



21st International Conference on Engineering and Product Design Education 2019

13th September 2019, Dep. Of Design, Manufacture and Engineering Management
University of Strathclyde, Scotland

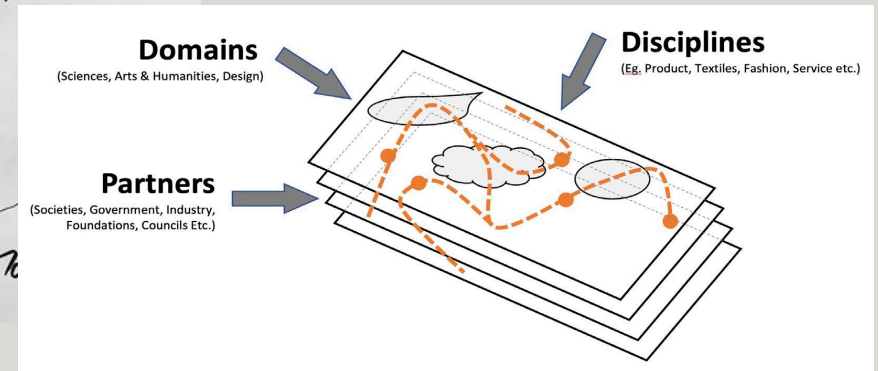
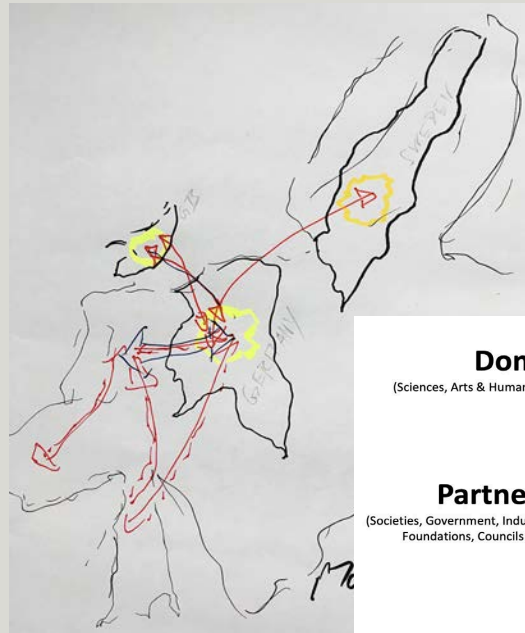
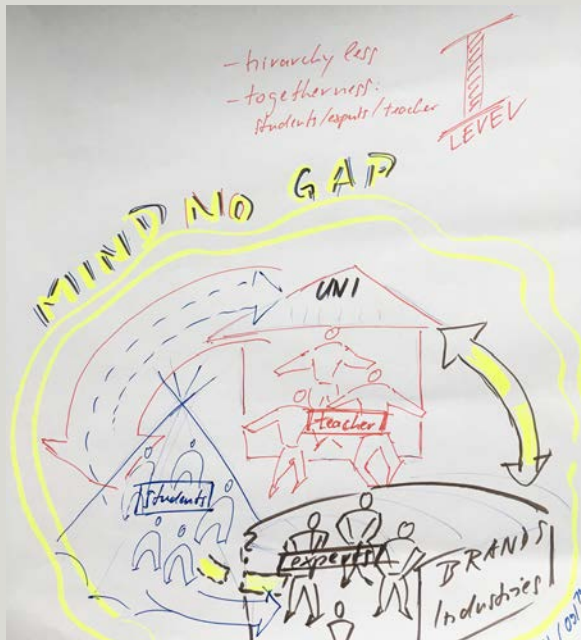
EUROPEAN Designers DRIVING RANGE
Innovative Landscapes for a tangible, non-hierarchical learning
space within a material and immaterial togetherness

together: Prof. Dr. Marina-Elena Wachs + Prof. Ashley Hall PhD

EUROPEAN Designers DRIVING RANGE

THESIS:

Europeans Designer Driving Range' explores a concept of knowledge sharing in non-hierarchical, cross-cultural learning landscapes to reflect on needs for tomorrows' creative playground.



