

The Future of Design Education

Keywords: design education, future of design, role-playing game, game-based design research

A conversation held at DRS2016 - Brighton
June 29th 2016, 2:00 – 3:30 PM.

This document is conversation proposal and documentation (from p. 4) in one.

Catalysts

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Introduction

“Throughout most of history, design was a process applied to physical objects. But as it became clear that smart, effective design was behind the success of many commercial goods, companies began employing it in more and more contexts. High-tech firms that hired designers to work on hardware began asking them to create the look and feel of user-interface software. Then designers were asked to help improve user experiences. Soon firms were treating corporate strategy making as an exercise in design. Today design is even applied to helping multiple stakeholders and organizations work better as a system.” (Brown & Martin, 2015)

Design as a discipline has evolved and is expanding its impact from individual physical objects and spaces to experiences and organizations. An emerging question is “how will the



increasing influence of design impact the future of design education and create value for its stakeholders as well as for the discipline of design?” Probably a more critical question is “how can or should design education prepare future designers for this expanding sphere of design influence?”

The changing context and design education.

“Design is a problem – solving process and the fundamental skills of the designer are the ability to look for meaningful problems, frame them into appropriate contexts, and design a process for developing and implementing a solution” (Irwin, 2015). This definition of design and the role of the designer are a significant departure from its original definition by the Bauhaus where the objective of all creative effort in the visual arts was to give form to space and where the source of creative imagination was in developing a proficiency in the craft (Gropius, Bayer, & Gropius, 1938). Although definition and the sphere of design influence have changed, design education has remained rooted in the craft skills. Design education has two trains of thought: the foundation and the progression. The foundation skills of observation and application have remained consistent through the history of design but the progression of design is in constant change (Foster, O. as cited by Currey, 2015).

Design education is at the crossroads (Kressy, 2015) and faces an uncertain future. “If design is to live up to its promise it must create new, enduring curricula for design education that merge science and technology, art and business, and indeed, all the knowledge of the university” (Norman & Klemmer, 2014). What is that promise that design has to offer? How can design schools lay the foundation to deliver that promise?

It is time to take a comprehensive look at the current state of design education and start a conversation about its future.

Organizing research question

What is the future of design education? In the context of the presented scenarios, what do the future design school and its programs look like?

The session at DRS2016

Please see from page 4 the outcomes of the session at DRS2016. A video compilation created by Sapna Singh is also available at <https://vimeo.com/181094311>.

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About the Catalysts:

Sapna Singh is a design researcher and strategist. She recently completed her MFA research thesis at Ohio State University that explored the future and value of graduate design education applying a multidisciplinary approach combining design research and organizational strategy. Her research interests include business strategy as a design problem and exploring design for learning.

Elizabeth B.-N. Sanders joined the Design Department at The Ohio State University in 2011 after many years as a design research consultant exploring methods to drive design from a human-centered perspective. Liz's academic research focuses on co-design for innovation and transdisciplinary collaboration.

Terry Irwin is the Head of the School of Design at Carnegie Mellon University. Her research is in the area of Transition Design, a new area of design research, study and practice that focuses on design-led societal transition toward more sustainable futures.

Pieter Jan Stappers came to design with an MSc in Experimental Physics and a PhD on using Virtual Reality for perception studies. In 1984 he joined the Faculty of Industrial Design Engineering of Delft University of Technology where his work focuses on developing tools and techniques to support the early phases of designing. His research emphases are context-mapping, interactive prototyping, and the role of design skills in doing research (i.e. research through design).

Nicole Lotz is Lecturer at the Open University. She designs, develops and teaches award-winning design courses in online design environments. Her research interests cover design pedagogy, design patterns, cross-cultural collaboration and social interaction in online design environments.

Erik Bohemia is the Programme Director in the Institute for Design Innovation at Loughborough University. Dr.Bohemia's research explores changes associated with Globalization and the impact on Design. This research has been used to develop an innovative international collaboration named the Global Studio.

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Documentation of Conversation session

FUTURE OF DESIGN EDUCATION

held on June 29, 2016

at the Design Research Society 2016 conference in Brighton, UK

Contents

This document presents the concept, workshop materials and outcomes of the Conversation session titled "Future of Design Education" held on June 29th from 2:00pm to 3:30pm at the Design Research Society conference 2016 in Brighton, UK.

In this document:

- Workshop Concept
- Future Scenarios presented by the Catalysts
- Workshop outcomes (images, posters and summaries)
- Catalyst presentations
- Toolkit cards

For any questions regarding the session, please contact Sapna Singh at singh.183@osu.edu.

Sapna Singh also created a video compilation of the session, available at <https://vimeo.com/181094311>.

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FUTURE OF DESIGN EDUCATION

Workshop Concept

Workshop Concept

The format for conducting the conversation was developed as a workshop. The methodology of participatory design research using a generative design make toolkit (Sanders & Stappers, 2012) was the chosen to facilitate the conversation and provide participants with tools to visualize and communicate their ideas for the future of design education.

The 90 minutes session was divided into following 3 activities:

- 1. Introduction and presentation of future scenarios:** The first 30 minutes of the session involved introducing the focus of the conversation, introducing the catalysts, workshop toolkit and presentation of four future scenarios by the catalysts.
- 2. Group activity:** The second part of the session was assigned to group activity for 30 minutes. The session attendees divided into groups, each group selected one of the four future scenarios to discuss and visualize future design education based on the scenario. The visualizations were created as posters using the toolkit that included cards with visuals and text, markers, tape and a large sheet of paper to use as canvas.
- 3. Group presentations:** The last 30 minutes of the session were assigned to presentation of the posters created by the groups followed by questions and answers.

The format and toolkit for the session was developed by Sapna Singh. For questions regarding the workshop, send an email at singh.183@osu.edu.

Sanders, E.-N., & Stappers, P. (2012). *Convivial Toolbox: Generative Research for the Front End of Design*. Amsterdam: BIS Publishers.

INTRODUCTION

- *Four future scenarios*
- *Five minutes presentation for each scenario.*
- *One big question.*
- *Select one scenario to discuss within smaller group.*
- *Use toolkit to document discussion on paper.*
- *Share key ideas with the larger group.*
- *Questions and answers.*

TOOLKIT

- *Cards*
- *Markers*
- *Tape*
- *Paper*

TOOLKIT / CARDS



TOOLKIT / CARDS



VISIONARY

Thinks, explores and develops ideas for the future

MAKING SENSE

Connecting the dots, simplifying complex information

Design can lead change

GROUP DISCUSSION

- *Time: 30 minutes*
- *Select **ONE** scenario to focus.*

- *Two requirements:*
 - ***Browse** through **all** cards.*
 - *Put down **ideas** on paper.*

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FUTURE OF DESIGN EDUCATION

Future Scenarios

DRAW: Designing, Reading, Arithmetic and Writing

CATALYSTS: ELIZABETH B.-N. SANDERS, SAPNA SINGH

Place-Based Design: Cosmopolitan Localism (CL) as a Framework for Transdisciplinary Higher Education

CATALYST: TERRY IRWIN

DesignX: Designing for Complex Sociotechnical Systems

CATALYST: PIETER JAN STAPPERS

Distant and Jet So Close: Ubiquitous Distance Design Learning

CATALYSTS: NICOLE LOTZ, ERIK BOHEMIA

DRAW: Designing, Reading, Arithmetic and Writing

CATALYSTS: ELIZABETH B.-N. SANDERS, SAPNA SINGH

APPROACH

Designing is fundamental to learning at all levels of education. It forms the core of K-12 curricula together with reading, arithmetic and writing. K-12 refers to primary/elementary, middle and high school education for ages 5 to 18 years.

PEOPLE

Foundation in Grades K-3: Students collaborate with their peers and family members to understand and develop concrete design knowledge. Teachers, designers and curriculum developers collaborate to develop toolkits for use in this effort.

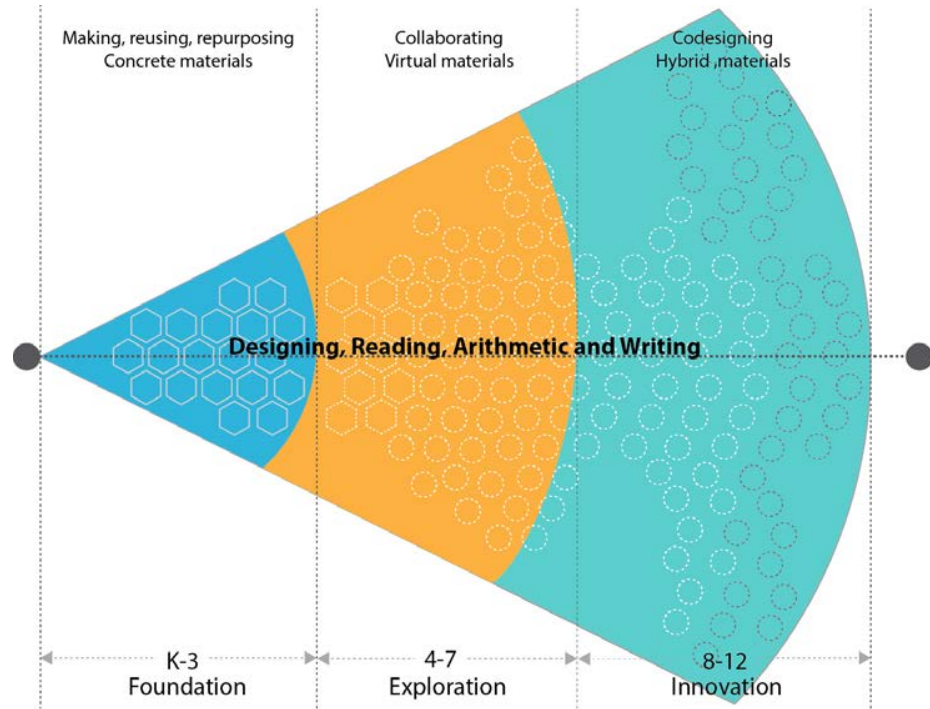
Exploration in Grades 4-7: Students collaborate with members of the local community including families in the neighborhood, businesses, social organizations and government organizations. Teachers and parents facilitate this process.

Innovation in Grades 8-12: Students collaborate with social and public organizations. Through these collaborations, they explore codesigning with members of communities across the nation as well as internationally. Teachers and others facilitate this process.

CURRICULUM

Foundation: Children learn about designing through practical and fun hands-on experiences with their peers and families. They have classes, events, and workshops in making, repairing, reusing, and repurposing. The students develop foundational skills in empathy and collaboration.

Exploration: The curriculum is project-based which brings



together knowledge from multiple subject areas. Students learn about co-designing and develop their own toolkits to use in collaborating with the local community and their neighborhoods. Hacking is introduced in 6th grade.

Innovation: Students develop their own co-design toolkits from hybrid materials. They learn to codesign with collaborators and go through the iterative process of innovation.

THE BIG QUESTION

When designing forms the core of K-12 curricula together with reading, arithmetic and writing, how will higher education in Design change?

DRAW: Designing, Reading, Arithmetic and Writing

PARTNERSHIPS

Schools, curriculum developers and designers work together on developing the toolkits for design learning. Education resource companies would be interested in participating in the collaboration as well. The families of the students, the community and members of the larger local and global society will play the role of co-designers through the different stages.

Foundation: Partnerships with families play a significant role.

Exploration: Partnerships with local and community based organizations become important.

Innovation: Partnerships with organizations that have an impact on the national and global society become instrumental in creating opportunities for students to explore the potential impact of their ideas and visions.

INFRASTRUCTURE: TOOLS & MATERIALS

Foundation: Students work and play with concrete physical materials.

Exploration: Virtual materials along with the concrete materials are in play.

Innovation: Having gained foundational experience with physical and virtual materials, the students will learn by combining the two to explore hybrid tools and materials.

INFRASTRUCTURE : SPACES & PLACES

Foundation: Learning takes place primarily in schools and home.

Exploration: Learning takes place in schools, home and throughout the local community such as playgrounds and parks, libraries, and other collaborative spaces.

