science
https://doi.org/10.1007/s11625-020-00819-5

SPECIAL FEATURE: ORIGINAL ARTICLE

Agroforestry for Sustainable Landscape Management

Driving factors and impact of land-use change in a fragile rainfed lowland rice-sugar palm cultural agroforestry system in southern Thailand

Pongchai Dumrongrojwatthana[1] · Keerati Wanich[2] · Guy Trébuil[3,*]

Cropping Game & SQT Game: Publications

Role-playing game to create learning about farming in an area surrounded by national park

Sutheera Pruksakorn[1], Somboon Kiratiprayoon[2], Somkit Uttaranakorn[3], Orathai Sukreeyapongse[4], and Pongchai Dumrongrojwatthana[1,*]

Pruksakorn S. et al. **Using a role-playing game for collective learning on soil quality improvement in 3 villages located in Phu Kao-Phu Phan Kham National Park, Thailand.** The 8th Annual International ThaiSim Conference. Sripathum University Sriracha campus, Chonburi, Thailand (July 28-29, 2016)

Game for Low-Formal Education Farmers to Learn How to Improve Soil Quality

Sutheera Pruksakorn[1], Somboon Kiratiprayoon[2], Somkit Uttaranakorn[3], Orathai Sukreeyapongse[4], and Pongchai Dumrongrojwatthana[1]

GR Game: Publications

Board Game for Collective Learning on Green Roof Ecosystem Services

Rattanapan Phoonsiri, Jaruwan Akkapiphat, and Pongchai Dumrongrojwatthana

Ecological Processes

RESEARCH Open Access

Rapid assessment checklist for green roof ecosystem services in Bangkok, Thailand

Conclusion

- G&S is not difficult to use for T to R / R to T
  - Students obtain many learning outcomes after using/creating game(s): 'Learning by doing' & 'field study'
  - Instructors can produce scientific publications
- G&S can support "SD" of local community by:
  - Explore diverse scenarios & share learning
  - Increase adaptive management capacity
- Coaching students to create/construct games is important (time consuming activity)
- Advance courses on G&S (online?) are important for continuous learning

Future work

- Wetland University Network:
  "The role of wetlands in water security for the Mekong region"
- More games will be created & use for "share learning" across 4 countries (Vietnam, Cambodia, Lao PDR, Thailand)

References

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- Wanich, K. and Dumrongrojwatthana, P. 2017. Participatory mapping to share ideas on environmental issues for changing the land in Sathing Phra District, Songkhla Province. *Community and Social Development*. 1(2): 63-85. (in Thai)

Webinar - 23

Day, Date & Time: Saturday, 26-06-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Marcus Watson,** Honorary Professor, Faculty of Health and Behavioral Sciences, University of Queensland

Country: **Queensland**

Title: An Online Driver Hazard Perception Training Course: Applying Simulation Fidelity and Games

Webinar Topic

An Online Driver Hazard Perception Training Course: Applying Simulation Fidelity and Games

Abstract

Driving accidents are rare; however, the consequences may be dramatic. Decades of evidence have shown that training the technical skills of driving does not significantly reduce road accidents. What is required is the development of the driver's situational awareness to predict the future state, based on the comprehension of the observed environment and events. The University of Queensland team had produced an online program that delivers the equivalent of 1000 years of driver experience in 3 hours. Professor Watson discussed the use of the knowledge elicitation techniques; the fidelity requirements; the application of cognitive learning theory and gamification, which underpin the program. He also discussed how the choice of simulation methods and gamification motivates learning at the same time as addressing the accessibility of the training at an affordable cost. This was supported with a synopsis of the empirical findings and discussion on the implication for training.

Speaker Profile

Marcus is an Honorary Professor in the Faculty of Health and Behavioural Sciences, at The University of Queensland where he leads research on human factors, education, and design. He has extensive knowledge of simulations and is a national leader in simulation-based research. He has delivered keynotes, plenaries and workshops including simulations development, serious games, online learning, and human factors in healthcare. He has extensive experience as a developer and instructor working with computer-based simulation, high end immersive simulation, serious games, and distributed learning. He has received national awards for innovation based on his work in simulation.

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Create change

A thousand years of crash experience in three hours: An online hazard perception training course for drivers

Professor Marcus Watson
The University of Queensland, Australia
Contact: m.horswill@psy.uq.edu.au

In collaboration with Mark Horswill, Andrew Hill, Likitha Silapurem, Nicole Bemi-Morrison, Francine Smith, Genevieve Kieseker
Special thanks to Paul Jackson

Designing Interventions for Non-Technical Skills

Non-Technical Skills are skills required to perform activities or tasks that cannot be described as deterministic relationships between the inputs and outputs.

Non-Technical Skills are highly contextual

- Situation awareness
- Leadership
- Communication
- Teamwork
- Visual arts
- Music
- Creative writing
- Games design

Hazard Perception Training Course

Course innovations:

- Use of video footage of real crashes and near-misses
- Focus on a skill that predicts crash risk: hazard perception
- Use of real world transfer strategies
- Use of forgetting-inoculation strategies
- Use of deliberate practice strategies

Training Simulation Fidelity

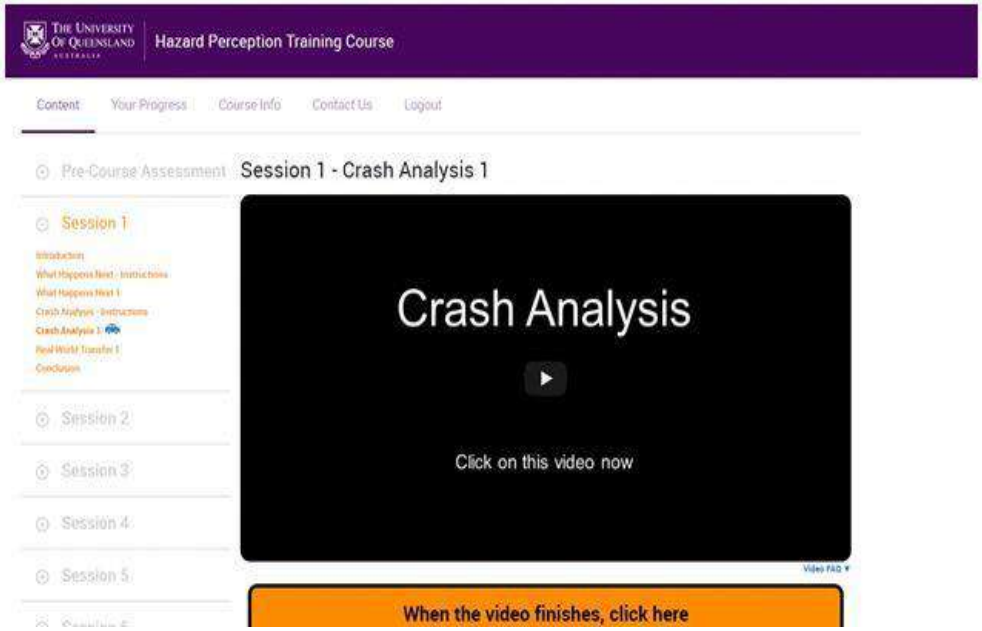
Examples of absents information

- Vestibular feedback
- Haptic feedback:
  - steering wheel,
  - accelerator,
  - car seat.
- Head rotation and peripheral vision
- Rear view mirror

Training Simulation Fidelity

Examples of incorrect information

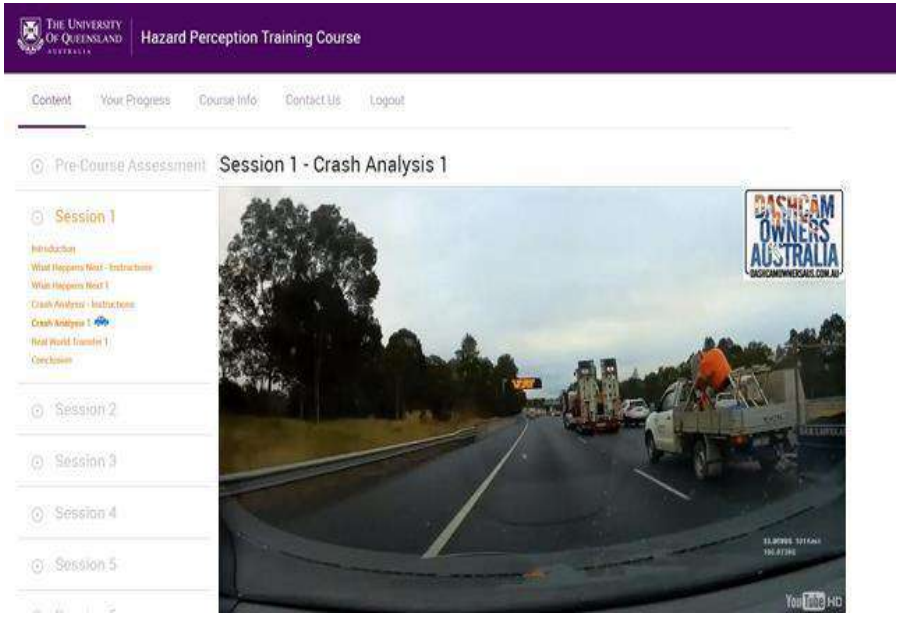
- Dash camera offset from the driving position
- Leans distortion
- Image quality:
  - colour accuracy,
  - pixel density,
  - frame rate.

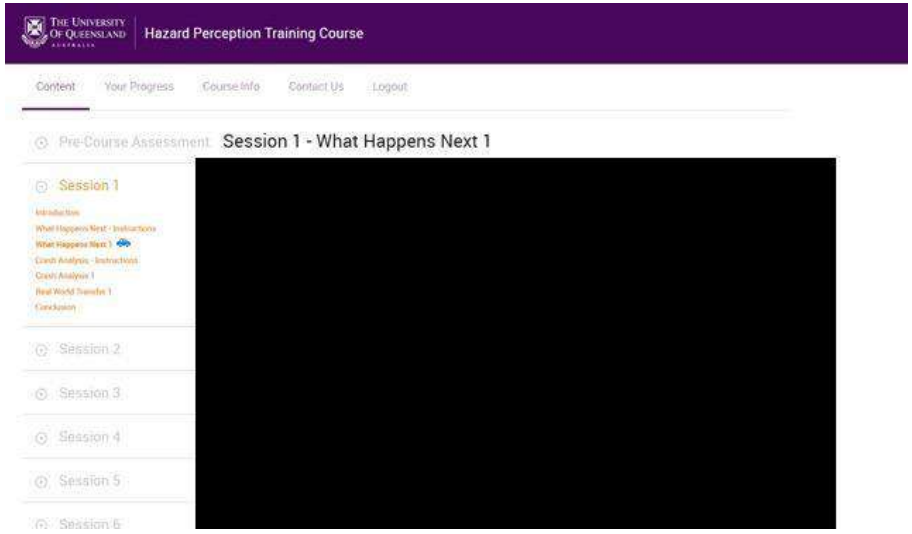


Training Simulation Fidelity

Examples of augmented information

- Pre activity briefing
- Feedback methods:
  - repetition and rewind,
  - pauses,
  - voice over,
  - Highlighting,
  - equivalent examples for alternative outcomes




The University Of Queensland
Australia
Hazard Perception Training Course
Content
Your Progress
Course Info
Contact Us
Logout
Pre-Course Assessment
Session 1 - What Happens Next 1
Session 1
Session 2
Session 3
Session 4
Session 5
Session 6


Commentary Drive

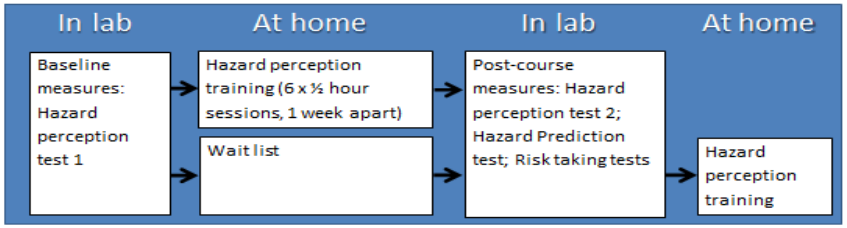

The University Of Queensland
Australia
Hazard Perception Training Course
Here are three suggested activities for you to try when you drive. Please click on the activity that you think will be the most useful to you. We recommend you choose an activity that you haven't tried before.
Commentary drive: I will do a Commentary Drive - in my head - during real driving. I will consider what can be seen, what can't be seen, and what might reasonably be expected to happen.
What happens next: At various points during my drive, I will consider the following question: "If a crash was going to occur within the next five seconds, what could it be?"
Look for hidden road users: I will identify locations that might need special monitoring because of the potential for hidden road users. Hiding places could include: behind other road users, near intersections, around bends, or over hill crests.

Hazard perception training course: Initial evaluation study

We evaluated the effect on the training course on:

1. Hazard perception test response times; 2. Hazard prediction test scores;

3. Video speed choice test scores; 4. Video following distance scores; 5. Video gap acceptance scores



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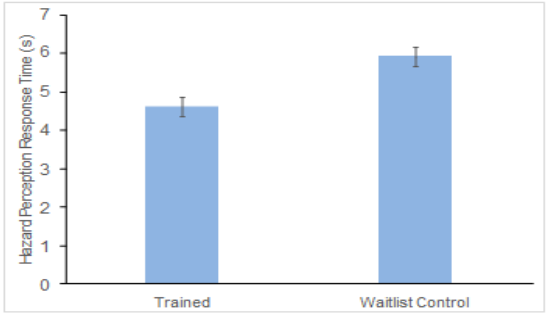
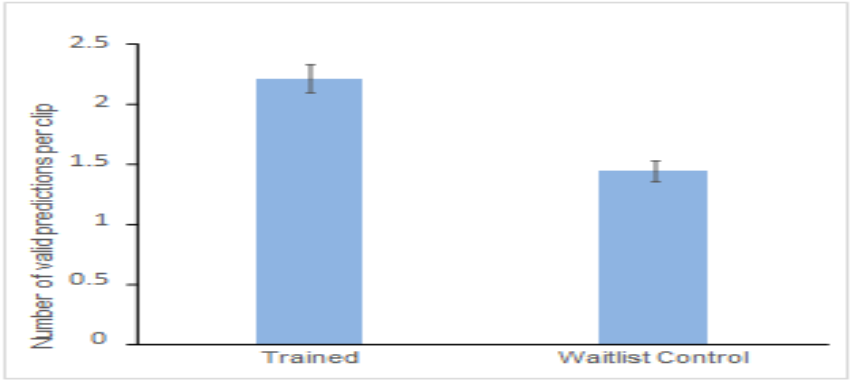
Hazard Perception Test Response Times



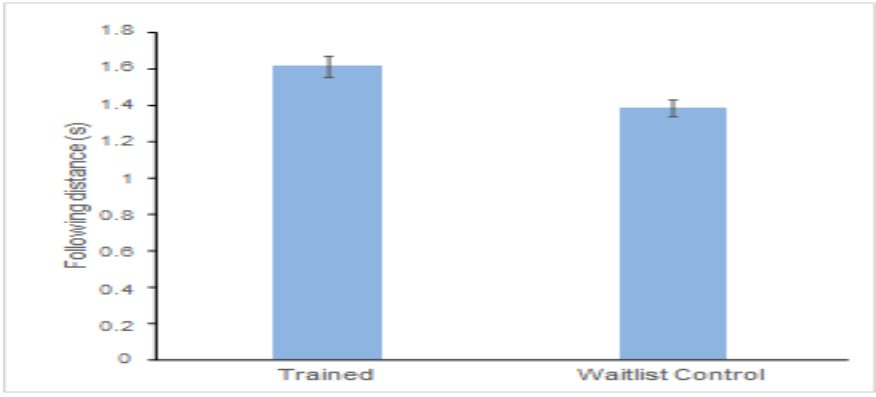
$F(1, 47) = 12.9$, $p < .001$, $\eta^2 = .17$

Hazard Prediction Test Scores



$t(48) = 5.24$, $p < .001$, *Cohen's d* = 1.48

Following Distance Scores



$t(48) = 2.99$, $p = .004$, *Cohen's d* = 0.85

No training effect on…

Video speed choice:

- Novices: $t(48) = -0.43$, $p = .666$, *Cohen's d* = -0.12

Gap acceptance test scores:

- Novices: $t(48) = 0.85$, $p = .400$, *Cohen's d* = 0.24

So what were the key game considerations?