EUROPEAN DRIVING RANGE

Innovative Landscapes for a tangible, non-hierarchical learning space within a material and immaterial togetherness

OVERVIEW

- _ Thesis about Designer Driving Range
- _ Industrial design landscapes in relation to ...
- _ ... Design heritage – Germany and Great Britain
- _ ... Education examples – linear and decentralized
- _ Future: cross-cultural – non- hierarchical,...
- _ ... Pan European TOGETHER – interlinked design playground

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GERMAN context

- Germany Design Yesterday are...
- Object based - Designers based - Industrial based - Process based
- Since 1980s design management and theoretical reflection came into greater interest in design theory...
- behind...man made...maker spaces...thinkers of linear process...
- Remembered by brand names / designer names: to mention a few: Adidas / Porsche / Schiesser / Braun /... German Heritage in Industrial Design Konstantin Grcic, Stefan Dietz, Dieter Rams, Jil Sander by Peter Schmidt
- Werkkunstschulen, Bauhaus and others build the bridge to industry and serial production vice versa university education... In a linear process...

From a linear process ...

Idea – prototype – evaluation – construction / process details – production – transport – selling ...
the product / concept – evaluation again....

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EUROPEAN context

- Europe / global tomorrow ...
- Challenges... transdisciplinary interlinked Design schools
- Design councils engagement in „education of the folk“
- Design institutions / foundations to discuss and engage together
- Entrepreneurial engagement...
- Together in non hierarchial structures
- ... In a DECENTRALIZED process...

Nowadays / in the future:

.....non linear processes...to solve design problems...not only object based...circular and decentralised...
...cross-cultural non-hierarchical... beyond culture...



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UK context

- Industrial revolution introduced art colleges and schools of design in the UK from the 1830's
- Focus was firmly on design 'serving' industrial needs
- Design was very much at the end of the process humanising machines
- Robin Darwin had proposed bridging domains of design and engineering as early as 1945
- 1980 the first industrial design engineering postgraduate course is set up