Innovation: Collaborative learning takes place in hybrid (physical and virtual) spaces. Physical spaces such as the classrooms, collaborative maker spaces, and libraries along with virtual spaces that facilitate collaboration and codesign would be part of the infrastructure at this stage.

IMPLICATIONS FOR THE FUTURE

The educational standards for assessment have been re-conceptualized. The focus now is on multicultural, social, and humanistic levels of achievement. This has transformed the mindset of people towards education. The goal of education is developing future smart citizens who are prepared to be agents of change.

Designing is one of the key components of the foundational K-12 literacy along with reading, writing and arithmetic. Designing will become a key component of higher education curricula for all disciplines as well.

Place-Based Design: Cosmopolitan Localism¹ (CL) as a Framework for Transdisciplinary Higher Education

CATALYST: TERRY IRWIN

APPROACH

By 2031, a global network of Cosmopolitan-Localist Universities has arisen in which design is a core discipline on every campus. These Universities exist to serve local and regional populations, are linked in their global exchange of knowledge and technology, and are entirely transdisciplinary. In this new structure, academic disciplines (siloes) offer specialized learning and expertise that is embodied and applied in transdisciplinary collaboration on place-based problems and solutions that are formulated for short, mid- and long horizons of time.

¹ Cosmopolitan localism refers to lifestyles and communities that are place-based and regional, yet cosmopolitan in their global awareness and exchange of information, knowledge and technology. Also known as a multi-local society; communities that are supported by a new type of globalization and by cultural and socio-economic interconnection.

PEOPLE

CL University: Faculty and students at the undergraduate, graduate and doctoral levels toggle between their home/core discipline(s) and a 'common space' in which collaboration on place-based/community and regional problems occur. Faculty and students often engage in a relationship of co-learning in areas in which expertise has not yet been developed (for instance society needs to learn to live sustainably in place—there are no experts in this area).

Local/Regional Partners: Since the CL University exists to serve the city and region, it has close ties with local government/policy makers, activists and community members as well as a wide range of industry and non-profit partners. University facilities support an ongoing process of co-design without outside partners and most activities are design-facilitated and led within configurable studios (design thinking/making spaces).

CL University Network: Cosmopolitan Localist Universities have a common suite of core disciplines that are scaffolded by complimentary disciplines representative of local/regional expertise, culture and economy (in this way each CL University retains unique, place-based characteristics and expertise). Faculty and students within the network collaborate on projects, exchange knowledge, innovation and best practices and in some cases engage in physical exchanges.

Partnerships with other universities: CL Universities provide spaces in which students, faculty and researchers from other, traditional universities can visit for short or long periods of time to participate in place-based projects and courses, conduct case-study research etc. CL University faculty, students and researchers spend time in traditional universities in order to take deeper dives into a particular discipline or area of specialty.

THE BIG QUESTION

Can we visualize a 'day in the life' scenario of a design student in such a University, working up through systems levels from the local/individual through the regional to the global?

- In addition to design, what are the other 2-3 'core' disciplines that every student must study within to contribute to cosmopolitan localist societies?
- What does it mean to be local and cosmopolitan? How can we create symbiotic relationships at multiple levels of scale?

Place-Based Design: Cosmopolitan Localism¹ (CL) as a Framework for Transdisciplinary Higher Education

CURRICULUM

All students at CL Universities take courses in 2-4 required disciplines of which design is one (others might include bioregionalism/geography, rhetoric/communication, sociology/anthropology etc.) These 'gateway courses' provide a practical and theoretical foundation for place-based/regional learning and problem solving that emphasizes global awareness and responsibility. Students create their own degree pathways among the local variety of disciplines and divide their time between study/learning within a specialized discipline and a space in which they work in transdisciplinary teams on real-world problems in collaboration with outside community/regional partners.

PARTNERSHIPS

The success of the CL University will depend upon local partnership 'ecologies' that are networked with those in other regions around the world. These partnerships will include local government/policy makers, representatives from social service sectors such as healthcare, city planning, law enforcement, education, local farmers, community groups and partners from both industry and non-profit organizations. In this vision, the CL University would be an integral part of a city or region's civic tapestry and would be seen as a resource for ideas/solutions and a contributor to the overall socio-economic-environmental health. Because of this contribution, CL Universities would receive a significant increase in support, driving tuition down and making higher education an option for most of society.

INFRASTRUCTURE: TOOLS & MATERIALS

An emphasis on rapid prototyping combined with learning (relearning) place-based knowledge and abilities such as growing food, building simple shelter, small scale manufacturing (enabled by new digital technologies) will require faculty and students to develop seamless bridges between craft-based/traditional tools and new, innovative technologies.

Questions of environmental sustainability, social responsibility, appropriateness and 'fit' form will be fundamental to all learning.

INFRASTRUCTURE : SPACES & PLACES

Learning will take place in three primary places: 1) on the CL campus in classrooms that resemble design thinking/making/studio spaces and workshops. CL campuses are situated in settings that integrate indigenous flora/fauna and native landscapes with interior spaces fluidly where place-based learning permeates the student experience. 2) In the community, working on real-world projects and in the local watershed learning about the distinctive constraints and characteristics of the region. 3) At partner universities in more traditional settings.

IMPLICATIONS FOR THE FUTURE

In this scenario, design is seen as a highly integrative 21st century skill that is essential in solving complex problems (on behalf of society and the environment) that require transdisciplinary collaboration. Design remains an area of disciplinary specialty for some students but is also a meta-level problem solving/collaborative skillset that all University students acquire; design tools and approaches are available to all disciplines/areas of specialty as a way of prototyping solutions, catalyzing inter- and transdisciplinary collaboration and visualizing complex concepts and ideas within diverse teams. CL Universities are seen as a viable option to more traditional Universities, however there is a lively exchange between the two networks (CL University network and the traditional University network). Because CL Universities have become valuable resources for local and regional development and are fundamental to the health of socio-technical systems, students are more apt to find jobs within networks they have been embedded within during their college years. In this scenario, the University has been transformed into a catalyst for positive social and environmental change and design and designers are playing a key role in this transformation.

DesignX: Designing for Complex Sociotechnical Systems

CATALYST: PIETER JAN STAPPERS

APPROACH

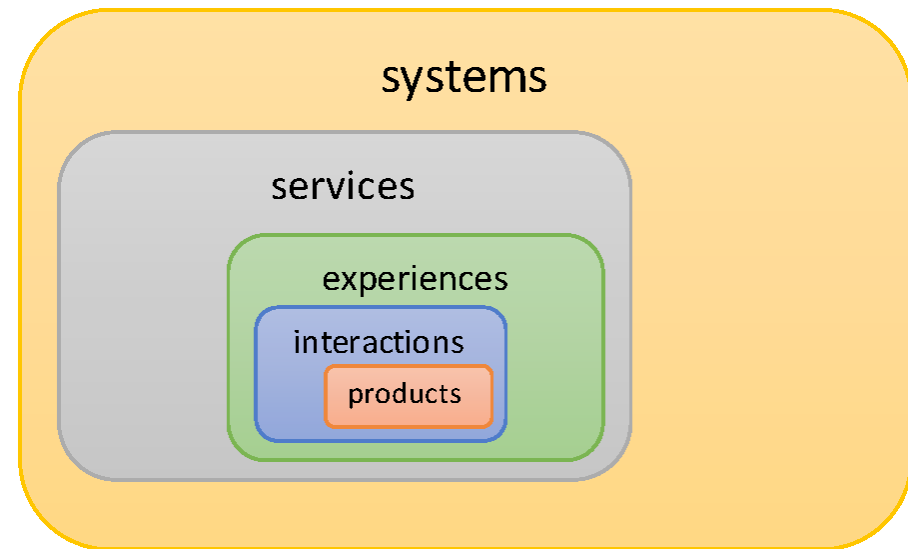
The object of design has broadened over the last century: products, interfaces, interactions, experiences, services, and now complex systems where making a change involves contributions from many parties and actors. Think energy supply, organization of (health)care services, mobility. Designers find that they can conceive solution directions, but increasingly managing the complex implementation and development that follows is where the action is, and where the designing should continue.

PEOPLE

After the change from domain-bound (design of, e.g., furniture or electronic products) to purpose-driven (design for experience or sustainability), we see that designers get involved in development efforts which surpass disciplines and domains, and require the active, creative, involvement of increasingly many and increasingly different people, roles, and abilities. What binds them together can be the activities of designing, especially focused around the human-centered perspective.

CURRICULUM

All these people, both design professionals and others, will need design skills to varying degrees to take part in such development of systems. Skills on creativity and project management, on communication and collaboration, understanding and empathy, prototyping and evaluation. A modicum of these skills will have to go in every education at all ages and levels, a deeper mastery is essential for certain professions with special roles and skills.



THE BIG QUESTION

What design skills do 'all involved' need?

- What can be the roles of the design professional(s)?
- And how can we teach these skills, to designers, and to 'all involved'?

DesignX: Designing for Complex Sociotechnical Systems

PARTNERSHIPS

Partnerships will be formed around the systems which are the problem domain: mobility, healthcare, ... All major actors, and selected other stakeholders will need to be on board. For instance, in codesigning a new way to organize elderly care in the community, you'll need constructive engagement of citizens, care organisations, (municipal or state) authorities, insurance companies, and designers. These will be longer-lasting collaborations where development is part of running the operation, and where exploring new solutions has become not a separate activity, but part of the day-to-day business.

INFRASTRUCTURE: TOOLS & MATERIALS

Cross-disciplinary development of these systems will bring together various disciplines, each with their own tools and materials. But at the intersections, interfaces, and overlaps, models, materials, tools, and languages will need to be developed to connect the contributions of the different parties. It will be one job for designers to create such tools. This design niche may come with its own specialist tools and skillset.

INFRASTRUCTURE : SPACES & PLACES

The challenge in complex systems lies not making in a single predictable perfect-forever solution, but in evolving solutions as they develop, so training needs to take place in vivo (possibly in 'living labs'). This requires involvement of various societal partners, in the development of the system, in the design activities to support that development, and in the education of the requisite skills. This can not be learned 'in vitro'.

IMPLICATIONS FOR THE FUTURE

In fifteen years from now digital technologies will have matured to support information transfer (formerly: print and oral lectures), coordination of collaboration (formerly agendas and meetings), and consolidating results (formerly reports, prototypes)? Next to that we will have (had to) develop(ed) ways to prototype and develop in vivo systems and services, and all of us (users, designers, managers) will shift between being part of the running system to making smaller or larger changes in them. Making actual and possible changes visible, and synchronizing/ harmonizing the actions of many actors will be the main challenge.

Note: The result of the DesignX discussions was described in Norman, D. A., and Stappers, P.J.. "DesignX: Complex Sociotechnical Systems." *She Ji: The Journal of Design, Economics, and Innovation* 1.2 (2016): 83-106. ([open access link](#))

Distant and Jet So Close: Ubiquitous Distance Design Learning

CATALYSTS: NICOLE LOTZ, ERIK BOHEMIA

APPROACH

Because learners feel isolated in distance education, it is very difficult to retain them. The key approach for distance design education of the future is to make learning relevant and close to the learner's interests and to develop a feeling of belonging and responsibility.

PEOPLE

Design distance learners collaborate with a variety of stakeholders, such as learners from any discipline, external stakeholders and experts from maker spaces, companies, and workshops on projects.

Learners are advised and guided by a mix of AI, local expertise and in online tutor groups. A 'close to home' tutor stays with student throughout their journey. Individuals and communities of users assess and validate designs, services and interactions the learner has created.

PARTNERSHIPS

Relations to local maker spaces, community mending groups and workshops are central to distance learners exposition to hands-on designing. Local companies ranging from corporations to startups and local shops offer small services, apprenticeships or practice to the distance learners. Learners can join local community or government project to design new services and interactions.

CURRICULUM

A project-based curriculum covers a range of projects from designing for the real world to abstract, theoretical or philosophical assignments. Cooperative and collaborative curriculum components are based on the learners' online social network and local communities.

A dynamic and intelligent curriculum (AI) suggests projects to the learner based on relevance to learner and proximity to his or her communities. More experienced learners gain more autonomy to choose curriculum content. The learner feels responsible and socially integrated. Lifelong learning is the goal for the learner.