- Context
- The right level of fidelity
- Anticipation
- Problem solving
- Feedback loops
- Small rewards

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Create change

Questions and comments welcome

Webinar - 24

Day, Date & Time: Saturday, 10-07-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Hidehiko KANEGAE,** Professor, Faculty of Policy Science, Institute of Disaster Mitigation of Urban Cultural Heritage, Ritsumeikan University

Country: Japan

Title: Why do simulation and games drive the digital transformation of cities and regions?

Webinar Topic

"Why Do Simulation and Games Drive the Digital Transformation of Cities and Regions?"

Abstract

In this webinar, the speaker portrayed the perspective that the digital transformation of cities and regions is driven by the mechanisms and phenomena of simulations and gaming. The tight connection between real physical space and digital cyber space is called the digital twin, or as Kevin Kelly calls it, a Mirror world where the true human brain emerges in an integrated cyber-physical space, SOCIETY 5.0. A statically connected three-dimensional cyber-physical integrated space requires dynamic behaviours and activities driven by the rules and regulations of a simulated or gamified society, as shown in the following presentation agenda:

- *A four-stage model of urban development from a brain-society perspective;*
- *Digital Transformation of Cities and Regions (UDX and RDX);*
- *Simulation-based gamified society drives the Mirror world of Digital-Twinning.*

Speaker Profile

Hidehiko KANEGAE Ph.D., Faculty of Policy Science, Institute of Disaster Mitigation of Urban Cultural Heritage, Ritsumeikan University, Japan. 4th industrial revolution special committee member, Osaka Chamber of Commerce and Industry (2018-2021). ISAGA-EB (2017-2021) and ISAGA-President (2015-2016), JASAG President (2017-2021), Vice President (2019-2021) of The Pacific Regional Science Conference Organization (PRSCO) /Regional Science Association International (RSAI) and Japan National Delegation (2015-2018) of International Society of City and Regional Planners (ISOCARP). Major works: Planner training gaming simulation for regional sustainable development and planning Exercise Program that is published "INTEGRATED GLOBAL MODELS OF SUSTAINABLE DEVELOPMENT"- Vol. II, UNESCO Encyclopedia of Life Support Systems.

KEYWORDS: NEO DEMOCRACY

Matured Democracy/ participatory Technology Assessment/
Deliberative democracy/ Mini publics/ Deliberative Polling/ Inclusive Society
Strategic Environmental Assessment/ Mini Assessment
e-Government/ Open data policy/ Ethical ESG Investment Economics
Green Diplomacy/ Evidenced Based Policy Making
CivicTech/ Citizen's Science
Distributed energy systems with battery revolution i.e. Tesla Powerpack
VPP: Virtual Power Plant/ Renewable Energy Plant (Solar & Wind)
(Baseload policy → DR: Demand Response with ERAB: Energy Resource Aggregator, BESS: smart-Battery Energy Storage System/ EV: Electric Vehicle/ Microgrid/ DERMS: Distributed Energy Resource Management System)
4th Industrial Revolution/ Smart Ag, AgTech, Agritech/ Forestrytech/ Fisherytech/ RPA
Fintech/ Blockchain/ Cryptocurrency/ 'Bitcoin: A Peer-to-Peer Electronic Cash System' Satoshi N. 2008
IoT/ IoE/ AI& Bigdata/ Digital Twin/ Mirrorworld
Urban Digital Transformation/ smart-city (super city Japan)

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Accelerated Paradigm shift by COVID-19 toward Society5.0:

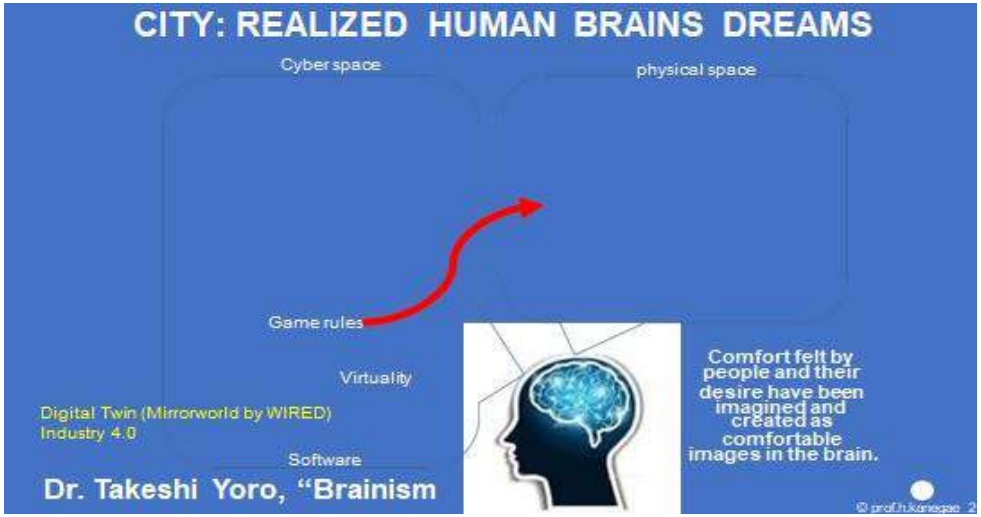
Depopulation
-> Aged society
Pension allowance
-> Basic income
New class
-> Creators, Artists
New tax
-> A.I. tax and robotics tax
Technium by Kevin Kelly
Novacene by James Lovelock

TABLE1 HISTORY INDUSTRIAL REVOLUTIONS AND HYPOTHETICAL FUTURE PARADIGM SHIFTS

Society 1.0	Society 2.0		Society 3.0		Society 4.0		Society 5.0 cyber-physical fusion	
				Mechanical Economics (Capitalism)			Pure Mechanized Economics (Tegunium Economy + Shared economy)	
Collection - hunting		Agriculture	manufacturing industry (Mass-production)		Service industry, ICT business		Gaming era: Gamified Society SNS-Game, E-Sports	
k		Slave times	Machine era, Labor times	Systems era	Digital era	Specific AI era	general-purpose integrate AI era	
BC10000			AD1770	1865	1995	linguistic walls	2030	2045
	Settlements revolution		First industrial revolution (Steam engines)	Second industrial revolution (Internal combustion engines & Electric motors)	Third industrial revolution (PC & Internet)		Fourth industrial revolution (gAI, IoT, IoE, Global brain architecture)	

Author added

CITY: REALIZED HUMAN BRAINS DREAMS



MODERN PLANNING SCIENCE
= SINCE INDUSTRIAL REVOLUTION

1st Paradigm: MACHINE era

- Pre-determinism

2nd Paradigm: SYSTEMS era

- ICT, Scalability and multiple-network

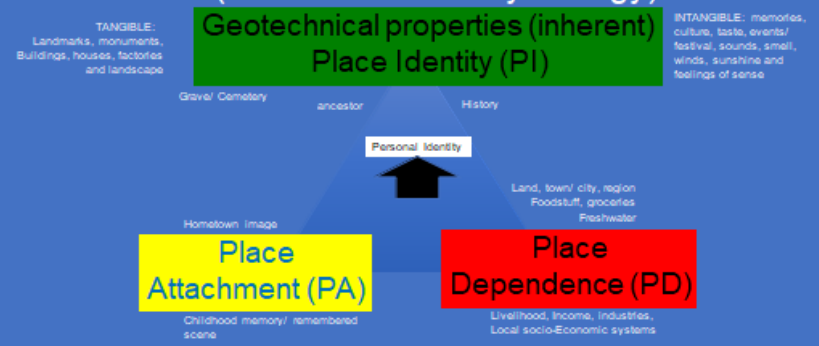
3rd Paradigm: DX era

- Digital Transformation & Complexity

Industry 4.0 ongoing toward Society 5.0

A.I., IoT, Smart-city and gamified society

SOP: Sense of Place theory (environmental Psychology)



CITIES ARE THE LARGEST AND MOST POWERFUL LEARNING DEVICES

HUMANS CONTINUE TO BUILD CITIES

- A city is a psychological collection and movement of brains
- A city of multiple functions
  → Tight constraints in the beginning
- Major cities were formed after the industrial revolution
  → Major cities were formed as factories were being built
- A city is a package of information, a collection of image processors
- The brain is an image processor
- Selection is a synthesis of images = planning
- Self-organized emergence
  → Urban culture
  → Self-definition in accordance with the image
  → Symbols are deposited

HUMANS CONTINUE TO BUILD CITIES

CITIES ARE THE LARGEST AND MOST POWERFUL LEARNING DEVICES

- Planning is man's most powerful and optimal life phenomenon

- Simulation since the days without computers
  Quantitative calculation & prediction ⇔ Qualitative calculation & prediction

- Is society directly controllable?
  → Projection of planning
  → change in planning dimension
  → Image projection/processing
  → observability

HUMANS CONTINUE TO BUILD CITIES

CITIES ARE THE LARGEST AND MOST POWERFUL LEARNING DEVICES

- The Limits of Big Cities:
  - → Limits to growth;
  - → Human's direction of manufacturing and movements are changing.
- Feel-good compact polices, compact cities, Green cities and Creative cities:
  - → Information, Cultural, gammified and intellectual productions industry arising;
  - → Cultural industries, creative cities
- For brains, cities are the pursuit of comfort by brains
- For genes, the city is the pursuit of comfort through artifacts
  - → Brains (pursuit of comfort by brains) and genes (pursuit of comfort by artifacts) have different directions.
  - → This is the environmental problem of a brain-based society.
- The last nature is children of humans
  - → Adults want to be part of the brain society (city) more than they want to be nature.

URBAN GAMING SIMULATION UNDER PLANNING SHIFTING 1 (AFTER WORLD WAR II)

- 1) Urbanization & Sprawl period (till 1970')
- Demands for physical planning
- → Traditional (civil) engineering
- Hard-ware oriented planning period

- 2) Stable urban dwelling and edge cites(till1990')
- Demands for living environment, amenity etc.
- →Landscape, vicinal environment, Quality of Life, etc.
- Soft-ware oriented planning period

URBAN PLANNING/ CITY PLANNING

- Modern Planning after the Industrial revolution
- City Planning is combination of (Comprehensive) Master Plan, Spatial Plan (Landuse), (Economic & Industrial) Development Plan, Physical Plan, Housing Policy & District Plan and Social Welfare & Education Planning
- -> Urban Planning is Development Plan

AFTER MANY REGRESSIONS WITH VICTIMS

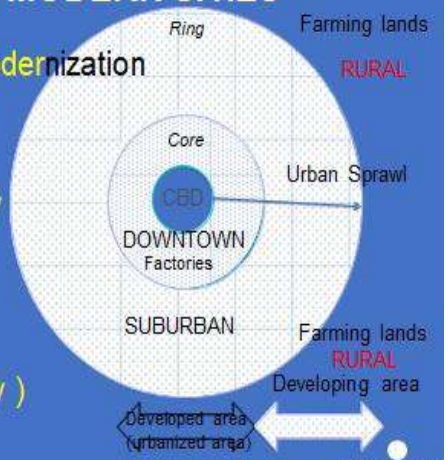
- (environmental) pollution protections are built-in,
- Quality of Life is also built-in,
- Amenities is also built in,
- Landscape is also built-in,
- Countermeasures for climate changes are now being built-in,
- Disaster prevention & Mitigations changes are now being built-in.

MEGA CITIES IN HISTORY

Ancient Greek	BC2000~BC1000	10,000 pop.
Ancient Mega cities:		
Athene	BC340	More than 1 million pop.
Rome, Syracusa, Corinth, Rhodes	BC230	1 – 2 million pop.
Carthage, Alexandria, Antioquia, Seleucia	BC230	More than 2 million pop.
Roman Empire		1 million pop.
European cities in middle ages		100,000 -150,000 pop.
Edo (Tokyo)	18th century	1 million pop.
London	19th century	1 million pop.
Paris	19th century	2 million pop.
Tokyo	20th century	12 million pop.

HISTORY OF MODERN CITIES

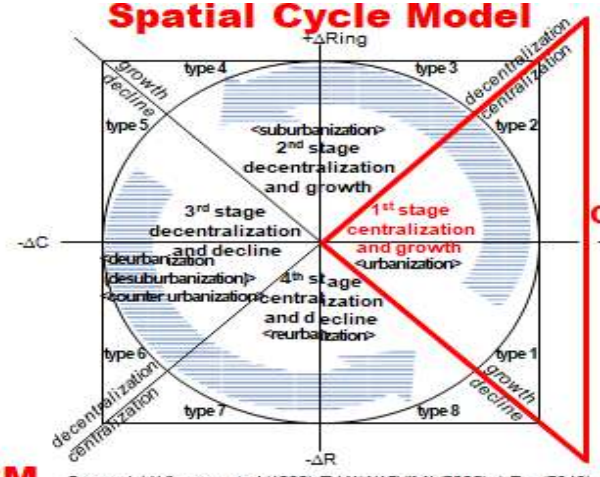
Mega city growth under modernization
(Industrial Revolution)
↓
Economic Growth tendency
↓
Great Expansion
↓
Migration (Rural → Big city)



HISTORY OF MODERN CITIES

Migration (Rural → Big city →Mega city)
↓
Public Health Problem, Pollution and Disaster
↓
The Club of Rome Report
***"The Limits to Growth"*, 1972**
↓
The Earth Summit
Sustainable Development, 1992
< Turning Points for Social Learning >
Renewable energy
↓
Technological Singularity 2045
Networked Automation AR Society (ICT+AI+Robot+AR)
Multilarity revolution & Gaming Society 2025-2045

