

SERIOUSWORK

The Research & Theory underpinning LEGO® SERIOUS PLAY®

Constructivism (Piaget)

[https://en.wikipedia.org/wiki/Constructivism_\(philosophy_of_education\)](https://en.wikipedia.org/wiki/Constructivism_(philosophy_of_education))

Constructionism (Harel and Papert),

[https://en.wikipedia.org/wiki/Constructionism_\(learning_theory\)](https://en.wikipedia.org/wiki/Constructionism_(learning_theory))

Cognitive development (Piaget)

https://en.wikipedia.org/wiki/Piaget%27s_theory_of_cognitive_development

Theories of play (Huizinga, Fein, Vygotski),

[https://en.wikipedia.org/wiki/Play_\(activity\)](https://en.wikipedia.org/wiki/Play_(activity))

Definitions of Play (Grey)

http://www.scholarpedia.org/article/Definitions_of_Play

Motivational theories (Maslow)

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Theory of flow (Csikszentmihalyi)

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LEGO® SERIOUS PLAY® a method founded on research and theory

The original concept of LEGO® SERIOUS PLAY® was created by Professors Johan Roos and Victor Bart from the Swiss Business School IMD and further developed at 'Imagination Lab'. In creating LEGO® SERIOUS PLAY® they based their thinking on theoretical work that included:

Constructivism (Piaget)

[https://en.wikipedia.org/wiki/Constructivism_\(philosophy_of_education\)](https://en.wikipedia.org/wiki/Constructivism_(philosophy_of_education))

Jean Piaget is considered the father of the theory of constructivism. Constructivism is a theory on learning, which says people acquire knowledge by experiencing things and in conjunction with knowledge that they already possess, they then "construct" their own understanding of these things.

In simple terms, it suggests that we never learn anything from scratch, but rather that new information that we acquire builds on knowledge that we already have, and this constructs a new, broader understanding of the world around us.

Constructivism suggests that the learner needs to be proactive in how they learn, taking new information, and shaping it to their understanding, rather than just 'sitting still and passively absorbing information like a sponge'.

According to the social constructivist approach, instructors have to adapt to the role of facilitators and not teachers (Bauersfeld, 1995)

Meaning> As a tool that relies on construction the LEGO® SERIOUS PLAY® method provides a great way to enable participants to understand the topic-at-hand through cycles of building, sharing and reflecting.

Constructivism is a facilitation centric idea, the role of the facilitator is not to teach or solve the problem, but provide engaging and compelling build tasks and rich reflective spaces for individuals and groups to use their builds to learn and deepen their understanding or knowledge on the subject-at-hand.

Constructionism (Harel and Papert 1991),

[https://en.wikipedia.org/wiki/Constructionism_\(learning_theory\)](https://en.wikipedia.org/wiki/Constructionism_(learning_theory))

Constructionist learning is when learners construct mental models to understand the world around them. Constructionism advocates student-centered, discovery learning where students use information they already know to acquire more knowledge.

Students learn through participation in project-based learning where they make connections between different ideas and areas of knowledge facilitated by the teacher through coaching rather than using lectures or step-by-step guidance.

Further, constructionism holds that learning can happen most effectively when people are active in making tangible objects in the real world. In this sense, constructionism is connected with experiential learning and builds on Jean Piaget's epistemological theory of constructivism.

Cognitive development (Piaget)

https://en.wikipedia.org/wiki/Piaget%27s_theory_of_cognitive_development

Piaget's (1936) theory of cognitive development explains how a child constructs a mental model of the world. He disagreed with the idea that intelligence was a fixed trait, and regarded cognitive development as a process which occurs due to biological maturation and interaction with the environment.

Meaning> By encouraging participants to take responsibility for their own curiosity and use the insights arising from builds they are able to weigh up, assess and challenge (or support) the mental models, assumptions, norms, habits or worldviews individuals or groups have.