INFRASTRUCTURE: TOOLS & MATERIALS

Physical tools for prototyping and production are sourced from locally available maker spaces, local workshops, and local services (2D, 3D printing). Learners will be inspired to experiment with any physical materials. Virtual tools are twofold; a central map-based virtual learning environment connects learners and other stakeholders with objects and services and specific design applications are acquired on demand.

THE BIG QUESTION

How do we accredit ubiquitous, livelong distance learning in the future?

- Is traditional accreditation of learning still needed if the educational institutions are calling for livelong, ubiquitous learning?
- Who, except of traditional educational institutions, will accredit learning and with what goal?
- Which elements of learning will be assessed and accredited and how?

Distant and Jet So Close: Ubiquitous Distance Design Learning

INFRASTRUCTURE : SPACES & PLACES

In the future, distance design education will be orchestrated virtually but will be anchored in physical spaces. With each new project, a virtual learning environment (VLE app) (Figure 1 Waze-like app) lists all live and past projects on a map. The dynamic map shows stakeholders (learners, teachers, users, builders, producers, etc) and objects and services (designs, inspirations, services, projects, portfolios, collaborations) on the map, which are relevant to the learners and their tasks.

The VLE app allows the learner to connect to his local and online communities.

During the project work, the learner is in conversation with an AI in the VLE app (Figure 2). The AI suggests similar and relevant topics and resources from the VLE's virtual library including but not limited to visual literacy, material literacy, processes and approaches to designing, previous projects, noteworthy designs. Suggestions are based on physically proximate and virtual communities close to the learner's interests and project nature (aka 'you might also like', or 'others like you also did this'). The VLE app is not just limited to one country or a region/city, but is a global initiative.



Figure 1. VLE: Waze like app showing stakeholders and objects on a map and allowing access the VLE library. (source: <http://revistaautosporte.globo.com/>)



Figure 2. VLE AI: Instead of asking: "Driving to work?" the question could be: "Continue working on project 'Better living on Local street'?" (source: <http://blog.rumble.me>)

IMPLICATIONS FOR THE FUTURE

Design education is ubiquitous and part of our everyday interactions with others and the environment. Design learning projects are anchored in the learners' local and relevant online and local communities. On commutes or journeys and through global social networks learners are exposed to different communities, collaborate across cultures and disciplines. Connecting a variety of online and local communities gives rise to culturally sensitive designs and cross-cultural collaborations in projects.

New assessment strategies are introduced. A multiplicity of stakeholders (companies, workshop experts, users, universities etc) will evaluate and assess learners' work depending on relevance to the stakeholders and learners. A blurred boundary between learning and commercial design work helps learners to enter employment or starting a business. New, 'pay as you go' or 'in exchange of' models are introduced for learning services such as workshops, tuition, assessment (similar to MOOCs).

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FUTURE OF DESIGN EDUCATION

Workshop Outcomes

Posters & Summaries

Images from the session:



Poster 1 / Scenario: DRAW



Poster 1 / Scenario: DRAW

The concept presented in this poster is based on the DRAW scenario presented by Liz Sanders and Sapna Singh.

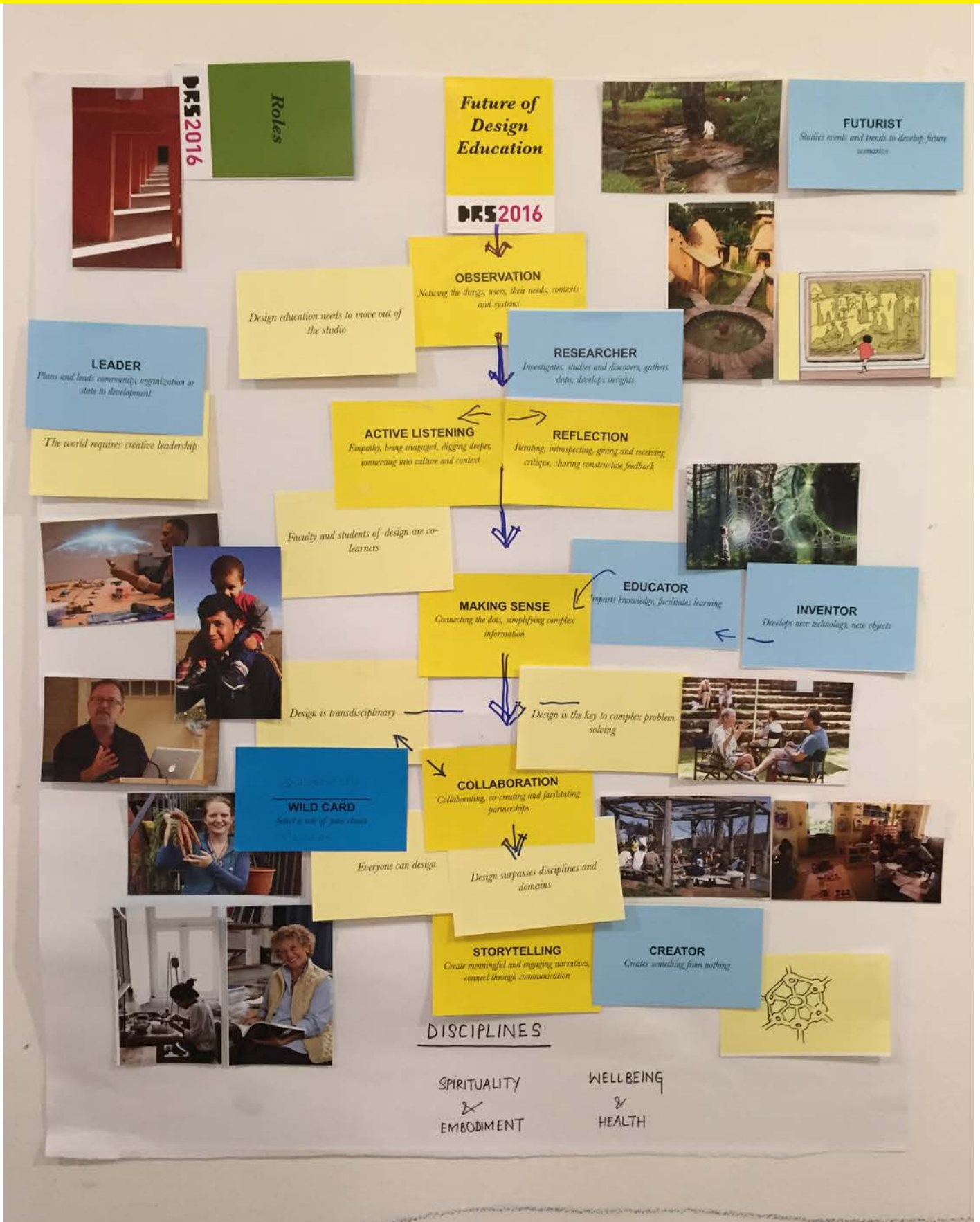
SUMMARY:

In the DRAW scenario, when design gets added to reading, arithmetic and writing as the core in K-12 education, it changes the balance to more creative disciplines. Students learn to collaborate and actively listen more during the K-12 years. They are prepared to use design terms when they enter university and the university need not use so many resources in getting them to use the terms.

The students will also need more variety, not just classroom lecturing. Design learning will need to move out of the studio to collaborate with community and explore the natural environment.

Design is a very complex field and at the university level the students will be more brave, learn to experiment and take chances. They need to design at the global scale. Design is the key to solving a lot of our future problems for which design students need to learn to negotiate to figure out solutions which requires collaboration, active listening and communication.

Poster 2 / Scenario: Cosmopolitan Localist



Poster 2 / Scenario: Cosmopolitan Localist

The concept presented in this poster is based on the Cosmopolitan Localist scenario presented by Terry Irwin.

SUMMARY:

The philosophy behind the concept is a path to discovery and respect. Wisdom is a big part of this environment because it relates to nature, community, sharing and learning. It will be an environment of self-reflection, spirituality, introspection, respect towards nature and learning.

The community of learners would be largely older people but with younger people as part of that community. Faculty and students are co-learners and the delineation between them would become very blurred.

Environment is a core element. Spaces are designed for reflection, being able to create and make meaning out of it. Designing as a key to complex problem solving would be directed towards concrete local problems that the community faces.

The students attracted to this program would have more wisdom and experience behind them and would be interested in leadership roles.

In terms of space and community, the family will play an important role. Learning is not separate from the students' other aspects of life. A typical day would somehow follow the design process.

Environmental and indigenous knowledge would become a core discipline. Well-being and health will be a part of learning, not just the physical health and well-being but more in terms of the community, space and individuals. Well-being means nourishment and flourishing for communities.

Poster 3 / Scenario: DRAW

Designing in *Each*

GIVING SHAPE
Translating insights and ideas into concepts, prototypes, blueprints and solutions

OBSERVATION
Noticing the things, users, their needs, contexts and systems

CREATOR
Creates something from nothing

AGILITY
Rapid learning, rapid prototyping, experimentation

LEARNER
Curious; explores knowledge, develops skills, adapts

COMMUNICATION
Creative and clear communication, communicating with teams and stakeholders

BRAVERY
Willing to take risks, follow the unbeaten path, learn from failure

ACTIVE LISTENING
Empathy, being engaged, digging deeper, immersing into culture and context

ACTIVIST
Strives to bring about change

DISCIPLINE
Following design process, planning and organizing, building scaffolding and structure

VISIONARY
Thinks, explores and develops ideas for the future

LEADERSHIP
Creating vision, setting direction, engaging team members, planning and communicating to create a new path

RESEARCHER
Investigates, studies and discovers, gathers data, develops insights

NAVIGATE AMBIGUITY
Exploring the unknown, helping others make sense of vague information

Design is the key to complex problem solving

Design means making and building

Design education needs to move out of the studio

Design is fundamental to learning at all levels of education

Faculty and students of design are co-learners

Everyone can design

Design can be taught

Plans and leads community, state to development

Investigates, studies and discovers, gathers data, develops insights

Exploring the unknown, helping others make sense of vague information

Design is the key to complex problem solving

Design means making and building

Design education needs to move out of the studio

Design is fundamental to learning at all levels of education

Faculty and students of design are co-learners

Everyone can design

Design can be taught

Plans and leads community, state to development

Investigates, studies and discovers, gathers data, develops insights

Exploring the unknown, helping others make sense of vague information

Poster 3 / Scenario: DRAW

The concept presented in this poster is based on the DRAW scenario presented by Liz Sanders and Sapna Singh.

SUMMARY:

The DRAW scenario presented a problem – What if design becomes part of this fundamental knowledge in the K-12 education? The real question in this scenario is – What kind of value can higher education at this point bring into the mix? This is quite a current problem because design is being taught in a lot of places.

If design is fundamental knowledge in the K-12 education, the students will come in with basic literacy in design. Many probably consider themselves quite a designer already. Students would enter higher education with a rich skill set, values and qualities such as collaborative skills, observation, ability to create, be curious, be learners and hopefully have a sense of activism. But not everyone is going to come out of high school and become a professional designer.

The overarching theme of this concept is that design will be in every discipline. The eventual goal would be to create leaders who have leadership skills and will be able to navigate ambiguity. Students in every discipline with the design skill will be brave enough to tackle system level problems, soft problems and wicked problems. They will be able to visualize and communicate their ideas.

Design would be a specialization at the graduate level. Student will get a BA in whatever discipline and then they go on to a Masters and PhD to be more specialized in design.

Design in K-12 education would mean a much wider and larger population that can go to design schools. Instead of rethinking design curricula, the focus would be rethinking curricula of other disciplines – how to inject design education into other discipline curricula. What would make other disciplines outward facing and engaged with the world, taking forward the key principles that would be seen at K-12.

Poster 4 / Scenario: DesignX

" WE LEARN A LOT
- BUT NOT FROM YOU... "

FACILITATOR

Everyone can design ?

