Interdisciplinary Collaborative Design Process in an Educational Setting: The Interdisciplinary Design Studio

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Background
IDS (industry-academia partnership)

Phase I - Intense lectures
Phase II - Conceptual design
Phase III - Detailed design
Phase IV - Prototyping [almost]
Methodology

• Mixed methods design
  • 50 semi-structured interviews with the students
  • 24 semi-structured interviews with the faculty
  • Natural observation
  • Online weekly surveys (3 open-ended questions, logbook logic)
Findings
Well, from that perspective, it should have been good for engineers to see these studios. Same for us, for example when we went to machine [department of mechanical engineering] yesterday I said something like ‘I have been here for some many years but I didn’t know that there was a building like this’ and it was nice, it was different for me.”
Peer-learning

For instance, G.’s [ID] things were good. [She] taught me the parts I didn’t know. I hadn’t thought of making apps before … . Our logo and else were G.’s design. Stuff like that complemented my short comings. I mean I didn’t have such a vision, I have such a vision now. That was good. The assignment I had for instance, while I was talking to K. [ARCH] a minute ago, I learned that she also needed similar stuff and she learned them like I did [from her friends]”
Peer Learning III

We didn’t come together and brainstorm much. We didn’t discuss things like what our flaws are or what can happen in the project. The students did but we didn’t. We did at first but then it was like we let it slip. [Faculty]

I am curious about something, for example, they gathered this many people from different disciplines, OK, that’s nice, they are gonna make us do something, but have these tutors ever come together? Have they ever tried to do something together? I am curious about this.

It was around the second week, the tutors were providing critique, like do this do that, some suggestions; it was like the tutors didn’t have a fully command of things... they didn’t have a common denominator or objective. Everybody had their own interpretation about the studio. They hadn’t decided about it, that was interesting. We were receiving stuff from everyone in a different direction.
Clashes among the academic cultures

- Faculty
  - “[At the university] the departments are so detached from each other. And the departments have, I don’t want to say biases, some established opinions about each other.”
  - Interdisciplinary, design, project
  - “conceptual design” vs. “working prototype”
  - “Environmental engineering/food engineering is not engineering, they don’t count.”

- Students
  - “Professor, don’t bother me with these [everything about collaboration], just give me the specs. You want this robot to jump 2 meters, just tell me, I will do it.”
  - “Let the designers draw it, I will do it.”
I told them that these things were related to space, right now, we're kind of guests there, in the following times I would give a speech there, and there would be someone from mechanical engineering, and these kinds of complaints decreased over time. But, the very first week, they felt like they were attending a workshop organised by the industrial design or architecture department—not an overall interdisciplinary thing. It may be psychological.

But well, I didn't feel myself deeply involved. This is probably because the IDS was, in terms of space, over there.
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But well, I didn’t feel myself deeply involved. This is probably because [the IDS] was, in terms of space, over at that side. ... I mean, all in all, as it was the Faculty of Architecture who provided that space, I was grateful at that point. But we couldn’t get involved in that way.
Soft skills (communication, conflict management, teamwork, public speaking, etc.) are as important as domain-based skills and knowledge (coding, using 3D printer, static calculation, etc.).
Motivations of industry

• Networking
• Be involved
• Identify talent
• Capacity building
• Prototype (?)
Lessons learned

• Increase the opportunities for peer-interaction
• Common values, goals, etc. are important but that message needs to be conveyed strongly.
• Shared interaction space is critical both for the faculty and students.
• Soft skills are as important as the technical skills for the team.
Publications & presentations...


- Kaygan P. & Aydinoğlu, AU. Why space matters in collaboration for innovation: The Interdisciplinary Design Studio. Creativity and Innovation (submitted)


Any questions...

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