

Lodz University of Technology







DESIGN THINKING FOR PBL

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A WARM WELCOME TO YOU FUTURE DTers!

- COURSE STRUCTURE
 - 25 hours (2-3 hours/course)
 - Always in room 110
 - I will talk a little You will DO a LOT!
 - You work on your PBL project on the fly (but sometimes test tools before on practical examples)!
 - Mentors should also attend the workshops

- EVALUATION
 - DT mark (individual/group activity, progress evaluation) – ME
 - Mentor
 - Article-type report
 - Presentation (Poster session)
 - And OBJECTIVE peer assessment!

Mutual contract & rules

- We start at 10:15 sharp. Don't be late!
- No mobile phone. Turn them off! (but allowed to take pictures).
- When I raise my hand, we stop talking
- We take 5 minutes at the end of workshop for debriefing.
- What you experience here is encouraged to be repeated in teams if necessary.
- I will put DT materials on my webpage (<u>http://lbabout.iis.p.lodz.pl/</u> <u>teaching and student projects.php</u>).
- Think of warm-up for next session!

Which problem DT has solved?



BILL& MELINDA GATES foundation



Treadle pump: selling issue in some African communities



Grantee discovered that in some communities where selling low cultural norms see hip swaying not appropriate

Have you ever felt like a firefighter?





DT project at Paris-Est d.school



LET'S FINISH WITH EMBRACE SUCCESS STORY

 Students at Stanford were asked to tackle problem of low-birth-weight baby mortality in developing countries



Design Thinking – Large companies also apply it (at some point)?



design thinking is a human centred & collaborative approach to problem solving that is creative, iterative & practical.

(Brown, 2008)

Another string to your bow...

- Companies* look for:
 - Business skills (to turn ideas into sustainable markets): IP law, innovation management, understanding suppliers/customers, project management, standardization and certification;
 - Personal skills (for successful collaboration): creative thinking/problem solving, communication, team work, leadership, networking.

*European Chemical Industry Council www.cefic.org/Documents/PolicyCentre/Skills-for-Innovation-in-the-European-Chemical-Industry.pdf

Design Thinking

- Design thinking is a set of methods for identifying and solving problems (hard/wicked)
- DT promotes and embraces user-centred design



dschool.stanford.edu

Beginnings

- 1970s first publication on design as a way of problem-solving
- 1980s & 1990s first applications success at Stanford
- IDEO business applications
- NoTosh- DT at school

Harold G. Nelson and Erik Stoltermar



Intentional Change in an Unpredictable World

To put it differently



A "divergence-convergence" process

The Double-Diamond Model*



* UK Design Council: http://www.designcouncil.org.uk/news-opinion/introducing-design-methods

Empathy, empathy, empathy...

- ...but not sympathy
- feel in the shoes of someone else





VE GOT 99 PROBLEMS AND 86 OF THEM ARE COMPLETELY MADE UP SCENARIOS IN MY HEAD THAT I'M STRESSING ABOUT FOR ABSOLUTELY NO LOGICAL REASON





International Faculty of Engineering



Institute of Applied Computer Science Lodz University of Technology





Lifelong Learning Programme





GCU Glasgow Caledonian University





DESTINE – unique programme



DESIGN THINKING

- Students from 5 continents, 15 countries
- Truly multicultural interdisciplinary teams



DESTINE – structure

Mix of:

- Multicultural, interdisciplinary teams
- Building team, communication and social skills :)
- Remote, on-site and in-the-wild work
- DT workshops + supporting TB activities,
- Unusual forms of formative assessment and feedback (speed-geeking, pecha-kucha, etc)













DESTINE – effects





The Mobile Sleep Lab







From Stanford university...



...To TUL

DT4U WORKSPACE - Space properly designed for professional conduct of full DT methodology



Interdisciplinary team composed from lecturers and students from Mechanical, **Electrical and Textile Engineering Faculties** at TUL

















Development of Innovative AcadeMy ON the basis of DT teaching











What DT for project teams can be

- A lot of fun!
- And even more hard work :)
- A culture of **open-ended** inquiry
- A working environment that leverages the skills of team members...
- ...and <u>Build creative confidence</u>



SMILE task

- Start to know each other
- Known facts
 - feel so bad about drawing other people faces!
 - brain overestimate / big eyes (we look at them 80% of the time)
 - kids more creative
- DT should understand cognitive biases



Build CONNECTION

• STARE AT PARTNER IN FRONT OF YOU FOR 4 MINUTES

• <u>Uinterrupted eye contact increases intimacy</u>

CHALLENGE

TO REDESIGN THE -BREAKFAST EXPERIENCE OR -EXAM PREPARATION

FOR YOUR PARTNER



PART 1 Discover by "empathizing"



"I know exactly how you feel."

DISCOVER BY "EMPATHYSING"

• Ethnographic observations

<u>Malinowski & anthropologic revolution</u>

• Empathy ≠ sympathy

<u>Empathy belt</u>

- Foster individual interview / group interview
 - Be aware of group conformity

Interview your Partner

Remember to:

- build rapport
- ask open-ended questions avoid "YES NO" questions
- Ask "why?" 5 times get to the root of the issue
- Ask for stories "Can you tell me more about that?"
- Ask for emotions "How did that make you feel?"
- Minimize you presence, and express ignorance.

TAKE NOTES HERE:



PART 2 Interpret





Interview your Partner

Remember to:

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- Ask "why?" 5 times get to the root of the issue
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TAKE NOTES HERE:

Define a Point Of View



POV

- Reframing of a design challenge into an actionable <u>problem statement</u> that will launch you into generative ideation
- 3 components
 - specific user
 - users' need
 - insight
- Defining Insight
 - hardest part of POV, because ...
 - ... An insight is a provocative statement of truth, that reflects a clear, meaningful perception into human behavior in a particular context

GOOD/BAD POV examples

	BAD POV	GOOD POV
NUTRITION*	A teenage girl needs more nutritious food, because vitamins are vital to good health.	A teenage girl with a bleak outlook needs to feel more socially accepted when eating healthy food, because in her hood a social risk is more dangerous than a health risk. *From d.school method card on POV
MECHANIC	A driver needs his/her car to be fixed urgently, because it is his/ her only possible transport solution to go to work.	A shy educated female driver needs to feel trust from repair shop, because good and honest diagnostic is a basic condition to keep clients' fidelity.
STRESS	A kid needs to cope with stress during exam, otherwise he/she has higher probability to fail it.	A primary school kid with stress issues needs to feel school support before exams, because reducing pressure on children shoulders is a basic rule for a more fruitful personal emancipation.

POV try

- Watch this short documentary <u>"what does it feel to be old and alone?"</u>
- Use the POV card to imagine a problem statement for these end-users



PART 3 Ideation





PART 4 Rapid prototyping and testing