CONDUCTOR

COMMUNICATION
Create and clear communication, communicating with teams and stakeholders

LEARNER
learns; explores knowledge, adapts

VISIONARY
Thinks, explores and develops ideas for the future

Faculty and students of design are co-learners

STORYTELLING
Use meaningful and engaging narrative, connect through communication

FUTURIST
Shapes reality, anticipates the desirable future

Design surpasses disciplines and domains

Design is a way of thinking, it is a process

PARENT
Mother, Father, caregiver of the family

LEADERSHIP
Inviting vision, setting direction, engaging team members, planning and communicating, to create a new path

DESIGN X

Poster 4 / Scenario: DesignX

The concept presented in this poster is based on the DesignX scenario presented by Pieter Jan Stappers.

SUMMARY:

The concept presented here is based on the main finding that we need to give up on the idea that the entire design class needs to learn everything. So the future class of design students would be where all students have their own ambitions or ideas about what they want. For example, Nina, one of the students comes in with a horticultural background. She wants to do space agriculture.

Design surpasses disciplines and domains anyways, so the class can probably learn as much from each other as they can from professors. In other words, students and faculty are co-learners.

Poster 5 / Scenario: DRAW



JACKSON THE EXPLORER

ACTIVIST
Strives to bring about change

foundatⁿ year:

different societal
lenses for where
would place
themselves



CECELIA, HIS CLASSMATE

exploratⁿ

LEARNER
Curious; explores knowledge, develops skills, adapts



health
business/
economic

political
social
tech

COLLABORATION
Collaborating, co-creating and facilitating partnerships

ENTRY - what they "come in with"

curriculum
"THE EXPERIENCE"
"EXPLORING DIFFERENT DOMAINS"

"CONTENT"



Faculty and students of design are co-learners

AGILITY
Accelerated learning, rapid prototyping, experimentation

COACH
Specialized trainer, directs and facilitates learning and skills development

REFLECTION
Iterating, introspecting, giving and receiving critique, sharing constructive feedback

Design surpasses disciplines and domains

WE BREAK APART THE "MISSIONARY"

BUILDING / SHAPING
IDENTIFYING THEIR ROLE - WHICH DOESN'T EXIST YET!

LEADERSHIP
Creating vision, setting direction, engaging team members, planning and communicating, to create a new path

BRAVERY
Willing to take risks, follow the unbeaten path, learn from failure

VISIONARY
Thinks, explores and develops ideas for the future

GIVING SHAP
Translating insights and ideas, prototypes, blueprints and



DESIGN(ING) TRAJECTORIES: FROM EXPLORER TO VISIONARY

Poster 5 / Scenario: DRAW

The concept presented in this poster is based on the DRAW scenario presented by Liz Sanders and Sapna Singh.

SUMMARY:

In the DRAW scenario all the students are going to come to higher design education already design literate. But the big question is – what do we teach them?

The key idea is that there are three phases to the new curriculum, what is referred to as designing trajectories from explorer to visionary.

Students will come to the program as design literates with different skills and interests. For example, one student could be more into social and technological aspects of design, while another student could have design skills around health and alternative economics.

The design program is an experience instead of being a curriculum. In the first phase they get a taste of many things in addition to their interests. This foundation year would allow them to explore different lenses, for example, political, health, and business economics. In the second phase the students explore different domains. They get to explore where they might want to place themselves in the future.

By kind of encouraging learners to become explorers of society, it may conclude with them shaping their own role. The role may not exist yet, so it might be kind of defining a new space. Towards the end of the program, in the final phase, the students start to explore what kind of impact they want to have as a designer.

The first year is group based and once a student has identified an area of interest they could experiment and explore it further. Their career paths are not linear anymore. They have to be comfortable with being mobile and adaptable to changing situations. Here faculty and students are co-learners.

The students will be brave and have leadership skills. They will give shape to their own education and be visionaries.

Poster 6 / Scenario: DesignX

SKILLS for DESIGNX

Roles

EXPLORER

WILD CARD

Select a role of your choice

FUTURIST

Studies events and trends to develop future scenarios

VISIONARY

Thinks, explores and develops ideas for the future

INVENTOR

Develops new technology, new objects

ACTIVIST

Strives to bring about change



Skills to Teach

STORYTELLING

Create meaningful and engaging narratives, connect through communication

NEGOTIATION

Handling dynamic and shape shifting wicked problems, drawing from diverse perspectives

BRAVERY

Willing to take risks, follow the unbeaten path, learn from failure

VISUALIZATION

Giving form to ideas, visualizing complex problems by applying metaphors, framing problems

COLLABORATION

Collaborating, co-creating and facilitating partnerships



VALUES
ETHICS
RESPONSIBILITY

Poster 6 / Scenario: DesignX

The concept presented in this poster is based on the DesignX scenario presented by Pieter Jan Stappers.

SUMMARY:

In the context of the DesignX scenario, the primary roles for the designers are that of explorer, futurist, visionary, inventor and activist. The skills that they have to learn are learning by doing, storytelling, negotiation, bravery, visualization, collaboration, values, ethics and responsibility. Among other important skills are playfulness, experimentation and skills to be moving on and thinking globally as part of the system.

What makes the designers stand out is their ability of storytelling, being able to engage with different people. The other key ability is to be able to visualize what they are talking about. It is the ability to create something that is compelling and can start a conversation.

The explorer role requires thinking of new ways. Bravery is important because the more the students know; they can look at a problem in more ways. They should be able to pursue their ideas even in the face of complexity.

The activist role means to be able to have a point of view and consider different values and ethical positions on topics such as intellectual property, privacy and inequality.

Design teaching is distributed and taught across all disciplines. New areas or subjects may not be in silos anymore but spread right out.

PRS2016

FUTURE OF DESIGN EDUCATION

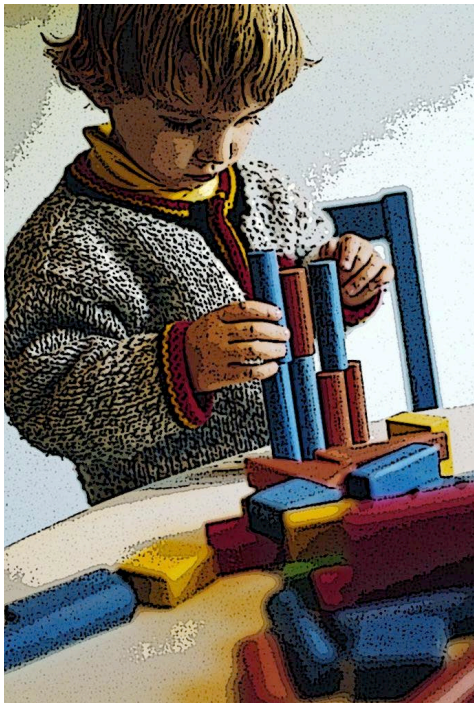
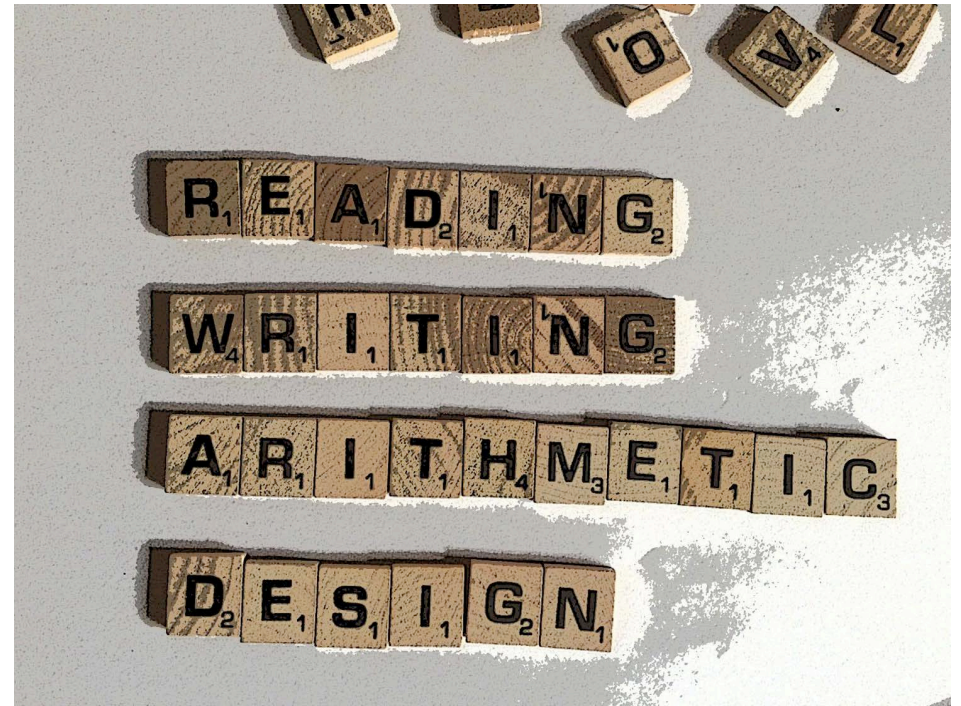
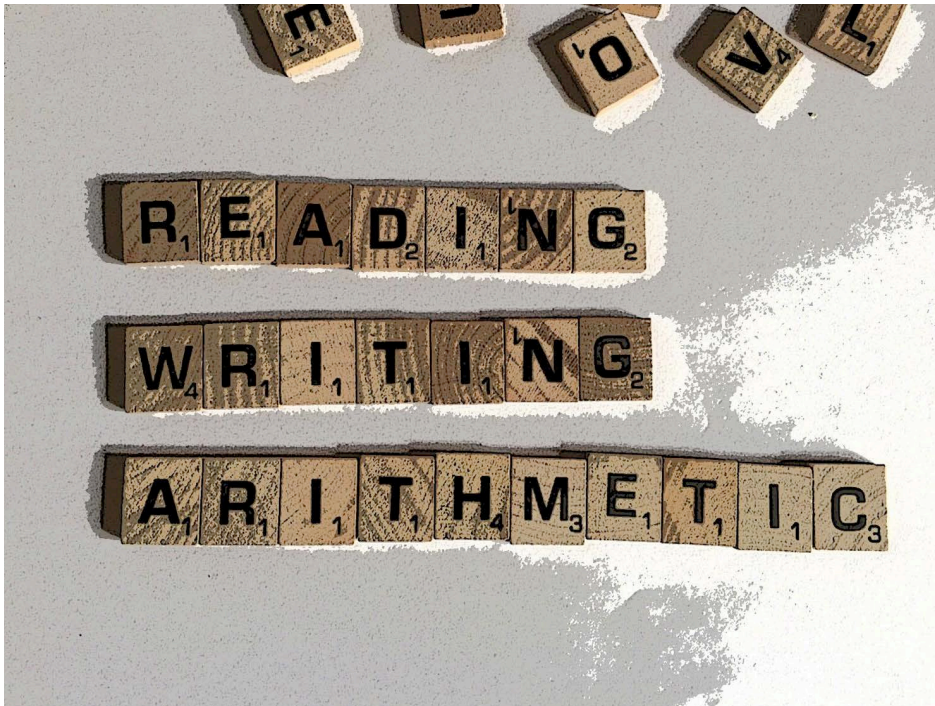
Catalyst Presentations

SCENARIO #1

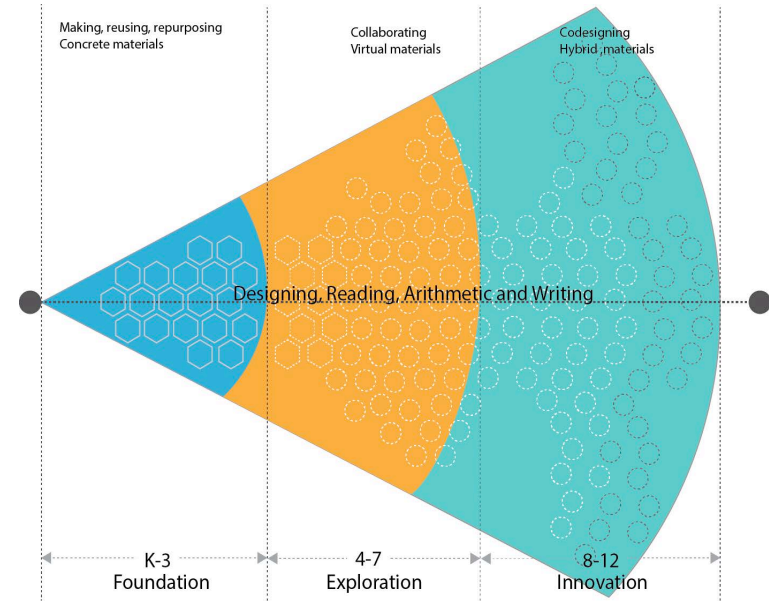
DRAW: Designing, Reading, Arithmetic and Writing

Elizabeth B.-N. Sanders

Sapna Singh



Designing forms the core of K-12 curricula.