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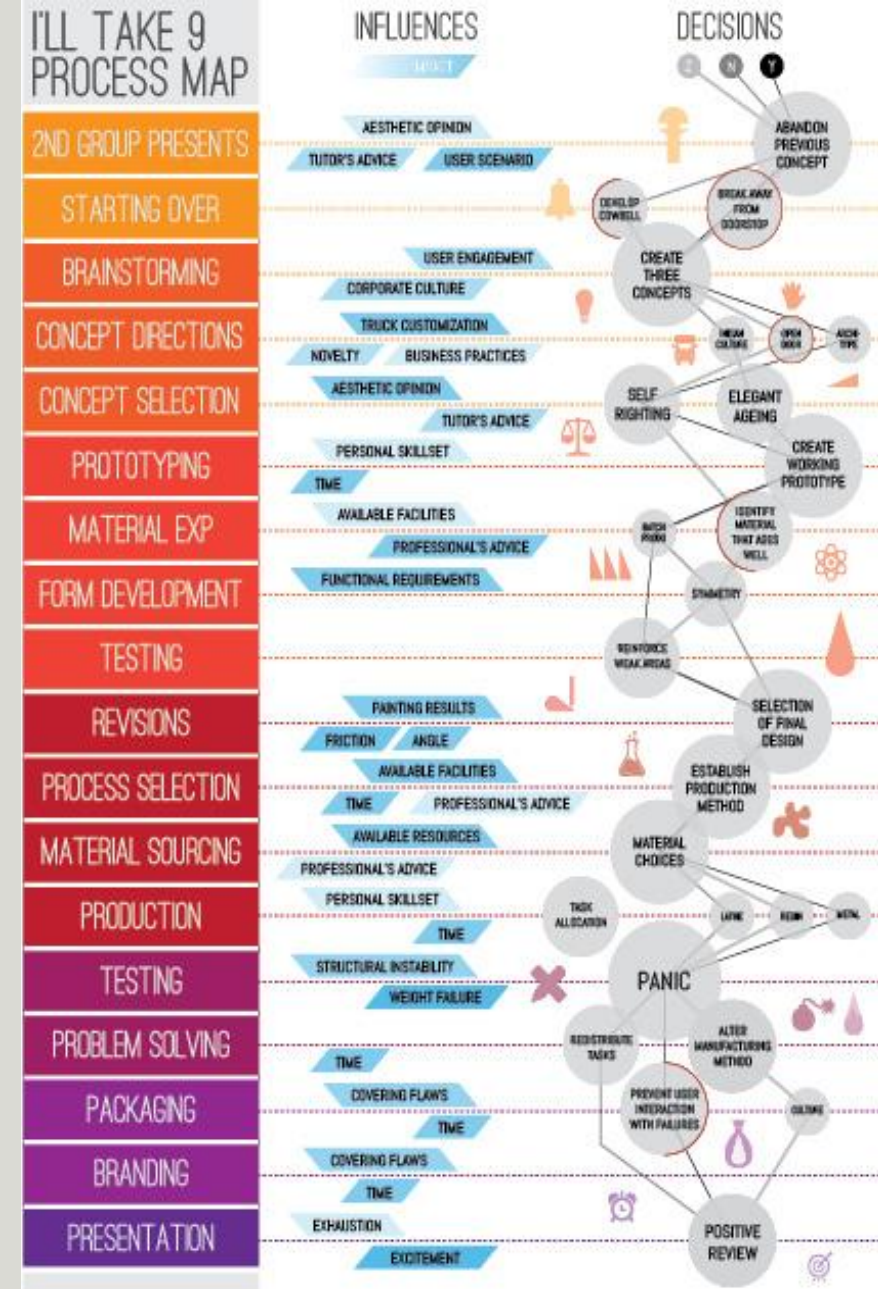
The challenges

- Shift of level from delivering education from undergraduate to postgraduate to a focus on including wider disciplinary perspectives
- Question the value of traditional design skills and their ongoing relevance verses cross disciplinary design led innovation skills.
- When students graduate from engineering design without an ability to draw, yet express themselves creatively through code
- Technologies like AI alongside biotechnology and nanotechnology become more intangible as a result of their material scale challenging long held traditional tangible models
- Cultural behaviour in design and decolonising 'west knows best' into compatibility with other cultures and philosophies
- Creative methods potentially limiting global design variety



Case Study 1: Miscommunication

- Miscommunications in early stages of interdisciplinary cross-cultural design project can lead to impactful innovation concepts
- Used a process of c-sketching and analysed group emotional journeys that were compared to creative outputs
- These were then cross referenced across the entire sample (40+) discovering that ambiguous misunderstanding leads to differences, which inspired unintended innovations