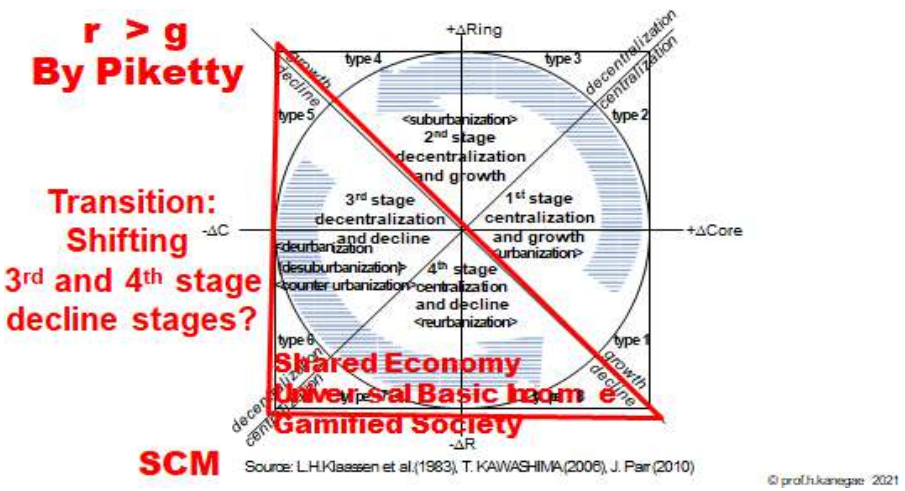
Spatial Cycle Model



1st stage: centralization and growth

SCM

Source: L.H.Klaassen et al.(1983), T. KAWASHIMA(2006), J. Parr (2010)



CREATIVE CITY

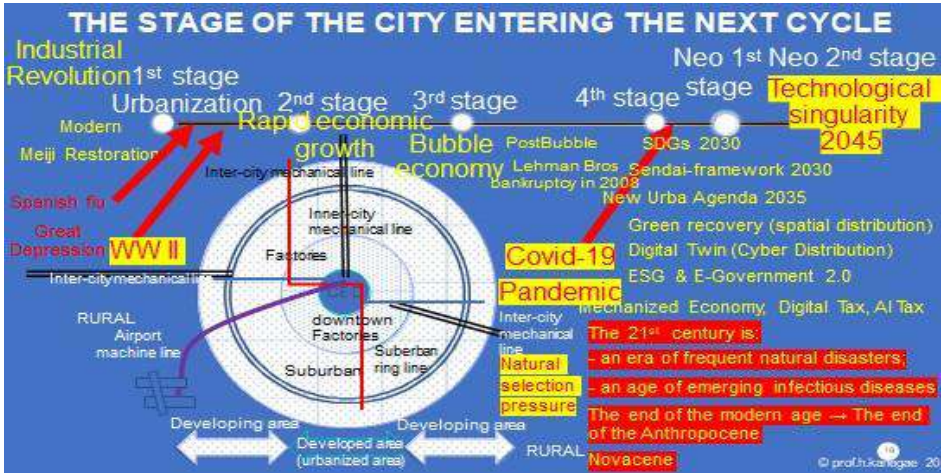
Charles Landry's (2000) Creative City and
Richard Florida's (2002) The Rise of the Creative Class. Richard Florida (2002), The Rise of the Creative Class: A Theory of Creative Capital.

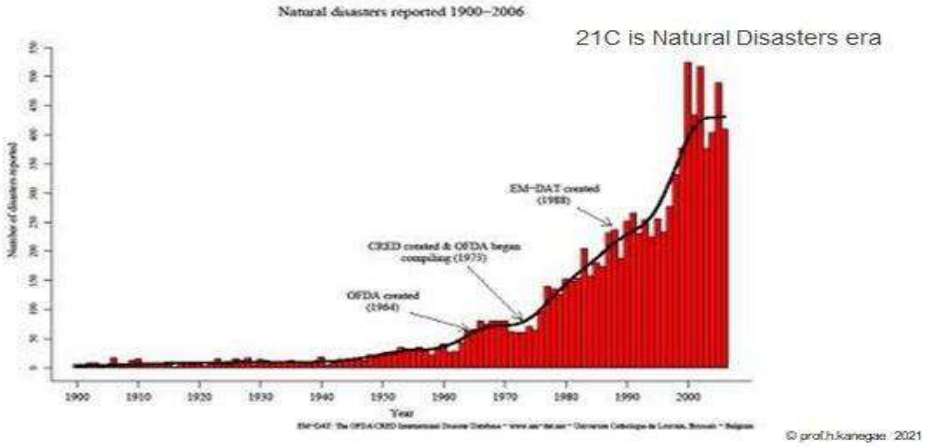
Generation 1: Seven creative industries: literature, film, music, crafts, design, media arts, and food culture Creativity is the engine of economic growth in cities. Goods, products and people selected by the market based on the added value of creativity, e.g., unique characteristics (history, artistic activities, movements), fashion, food (gourmet food), content (manga, anime, games), arts and crafts, design, space and architecture, tourism, goods and people involved in advertising Although the growth and enjoyment of the creative economy is skewed toward developed countries, future development can be expected in developing countries as long as the social infrastructure, including intellectual property rights, necessary for the development of cultural industries and the creative economy is in place. A fusion of the "creative economy" (creative cities) and the environmentally and socially conscious "green economy" (sustainable cities) will occur in DX.

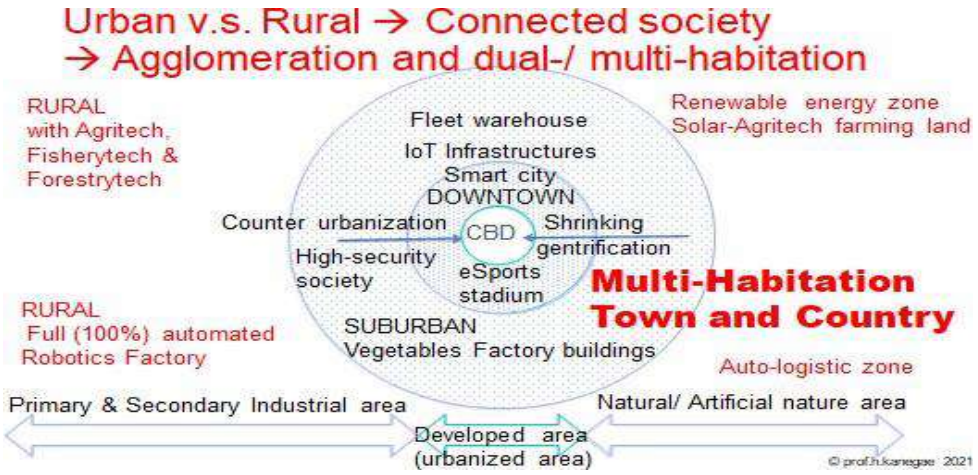
• Table Transition from an industrial economy to a creative economy

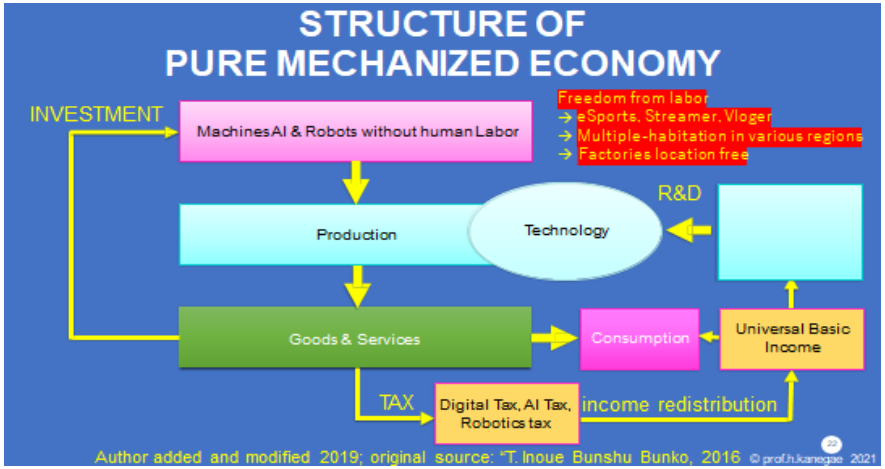
	Industrial Economy in the 20th Century	Creative Economy in the 21st Century
Production System	Large-scale production (Top-down structure)	Flexible production (Bottom-up systems)
Consumption	Non-individualistic; Mass consumption	Individualistic cultural consumption
Distribution and Media	Mass distribution; Mass media	Network; Social Media
Economic advantage	Assets, land, energy	Creative talent Knowledge, wisdom, culture
Urban form	Industrial city	Creative city

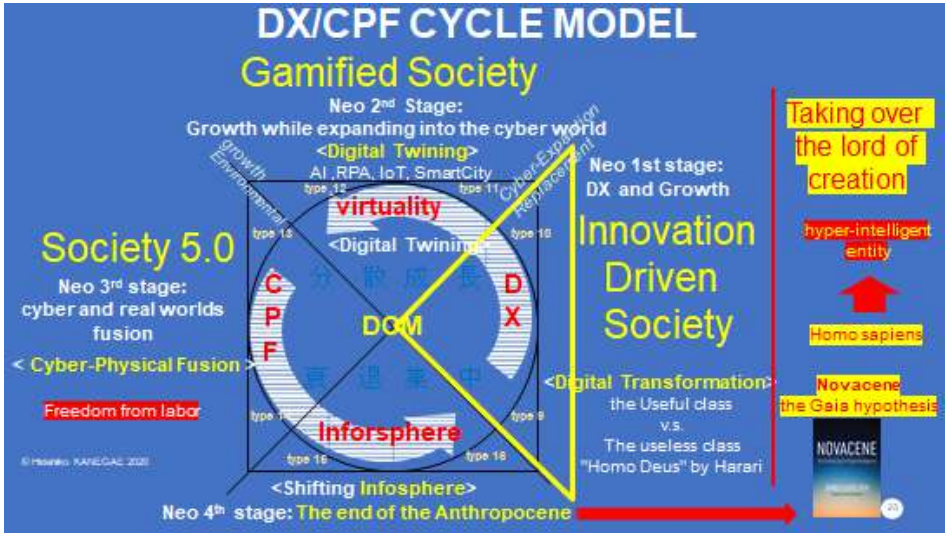
Source: Masayuki Sasaki, Professor, Graduate School of Osaka City University, "Kyoto's Vision of a Creative Economy and Creative City,











Dyson sphere & the Kardashev scale

Freeman Dyson in his 1960 paper "Search for Artificial Stellar Sources of Infrared Radiation" Nikolai Kardashev was looking for signs of extraterrestrial life within cosmic signals.

Class	Joule	Features
Type I: Planetary system	10^{16}W	Harness all Earth's energy (Our human will reach 100 -200 years in our future)
Type II: Stellar system	10^{26}W	harness the power of their entire star = Dyson Sphere
Type III: Galaxy	10^{36}W	Controling over a planet, to a star, Nothing for "disposable" where a species (cyborgs (or cybernetic organism, beings both biological and robotic) then becomes galactic traversers
Class	**Joule**	**Features**
Type IV: civilization	10^{46}W	Harness all universe.
Type V: Whole space	Equal of all energy	In all universes/ multiverse and in all time-lines:= ***Time Traveller***/ multiverse
Type 0:		Our situation XXI century, but XXII or XXIII will be shifted Type I

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HOMO LUDENS and HOMO DEUS

Homo Ludens is a book written in 1938 by Dutch historian and cultural theorist Johan Huizinga.[1] It discusses the importance of the play element of culture and society. Huizinga suggests that play is primary to and a necessary (though not sufficient) condition of the generation of culture. The Latin word Ludens is the present active participle of the verb ludere which itself is cognate with the noun ludus. Ludus has no direct equivalent in English, as it simultaneously refers to sport, play, school, and practice

Homo Deus: Yuval Noah Harari envisions a near future in which we face a new set of challenges. Homo Deus explores the projects, dreams and nightmares that will shape the twenty-first century and beyond – from overcoming death to creating artificial life.

Source: Wikipedia

History of Classes

Ancient
- ruling class (citizen), ruled class (slave)

Medieval and early modern times
- Aristocrat (manor lord) class, serf (crop) class, dweller in a wall (bourgeoisie), slave

Modern
- Upper class (Royal, noble, land owner), middle class (industrial capitalist: bourgeoisie),Working class (including maternity class, farmers), lower class

20th Century (Biosphere: Biosphere)
- Wealthy, middle and poor

Near future (Cyber-Physical fusion sphere)
- Use Useful Class, Useless Class, Mental Rewarded Class

21st Century (Information Area: Infosphere)
- New wealthy people, Gaming Class: new creative classes (2nd Generations), novices (including performers), new downstream / poverty people (emotional services workers)

Important

Learning by Doing
Not education
-> Education is policy phenomenon
With Facilitation
With Debriefing

Advantage of Gaming Simulation

To recognize whole dynamics/behavior

To recognize complexity

To understand model/systems

To aware world view/birdview

Gamified Society/ Gamified Civil Society

- Gamification for (civil) society
  to achieve goals or managing stable/sustainable dynamics of entire society **under game rules**
- Under what conditions game like dynamics enhance public participation?

New stream:CivicTech and Citizen-Science

Open Data

- **3DCG of Tokyo created by satellite data and AI**
- **Code for (Area)**
- **EdTech**
- **SDGs and Green Diplomacy needs Digital Transformation (DX) which changes our society:**

Concluding remarks

Industrial Revolution
↓
Rapid migration, Dividing simplified mono-landuse
↓
Connecting mono-landuse by mechanized transportations and lines
↓
Satellite city/ Bed town in Suburban area
(mass-consumption society)
↓ ↓
Gentrification, Gated town — Shared economy, IR4.0, VR/AR
↓ ↓
Resilient City & Compact City — Gaming Society & Pure Mechanized ESG Economy, e-Sprots & Gamification

CivicTech with digital native, useful class renewal, gamified-person, ESG educations are needed toward 2030

Webinar - 25

Day, Date & Time: Saturday, 24-07-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Toshiko Kikkawa,** Professor at Keio University, Tokyo

Country: **Japan**

Title: Disaster Prevention and Awareness Education Using Simulation and Gaming

Webinar Topic

Disaster Prevention and Awareness Education Using Simulation and Gaming

Abstract

The resource person demonstrated how gamification is grounded in Japanese society, especially in the field of disaster prevention and awareness. Games and game-related activities have been common and pervasive in the field, partially because of the community self-education approach for mitigating the impact of disasters. The game "Crossroad", a tabletop exercise, is a pioneering game that has increased awareness of the effectiveness of gamification in the field. After it gained popularity, various games were developed by ordinary people, especially those who had experienced natural disasters or are expected to be victims of future disasters. This trend is a reflection of Japan's generally bottom-up culture. The success of the Game Market, which is held three times a year in Japan and where independent game designers develop games, shows that gamification is embedded in Japanese society. In addition to these trends, researchers and game designers have also contributed to disaster prevention and increasing awareness.

Speaker Profile

Toshiko Kikkawa, PhD is a professor at Keio University, Tokyo, Japan. She is a social and organizational psychologist with expertise in simulation gaming and risk communication. She started her career as a game researcher and facilitator in 1989 and has designed many games for educational purposes since then. She is also interested in training for improving risk communication using gaming simulation. She has been the vice-chair of Japanese Association of Simulation and Gaming (JASAG) since 2015 and was the Executive Board member of the International Simulation and Gaming Association (ISAGA) from 2012 to 2016. She is the co-editor-in-chief of the international journal of Simulation and Gaming.