Foundation / The Early Years

- Grades K-3 (ages 5 to 8)
- Learning takes place at school and home
- Collaborating with peers and family
- Making, reusing and repurposing
- Use of concrete physical materials
- Outdoors when possible
- Embodied learning in all the arts



Playing collaboratively with physical 2D materials



Full-scale creative place-making happens outdoors



Collaborative prototyping by repurposing full-scale 3D materials



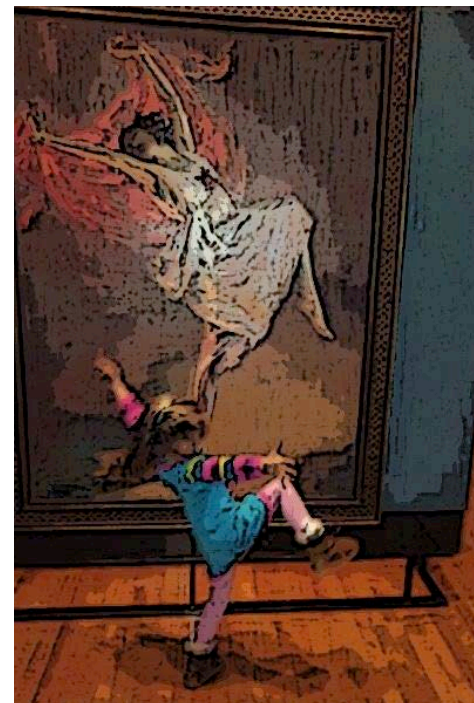
Learning through making takes place at home and at school



Learning about natural ecosystems outdoors



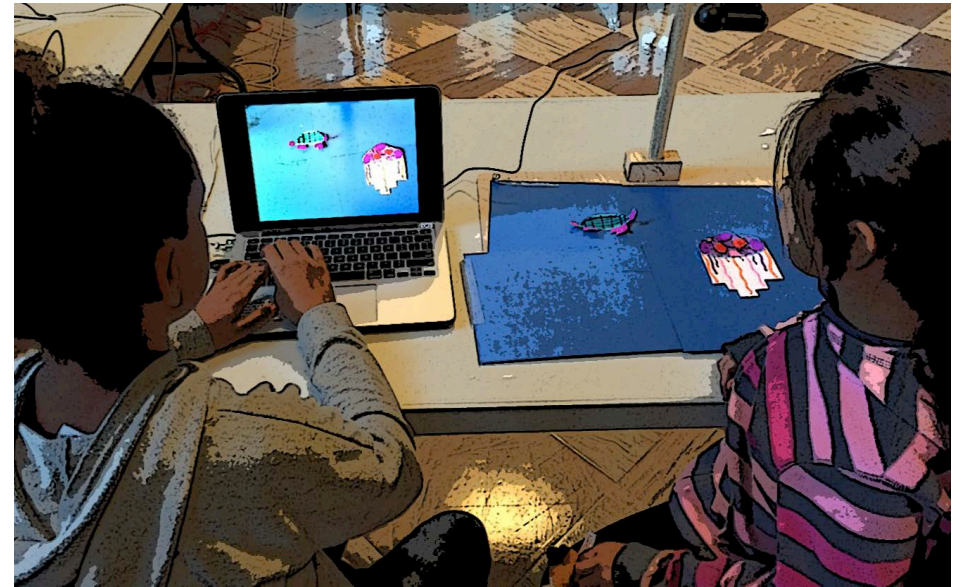
Learning from older children in local community settings



Embodied learning takes place outside of the school environment

Exploration/The Middle Years

- Grades 4 to 7 (ages 9-13)
- Learning takes place at school, home and neighborhood
- Collaborating with peers, family and local community
- Hacking is introduced
- Use of physical and virtual environments and materials
- Outdoors when possible
- Embodied learning in all the arts



Understanding relationships between the physical and virtual worlds



Learning through making that ties theory to application



Online learning at home and at school with remote collaborators



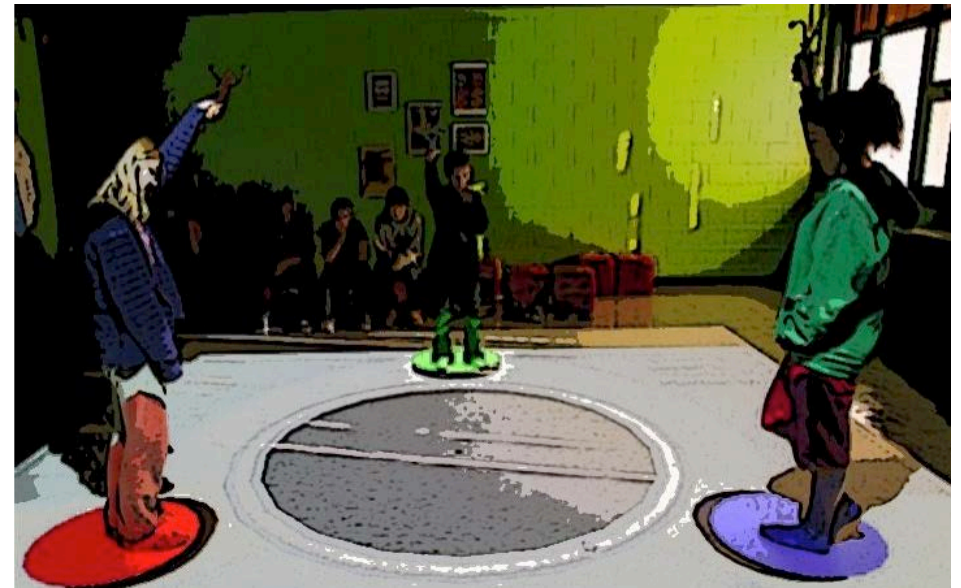
Learning happens everywhere



Collaborative making that is not gender-based



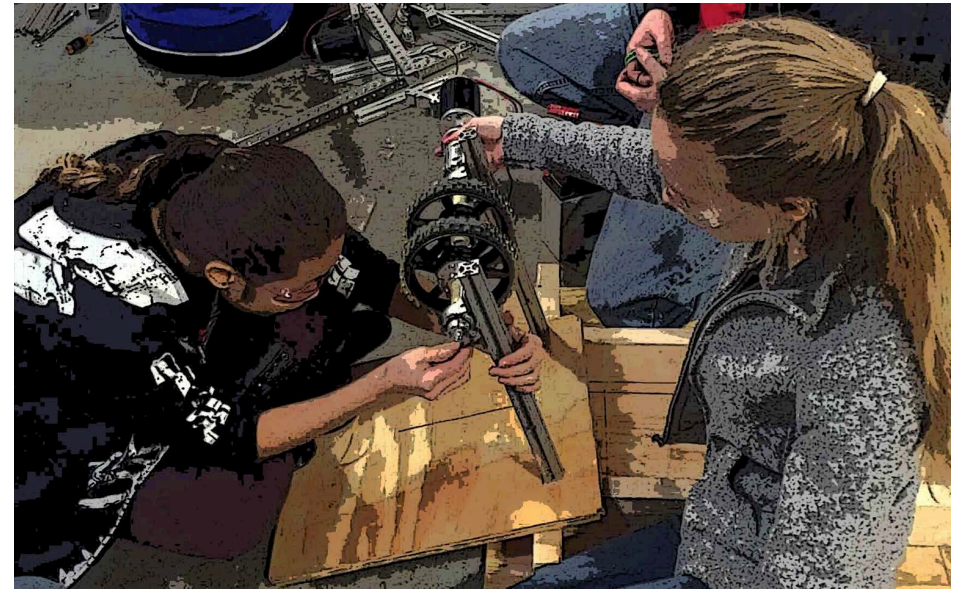
Engaging with local community members through co-designed events



Embodied learning in virtual spaces

Innovation/ The Later Years

- Grades 8 – 12 (ages 14 to 18)
- Learning takes place in hybrid (physical/virtual) spaces and places
- Co-designing with social and public organizations
- Exploring applications of hybrid tools, materials and environments
- Outdoors when possible
- Embodied learning in all the arts



Hands-on skills in reusing, repurposing, making and hacking



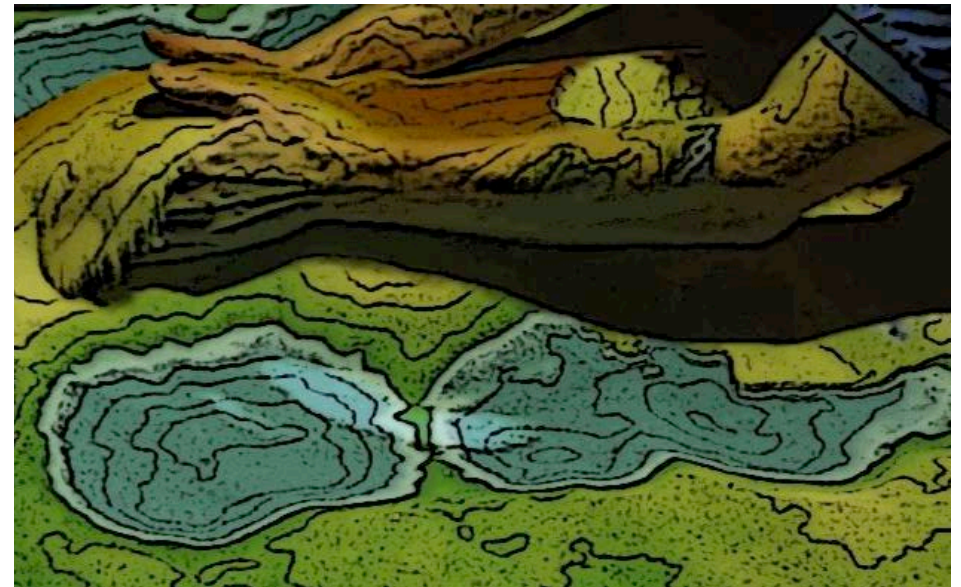
Systems thinking and design making.



Exploring virtual environments



Collective creativity enabled through online interaction with remote peers



Exploring virtual environments



Full body immersion helps to develop the whole person



Collaborative making with members of the local community



Social innovation takes place in the local community



Co-creating design spaces to engage with members of the local community



Co-creating events with the local community

Future Implications

The goal of education is to develop **smart citizens** who will be prepared to be **agents of change**.

Future Implications

The need for a **balance** between the physical and virtual worlds is understood and put into practice.

Future Implications

There is a change in assessment standards towards **multicultural, social** and **humanistic** levels of achievement.