The 'meta' narrative can be invisible or unconscious, a facilitator can ask individuals or groups what builds might mean at the level of mental models. LEGO® SERIOUS PLAY® is literally a different model for exploring topics, meaning, shared understanding and systems, at the same time the builds can help builders become aware of and challenge the mental models they hold.

Theories of play (Huizinga, Fein, Vygotski),

[https://en.wikipedia.org/wiki/Play_\(activity\)](https://en.wikipedia.org/wiki/Play_(activity))

Definitions of Play: Dr Peter Grey 2013

http://www.scholarpedia.org/article/Definitions_of_Play

Play is not neatly defined in terms of any single characteristic; instead, it involves a constellation of characteristics, which have to do with the motives or mental framework

underlying the observed behaviour. Three famous examples of attempts to characterise play are the following:

In *Homo Ludens*, the Dutch cultural historian Johan Huizinga (1955) summed play as: "Play is a free activity standing quite consciously outside 'ordinary' life as being 'not serious,' but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner."

In his influential essay, *The Role of Play in Development*, the Russian psychologist Lev Vygotsky (1978) characterised children's play as activity that is (a) "desired" by the child, (b) "always involves an imaginary situation," and (c) "always involves rules" (which are in the minds of the players and may or may not be laid down in advance).

In the *Handbook of Child Psychology*, Kenneth Rubin and his colleagues (1983) characterised play as behaviour that is (a) intrinsically motivated; (b) focused on means rather than ends; (c) distinct from exploratory behaviour; (d) nonliteral (involves pretence), (e) free from externally imposed rules; and (f) actively (not just passively) engaged in by the players.

After analysing these and other definitions of play, Peter Gray (2009, 2013) concluded that all of the descriptors of human play used by prominent play scholars can be boiled down to the five described below.

- Self-Chosen and Self-Directed
- Intrinsically motivated—means are more valued than ends
- Guided by mental rules, but the rules leave room for creativity
- Imaginative
- Conducted in an alert, active, but relatively non-stressed frame of mind

Selected Quotes from *Homo Ludens*

https://en.wikipedia.org/wiki/Homo_Ludens

http://art.yale.edu/file_columns/0000/1474/

[homo_ludens_johan_huizinga_routledge_1949_.pdf](#)

PLAY is older than culture, for culture, however inadequately defined, always presupposes human society, and animals have not waited for man to teach them their playing. We can safely assert, even, that human civilisation has added no essential

feature to the general idea of play. Animals play just like men. We have only to watch young dogs to see that all the essentials of human play are present in their merry gambols. They invite one another to play by a certain ceremoniousness of attitude and gesture. They keep to the rule that you shall not bite, or not bite hard, your brother's ear. They pretend to get terribly angry. And-what is most important-in all these doings they plainly experience tremendous fun and enjoyment. Such romplings of young dogs are only one of the simpler forms of animal play. There are other, much more highly developed forms: regular contests and beautiful performances before an admiring public.

To our way of thinking, play is the direct opposite of seriousness. At first sight this opposition seems as irreducible to other categories as the play-concept itself. Examined more closely, however, the contrast between play and seriousness proves to be neither conclusive nor fixed. We can say: play is non-seriousness. But apart from the fact that this proposition tells us nothing about the positive qualities of play, it is extraordinarily easy to refute. As soon as we proceed from "play is non-seriousness" to "play is not serious ", the contrast leaves us in the lurch-**for some play can be very serious indeed.**

Here, then, we have the first main characteristic of play: that it is free, is in fact freedom. A second characteristic is closely connected with this, namely, that play is not "ordinary" or "real" life. It is rather a stepping out of "real" life into a temporary sphere of activity with a disposition all of its own. Every child knows perfectly well that he is "only pretending", or that it was "only for fun" . How deep-seated this awareness is in the child's soul is strikingly illustrated by the following story, told to me by the father of the boy in question. He found his four-year-old son sitting at the front of a row of chairs, playing "trains". As he hugged him the boy said: "Don't kiss the engine, Daddy, or the carriages won't think it's real". This "only pretending" quality of play betrays a consciousness of the inferiority of play compared with "seriousness", a feeling that seems to be something as primary as play itself. Nevertheless, as we have already pointed out, the consciousness of play being "only a pretend" does not by any means prevent it from proceeding with the utmost seriousness, with an absorption, a devotion that passes into rapture and, temporarily at least, completely abolishes that troublesome "only" feeling. Any game can at any time wholly run away with the players. The contrast between play and seriousness is always fluid. The inferiority of play is continually being offset by the corresponding superiority of its seriousness. Play turns to seriousness and seriousness to play. Play may rise to heights of beauty and sublimity that leave seriousness far beneath. Tricky questions such as these will come up for discussion when we start examining the relationship between play and ritual.