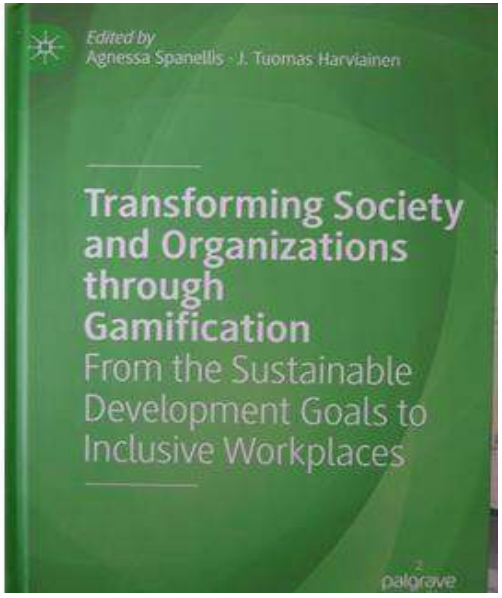
Disaster education using simulation and gaming

Toshiko Kikkawa
Keio University

Key points of today's presentation

1. Gamified approaches in Japan for disaster education
2. Key players for disaster education: Local people
3. Japanese bottom-up culture may enhance the trend

Today's talk is based on a chapter of this book:
"Disaster prevention and awareness"
https://link.springer.com/chapter/10.1007/978-3-030-68207-1_17



A turning point: The Great Hanshin-Awaji earthquake

- Occurred at 0546h on Jan. 17th, in 1995
- The earthquake was 7.2 in magnitude
- Occurred directly beneath Kobe, with a population of 1.5 million

The Great Hanshin-Awaji earthquake

- More than 6,400 people dead
- 15,000 people injured

- Around 70% of people were saved by people in the community
  - **"Self-help, mutual help, and public help"** has become a motto of disaster management and shared in Japan
  - Voluntary disaster management organizations (*Jishu Bosai Soshiki*)have been established in communities

The Great East Japan Earthquake

- Occurred at 14:46h on March 11, 2011
- Had a magnitude of 9.0
- Killed more than 21,000 people.

Why traditional education is not sufficient for disaster education?

1. The hazards of disasters differ from region to region
   - The Great Hanshin-Awaji case: Vulnerabilities of urban area
   - The Great East Japan case: *tsunami*
2. Types of disasters differs
   - Earthquakes, volcano eruptions, typhoons, floods, etc.

- As a result, each community requires custom-made educational methods and materials that reflect the possible situations in the community
- Games have an advantage, as they offer flexibility for changing content and rules

8

Case study #1
DIG (Disaster Imagination Game)

- The first game that gained recognition in disaster education
  - Developed by Assoc. Prof. Takeshi Komura in 1997
- A workshop-style simulation that uses local area maps

9

DIG (Disaster Imagination Game)

- Although DIG cannot be categorized as a game in the strict sense of the term, it opened the way for games as a part of disaster education
  - Since the term "Game" associates with "play" in Japanese, the game had been misconstrued as inappropriate for disaster education

11

Case study #2 Crossroad

"Crossroad": A brief history

- Originally designed as a tabletop exercise for disaster response training
- First published in 2003
- Started to be sold at bookshop of Kyoto Univ. in 2004
- The contents of the game was based on the interviews of the city employees of Kobe who experienced the Great Hanshin-Awaji earthquake
  - The interview started in 2003, meaning 8 year reflective process of interviewees

Flow of the game

Crossroad: Kobe1008

- You are … in charge of foods at a shelter.
- Several hours have passed since the disaster. Reliable information was obtained that 3,000 people are evacuated at the site. 2,000 meals are secured currently. There are no further prospects at the moment. Do you distribute these 2,000 meals to start with?

Fact (Kobe#1008)

- On the 18th , 223,217 people were at shelters
- 76,000 meals, 365,000 loaves of bread were available on the day
- The difference between equality and needs was a major concern

Two main characteristics of the original rule

- 'Closed question' to 'Open question'
  - Yes/No → Why? How?
- Unique opinion gains 'gold *zabuton*'
  - The rule encourages participants to express their minority opinion in the safe environment
    - E.g. 'I chose Yes because I want a gold *zabuton*.'

Variations

- Kobe (disaster response)
- For citizens (disaster preparedness)
- Safety management for volunteers
- Infectious disease
- Food risks
- Influenza

Crossroad(Small-Scale Miners1)

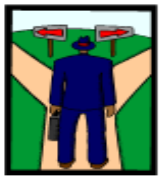
- You are…an Inspector
- Small-scale miners use mainly mercury and cyanide for the production of the gold, not environmentally sound. Environmentally sound mining tends to cost more.
- Do you enforce SSMs in your village to use a new method, which is environmentally sound?

YES (To enforce) ⇔ **NO (Not to enforce)**

Leaning from 3.11 disaster in Tohoku area

Crossroad: 3.11 disaster

- You are…A citizen who works as a volunteer at an evacuation center
- You are distributing food. One hundred and fifty loaves remain, but their expiration date is today.
- Do you distribute loaves to whomever wants them?



YES (Distribute them) ⟺ NO (Do not distribute them)

A letter from a city employee of Sendai

- "Having experienced 'Crossroad' before the 3.11 earthquake was a truly invaluable experience for me. Although the nature of the disaster was different in detail, the structure, i.e., incessant decision making necessary for disaster responses, was almost the same for me. I often recalled and reflected the discussion during the game play whenever I faced dilemmatic situations. In this sense, I think lessons learned from Kobe is not outdated even if it happened 18 years ago."

People from Tohoku area talked about 3.11 experiences

People from Kobe shared their experiences as well

Participants also shared their 3.11 experiences

Other games

31


まず あたまを まもろう。
Bosai (Disaster prevention) Duck!
Duck
Duck


+Arts (NPO) introduce game elements to disaster drills

Another example of the Japanese bottom-up culture related to games: The Game Market

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The Game Market

- The largest tabletop game event in Japan
- Held 3 times annually (2 in Tokyo, 1 in Osaka)
  - FYI: Over 25,000 participants across 2 days in the spring Market in2019
- Key characteristics: Exhibitors are mostly independent game designers
  - FYI: 350 out of 454 exhibitors of the 1st day of Tokyo Game Market in 2018 were independent game designers
- Like the Comic market (Comiket), this is a grassroots event, founded by an elementary school teacher

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Disaster education using S&G

- The general bottom-up culture and volunteer disaster prevention organizations play important roles in disasters education
- Not only the games themselves but also the whole learning system using games have contributed to the disaster prevention knowledge and increased public awareness

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Webinar – 26

Day, Date & Time: Saturday, 07-08-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Dr. Alexander Schiller,** Trainer, Facilitator at FSU Jena

Country: **Germany**

Title: Every game is a framegame!

Webinar Topic

Every Game is a Framegame!

Abstract

With games, we can learn effectively concepts, procedures, skills and knowledge. All instructional games have both content and activity; a framegame is deliberately designed to allow easy loading and unloading of one's own content. Framegames have four activity characteristics: Conflict, Constraint, Contrivance, and Closure. Usually, the conflict in a game takes the form of competition among players. Rules give constraints to control the players' behavior. Further, games contain artificial elements that prevent people from taking it too seriously (contrivance). Finally, termination rules in games bring the game to closure. In instructional framegames, one can also vary Conflict, Constraint, Contrivance, and Closure to create a new learning experience. In this webinar, the resource person explored how every instructional game can be seen as instructional framegame. The best way to vicariously explore a framegame is to play it. Then content and activity can be changed to create a new game.

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Speaker Profile

Dr. Alexander Schiller is a habilitated chemist and works now as trainer, coach and facilitator for scientists. He developed innovative academic teaching at LMU Munich (D), EPF Lausanne (CH), UC Santa Cruz (USA), and University Jena (D, "Lehr-Zertifikat Advanced", habilitation in 2015, Venia legendi in inorganic chemistry). In addition, he is a "Certified Facilitator" and "Certified Advanced Coach" with The Thiagi Group (thiagi.com). His company, Schiller & Mertens, has trained over 11 000 scientists worldwide in hundreds of seminars, coachings, consultings and lectures since 2011 (since 2020 coach in the Planck Academy).

Every game

is a framegame!

SCHILLER & MERTENS

Chemistry | Dr. ès sc. | Postdoc | Lab | Juniorprofessor

SCHILLER & MERTENS

SCIENTISTS NEED MORE

SCHILLER & MERTENS

SCIENTISTS NEED MORE

Facilitators with scientific background work on transferable skills

Every game is a framegame!

- Homo sapiens, homo faber, homo ludens
- Playing games can be efficient learning
- We do not learn from experimental playing
- We only learn from reflection on our experience
- We can develop reflection by seeing every game as framegame
- For that we need to **change our attitude**!

Characteristics of games

Conflict

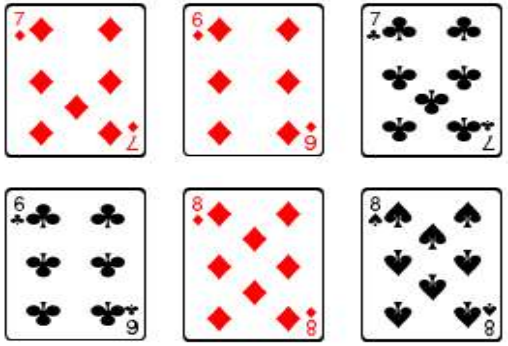
Constraint

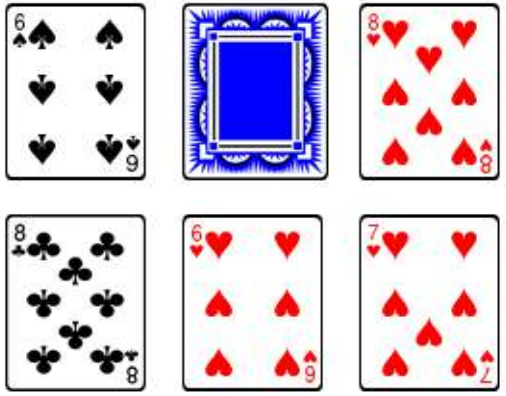
Competition

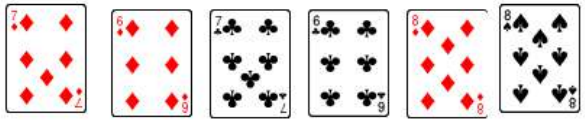
Collaboration

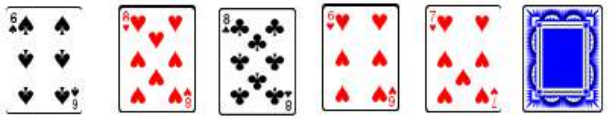
Contrivance

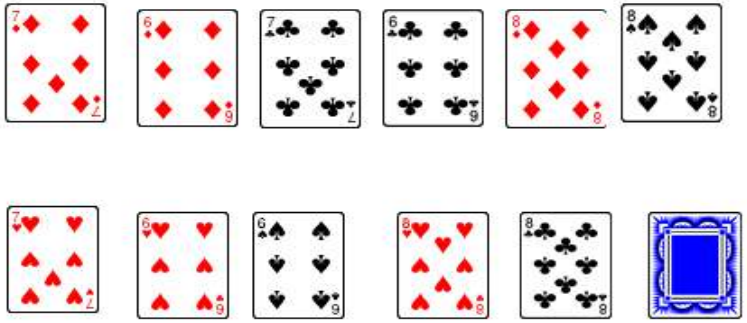
Closure











The more you focus
on one element,
the more likely you miss
the bigger picture.

Characteristics of framegames

Change Conflict

Change Constraint

Change Competition

Change Collaboration

Change Contrivance

Change Closure

1. Blnaekt
2. Bde
3. Cofmoterr
4. Deram
5. Marttses
6. Npa
7. Piolwl
8. Shete
9. Snroe

Please correct the misspelled words silently for yourself

How can play with the magic trick as a framegame?

Please think of a five-letter word

S___ _P

Did you think of....?

S L E E P

Why not alternatives?

scrap	scamp
stamp	scoop
steep	sheep
strip	stomp
scalp	sweep
setup	snoop
sharp	

Learning points

Questions

Who and what primed us to see games as stupid, silly activities children play only?

Who and what primed us when playing games that we should not change rules and characteristics?

We unconsciously prime people with our introductions, instructions, and comments.

We can avoid negative priming and increase positive priming by being mindful of what we say and do.

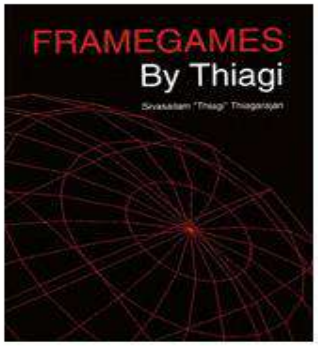
Every game is a framegame!

- Homo sapiens, homo faber, homo ludens
- Playing games can be efficient learning
- We do not learn from experimental playing
- We only learn from reflection on our experience and **with** our biases
- We can develop reflection by seeing every game as framegame
- For that we need to **change our attitude!**

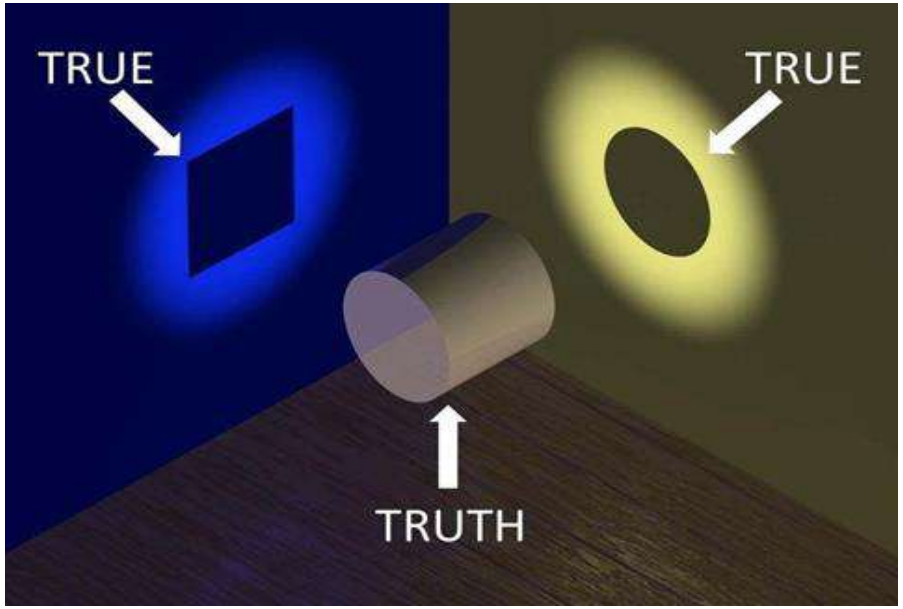
Simulation game for assistant professors before tenure