Projects UK driven – non hierarchical interdisciplinary cross-cultural

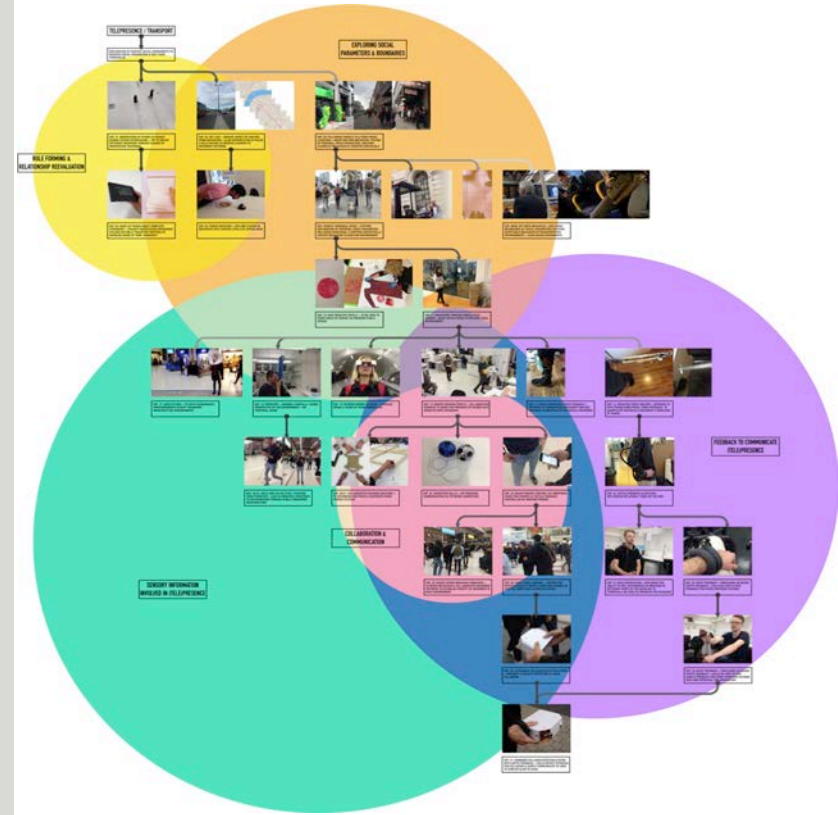
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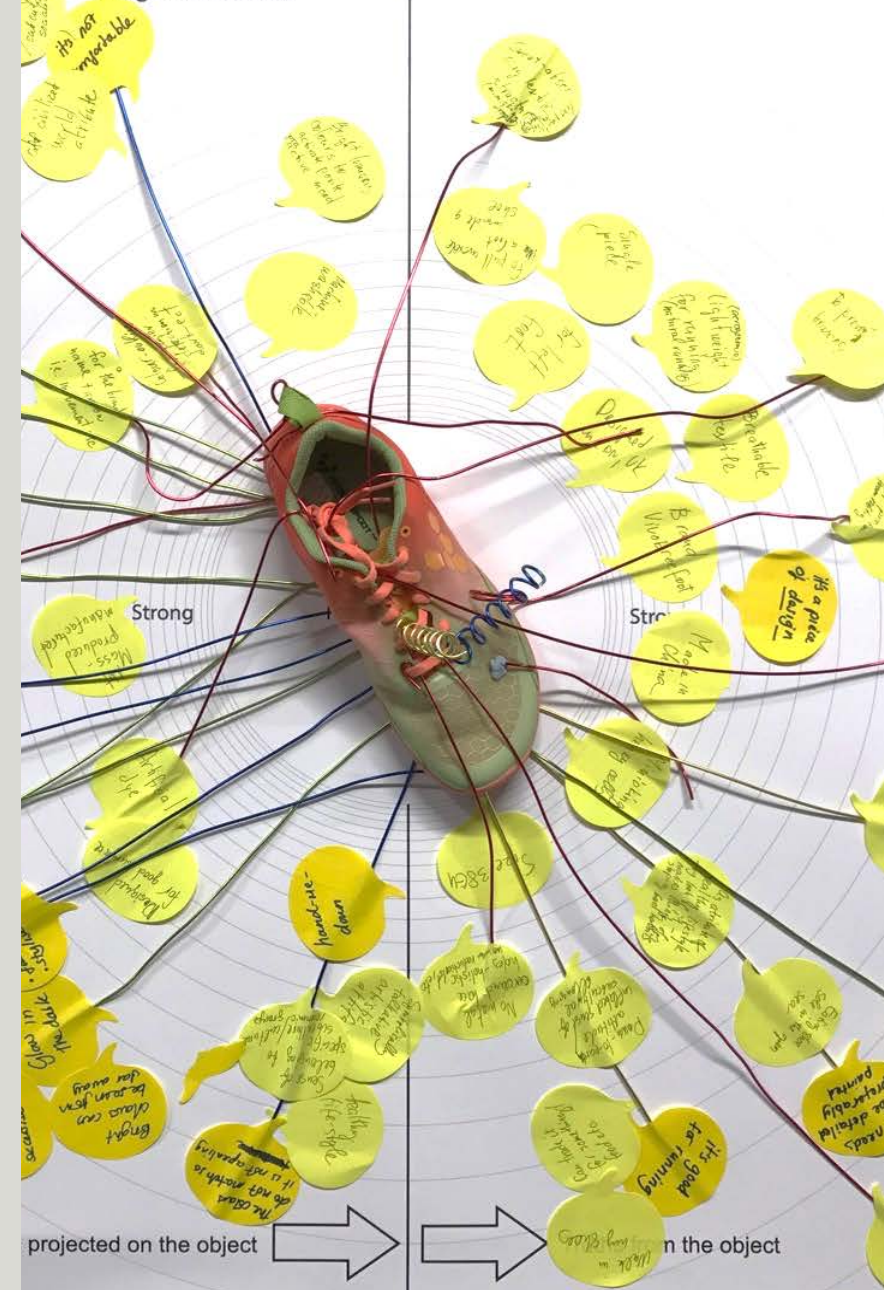
Case Study 2: Failure