The Big Question

When designing forms the core of K-12 curricula together with reading, writing and arithmetic, **how will higher education in Design change?**

SCENARIO #2

***Place-Based Design: Cosmopolitan Localism 1
(CL) as a Framework for Transdisciplinary Higher
Education***

Terry Irwin

Place-Based Design Cosmopolitan Localism as a framework for interdisciplinary higher education

Cosmopolitan Localism: *a lifestyle that is place-based and sustainable, but global in its awareness and exchange of information, knowledge and technology*

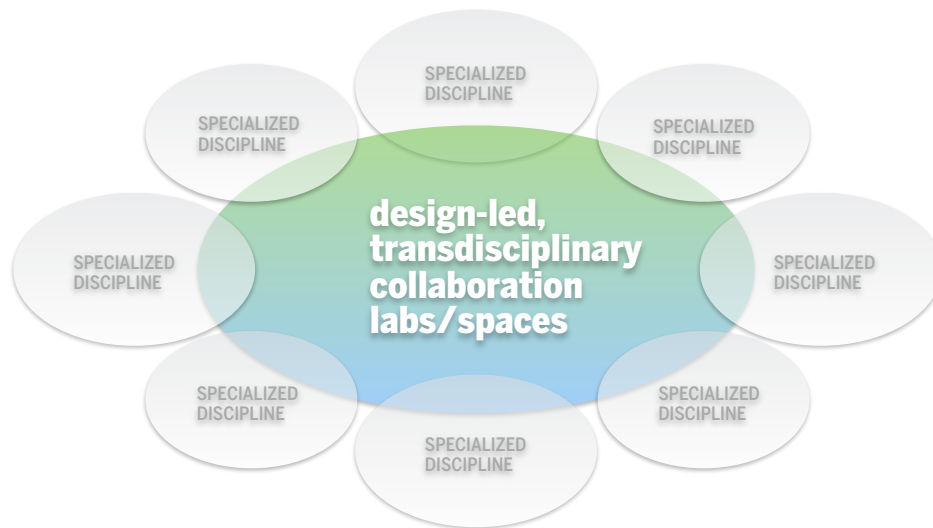
The Cosmopolitan Localist University: The Approach

By 2030, a global network of Cosmopolitan Localist Universities (CLU) has arisen in which **design is a core discipline on every campus**. These universities exist to serve local and regional populations, are linked in their global exchange of knowledge and technology, and **are entirely transdisciplinary**.



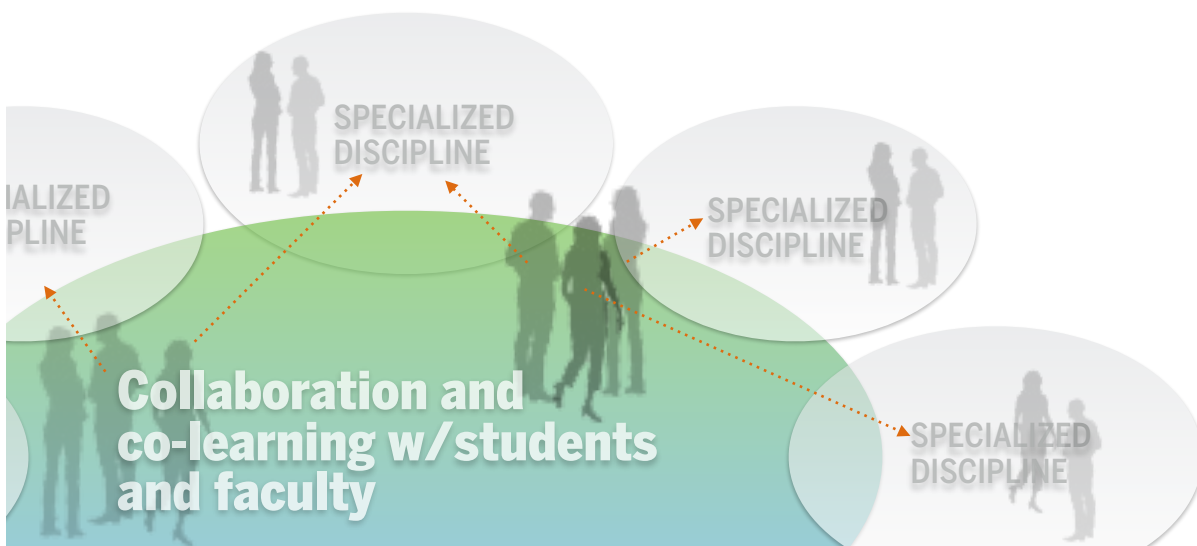
The Cosmopolitan Localist University: The Approach

In this new structure, academic disciplines (siloes) offer specialized learning and expertise that is embodied and applied in **transdisciplinary collaboration on place-based problems**. Solutions that are formulated for short-, mid- *and* long horizons of time.



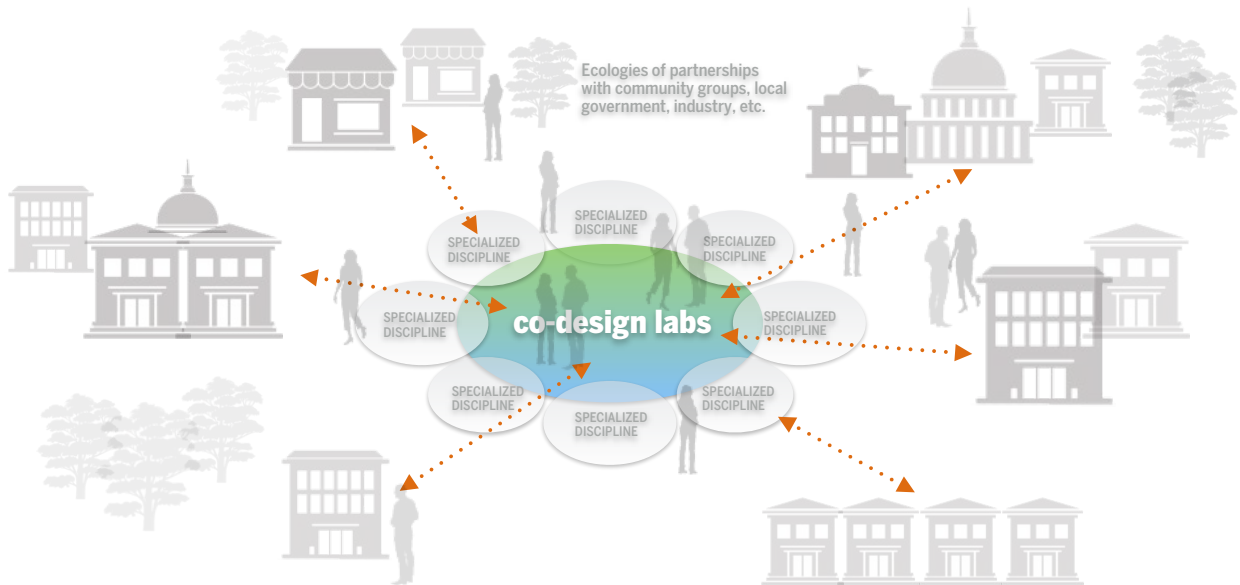
The Cosmopolitan Localist University: People

THE UNIVERSITY: Faculty and students 'toggle' between their home discipline and transdisciplinary labs and work on place-based projects and research. **Faculty and students are often in co-learning relationships**, working in areas in which deep expertise does not yet exist or has been forgotten by 21st century societies.



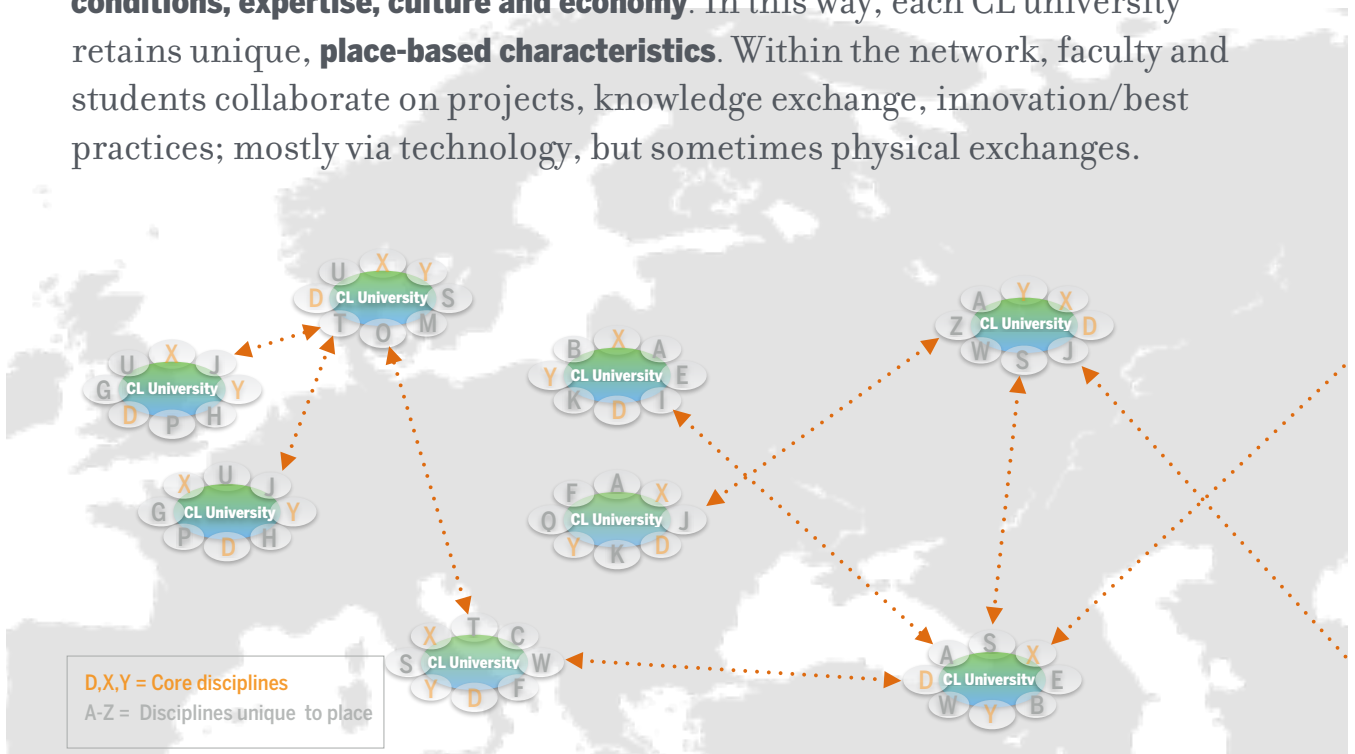
The Cosmopolitan Localist University: People

LOCAL/REGIONAL PARTNERS: CL universities **exist to serve the city and the region.** They have close ties with local government/policy makers, activists and communities as well as a wide range of industry and non-profit partners. The university hosts a co-design process with outside partners and **is seen as a vital and essential member of the community** and key to its well being.



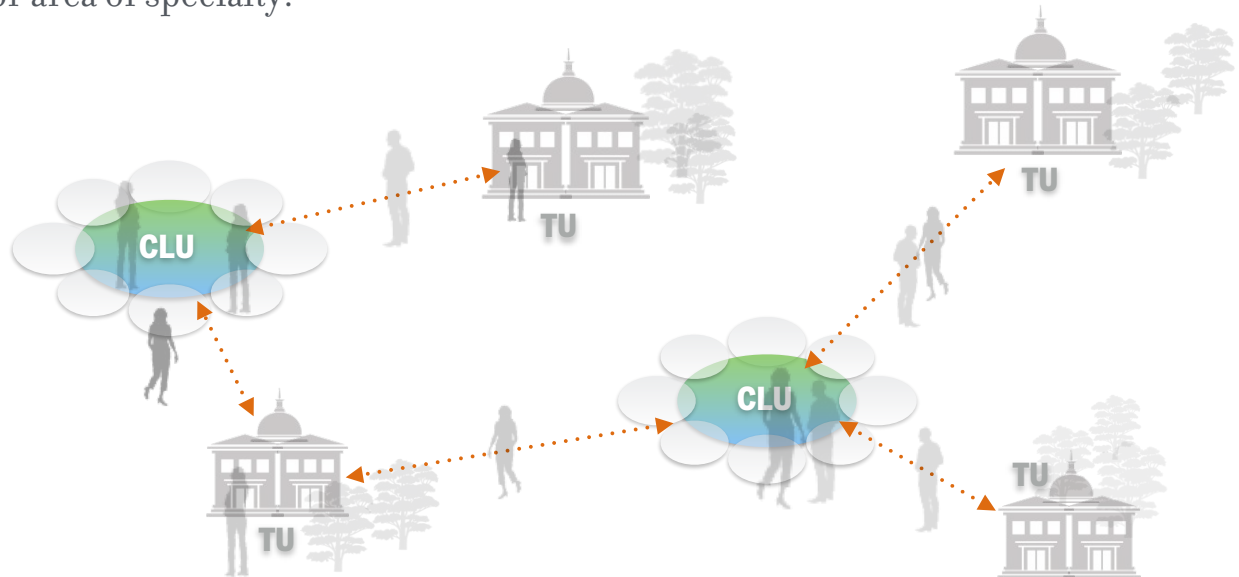
The Cosmopolitan Localist University: People

CLU NETWORK: CL universities have a common set of ‘core’ disciplines that are scaffolded by **complementary disciplines representative of local/regional conditions, expertise, culture and economy.** In this way, each CL university retains unique, **place-based characteristics.** Within the network, faculty and students collaborate on projects, knowledge exchange, innovation/best practices; mostly via technology, but sometimes physical exchanges.