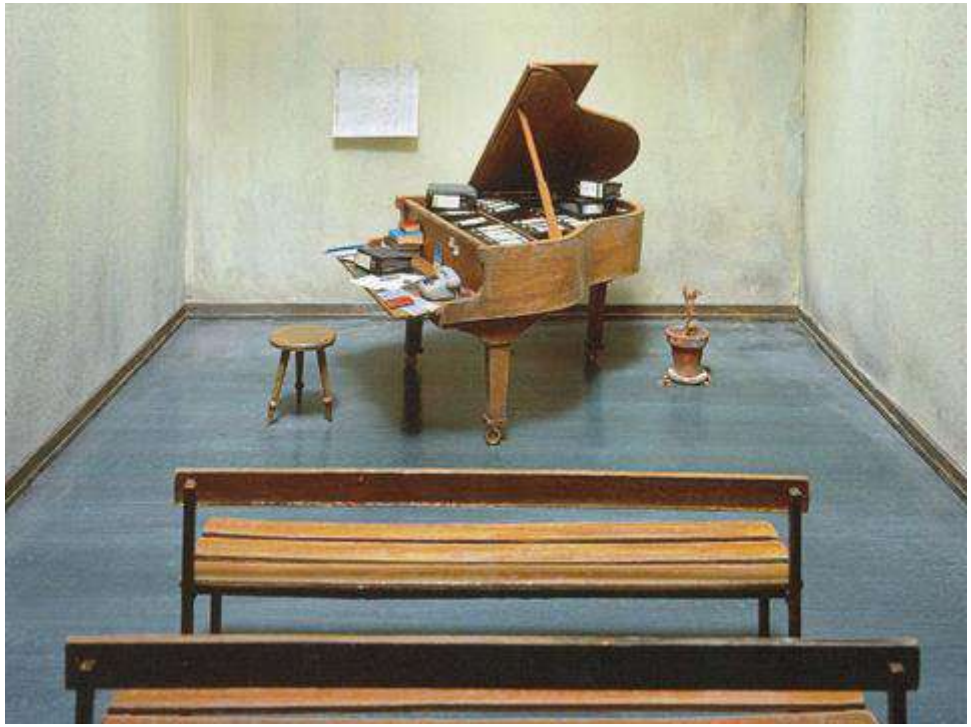
Machi Koro
japanese 街コロ

Every game is a framegame!



the thiagi group
improving performance playfully





Webinar - 27

Day, Date & Time: Saturday, 14-08-2021, 15:00 - 16:05 hrs (IST)

Invited Speaker: **Mr. Jawahar Bhalla,** PhD Candidate, University of Adelaide and Principal Systems Engineer, Shoal Group Australia

Country: **Australia**

Title: Reality – An Evolving Emergent Creation in an Increasingly Digital World

Webinar Topic

Reality – An Evolving Emergent Creation in an Increasingly Digital World

Abstract:

People live in an increasingly interconnected socio-technical-digital construct. Technological innovation, further catalysed by the Pandemic, is driving the migration to an increasingly virtual world. Platforms such as Facebook and LinkedIn have replaced traditional means of social and professional interactions, digital currencies are on the rise, virtual gaming is viral while AI/ML/DNN are all pervasive and surreptitiously shaping thinking and choices. People are in the throes of the greatest societal paradigm shift in recorded history, and Systems thinking, modelling and simulation will underpin their safe passage through these fast-changing exciting yet challenging times. This presentation looks back at the advent and use of systems concepts, modelling and simulation, followed by a deeper focus in a contemporary defence context, around advances in fighter-aircraft "generations" and the associated innovations in modern-day flight and mission simulation. Concluding focus shifts to the concepts, proposing a human-cantered framework for better understand.

Profile:

Jawahar Bhalla is a passionate Systems professional with experience across multi-national organisations in technical and strategic leadership roles delivering complex capabilities. He contributes to the advancement of Systems Thinking, Systems Engineering and Modelling & Simulation locally and globally, through leadership roles in peak bodies including the Systems Engineering Society of Australia and Simulation Australasia. He has a BE in Aerospace Engineering and a BSc in Computer Science from UNSW, a Master's in Systems Engineering from UNSW@ADFA and is a current iPhD candidate on an Australian Government Research Training Program, with industry partner Shoal Group, at the University of Adelaide, Australia.

Reality – An Evolving Emergent Creation in an Increasingly Digital World!

Jawahar Bhalla (JB)

PhD Candidate Uni of Adelaide & Principal Systems Engineer – Shoal Group

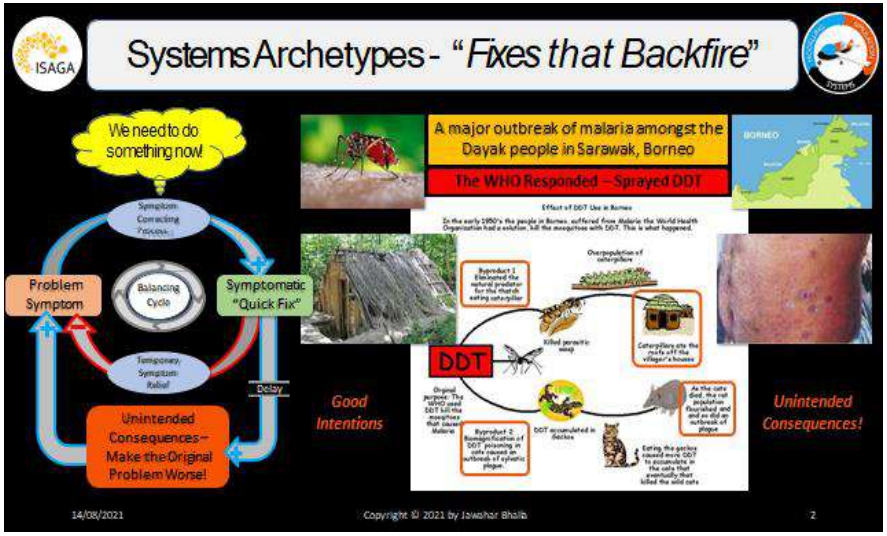
Technical Director – Systems Engineering Society of Australia (SESA)

SME Industry Co-Chair – ADF Synthetic Environment Working Group (SEWG)

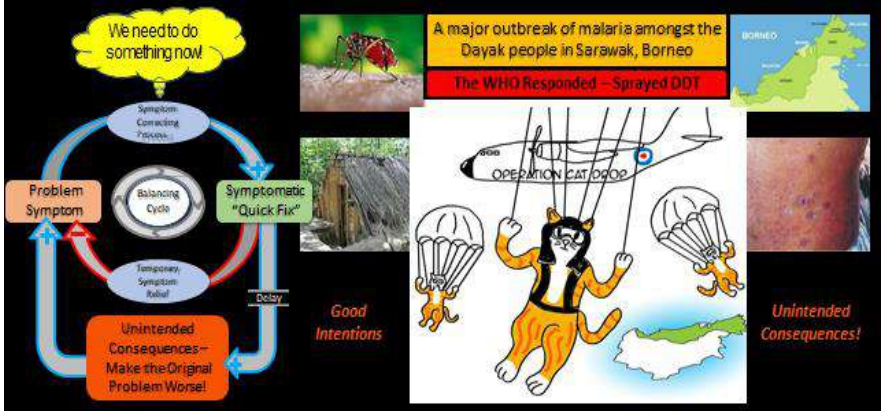
International Simulation and Gaming (ISAGA) 2021 – 52nd Annual Conference Webinars
Saturday, 14th August 2021 @ 15:00-16:05 (IST) / Saturday, 14th August 2021 @ 19:00-20:05 (AEST)
WEBINAR XXVII

Launch Poll 1

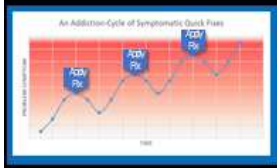
Systems Archetypes - "*Fixes that Backfire*"



Systems Archetypes - "*Fixes that Backfire*"

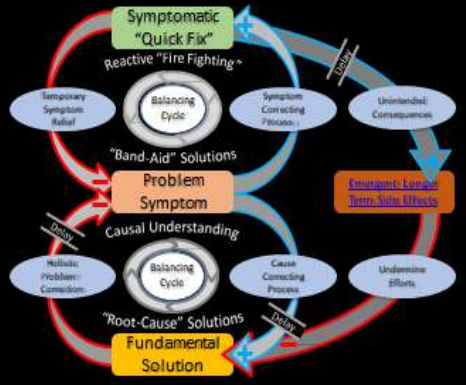


Systems Archetypes - "*Shifting the Burden*"

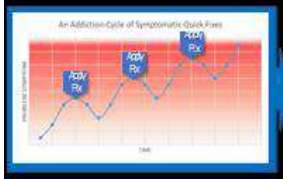


The longer we delay focusing on the fundamental solution, the more complex and harder it gets from unintended emergent consequences from our symptomatic "quick fixes"

https://youtu.be/EzuOU-ofIdc



Systems Archetypes - "*Shifting the Burden*"



The longer we delay focusing on the fundamental solution, the more complex and harder it gets from unintended emergent consequences from our symptomatic "quick fixes"

https://youtu.be/Ezu0U-ofIdc

Systems Archetypes - "*Shifting the Burden*"

Are we understanding and dealing with our challenges holistically?

What "quick-fixes" are we making and what will our legacy be for future generations ?

Launch Poll 2

Contextualizing the Presentation

WHAT?

Peter Senge → "Systems Thinking is a *conceptual framework*, a *body of knowledge* and *tools* that have been developed over the past fifty years, to *make the full patterns clearer*, and to help to *change them effectively*."

HOW?

MODELLING
SYSTEMS THINKING
SIMULATION

WHY?

Personal view → Systems Thinking is a *conceptual framework* to *understand and make sense* of the world we live in, to deal *efficiently* and *effectively* with the *challenges we perceive* and *create the reality we desire*.

Contextualizing the Presentation

THE ICEBERG MODEL

The Iceberg Model is a **Systems Thinking tool** that helps us discover and deal *efficiently* and *effectively* with "*events*" through understanding *patterns of behaviour*, *structures/architectures* and *underlying mental models*, helping identify the *greatest leverage solution options* for holistically solving problems while *minimising unintended emergent consequences*.

MODELLING
Mental MODELS
on
SIMULATION
Mental MODELS

Contextualizing the Presentation

Modelling & Simulation

Aircraft Generations

Flight Simulation

Mental MODELS

REALITY ?

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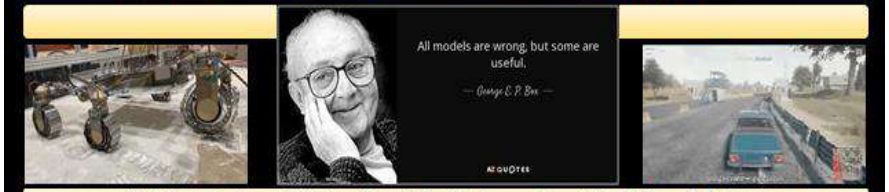
Modelling & Simulation – Contextual Definitions

A Model is a Physical, Mathematical or Logical *abstraction* for a *particular purpose* (i.e. a *suitable representation, perspective, view…*)

A Simulation is an Enactment (Method of Implementing) a Model over Time



A ***Simulator*** → The Tool that Executes the Simulation

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Categorizing Simulations

Scenario Participants

Scenario Environment	Real	Simulated
Real	LIVE: Real People operating in a real-world environment	HUMAN-SIM: Simulated People subjected to a real-world environment
Simulated	VIRTUAL: Real People operating in a simulated environment	CONSTRUCTIVE: Simulated People operating in a simulated environment

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Categorizing Simulations

ABSTRACTION

INTEROPERABILITY

Scenario Participants

Scenario Environment	Real	Simulated
Real	LIVE: Real People operating in a real-world environment	HUMAN-SIM: Simulated People subjected to a real-world environment
Simulated	VIRTUAL: Real People operating in a simulated environment	CONSTRUCTIVE: Simulated People operating in a simulated environment

BLENDED/MIXED

Typical Example of VIRTUAL and AUGMENTED REALITY (VR/AR)

EMERGENCE

JOINT/INTEGRATED

LIVE-VIRTUAL-CONSTRUCTIVE (HUMAN-SIM) or iLVC(H)