The exceptional and special position of play is most tellingly illustrated by the fact that it loves to surround itself with an air of secrecy. Even in early childhood the charm of play is

enhanced by making a "secret" out of it. This is for us, not for the "others". What the "others" do "outside" is no concern of ours at the moment. Inside the circle of the game the laws and customs of ordinary life no longer count. We are different and do things differently. This temporary abolition of the ordinary world is fully acknowledged in child-life, but it is no less evident in the great ceremonial games of savage societies. During the great feast of initiation when the youths are accepted into the male community, it is not the neophytes only that are exempt from the ordinary laws and regulations: there is a truce to all feuds in the tribe. All retaliatory acts and vendettas are suspended

Play in the workplace

[https://en.wikipedia.org/wiki/Play_\(activity\)#Workplace](https://en.wikipedia.org/wiki/Play_(activity)#Workplace)

There has been extensive research when it comes to the benefits of play amongst children, youth, and adolescence. Most commonly overlooked are the benefits of play for adults, more specifically, adults who spend a lot of time in the workplace. Many adults in North America are in the workforce and spend half of their waking hours in a workplace environment with little to no time for play.

Research shows that playing games may promote a persistent and optimistic motivational style and positive affect. Positive affect enhances people's experiences, enjoyment, and sense of satisfaction derived from the activity, during their engagement with a certain task. While people are engaged in their work, positive affect increases the satisfaction they feel from the work, and this has also been shown to increase their creativity and improve their performance on problem-solving tasks as well as other tasks. The development of a persistent motivational style charged with positive affect may lead to lasting work success.

Studies show that work and play are mutually supportive. Employees need to experience the sense of newness, flow, discovery and liveliness that play provides. By doing this, it will provide the employee with the sense that they are integrated within the organization, and therefore they will feel and perform better.

By incorporating play at work, it will also result in more productivity, creativity and innovation, higher job satisfaction, greater workplace morale, stronger or new social bonds, improved job performance, a decrease in staff turnover, absenteeism and stress. Decreased stress leads to less illness, which results in lower health care costs. Play at work may help employees function and cope when under stress, refresh body and mind, encourage teamwork, trigger creativity, and increase energy while preventing burnout.

Studies show that companies that encourage play at work, experience more success because it leads to positive emotion amongst employees. Risk taking, confidence in presenting novel ideas, and embracing unusual and fresh perspectives are common characteristics associated with play at work.

Play can increase self-reported job satisfaction and well-being. Employees experiencing positive emotions are more cooperative, more social, and perform better when faced with complex tasks.

Meaning> Play is a fundamental way animals and humans learn.

As Dr Stuart Brown from the National Institute for Play USA says: “Play is our natural way of adapting and developing new skills. It is what prepares us for emergence and keeps us open to new opportunities. It prepares us for ambiguity.”

Seen in this way Play has huge untapped potential in work environments and LEGO® SERIOUS PLAY® is a proven and legitimate way to engage intelligent professionals to work together.

As facilitators of LEGO® SERIOUS PLAY® by understanding play, we can help legitimise playful and serious ways to help groups ‘adapt’, ‘develop new skills’, be prepared for ‘emergence’ and alive to new opportunities.

Motivational theories (Maslow)

https://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs

Maslow's hierarchy of needs is a theory in psychology proposed by Abraham Maslow in his 1943 paper "A Theory of Human Motivation" in Psychological Review. Maslow subsequently extended the idea to include his observations of humans' innate curiosity.