- Failures avoided by design students especially those from technical backgrounds
- Often this is for good reason for example in reducing risks in critical structures.
- In design led innovation failure is a key ingredient for success
- The Elastic Octopus module was developed to challenge students to fail
- They would succeed in direct relation to their ability to fail
- Key insight came from student who claimed project improved her creative resilience to failures



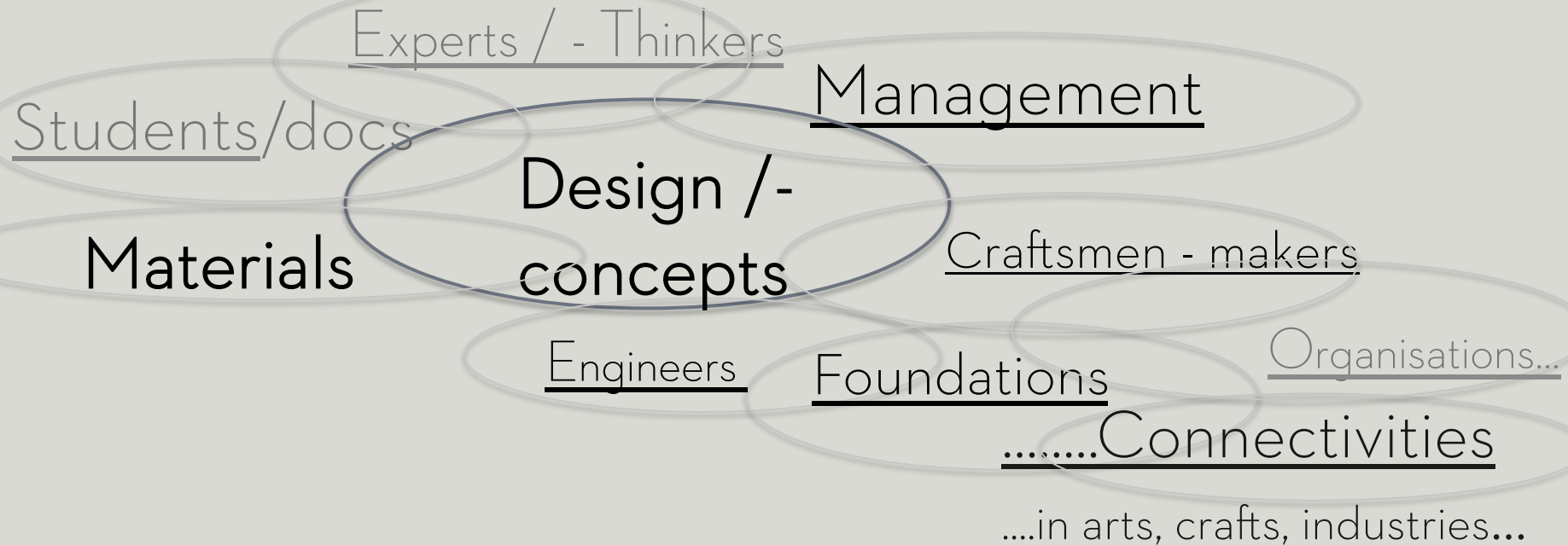
Case Study 3: Aesthetics

- Experiment noting lack of tangible aesthetic skills for discussing design innovations.
- Ubiquity of screen based creative tools and 'finished' quality of digital content impacts on tangible form creation
- Developed tangible aesthetics workshops to improve developing analogue analysis leading to identifying affordances and signifiers