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ISAGA
Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
The F-35 - A 5th Generation Platform
Manufacturer | Lockheed Martin
Role | Fifth generation, multi role fighter
Crew | Pilot
Engines | Pratt & Whitney F135 PW-100
Airframe | Length: 15.7 m, height 4.4 m
Wingspan | 10.7 m
Wing Area | 42.7m2
Weight | 13,290 kg (empty), 29,900 kg (max)
Range | 2,200 km
Combat radius (internal fuel) | 1093 km
Internal Fuel Capacity | 8278 kg
Ceiling | 50,000 feet
Max Speed | 1,960 km/h (Mach 1.6)
Thrust | 40,000 lb Maximum power (with afterburner), 25,000 lb Military Power (without afterburner)
Max g-rating | 9.0
Capability | •Low Observation Stealth •Advanced sensors •Networking and Data Fusion Capabilities •Helmet Mounted Sight
Weapons | •AIM-120C Air-to-Air Missile •AIM-9X "Sidewinder" Short Range Air-to-Air Missile •GBU-31 Joint Direct Attack Munitions (JDAM) Guided Bombs •Laser-Guided Bombs •Internal 25 mm GAU-22/A Cannon
Weapon Payload | 8160 kg
Stealth & Sensor Fusion
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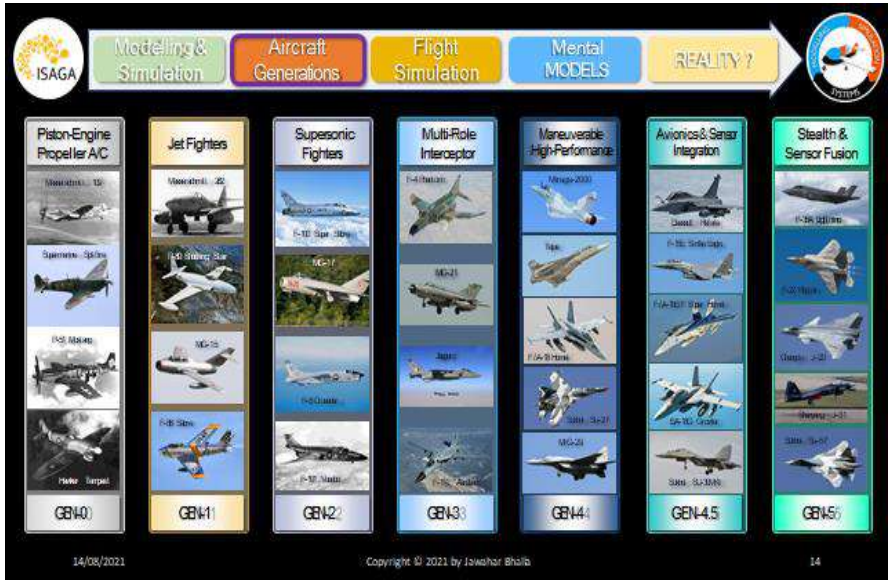
ISAGA
Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Piston-Engine Propeller A/C
Jet Fighters
Supersonic Fighters
Multi-Role Interceptor
Maneuverable High-Performance
Avionics & Sensor Integration
Stealth & Sensor Fusion
GEN-0
GEN-1
GEN-2
GEN-3
GEN-4
GEN-4.5
GEN-5
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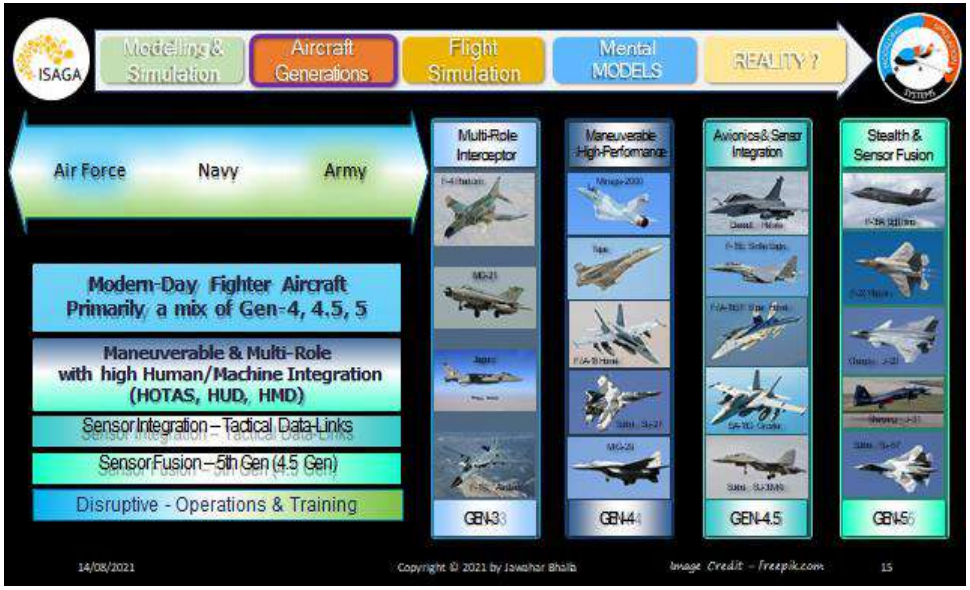
ISAGA
Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Air Force
Navy
Army
Modern-Day Fighter Aircraft Primarily a mix of Gen-4, 4.5, 5
Maneuverable & Multi-Role with high Human/Machine Integration (HOTAS, HUD, HMD)
Sensor Integration – Tactical Data-Links
Sensor Fusion – 5th Gen (4.5 Gen)
Disruptive - Operations & Training
Multi-Role Interceptor
Maneuverable High-Performance
Avionics & Sensor Integration
Stealth & Sensor Fusion
GEN-3
GEN-4
GEN-4.5
GEN-5
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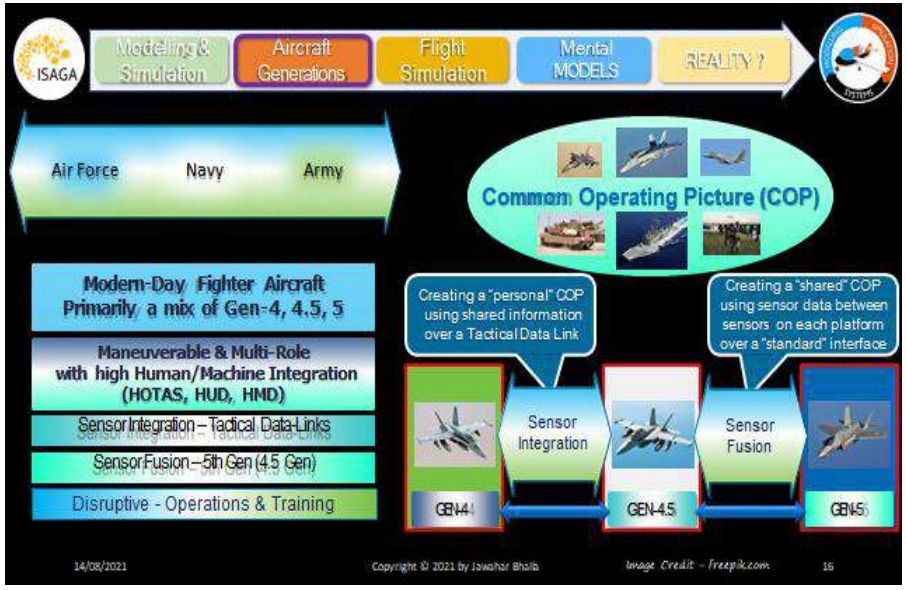
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Sensor Fusion – 5th Gen (4.5 Gen)
Disruptive - Operations & Training
Common Operating Picture (COP)
Creating a "personal" COP using shared information over a Tactical Data Link
Creating a "shared" COP using sensor data between sensors on each platform over a "standard" interface
Sensor Integration
Sensor Fusion
GEN-4
GEN-4.5
GEN-5
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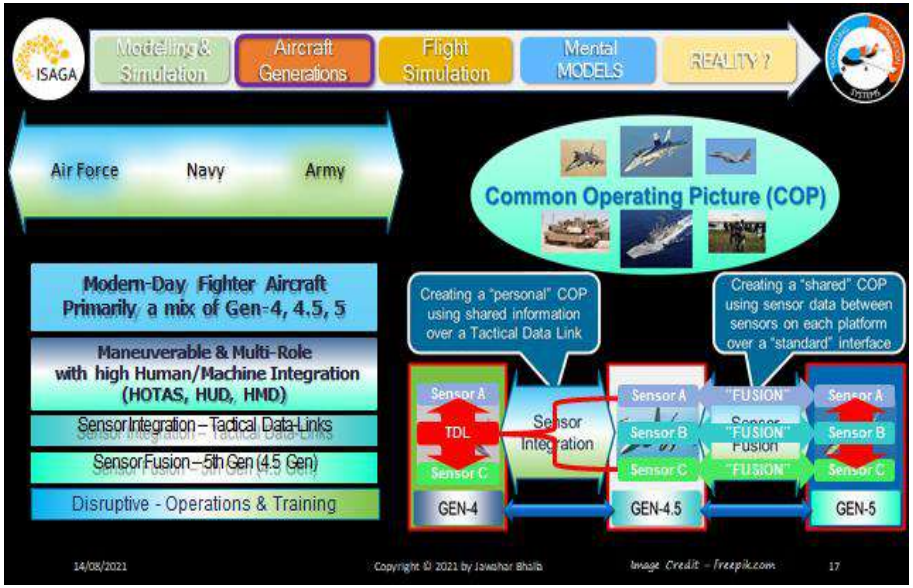
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Flight Simulation
Mental MODELS
REALITY ?
Air Force
Navy
Army
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Disruptive - Operations & Training
Creating a "personal" COP using shared information over a Tactical Data Link
Creating a "shared" COP using sensor data between sensors on each platform over a "standard" interface
Sensor A
TDL
Sensor B
Sensor C
Sensor Integration
"FUSION"
GEN-4
GEN-4.5
GEN-5
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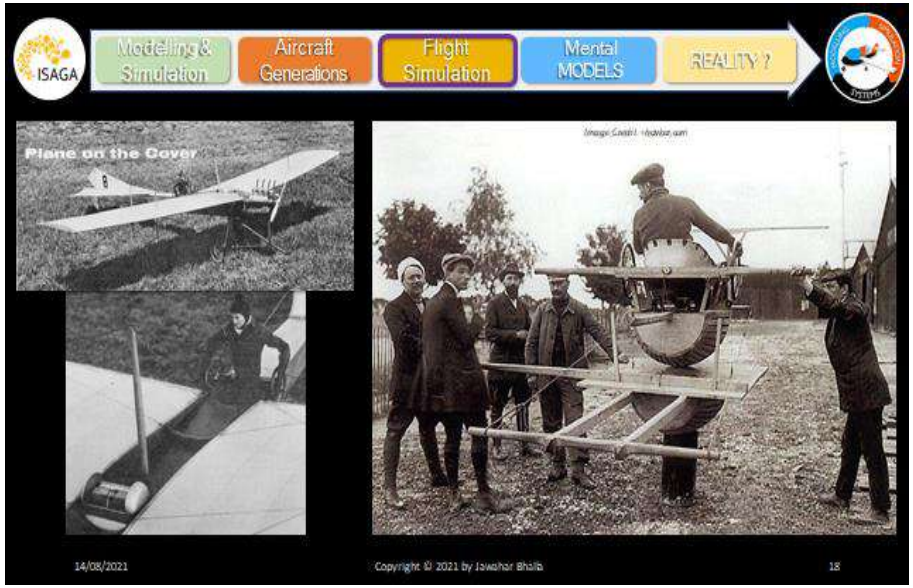
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Plane on the Cover
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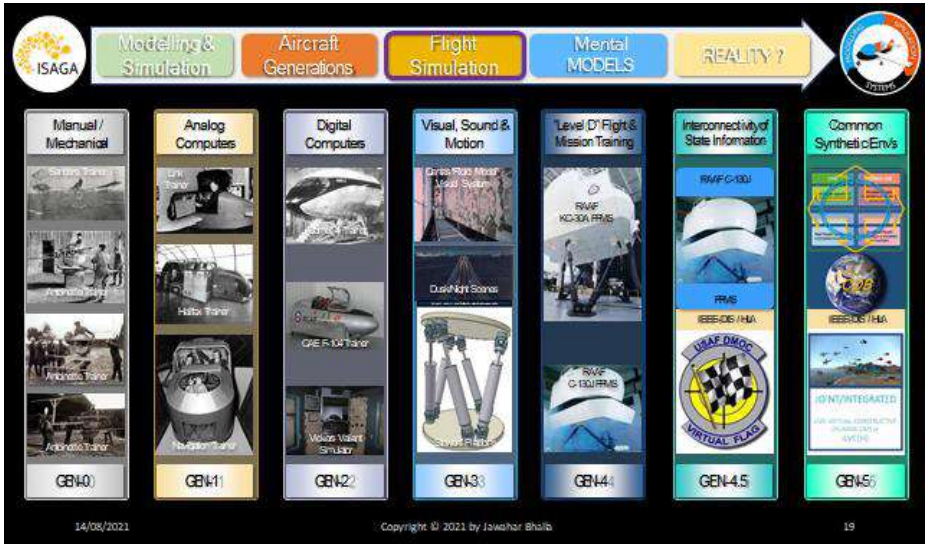
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Manual / Mechanical
Analog Computers
Digital Computers
Visual, Sound & Motion
Level D Flight & Mission Training
Interconnectivity of State Information
Common Synthetic Env's
GEN-0
GEN-1
GEN-2
GEN-3
GEN-4
GEN-4.5
GEN-5
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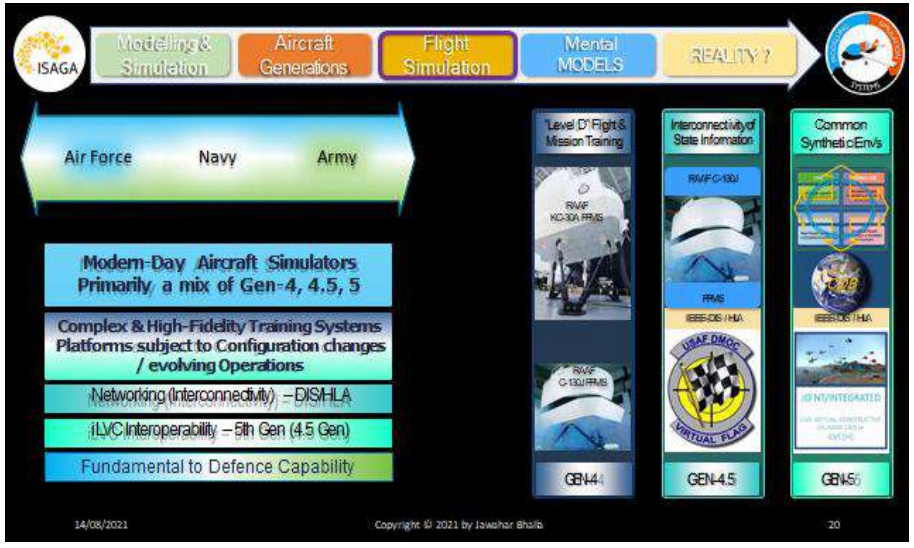
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Air Force
Navy
Army
Modern-Day Aircraft Simulators Primarily a mix of Gen-4, 4.5, 5
Complex & High-Fidelity Training Systems Platforms subject to Configuration changes / evolving Operations
Networking (Interconnectivity) – DIS/HLA
iLVC Interoperability – 5th Gen (4.5 Gen)
Fundamental to Defence Capability
Level D Flight & Mission Training
Interconnectivity of State Information
Common Synthetic Env's
GEN-4
GEN-4.5
GEN-5
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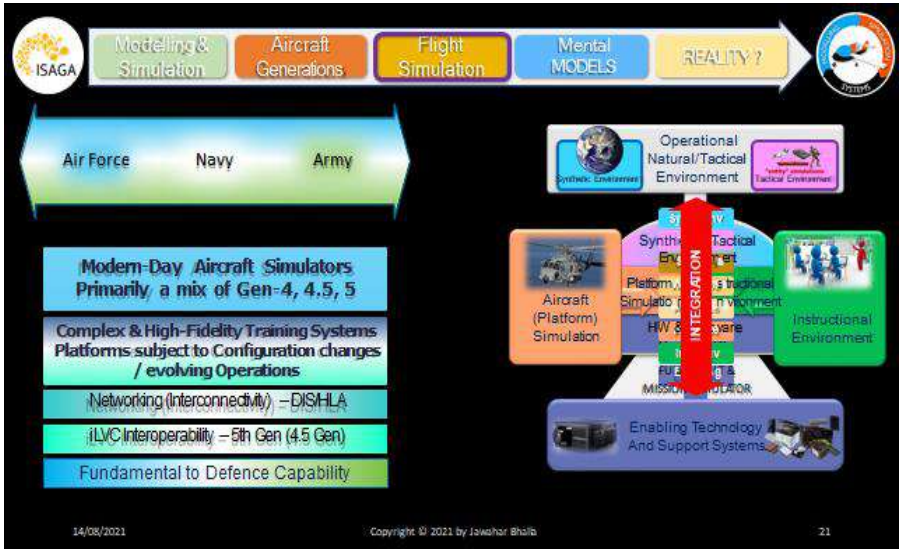
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Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Air Force
Navy
Army
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Complex & High-Fidelity Training Systems Platforms subject to Configuration changes / evolving Operations
Networking (Interconnectivity) – DISHLA
iLVC Interoperability – 5th Gen (4.5 Gen)
Fundamental to Defence Capability
Operational Natural/Tactical Environment
Aircraft (Platform) Simulation
INTEGRATION
Instructional Environment
Enabling Technology And Support Systems
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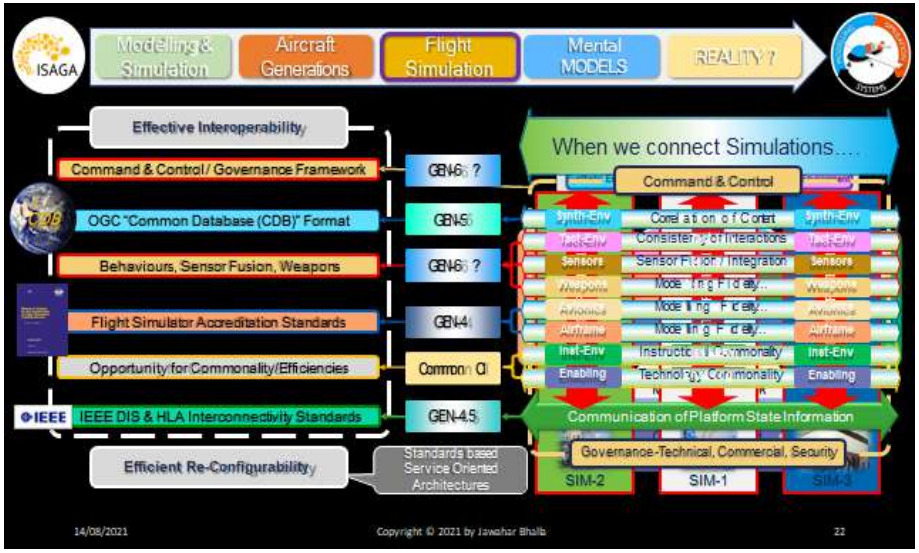
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Effective Interoperability
Command & Control / Governance Framework
OGC "Common Database (CDB)" Format
Behaviours, Sensor Fusion, Weapons
Flight Simulator Accreditation Standards
Opportunity for Commonality/Efficiencies
IEEE DIS & HLA Interconnectivity Standards
Efficient Re-Configurability
Standards based Service Oriented Architectures
GEN-6 ?
GEN-5
GEN-6 ?
GEN-4
Common CI
GEN-4.5
When we connect Simulations....
Command & Control
