COLLABORATIVE DESIGN EDUCATION

ICED17
CHAIRS: ROSS BRISCO & BRYAN HOWELL
Monday 21st August 2017 - 2pm - Room 2314

21st International Conference
on Engineering Design (ICED17)
Vancouver, Canada
21-25 August 2017

design
design education
special interest group

CD SIG
Collaborative Design Special Interest Group

the Design Society
a worldwide community

Workshop Team

Ian Whitfield

Avril Thompson

Ross Brisco

Bryan Howell

Dorothy Evans

Bill Ion

Collaborative Design SIG   Design Education SIG

Collaborative Design SIG

To support and build the community of collaborative design researchers and initiate a collaborative design research agenda.

Design Education SIG

To provide a forum for the identification, sharing and dissemination of best practice in design education.

Format

14:00	Introductions	What is your interest in Collaborative Design Education
14:10	Background	What is collaborative design education?
14:30	Group Discussion	Personal experience
14:50	Break	Time to engage in the network Line
15:10	Workshop Task 1	What are the challenges of collaborative design education?
15:30	Workshop Task 2	How might we overcome the challenges of collaborative design education?
15:50	Summary	Outcomes from the workshop
16:00	Networking time	Please ensure you complete the consent form and evaluation form

Please ensure you have signed in on the registration sheet and consent form

Introductions

- Who you are.
- Your interest in Collaborative design education.

Keep your introduction to ~30 seconds.

Background

What is Collaborative Design Education?

Students work in teams on design projects to:

- Tackle problem solving tasks.

- Create assessed documents.

- Negotiate and make design decisions.

What is Collaborative Design Education?
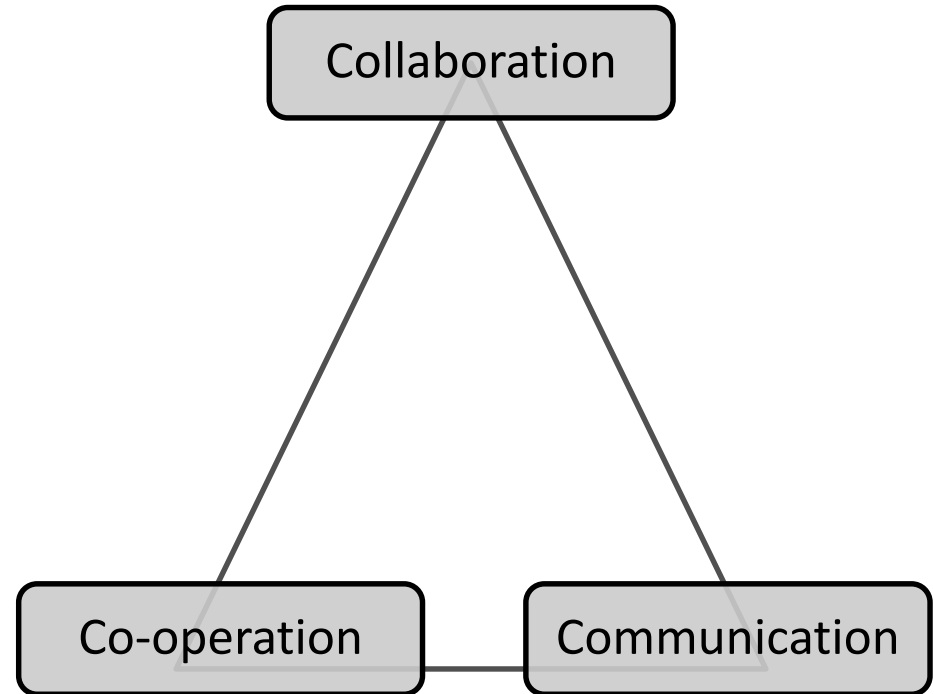
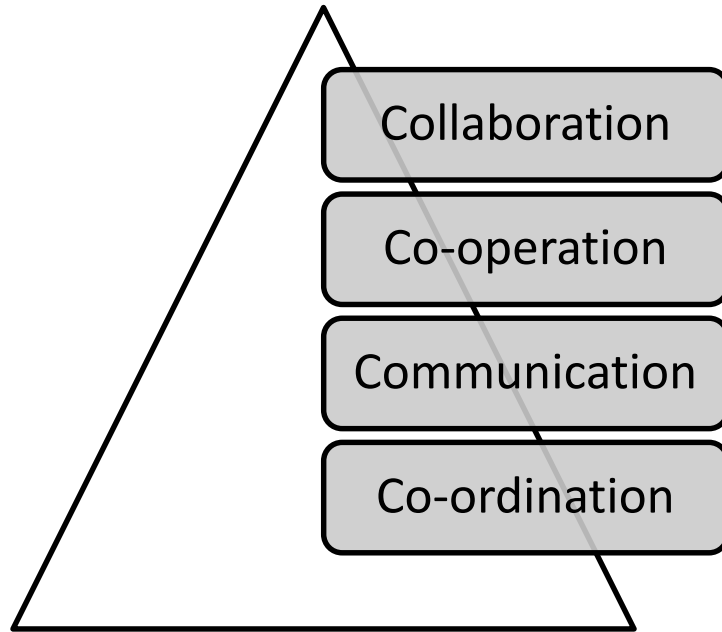Joint submission