Motivational theories (Hertzberg)

https://en.wikipedia.org/wiki/Two-factor_theory

The two-factor theory (also known as Herzberg's motivation-hygiene theory and dual-factor theory) states that there are certain factors in the workplace that cause job satisfaction, while a separate set of factors cause dissatisfaction.

The nature of the work one performs has the capacity to gratify such needs as achievement, competency, status, personal worth, and self-realization, thus making him happy and satisfied

Meaning> For most people LEGO® SERIOUS PLAY® is intrinsically motivating. Building a representation or model of an idea a builder has or that occurs during building is deeply absorbing. Additionally the democratic nature of sharing and telling the stories of models after building gives an amplified voice to the builder as they can also communicate visually and kinaesthetically.

Building, sharing, being heard about matters that matter, is for most rewarding in itself. If the LEGO® SERIOUS PLAY® workshop is especially meaningful (e.g. what is our shared vision for the future...) this combination of attributes is experienced by most as motivational.

Theory of flow (Csikszentmihalyi)

[https://en.wikipedia.org/wiki/Flow_\(psychology\)](https://en.wikipedia.org/wiki/Flow_(psychology))

Flow is an optimal psychological state that people experience when engaged in an activity that is both appropriately challenging to one's skill level, often resulting in immersion and concentrated focus on a task. This can result in deep learning and high levels of personal and work satisfaction.

Flow is one of eight mental states that can happen during the learning process which Csikszentmihályi outlines in his flow theory. In addition to flow, these mental states include anxiety, apathy, arousal, boredom, control, relaxation, and worry; they result when a learner experiences a combination of skill and challenge levels of a task in non-optimal combinations.

8 States picture: https://upload.wikimedia.org/wikipedia/commons/thumb/f/f6/Challenge_vs_skill.svg/600px-Challenge_vs_skill.svg.png

Flow is the most optimal of these states for learning, as it is where skill level and challenge level of a task are at their highest. This creates an opportunity for learning and intense focus, where learners can even feel that they lose track of time because they are so immersed in the task.

Flow can be experienced in any task in any field of activity, from music to writing to painting to sports. Educational researchers try to understand flow in order to help their students optimize their learning.

Meaning> The three build levels in LEGO® SERIOUS PLAY® offer increasingly hard levels of challenge, both technically and conceptually. At the higher build levels LEGO® SERIOUS PLAY® can be quite challenging.

Technically, the physical connections of models and conceptually in terms of the wide field-of-meaning present in complex system models. This range of difficulty allows a facilitator to design and increasingly hard set of tasks to try to keep a group in flow.

A sufficiently high level of challenge to meet an increasing level of skill in using the LEGO® SERIOUS PLAY® method, can keep groups in the top right box of the 8 mental states model.

Conceptual metaphors (Lakoff & Johnson)