- Found that differentiating between objective and subjective features was more difficult for students
- Began appreciating value of developing competence in form language



partner...

DESIGN DRIVER IN INDUSTRY + EDUCATION





WorkshopWorkshop | >Light and textile<, Charlotte Sjödel, William Franke, Oliver Heß

in Germany – non hierarchical interdisciplinary cross cultural
 Project TEXTILE-POP MAY 2019© Prof. Dr. Marina-Elena Wachs

Movie: ...

Movie Workshop Workshop I >Light and textile<, Regina Weidental, Charlotte Sjödel, William Franke, Oliver Heß

in Germany – non hierarchical interdisciplinary cross cultural

Project TEXTILE-POP MAY 2019© Prof. Dr. Marina-Elena Wachs

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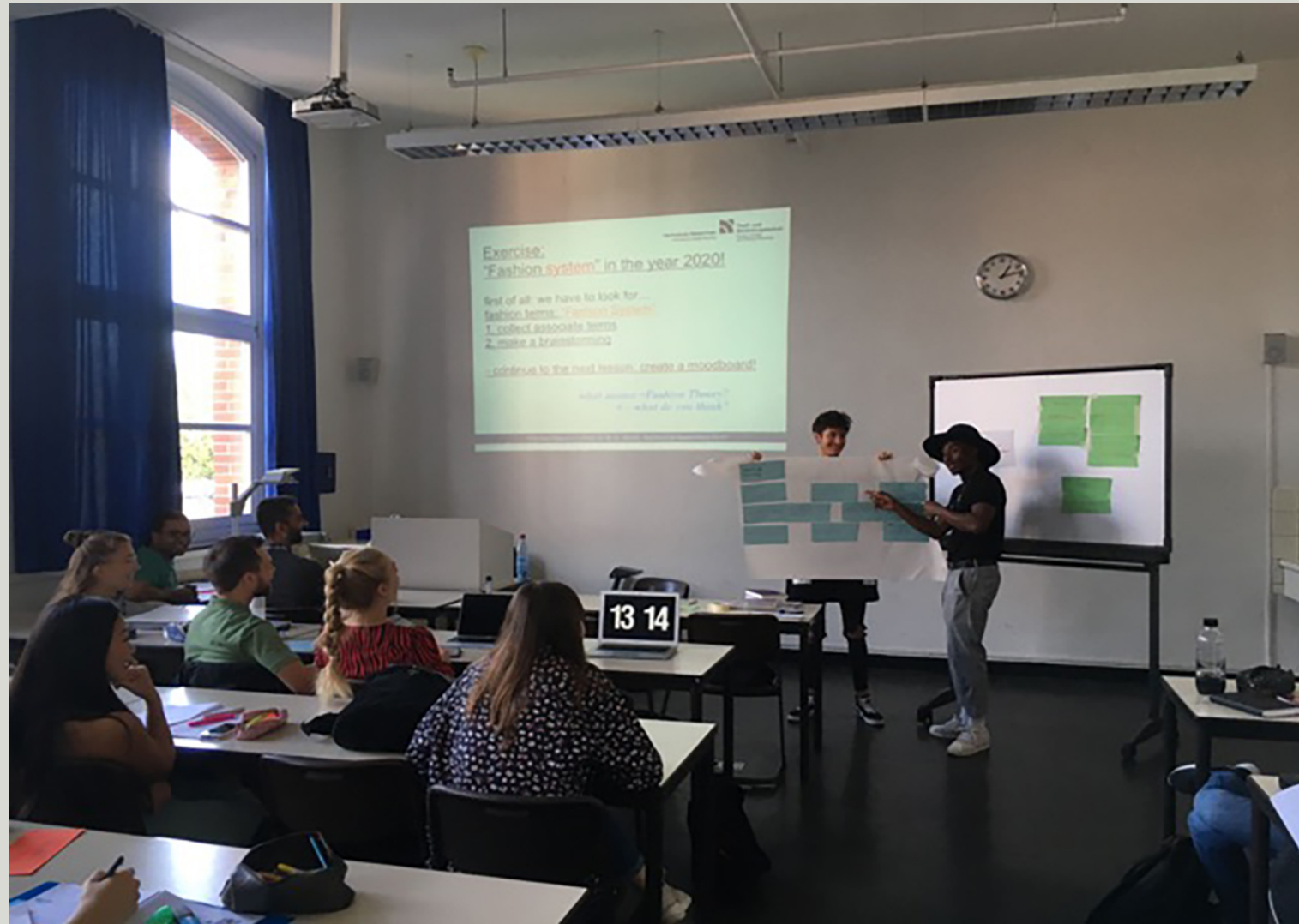