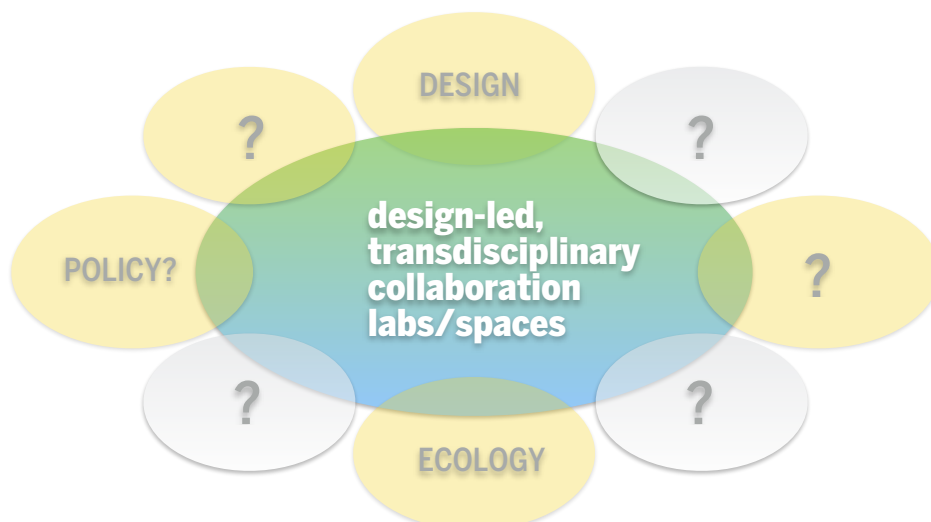
The Cosmopolitan Localist University: People

PARTNERSHIPS W/TRADITIONAL UNIVERSITIES: CL universities provide spaces in which **students, faculty and researchers from other, traditional universities (TU) visit for short or long periods of time** to participate in place-based community projects, take courses and conduct case-study research. CL students and faculty visit traditional universities to take **deeper dives into a particular discipline** or area of specialty.



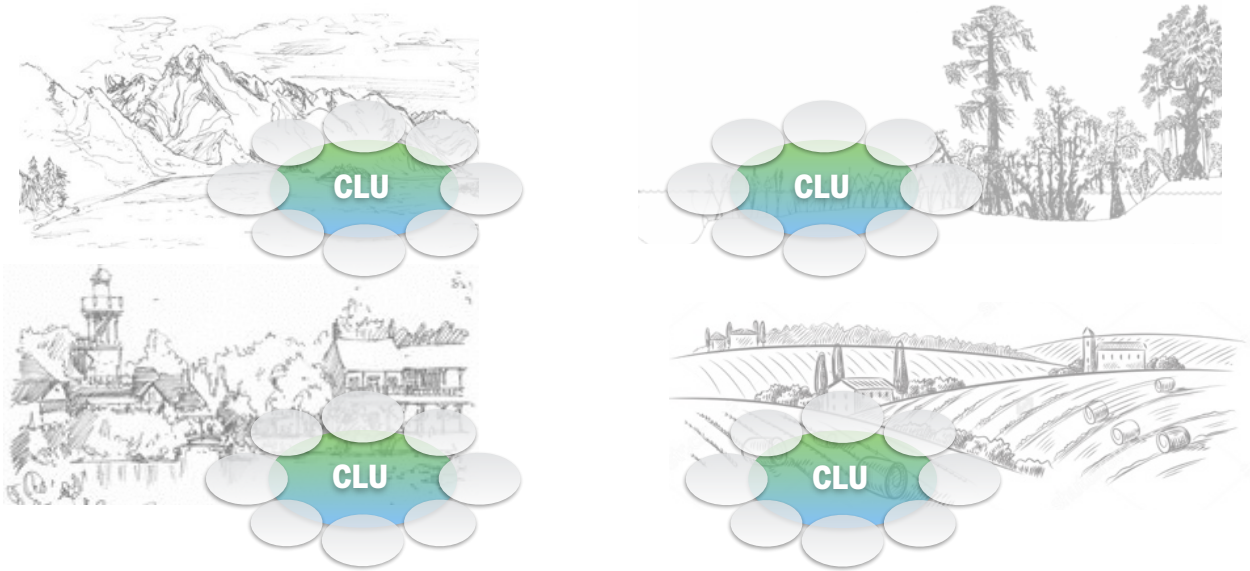
The Cosmopolitan Localist University: The Curriculum

All students take courses in **2-4 required 'gateway' disciplines** of which design is one. These courses provide a practical and theoretical foundation for place-based/regional learning and problem solving that **emphasizes global awareness and responsibility**. Students **customize degree pathways** and spend about 75% of their time in **transdisciplinary collaboration** that includes external, community and local government constituencies.



The Cosmopolitan Localist University: Infrastructure

WHERE LEARNING TAKES PLACE: CL universities **are situated in areas where indigenous flora/fauna remain** or have been restored so that the natural place-based constraints and local resources can inform solutions. Each CL university develops **skills and knowledge about their particular eco-system** and water-shed and the array of disciplines reflects this. *This is place-based design.*



The Cosmopolitan Localist University: Infrastructure

WHERE LEARNING TAKES PLACE: CL universities have **classrooms that blur the line between indoors and outdoors** and use the indigenous surroundings (often on large, multi-acre campuses) to conduct ecological research, perfect practical skills in areas such as **reed bed water purification, permaculture and urban farming.** Community partners are part of all of these projects.



The Cosmopolitan Localist University: Infrastructure

WHERE LEARNING TAKES PLACE: CL classrooms resemble **design thinking/making/studio spaces and workshops**. They are open to the outdoors whenever possible and both **projects and research often takes place outside**, on campus, in the local watershed and in the community.



Implications for the Future

Design is seen as a highly integrative 21st century skill that is essential in solving complex problems (on behalf of society and the environment).

Design tools and approaches are available to all disciplines/areas of specialty as a way of prototyping solutions, catalyzing inter- and transdisciplinary collaboration and visualizing complex concepts and ideas within diverse teams.

CL Universities are seen as a viable alternative to traditional Universities, however there is a lively exchange between the two networks (CL University network and the traditional University network).

Because **CL Universities have become valuable resources for local and regional development** and are fundamental to the health of socio-technical systems, students are more apt to find jobs within networks they have been embedded within during their college years.

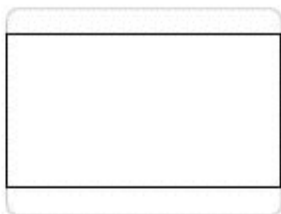
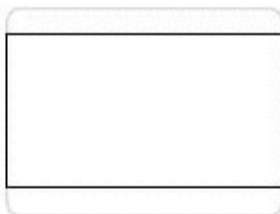
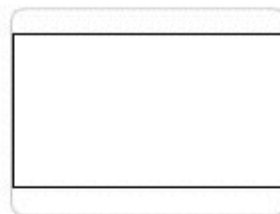
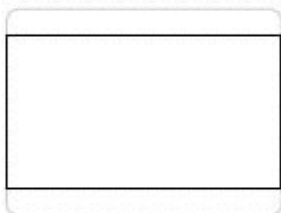
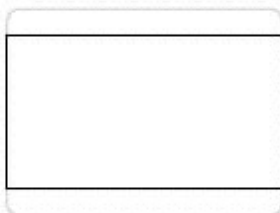
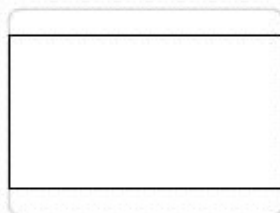
Implications for the Future

In this scenario, **the University has been transformed into a catalyst for positive social and environmental change** and design and designers are playing a key role in this transformation.

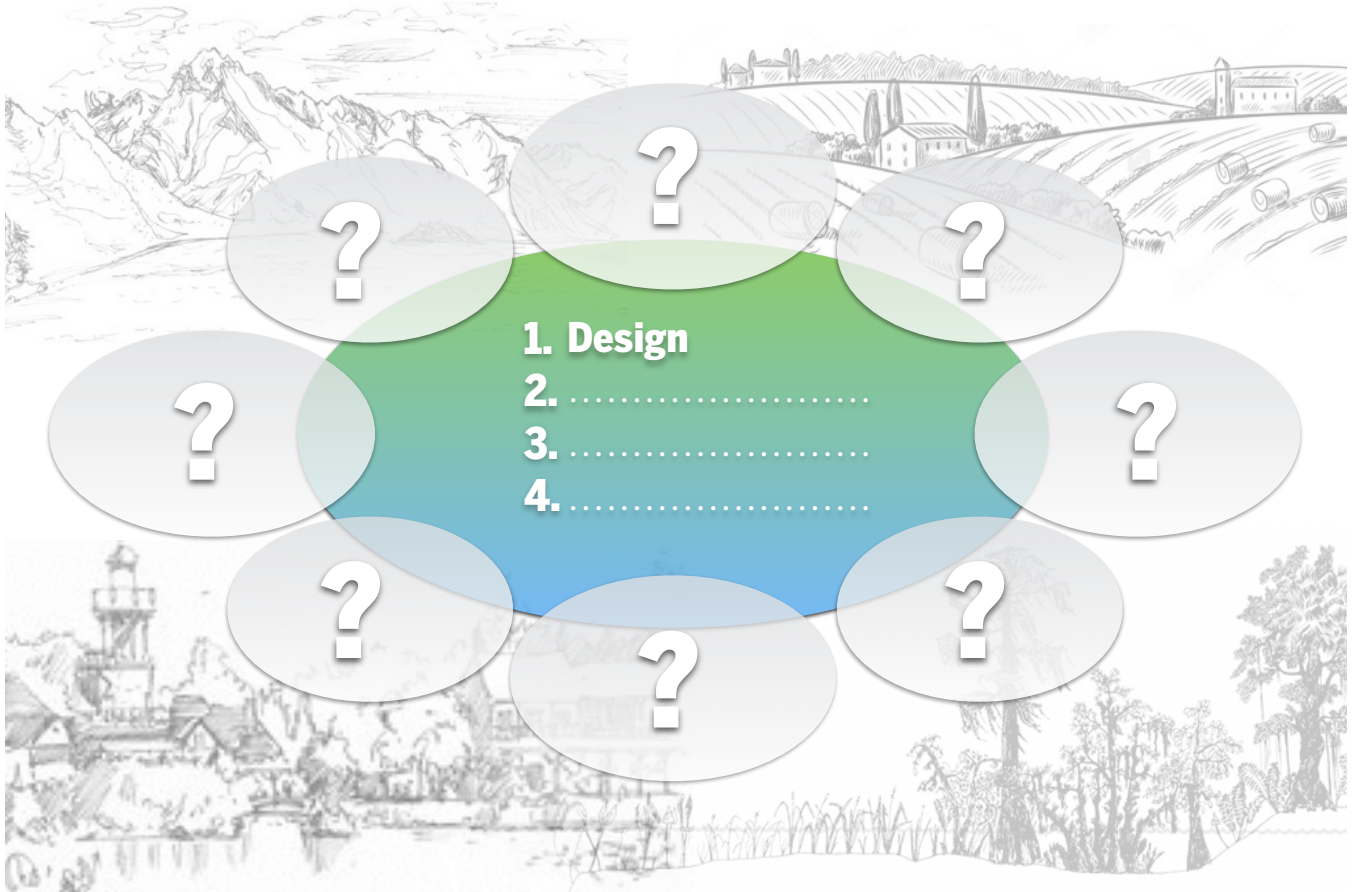
The Team Focus: Primary Question

What does a day-in-the-life of a CLU student look like?