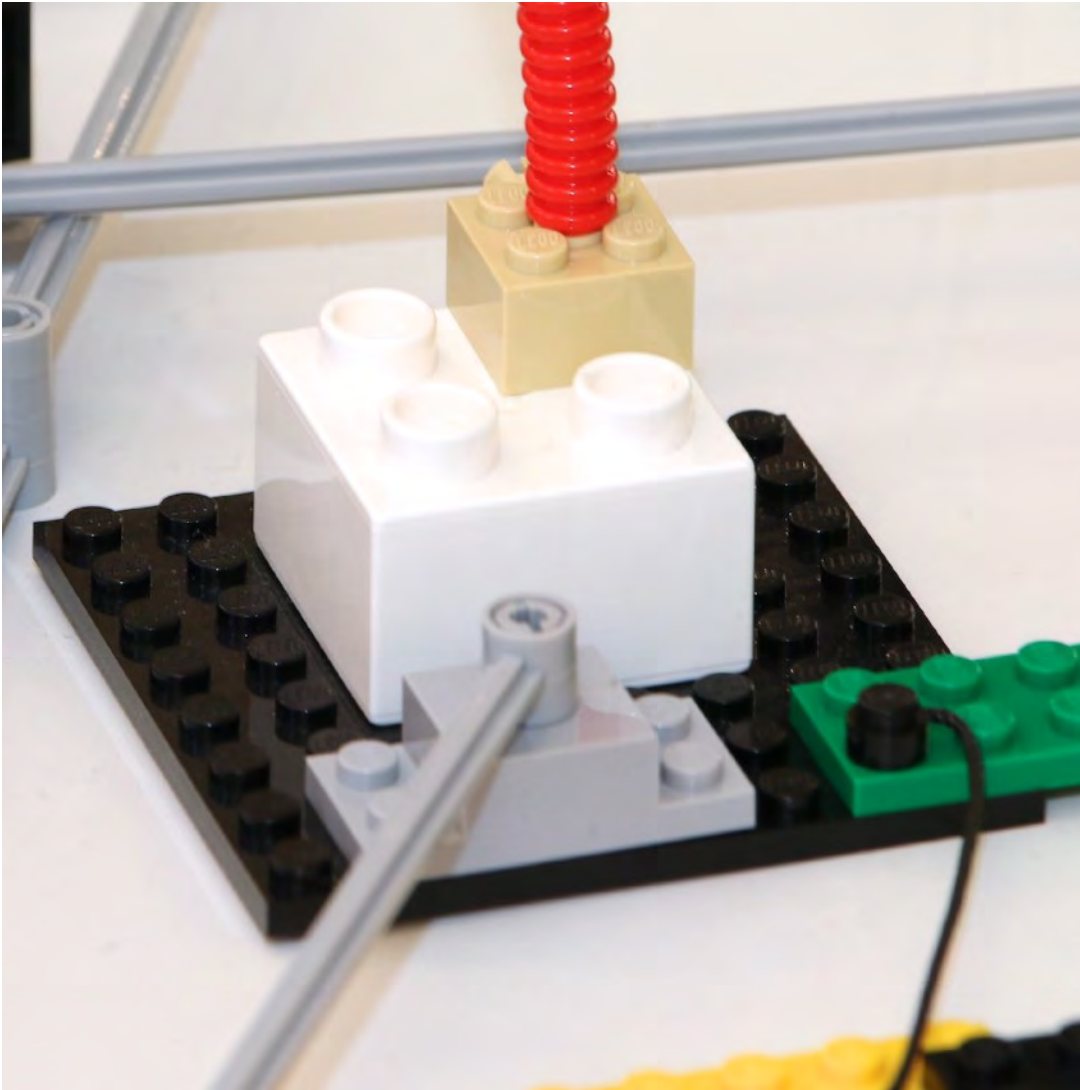
https://en.wikipedia.org/wiki/Conceptual_metaphor

In cognitive linguistics, conceptual metaphor, or cognitive metaphor, refers to the understanding of one idea, or conceptual domain, in terms of another.

Conceptual metaphors are seen in language in our everyday lives. Conceptual metaphors shape not just our communication, but also shape the way we think and act. In George Lakoff and Mark Johnson's work, *Metaphors We Live By* (1980), we see how everyday language is filled with metaphors we may not always notice. An example of one of the commonly used conceptual metaphors is "argument is war".

This metaphor shapes our language in the way we view argument as war or as a battle to be won. It is not uncommon to hear someone say "He won that argument" or "I attacked every weak point in his argument". The very way argument is thought of is shaped by this metaphor of arguments being war and battles that must be won. Argument can be seen in other ways than a battle, but we use this concept to shape the way we think of argument and the way we go about arguing.

Meaning> The team that invented LEGO® SERIOUS PLAY® build using bricks as metaphors into the method. So individuals and groups can express complex ideas with simple builds. The simple white brick with 4 studs in this build stood for the depletion of IPv4 address depletion. A complex idea represented in a simple build.



The build below arose when a team were asked to build models of negative behaviours that would stop them from achieving their vision. 'Wild Wolf Dogs' is a metaphor for a kind of negative behaviour associated by one person with the team feeling out of control.