**Textil- und
Bekleidungstechnik**
Faculty of Textile
and Clothing Technology



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a linear process...
Scene from yesterday...



M. Wachs / A. Hall at EPDE Conference 2019, University of Strathclyde, UK



Interlinked design learning landscape and
a decentralizes process...
Scene from tomorrow...





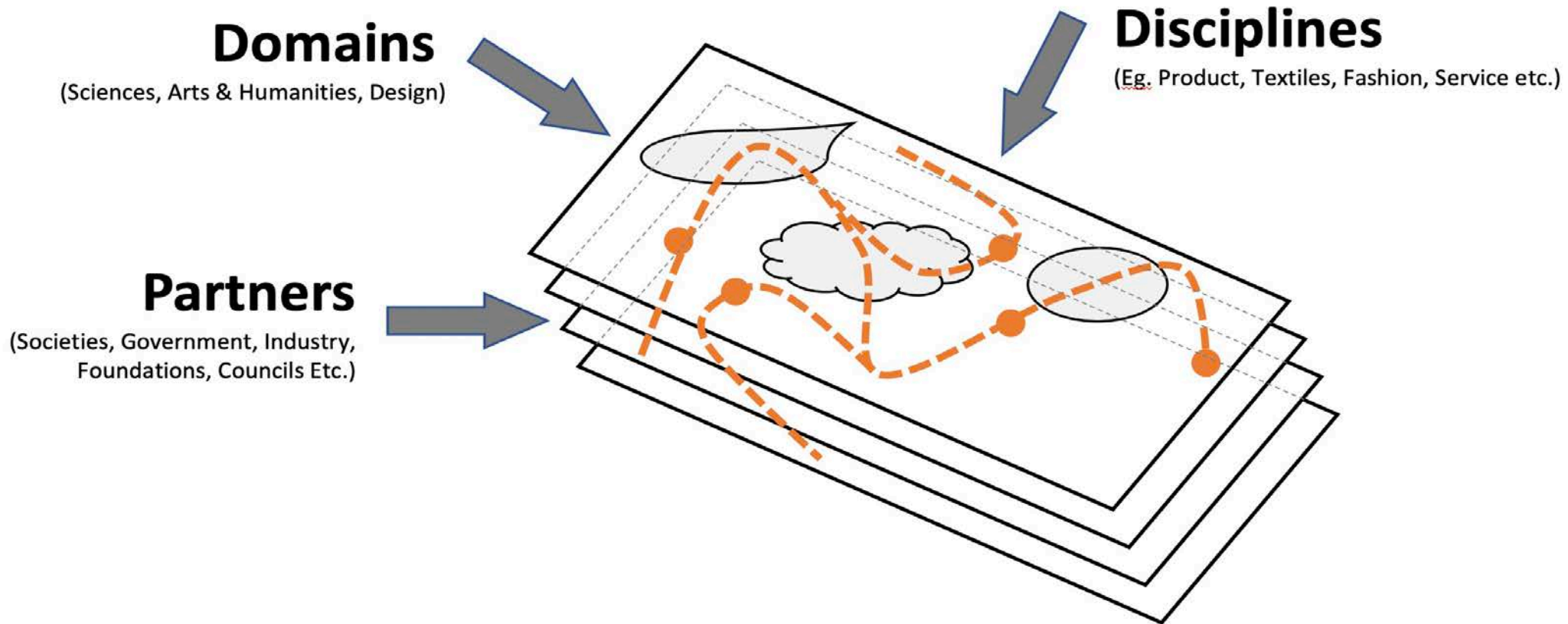
Adecentralized process...