Title:	Scene	Seq.
	Dr.	DP

The Team Focus: Sub Question: What are the Core Disciplines?



The Team Focus: Sub Question: What does it mean to be local?
What does it mean to be cosmopolitan?



SCENARIO #3

DesignX: Designing for Complex Sociotechnical Systems

Pieter Jan Stappers

types of design

system design



complex systems
organisations & change

service design



interaction over time
people offering service

experience design



emotion
personal meaning
social relations

interaction design



skills
usability

interface design

My Evaluation				Professional Development				
Goal Setting	Start	End	Owner	Course Name	Start	End	Location	Status
Collect Student Details	Jun 24	Jun 28	Principal	Collect Student Details	Jun 24	Jun 28	At School	●
Students Report	Jun 28	July 05	Principal	Students Report	Jun 28	July 05	At School	●
Course for Improvement	July 12	July 18	Principal	Course for Improvement	July 12	July 18	At School	●

cognition
perception

product design



manufacturing
aesthetics

1970 - 80 - 90 - 00 - 10 - 2020



teaching

Ambulance drone (2014)



SCENARIO #4

Distant and Jet So Close: Ubiquitous Distance
Design Learning

Nicole Lotz

Erik Bohemia

2031: Future of **Distance** Design Education

Distant and jet so close: Ubiquitous distance design learning

Nicole Lotz & Erik Bohemia

Key approach

- Learners feel isolated
- Learners are difficult to retain

So ...

- Make learning relevant and close to the learner's interests
- Develop a feeling of belonging and responsibility
- In the future, distance design education will be orchestrated virtually but will be anchored in physical spaces.



VLE: Waze like app showing stakeholders (learners, teachers, users, builders, producers) and objects (designs, inspirations, services, projects, portfolios, collaborations) on a map and allowing access the VLE library. (source: <http://revistaautoesporte.globo.com/>)



Conversation with AI: Instead of asking: "Driving to work?" the question could be: "Continue working on project 'Better living on Local street'?" "May I suggest looking at ... what a fellow learner has done recently nearby or using the maker space resources in Nearby street or reading text on sustainable community design from the library)" (source: <http://blog.rumble.me>)

Implications

- Learning part of everyday interactions
- Collaboration with different communities
- Blurring boundary between learning and commercial design
- 'Pay as you go' or 'in exchange of' models are introduced for learning services
- Multiplicity of stakeholders assess learning

How do we accredit ubiquitous, lifelong distance learning in the future?

- Is traditional accreditation of learning still needed if the educational institutions are calling for lifelong, ubiquitous learning?
- Who, except of traditional educational institutions, will accredit learning and with what goal?
- Which elements of learning will be assessed and accredited and how?

DRS2016

FUTURE OF DESIGN EDUCATION

Toolkit Cards

People

DRS2016

People

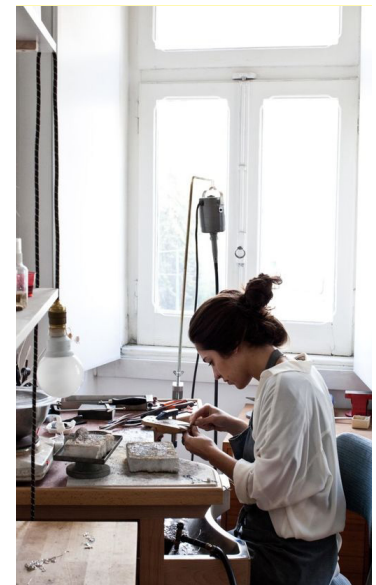
DRS2016

People

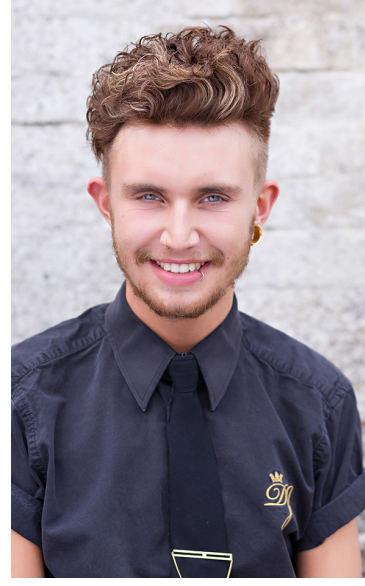
DRS2016

People

DRS2016







Places

PRS2016

Places

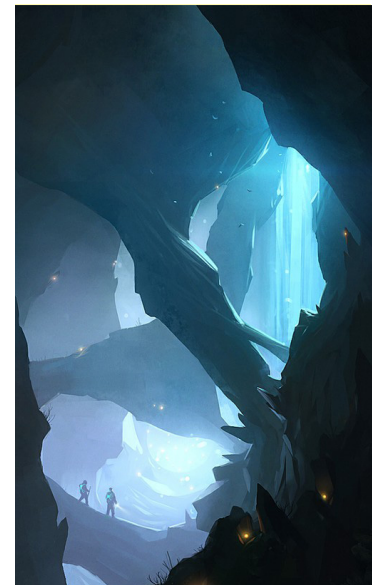
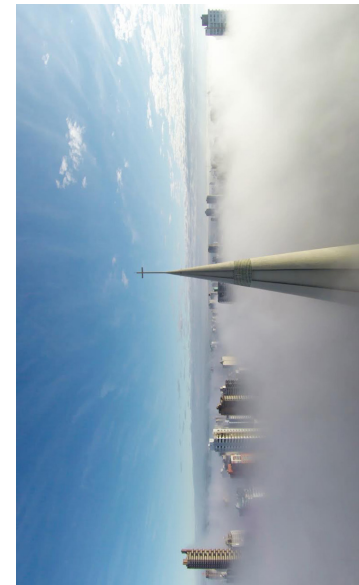
PRS2016

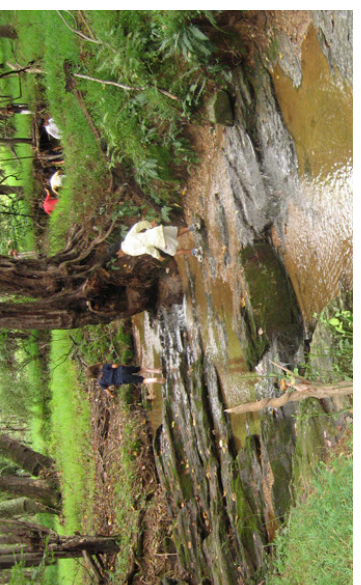
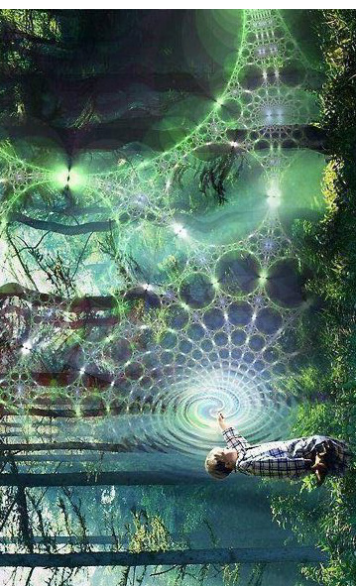
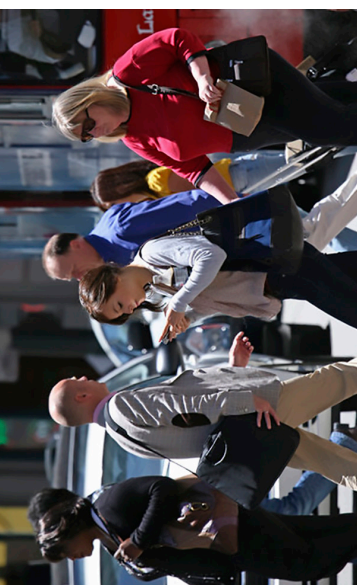
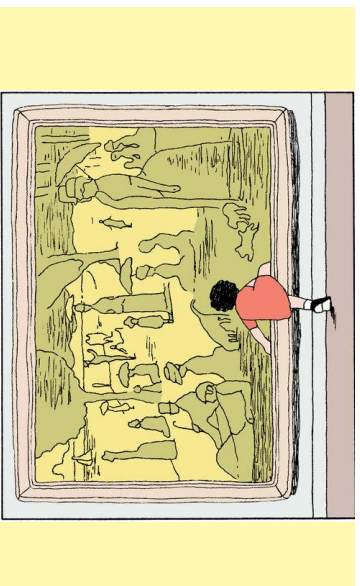
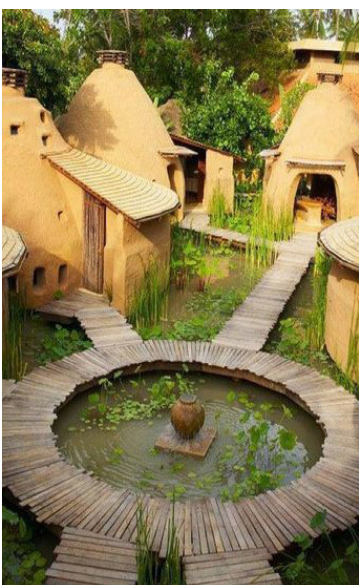
Places

PRS2016

Places

PRS2016







Skills

DRS2016

Skills

DRS2016

Skills

DRS2016

Skills

DRS2016

OBSERVATION

*Noticing the things, users, their needs, contexts
and systems*

COLLABORATION

*Collaborating, co-creating and facilitating
partnerships*

NAVIGATE AMBIGUITY

*Exploring the unknown, helping others make
sense of vague information*

REFLECTION

*Iterating, introspecting, giving and receiving
critique, sharing constructive feedback*

NEGOTIATION

Handling dynamic and shape shifting wicked problems, drawing from diverse perspectives

GIVING SHAPE

Translating insights and ideas into concepts, prototypes, blueprints and solutions

STORYTELLING

Create meaningful and engaging narratives, connect through communication

MAKING SENSE

Connecting the dots, simplifying complex information

VISUALIZATION

Giving form to ideas, visualizing complex problems by applying metaphors, framing problems

COMMUNICATION

Creative and clear communication, communicating with teams and stakeholders

AGILITY

Accelerated learning, rapid prototyping, experimentation

BRAVERY

Willing to take risks, follow the unbeaten path, learn from failure

ACTIVE LISTENING

*Empathy, being engaged, digging deeper,
immersing into culture and context*

LEADERSHIP

*Creating vision, setting direction, engaging
team members, planning and communicating,
to create a new path*

WILD CARD

Select a skill of your choice

DISCIPLINE

*Following design process, planning and
organizing, building scaffolding and structure*

Roles

PRS 2016

Roles

PRS 2016

Roles

PRS 2016

Roles

PRS 2016

EDUCATOR

Imparts knowledge, facilitates learning

LEARNER

*Curious; explores knowledge, develops skills,
adapts*

COACH

*Specialized trainer; directs and facilitates
learning and skills development*

LIBRARIAN

Manages and organizes information

PARENT

Mother, Father, caregiver of the family

CAREGIVER

Nurtures, protects and provides sense of security

RESEARCHER

Investigates, studies and discovers, gathers data, develops insights

CREATOR

Creates something from nothing

LEADER

Plans and leads community, organization or state to development

VISIONARY

Thinks, explores and develops ideas for the future

ACTIVIST

Strives to bring about change

INVENTOR

Develops new technology, new objects

ARCHITECT

Develops the masterplan, directs planning and develops blueprint for implementation

FUTURIST

Studies events and trends to develop future scenarios

WILD CARD

Select a role of your choice

MISSIONARY

Promotes a specific belief and/or idea

Statements

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Statements

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Design can lead change

Design is transdisciplinary

Design means making and building

*Design is the key to complex problem
solving*

Design is a way of thinking, it is a process

Design is fundamental to learning at all levels of education

Design thinking is systems thinking

Effective and successful design requires collaboration

The world requires creative leadership

Common physical space is required for collaborative design

Prototyping is the key to effective design process

Faculty and students of design are co-learners

Design can be taught

*Design education needs to move out of
the studio*

Everyone can design

*Design surpasses disciplines and
domains*

*Design research is much more effective
than scientific research*

***Future of
Design
Education***

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