Communication of Platform State Information
Governance-Technical, Commercial, Security
SIM-2
SIM-1
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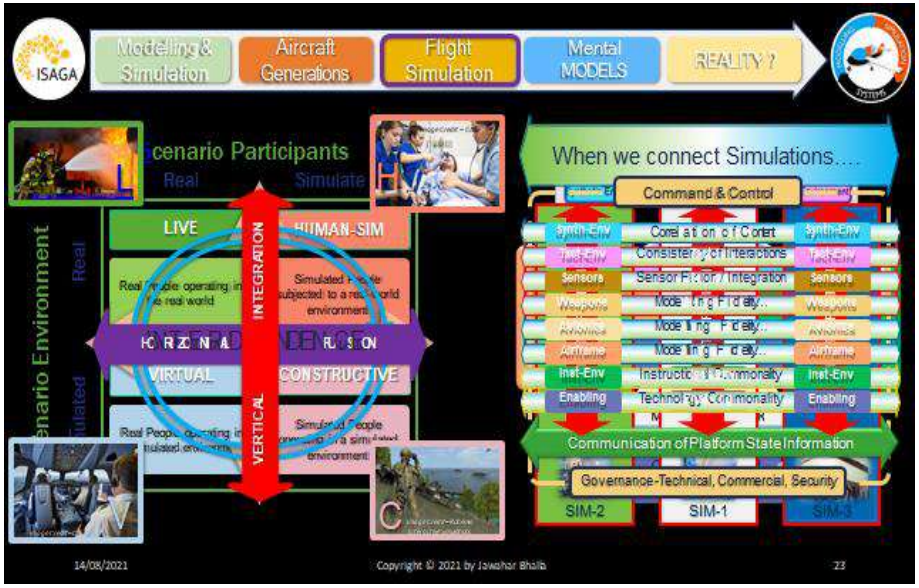
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
cenario Participants
Real
Simulate
LIVE
HUMAN-SIM
VIRTUAL
CONSTRUCTIVE
INTEGRATION
When we connect Simulations....
Command & Control
Communication of Platform State Information
Governance-Technical, Commercial, Security
SIM-2
SIM-1
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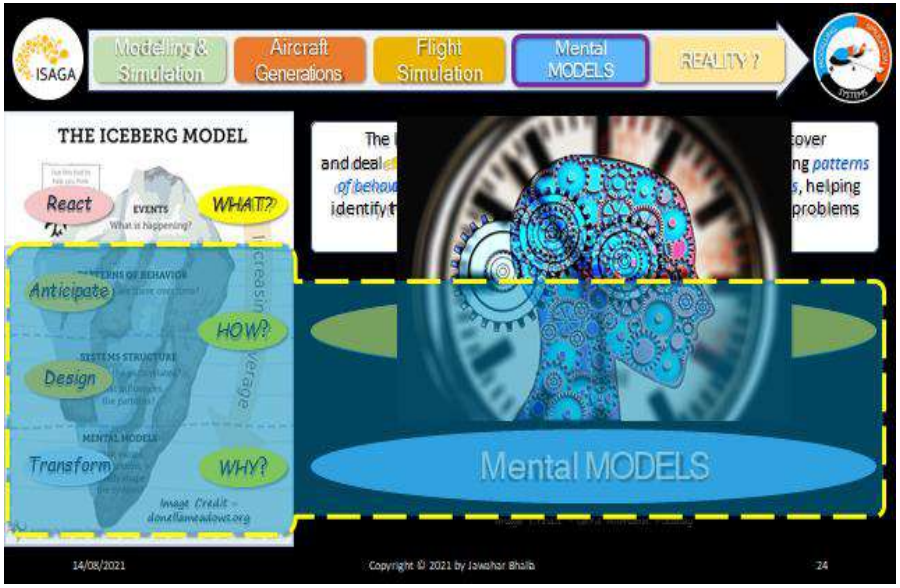
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
THE ICEBERG MODEL
React
EVENTS
What is happening?
WHAT?
Anticipate
HOW?
Design
Transform
WHY?
Mental MODELS
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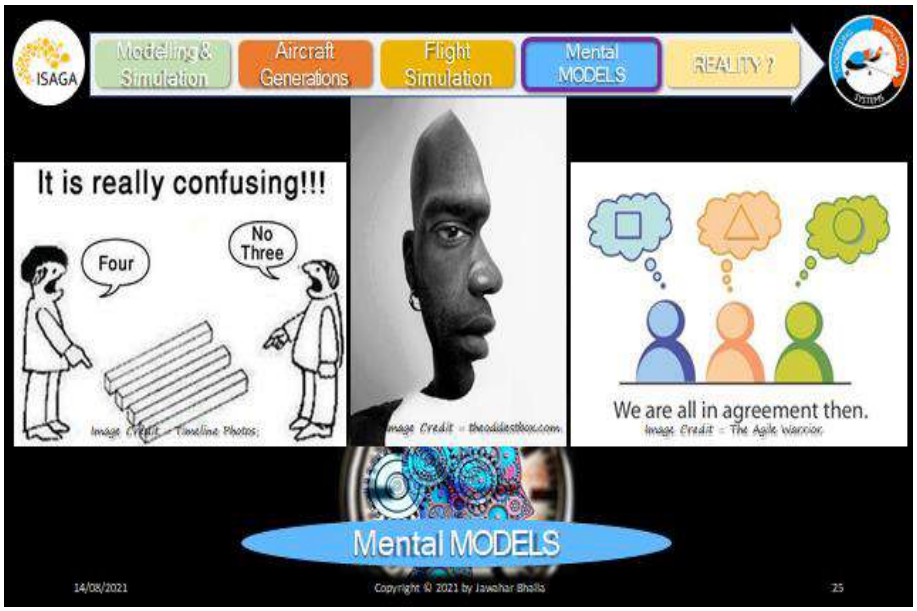
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Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
It is really confusing!!!
Four
No Three
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We are all in agreement then.
Image Credit - The Agile Warrior
Mental MODELS
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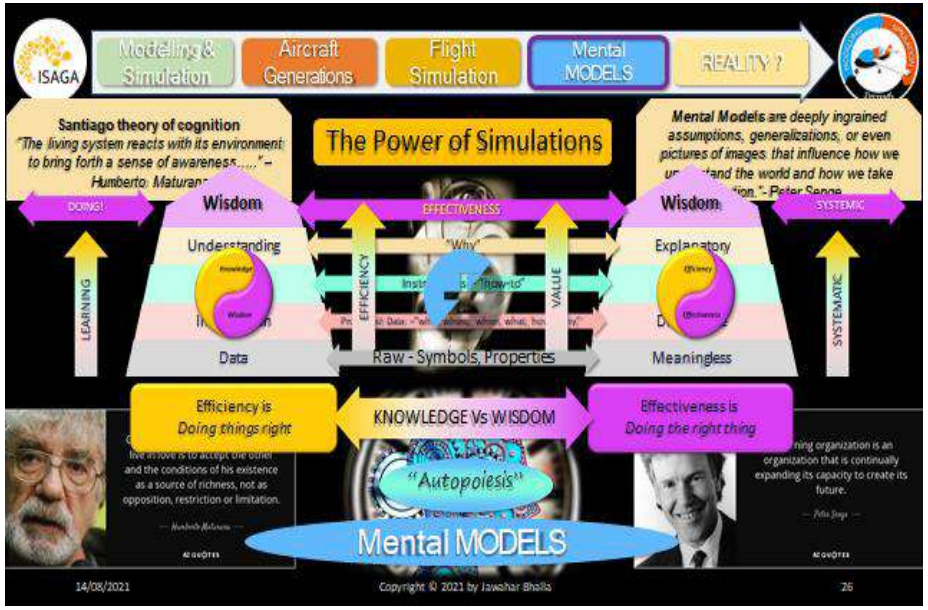
ISAGA
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Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Santiago theory of cognition
"The living system reacts with its environment to bring forth a sense of awareness....." – Humberto Maturana
The Power of Simulations
Mental Models are deeply ingrained assumptions, generalizations, or even pictures of images that influence how we understand the world and how we take action."- Peter Senge
DOING!
Wisdom
Understanding
Knowledge
Information
Data
EFFECTIVENESS
EFFICIENCY
VALUE
LEARNING
SYSTEMIC
SYSTEMATIC
Explanatory
Instructive
Descriptive
Meaningless
Raw - Symbols, Properties
Efficiency is Doing things right
KNOWLEDGE Vs WISDOM
Effectiveness is Doing the right thing
"Autopoiesis"
Mental MODELS
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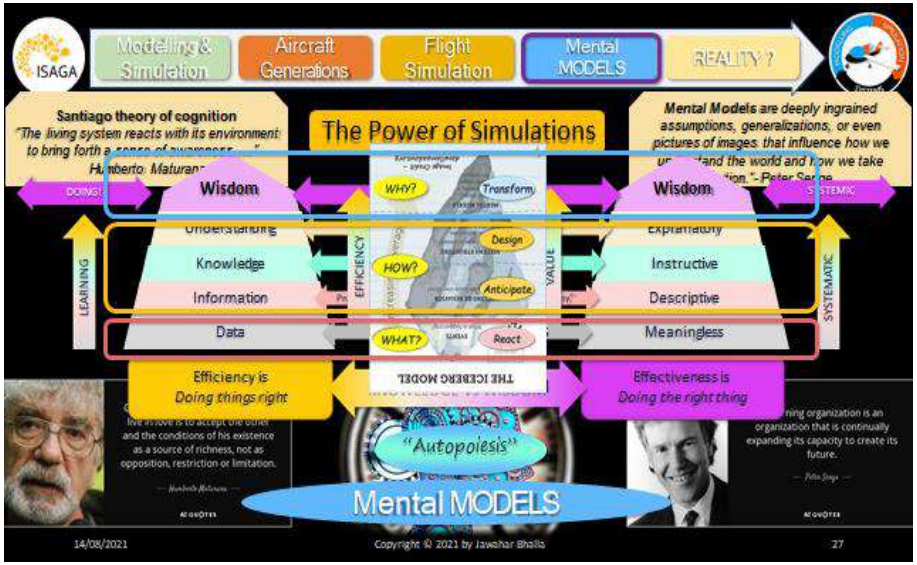
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Wisdom
Knowledge
Information
Data
Instructive
Descriptive
Meaningless
WHY?
HOW?
WHAT?
Transform
Design
Anticipate
React
THE ICEBERG MODEL
Efficiency is Doing things right
Effectiveness is Doing the right thing
"Autopoiesis"
Mental MODELS
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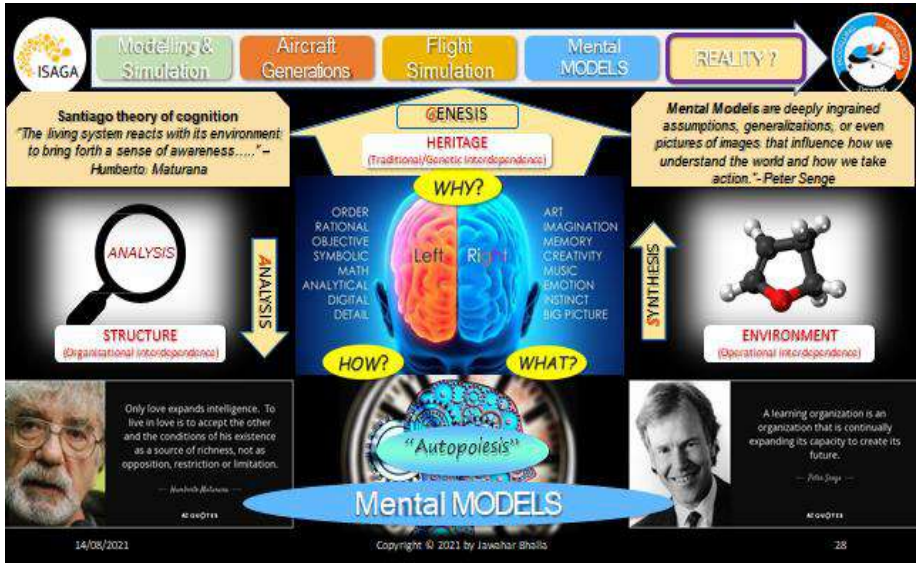
ISAGA
Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Santiago theory of cognition
"The living system reacts with its environment to bring forth a sense of awareness....." – Humberto Maturana
GENESIS
HERITAGE
(Traditional/Genetic interdependence)
Mental Models are deeply ingrained assumptions, generalizations, or even pictures of images that influence how we understand the world and how we take action."- Peter Senge
ANALYSIS
STRUCTURE
(Organizational interdependence)
WHY?
ORDER
RATIONAL
OBJECTIVE
SYMBOLIC
MATH
ANALYTICAL
DIGITAL
DETAIL
Left
Right
ART
IMAGINATION
MEMORY
CREATIVITY
MUSIC
EMOTION
INSTINCT
BIG PICTURE
HOW?
WHAT?
SYNTHESIS
ENVIRONMENT
(Operational interdependence)
Only love expands intelligence. To live in love is to accept the other and the conditions of his existence as a source of richness, not as opposition, restriction or limitation.
A learning organization is an organization that is continually expanding its capacity to create its future.
"Autopoiesis"
Mental MODELS
14/08/2021
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
EVERYTHING WE CONSIDER TO BE REAL (TRUE) IS AN ABSTRACTION (A MODEL) OF REALITY (THAT WHICH WE BELIEVE TO BE THE TRUTH), BUILT UP THROUGH OUR LEARNINGS, PERCEPTIONS AND EXPERIENCES.
It is really confusing!!!
Four
No Three
WHY?
GENESIS
ANALYSIS
SYNTHESIS
WHAT?
"We don't perceive the world we see, we see the world we perceive" - Humberto Maturana"
We are all in agreement then.
"Autopoiesis"
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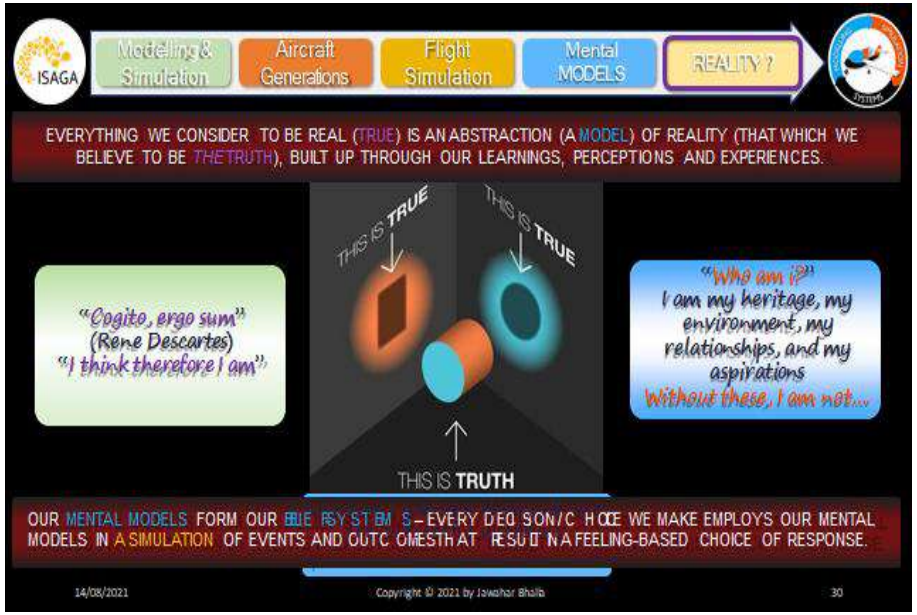
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"Cogito, ergo sum"
(Rene Descartes)
"I think therefore I am"
THIS IS TRUE
THIS IS TRUE
THIS IS TRUTH
"Who am i?"
I am my heritage, my environment, my relationships, and my aspirations
Without these, I am not...
OUR MENTAL MODELS FORM OUR BELIEF SYSTEMS – EVERY DECISION / CHOICE WE MAKE EMPLOYS OUR MENTAL MODELS IN A SIMULATION OF EVENTS AND OUTCOMES THAT RESULT IN A FEELING-BASED CHOICE OF RESPONSE.
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
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Is the Simulation in us?
THIS IS TRUE
THIS IS TRUE
Are we in a Simulation?
OUR PERCEIVED REALITY (WE BELIEVE TO BE "THE TRUTH") APPEARS TO ITSELF BE A SIMPLIFIED MODEL OF DEEPER TRUTH, ABSTRACTED (FOR OUR PERCEPTION) INTO OUR PHYSICAL SPACE-TIME CONTINIUM.
OUR MENTAL MODELS FORM OUR BELIEF-SYSTEMS – EVERY DECISION / CHOICE WE MAKE EMPLOYS OUR MENTAL MODELS IN A SIMULATION OF EVENTS AND OUTCOMES THAT RESULT IN A FEELING-BASED CHOICE OF RESPONSE.
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WHAT?
HOW?
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Modelling & Simulation
Aircraft Generations
Flight Simulation
Mental MODELS
REALITY ?
Is the Simulation in us?
Are we in a Simulation?
14/08/2021
Launch Poll 3
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Webinar – 28