Partnerships with industry
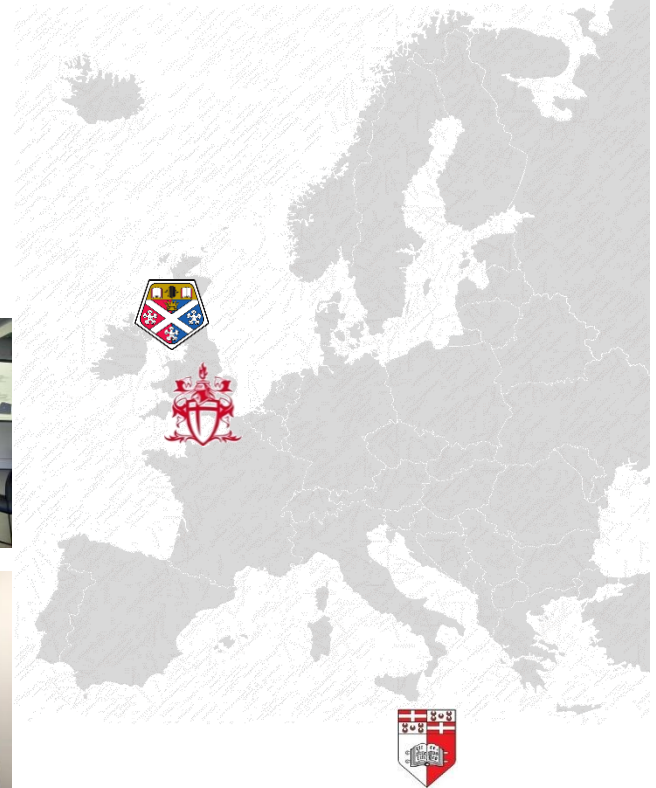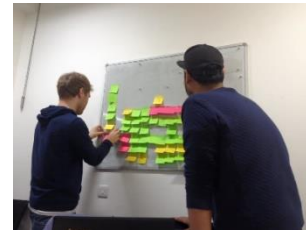
Shared goal

Users

What is Collaboration

Example

Groupwork

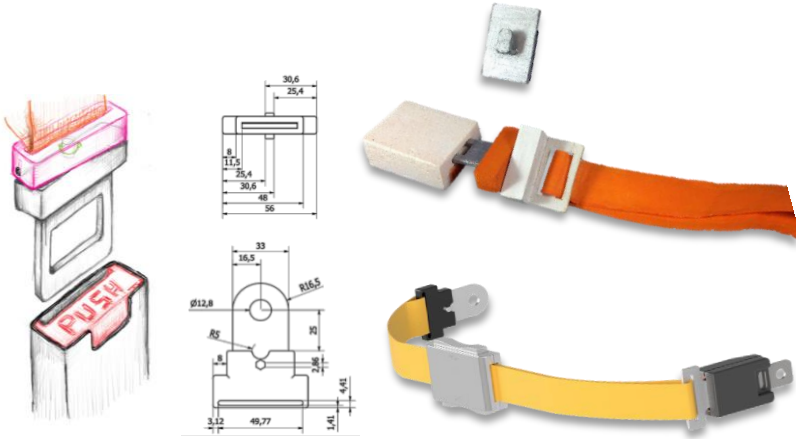# Example
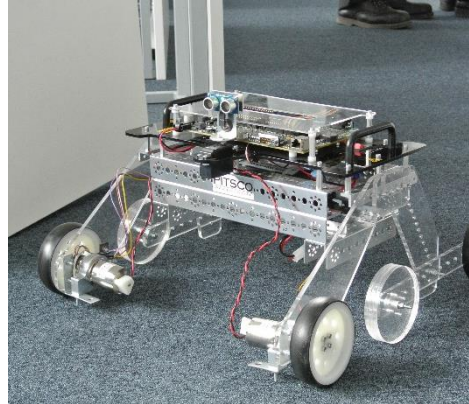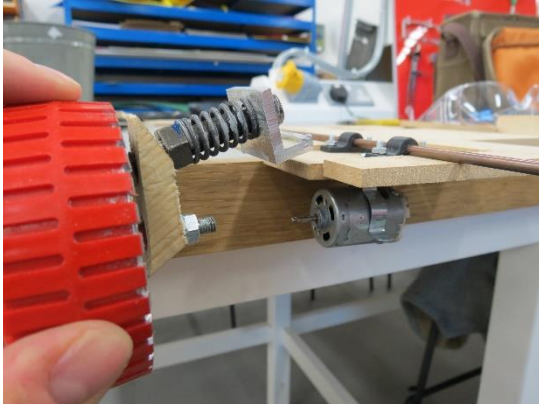
Distributed Design