NEGATIVE BEHAVIOURS TO WATCH FOR AND LEARN ABOUT

OUT OF CONTROL

WILD WOLF DOGS



Meaning > So as facilitators of the process we can both enable participants to use the bricks metaphorically (like the IPv4 example) and to describe one thing in terms of another to bring key ideas to life.

Managing change (Lewin, Schon, Argyris)

Lewin

https://en.wikipedia.org/wiki/Kurt_Lewin#Action_research

Lewin is often recognized as the "founder of social psychology" and was one of the first to study group dynamics and organizational development. A Review of General

Psychology survey, published in 2002, ranked Lewin as the 18th-most cited psychologist of the 20th century.

His research included pioneering work on:

Force field analysis

Action research

Leadership climates

Change process

Lewin's equation

Group dynamics

Schon

https://en.wikipedia.org/wiki/Donald_Sch%C3%B6n

Schön's seminal 1983 book, *The Reflective Practitioner*, challenged practitioners to reconsider the role of technical knowledge versus "artistry" in developing professional excellence.

His later work related to reflection in practice and the concept of learning systems. He (along with Chris Argyris) maintained that organisations and individuals should be flexible and should incorporate lessons learned throughout their lifespans, known as organisational learning.

His interest and involvement in jazz music inspired him to teach the concept of improvisation and 'thinking on one's feet', and that through a feedback loop of experience, learning and practice, we can continually improve our work (whether educational or not) and become a 'reflective practitioner'.

Thus, the work of Schön fits with and extends to the realm of many fields of practice, key twentieth century theories of education, like experiential education and the work of many of its most important theorists, namely John Dewey, Kurt Lewin, Carl Rogers and David A. Kolb.

Schön believed that people and organisations should be flexible and incorporate their life experiences and lessons learned throughout their life. This is also known as Organisational learning (Fulmer, 1994). Organisational learning is based on two things. The first being single-loop learning and the second being double-loop learning. The former refers to the process that occurs when organisations adjust their operations to keep apace with changing market conditions.

And then the latter refers to not just adjusting to the market, but also to the creation of new and better ways of achieving business goals

Argyris

https://en.wikipedia.org/wiki/Chris_Argyris

Key concepts developed by Argyris include ladder of inference, double-loop learning (Argyris & Schön 1974), theory of action/espoused theory/theory-in-use, high advocacy/high inquiry dialogue and actionable knowledge and the study of adult personality.

Meaning > It's hard to summarise three wise men in a pithy paragraph! Their work is really worth studying. Schön's ideas on Organisational learning and Argyris's work on double loop learning provide facilitators with powerful tools to support groups learn their way out of bad habits and navigate change respectfully.

The work of Argyris & Schön in particular are important background ideas for professional facilitators especially those working in organisational change.

Complex adaptive system theory (Holland 1995),

https://en.wikipedia.org/wiki/Complex_adaptive_system

A complex adaptive system is a system in which a perfect understanding of the individual parts does not automatically convey a perfect understanding of the whole system's behaviour

They are complex in that they are dynamic networks of interactions, and their relationships are not aggregations of the individual static entities, i.e., the behaviour of the ensemble is not predicted by the behaviour of the components. They are adaptive in that the individual and collective behaviour mutate and self-organize corresponding to the change-initiating micro-event or collection of events

The study of CAS focuses on complex, emergent and macroscopic properties of the system. John H. Holland said that CAS "are systems that have a large numbers of components, often called agents, that interact and adapt or learn."

Meaning > LEGO® SERIOUS PLAY® Build level three is a very powerful way to see, interact and learn with and from systems. The subject of a whole new book that I hope one day to write.