Day, Date & Time:	Saturday, 21-08-2021, 15:00 - 16:05 hrs (IST)
Invited Speakers:	**Mr. Bharat Jukaria,** Manager, Marketing and Sales**,** Health Sector **Dr.Vinod Dumblekar,** Founder and CEO, MANTIS, New Delhi
Country:	**India**
Title:	Development of a Project Simulation

Webinar Topic

Development of a Project Simulation

Abstract

A simulation was designed and developed so that participants could acquire a speedy understanding of the conceptual structure and processes of a project. A game is a metaphor; therefore, the resource persons studied a socially familiar phenomenon that served as their model for the simulation. The presentation described how project process was simulated. The design evolved from a blend of exhaustive research, discussion with practitioners, prototyping, and experiences and insights of the resource persons. The simulation participants played in teams of four members each. Each team was exposed to the resources, problems and goals of the project. The participants learnt from each other while they took decisions, used their resources and reviewed their actions in the simulation. Facilitation was concurrent to the play. This presentation described how the simulation was made so that it could encourage aspiring designers to build simulations for themselves.

Speakers' Profiles

Bharat Jukaria *is a manager with over ten years of experience in marketing and sales in the healthcare sector. He is a postgraduate in business administration. He is keen to develop simulation games of social relevance for participants to learn better decision making and effective financial planning. His interests are in photography, travel, cricket and forestry.*

Dr Vinod Dumblekar *designs, develops, conducts and researches business simulation and other games in his 18 year-old firm, MANTIS. The players are career managers and students of management and engineering. He has taught postgraduate students in finance, strategy and entrepreneurship courses. His continues to guide and review research, manuscripts and theses. As a member of ISAGA since 2004, he has attended six annual conferences and three summer schools.*

Why this project?

A well-known process or event
Few resources. Few metrics.

Simulation, not game; serious game!
Emotion, mystery and surprise
Choices, decisions and misunderstanding
Errors, delays, costs and disappointments

Saturday, August 21, 2021 Bharat Jukaria, Vinod Dumblekar

Driving through the fog – UC of VUCA

Goal? Milestones? Why?
People: beneficiaries and suppliers?
Rules: constraints and actions?
Resources and limitations?
Uncertainties, failures and delays?
Assessment, measures, evaluation?

Saturday, August 21, 2021 Bharat Jukaria, Vinod Dumblekar

Shadi Project, 2018

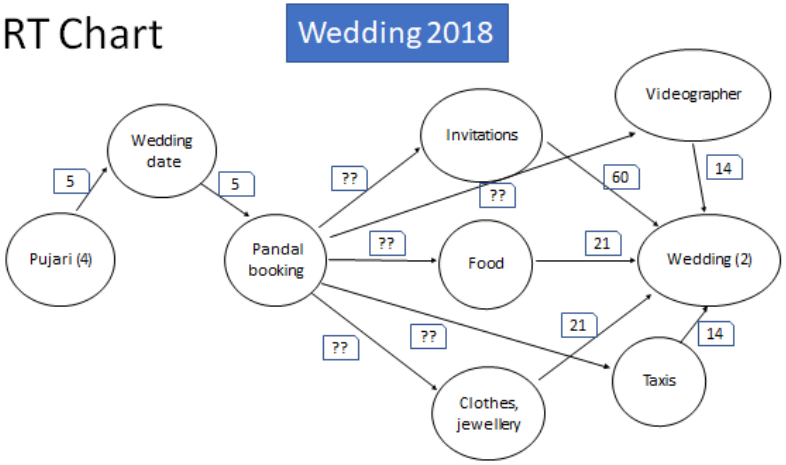
The parents and elders meet.
They decide that their children will marry.

What are the actions, resources, milestones and goals?
Who are the players? What are their specific roles?
What do they specifically do and when?
What are the costs and cashflows?
Who monitors, oversees and records the micro-events?
First-cut design: fishbone and critical path to be drawn

The marriage is over.

Saturday, August 21, 2021

PERT Chart



	Details	Notice (days)	Units	Rate (Rs)	Cost (Rs)	Advance (days)	Advance (%)	Advance (Rs)
AWedding hall		180	1	200,000	200,000		50%	
APujari		90	2	6,000	12,000			
AFood		45	500	200	100,000		20%	
AInvitation		30	2,000	22	44,000			5,000
BVehicles		15	6	1,400	8,400			
BClothes		30	15	1,500	22,500			
BPhoto video			3	4,000	12,000			1,000
BReturn gift			600	20	12,000			
BHotel			8	1,400	11,200			3,000
CHairdresser			2	6,000	12,000			
CMehandiwaale			4	5,000	20,000			
CBand, horse			1	22,000	22,000			
Jewellery		30	5	45000	225000			
Makeup Artists		30	1	20000	20000			
Wedding Planner								

Design problems

1. Who is the learner?
2. What should the player do?
3. The goals: what must be learnt?
4. What resources do the players need?

Development problems

Teams and players

Representing and shrinking time

Covid19 effects: rehearsals

Markers, colours and graphs

Profiles

THE BRIDE. Preeti Singh (27) is the elder of two daughters of Sita and Veer Singh of Lalgarh, a small town. Preeti and her sister became the first graduates in their family and Lalgarh.

THE GROOM. Baldev Kumar (32) is the second child of Gaitri and Murli Kumar, who stay in Bhumi. He is a science graduate and an executive in Hamaara Bank since six years.

Resources

Profile cards. Event cards.

Accounting statements

Markers and tokens

Manual

Gameplay

The manual. The briefing.
Bride and groom teams, player profiles
Tasks, stages and documents
Penalties, sample transaction
The pujari is the first stage
Gifting the married couple is the last stage

Graphic al progress

Pujari

PUJARI. Rs 1,000 advance	Rs 8,000 / 10,000
GUNJAN SHUKLA Friendly, 45, casual, local and well-known. Rs 5,000.	**PARITOSH JOSHI** New to Nainital, 54, price includes assistant and pooja saamagri. Rs 12,000.
RAMPARSHAD TRIPATHI Professional, 62, punctual, irritable. Rs 6,000.	**RAMESH THAPLIYAL** Bhimtal resident, 35, professional, streetsmart. Rs 7,000. Known to both families.

Guideposts

PERT chart
Malcolm Knowles' (1967) Andragogy
Mihaly Csikszentmihalyi's (1987-90) Flow
Raph Koster's (2004) Fun
Dumblekar, Dubey & Dhar's research, 2021

Andragogy - Knowles

- Adults need to know the reason for learning. Their experience of events and errors is the basis for their learning. They want to be responsible for their learning.
- They are most interested in learning subjects having immediate utility to solve problems, not satisfy curiosity. They respond to internal motivators.

Flow - Csikszentmihalyi

- The mental state of full immersion in an activity
  - Feelings of energetic focus, full engagement and enjoyment in the process
- In essence, flow is the complete absorption in what one does

Fun - Raph Koster

"Fun in games arises out of mastery. It arises out of comprehension. It is the act of solving puzzles that makes games fun. With games, learning is the drug."

Player satisfaction

Dumblekar, Dubey & Dhar's research

1. Memorable experience
2. Excitement
3. Team victory
4. Learning

Tasks due and aspirations

Actions for service providers

More interactivity, disputes and problems

Satisfaction: scoring, humour and gamification

Measuring progress and learning

Online game; haptic = board + card games

What did we learn?

Research is fun! To experiment = to innovate!

Two can do faster and better than one

Learn from prototyping (Kolb, Bandura, VUCA)

Thoughtful repetition sharpens the learning curve

Meta-learning

It's a frame game! It's so easy to make one!

Interaction produces insight; I = i

Every player is both student and teacher

To create is to learn! (Bloom 6)

Secret of good design: knowledge vs insights!

Epilogue

To aid in building capacity, a gaming and simulation trajectories with Region Stockholm and 4 pilot municipalities are focused for better design development based on approaches reflected upon the methodological learnings obtained. Serious games are experiential learning environments supporting the journey and can take an analogue, digital or mixed reality form. The concept of simulation continues to be an essential part of human activity and also a problematic one. In companies, the simulation of alternative scenarios is sometimes added. All these simulation game developments are based on the fact that they happen on theoretical assumptions and models.

Advantages of Simulation & Gaming (S&G) for building community resilience are well focused domain and having increasing importance of community resilience against disaster. Strong and planned strategy are needed for the evolution of gaming simulation design as a learning technique for the design practice and the construction of future scenarios in the field of territory and urban planning in particular.

At the intersection between simulation and gaming and participatory modeling, the common practice is using gaming/simulation that is explicitly modeled at the functioning of a system, and which is explicitly made for stakeholders to learn and get empowered on the issues they face. The Sustainable Development Goals (SDGs) in gaming / simulation can methodically support the implementation of the underlying targets.

Simulation games often teach specific competencies (like renewable resources management, etc.) and students need them in their profession/activities. However, the most of the games are run for a much wider range of participants and are not directly related to their future activities. In order to maximize the learning, the crucial pivot point of simulation design has to be managed. One of the key ally and adversary to design in the corporate learning environment is time and the balancing of considerations is done by designing simulations for corporate learning.

The design of simulation game prototypes is part of the didactic approach and the framework of game development. Some examples of outcomes support a deeper understanding of the methodology of gaming simulation for education. The

dissonances between simulation/gaming, gamification designers, the Serious Games Movement, and Game-Based Learning conclude the positive examples of how the groups are now finding each other more and more often.

The design of effective games towards urban planning, strategic decision making and systems modeling have elaborated the trade-offs and provided deep insights. The resource person assured the participants that they will be able to design and deliver simulations and games through any webinar platform and their new skills will be supported by two books and hundreds of online resources.

The applications of games to develop the mindset in addition to improving motivation, engagement, and the learning experience describes the key benefits towards business games and simulations to lead the unknown roles in business of the future. The exploration of 360-degree consumer technologies is being applied to tackle medical training and education at scale through hyper-realistic virtual, augmented and mixed reality devices, including the Hololens and consumer VR devices such as the Oculus Quest.

The way a facilitator designs a workshop with a game shapes the behavior of participants, while at other points the facilitator needs to adapt the design spontaneously in order to respond to the group. The Fields of View elaborate in the Indian context in the areas of poverty, transport, energy, disaster management and urban planning to talk about the use of gaming-simulation as tools in public policy.

Task-Technology fit is quite high in virtual worlds as the sense of vision, orientation, sound creates an immersive environment enabling higher learning outcomes in contributing to higher learning attainments. Student-Teacher Collaboration is the useful way to make your gaming more attractive. Students' fantastic efforts in BASE Project, manage such community, and advise the audience to bring out students' talents.

The evolution of the digital gaming space from online simulation games to the mobile gaming and also VR and AR for simulation gaming has achieved enhancement in Technology adoption. The iterative and evolving process between classroom and field work demonstrated that it is not difficult to adopt gaming simulations and for students to obtain diverse learning outcomes.

The choice of simulation methods and gamification motivates learning at the same time as addressing the accessibility of the training at an affordable cost. This was supported with a synopsis of the empirical findings and discussion on the implications for training. The tight connection between real physical space and digital cyberspace is called the digital twin and a Mirror world where the true human brain emerges in an integrated cyber physical space, SOCIETY 5.0.

The success of the Game Market, which is held three times a year in Japan and where independent game designers develop games, shows that gamification is embedded. Japanese have also contributed to disaster prevention and increasing awareness. In instructional framegames, one can also vary Conflict, Constraint, Contrivance, and Closure to create a new learning experience to explore how every instructional game can be seen as instructional framegame.

The advent and use of systems concepts, modelling and simulation, followed by a deeper focus in a contemporary defence context, around advances in fighter-aircraft “generations” and the associated innovations in modern-day flight and mission simulation. The design evolved from a blend of exhaustive research, discussion with practitioners, prototyping, and experiences and insights of the resource persons.

ABOUT UNIVERSITY

Shri Vaishnav Vidhyapeeth Vishwavidyalaya is a private university established under Madhya Pradesh Niji Vishwavidyalaya (Sthapna Avam Sanchalan) Adhiniyam in 2015 at Indore (India). The University has been established with a vision to be leader in shaping better future for mankind through quality education, training and research.

It shall pursue the mission to make difference in sustaining the growth of global societies by developing socially responsible citizens. Value based education being at the helm, the university is an activity driven institution.

VISION

To create an educational environment that engages deep intellectual, moral and spiritual stimulation, thereby nurturing leadership

MISSION

To pioneer a 'mentoring ' based education system with a culture of its own, rooted in Indian ethos and in tune with contemporary times; To impart learning through understanding- knowledge enrichment, skill development and positive attitude formation; To encourage innovative thinking with self discipline and social responsibility.

VALUES

Endurance, Excellence, Fairness, Honesty and Transparency

QUALITY POLICY

We, at Shri Vaishnav Vidyapeeth Vishwavidyalaya are committed to impart quality education by meeting stakeholder requirements and norms of regulatory authorities. We strive to continuously enhance the quality of our academic and research offering and effectiveness of teaching-learning process.

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