Scene for tomorrow...

- in(t)erlinked
- together
- digital cross-cultural
- non hierarchical...

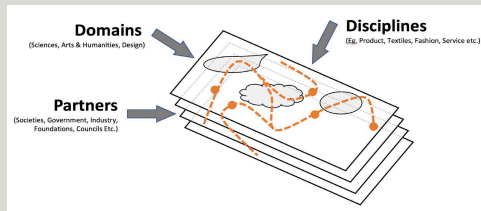
DRIVING RANGER ... Design Driver

Marina-Elena Wachs and Ashley Hall



M. Wachs / A. Hall at EPDE Conference 2019, University of Strathclyde, UK.

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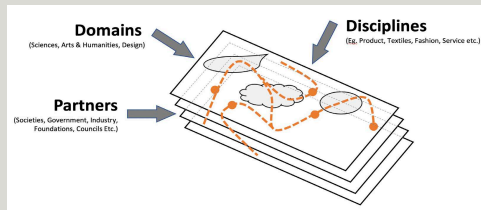


Needs in industrial design engineering areas after 4th Ind. Revolution:

DISCIPLINES – DOMAINS – PARTNERS means...

- ... non hierarchical structures in design engineering + design education
- ... interactive projects and integration of digital AND analogue tools
- ... interdisciplinary and cross-cultural solving tasks together
- ... geopolitical changes / working conditions evoke interacting design education
- ... everybody could participate on sustainable living conditions
- ... pan European design education driven by Designers (*drivers*) Range!

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Europeans Designer Driving Range' explores a concept of knowledge sharing in non-hierarchical, cross-cultural learning landscapes to reflect on needs for tomorrow's creative playground.

After EPDE Conference 2019: the need for visionary learning landscapes:

- participate open minded at „workshop projects“ with all parties: students – teacher – experts +... cross cultural
- create „fearless spaces“ to work in – together – to have space to failure
- create interlinked analogue and digital connected learning landscapes
- ...landscapes for „observers“ (re/cognition) and other skills to trigger
- to go on in „self evaluation methods“ for students to create the own trip...



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More:

<https://www.hs-niederrhein.de/faculties/textile-and-clothing-technology/research/-c86582>

Prof. Dr. Marina-Elena Wachs + Prof. Ashley Hall PhD

Thank you so much! - designing together!

In special to Charlotte Sjödel and William Franke