Strategy (Mintzberg),

<https://en.wikipedia.org/wiki/Strategy>

https://en.wikipedia.org/wiki/Strategic_thinking

<https://www.amazon.co.uk/Rise-Strategic-Planning-Henry-Mintzberg/dp/1476754764>

Henry Mintzberg wrote in 1994 that strategic thinking is more about synthesis (i.e., "connecting the dots") than analysis (i.e., "finding the dots"). It is about "capturing what the manager learns from all sources (both the soft insights from his or her personal experiences and the experiences of others throughout the organization and the hard data from market research and the like) and then synthesizing that learning into a vision of the direction that the business should pursue."

Mintzberg argued that strategic thinking cannot be systematized and is the critical part of strategy formation, as opposed to strategic planning exercises. In his view, strategic planning happens around the strategy formation or strategic thinking activity, by providing inputs for the strategist to consider and providing plans for controlling the implementation of the strategy after it is formed.

Perhaps the most distinctive feature of Mintzberg's research findings and writing on business strategy, is that they have often emphasized the importance of emergent strategy, which arises informally at any level in an organisation, as an alternative or a complement to deliberate strategy, which is determined consciously either by top management or with the acquiescence of top management.

He has been strongly critical of the stream of strategy literature which focuses predominantly on deliberate strategy

Meaning > Mintzberg's work in challenging the norms of how strategy processes work helped the pioneers of LEGO® SERIOUS PLAY® imagine using LEGO in strategy. The original LEGO® SERIOUS PLAY® application 'Real Time Strategy' used the idea of emergence combined with systems thinking.

LEGO® SERIOUS PLAY®

https://en.wikipedia.org/wiki/Lego_Serious_Play

Johan Roos and Bart Victor created the "SERIOUS PLAY" concept and process in the mid-1990s as way to enable managers to describe, create and challenge their views on their business. Dr. Roos is now Chief Academic Officer at Hult International Business School and Dr. Bart Victor is Cal Turner Professor of Moral Leadership at Vanderbilt

University but when they created serious play they were both professors at IMD in Switzerland.

The conceptual foundation of serious play combines ideas from constructivism (Piaget 1951), its subsequent version constructionism (Harel and Papert 1991), complex adaptive system theory (Holland 1995) and autopoietic corporate epistemology (von Krogh and Roos 1994; 1995) applied to the context of management and organizations.

The empirical foundation of the concept of serious play stems from Roos and Victor's experiments with leadership teams in Tetra Pak, Hydro Aluminium and TFL and during an IMD program for the top 300 leaders in the Lego Company. They presented their early ideas in a short article published by IMD in 1998 entitled "In Search for Original Strategies: How About Some Serious Play?" and in the 1999 article "Towards Model of Strategy Making as Serious Play" published by European Management Journal. In 2004 the journal Long-Range Planning published their article "Playing Seriously with Strategy" (with Matt Statler), which serves as the foundation for the concept and practice of LEGO SERIOUS PLAY.

Sean's conclusion from this body of work and his own experience:

LEGO® SERIOUS PLAY® is deeply founded on academically robust ideas, it's not a fad, there are compelling reasons why LEGO® SERIOUS PLAY® works.

Play at work has been broadly dismissed - this is a great shame, and a terrific opportunity.

Building models unlocks insight that (formal abstract) thinking alone cannot access.

The act of (playful) building is inherently and intrinsically motivating and therefore satisfying.

The combination of auditory, visual and kinaesthetic modes of communication can create much better levels communication, especially for listeners.

The visual nature of models makes retention of ideas significantly better than spoken words alone.

Shared and system model building puts groups into relationship and can create much deeper connection and relationship between people in groups. The conversation that

often flows after the experience of building together feels respectful, authentic and focussed.

System model building allow groups to see the unintended consequences of decisions. LEGO® SERIOUS PLAY® is a very powerful tool for exploring and understanding systems.

Skilled facilitation of the process is key and can create very powerful experiences for people, but should not be instructed as a step-by-step 'technique'. In this sense it is a skilled practice, a bit like a therapist would not council a patient though a step-by-step process, a skilled LEGO® SERIOUS PLAY® facilitator know when and how to intervene, and when to step back to allow people and groups to get the outcomes or breakthroughs they are seeking.

Sean Blair
London, August 2017.

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