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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
Workshop Team

Ross Brisco

Bryan Howell

Ian Whitfield

Avril Thompson

Collaborative Design SIG

Dorothy Evans

Bill Ion

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

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

Collaboration

Co-operation

Communication

Co-ordination

Collaboration

Co-operation

Communication
Example

Groupwork
Example

Distributed Design
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?
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?
What precedence should we put on learning outcomes?
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.
What is your experience with Collaborative Design Education?
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<td>Location:</td>
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**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
Summary
Thanks for Coming

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

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LinkedIn: Bryan Howell
Bryan.Howell@byu.edu
Results
Photos from the day
What are the challenges involved with collaborative design education?
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!