Example

Industrial Partnerships

Example

Multidisciplinary

Collaborative Design Education

- Encourages good motivation for the project.
  - Don't want to let team members down.
  - Encourages informal relationship building.
- Enables more creative outcomes.
  - Greater number of opinions.

Collaborative Design Education

- Industrial experience.
  - Tackle more complex problem.

Collaborative Design Education

- Peer Learning.
  - Learning with and from each other.
  - Critical reflection on team actions and decisions.
    - Not only learning a toolset or a method.

Collaborative Design Education

- learning as a social activity.
  - To improve their engineering design skills.
  - Knowledge exchange or knowledge generation.
  - Transformative learning.

Collaborative Design Education

Are students truly collaborating?

Collaborative Design Education

Can we ensure individual team members learning benefited from participating in this learning environment?

Collaborative Design Education

Can we ensure all team members have achieved the learning outcomes?

How can we evaluate this?

Collaborative Design Education

What precedence should we put on learning outcomes?

Future Considerations

Moving into industry 4.0, how do we ensure our students are prepared with the knowledge to: coordinate, communicate, cooperate and collaborate with those outside their discipline.

Future Considerations

Can we ensure an authentic engineering design environment within University restrictions?

Future Considerations

Can we truly represent a multidisciplinary team in an educational environment?

Future Considerations

How important are collaborative skills for future jobs? And how much importance should educators put on building these skills.

Group Discussion

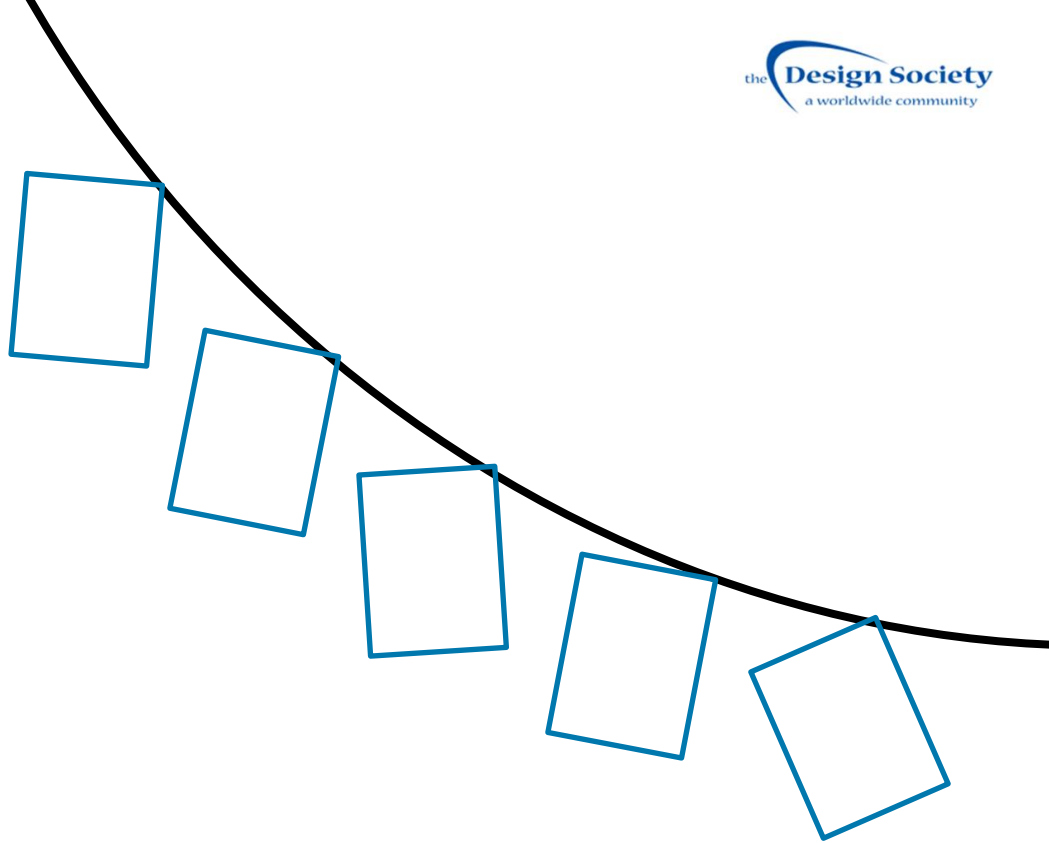What is your experience with Collaborative Design Education?

Network Line

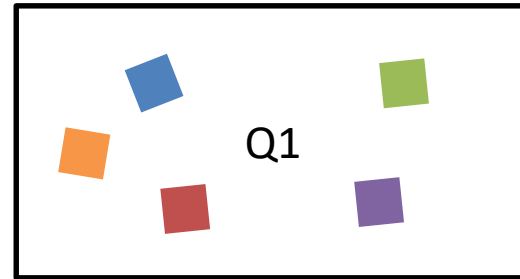| |
|---|
| Name: |
| Location: |
| What skills do you have in collaborative design / design education? |
| Do you have any requirements of skills in collaborative design or design education? |

Groups

Try to form groups with those you are less familiar with.

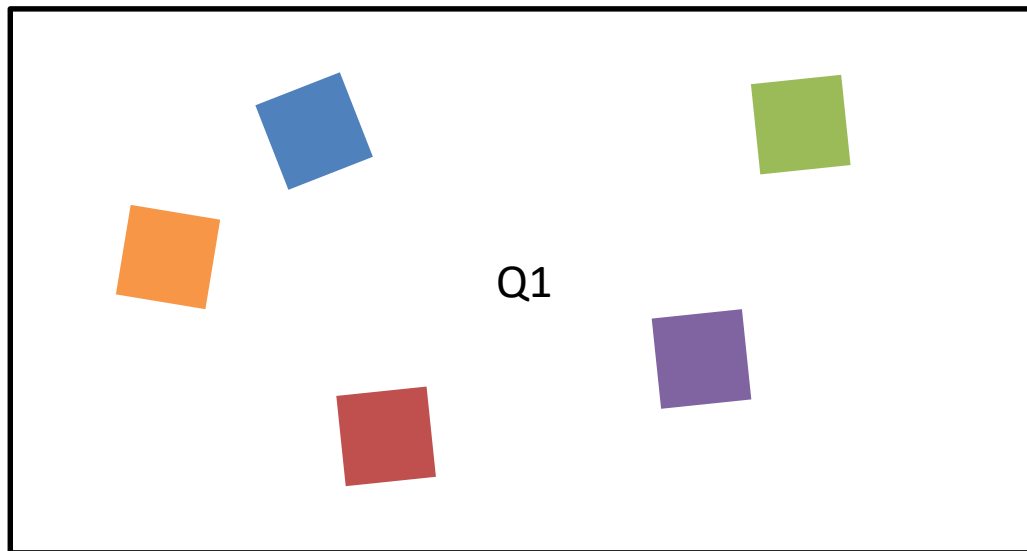Try to form a mix of CD and ED SIG in each group.

Workshop Task 1

Workshop Task 1

What are the challenges involved with collaborative design education?

Please write these challenges on a post-it note and stick it on the flip chart paper. Select your top 3 challenges.

Results

Break

Workshop Task 2

How might we as educators and researchers overcome the challenges of collaborative design education?

Discuss in your teams and write these for each challenge.

Pick 1 top solution for each of the challenges.

Results
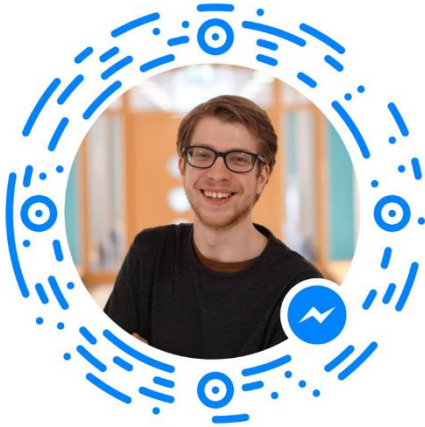
1.

2.

3.

Summary

Thanks for Coming

Please take the time to fill in the consent form and feedback form.

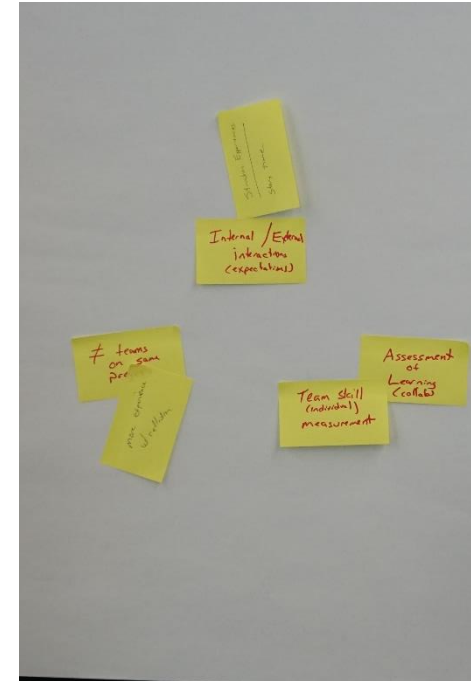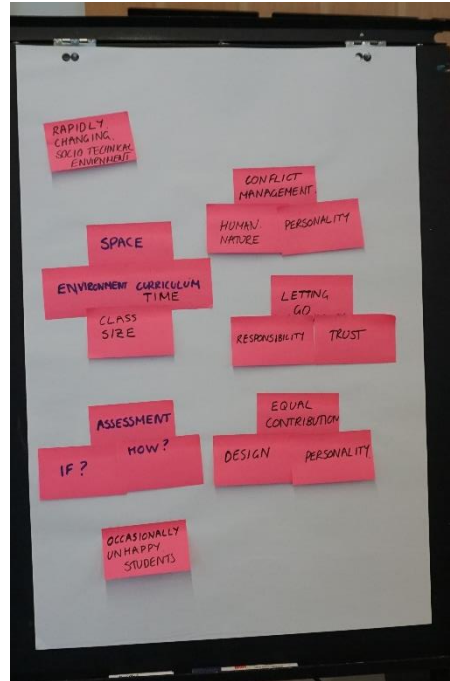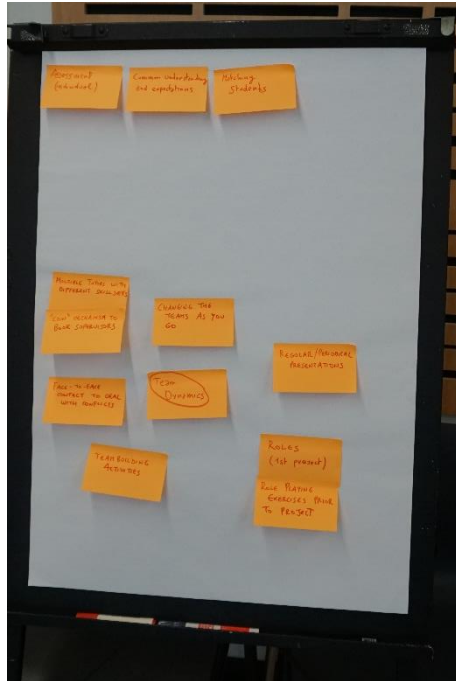Twitter: @ResearchRoss

Ross.Brisco@strath.ac.uk

LinkedIn: Bryan Howell

Bryan.Howell@byu.edu

Results

Photos from the day

What are the challenges involved with collaborative design education?

Image 1 (orange post-its):
- Relationship (educational)
- Common understanding and expectations
- Matching students
- Multiple teams with different skill sets
- Can't micro/in to their supervisors
- Changing the teams as you go
- Regular/periodic presentations
- Face-to-face contact to deal with difficulties
- Team dynamics
- Team building activities
- Roles (1st project)
- Role playing exercises prior to project

Image 2 (pink post-its):
- Rapidly changing, socio technical environment
- Conflict management
- Human nature — Personality
- Space
- Environment — Curriculum Time
- Class size
- Letting go
- Responsibility — Trust
- Assessment — How?
- If?
- Equal contribution
- Design — Personality
- Occasionally unhappy students

Image 3 (yellow post-its):
- Internal / External interactions (expectations)
- # teams on same proj
- Assessment of Learning (collab)
- Team skill (individual) measurement

What are the challenges involved with collaborative design education?

- Three common themes were identified by two groups:
  - Expectation of internal group and external (stakeholder)
  - Assessment of learning
    - Team vs individual skill assessment
  - Matching students with each other

How might we as educators and researchers overcome the challenges of collaborative design education?

- We might evaluate student personalities in order to match teams
- Utilise a booking mechanism to allow students time with academics/stakeholders
- Change the teams as you go? Is this moving towards a more entrepreneurial stance.
- Face-to-face contact is essential to deal with conflicts
- Team building activities are essential
- Regular periodical presentations are required
- Evoking greater reflection in student work and relationships

Thanks for attending the Workshop!