

Impact of Multidisciplinary Teams on design outcomes

Investigating the benefits and challenges postgraduate students
experience while collaborating on design projects

Introduction

Designers must be able to understand the relationships between various disciplines such as science, technology, humanities, and art to create products, services, and experiences that bring about disruptive change (Qu et al. 2020, Schweitzer et al. 2008). The act of designing also places emphasis on communication skills that are required in collaborative creation and decision-making (Qu et al. 2020). Currently, no single discipline provides all the necessary expertise (Mackay, W.E., 2003). Therefore, the sensitisation and adoption of multiple perspectives is an important element in design education.

Through this essay I seek to highlight the benefits of working in a multidisciplinary team (MDT), investigate the challenges faced while working with students and professionals from different disciplines, and use the findings to reflect on the project outcomes in the MA : UX Collaborative Unit.

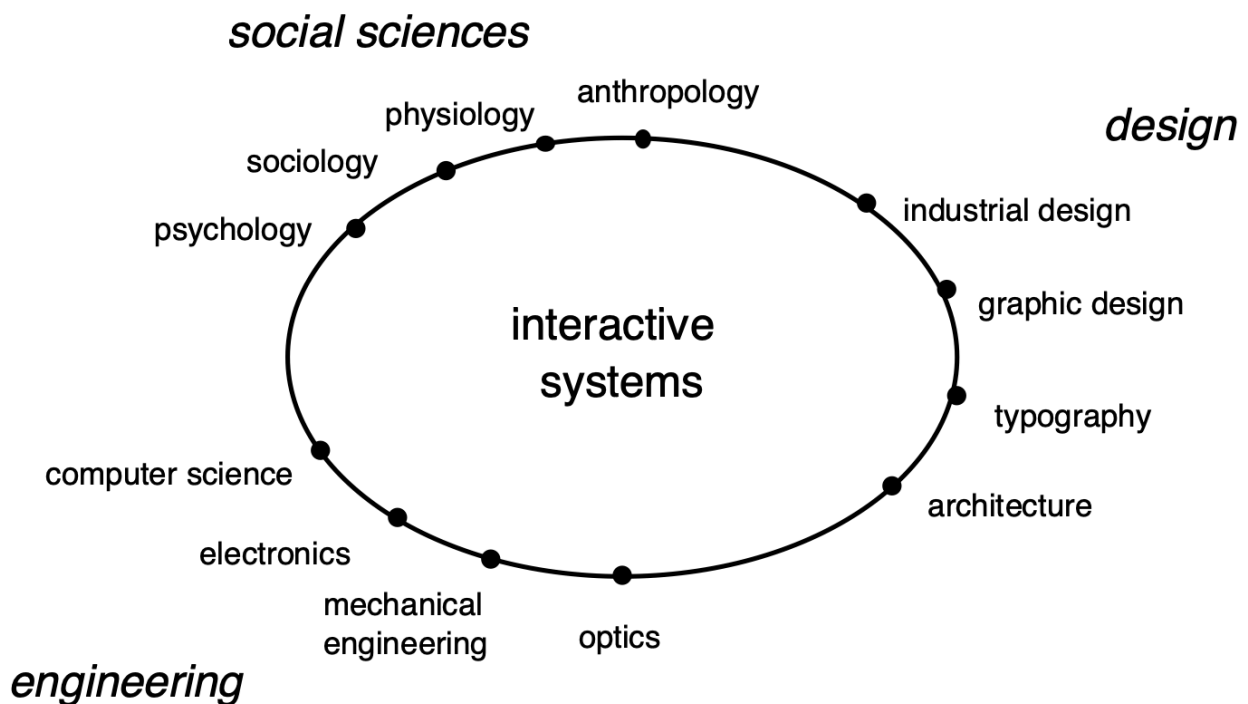


Fig 1. A diagram showcasing how designing interactive systems relies on knowledge from different disciplines. (Mackay, 2003)

Multidisciplinary Collaboration: Where to draw the line?

Adams defines multidisciplinary practice as ‘Joining together of disciplines to work on common problems; split apart when work is done.’ (Adams et al., 2009 p. 3)

Several essays use the words multidisciplinary and interdisciplinary interchangeably, for example the abstract of “Architects in interdisciplinary contexts: Representational practices in healthcare design” (Kasali and Nersessian, 2015). While multiple cross-disciplinary practices exist (Adams et al. 2009), this essay is particularly aimed at multidisciplinary collaboration. However, due to the structure of the course and the understanding of definition by different people, the lines between these approaches may be blurred.

Multidisciplinary approach

- juxtaposition of disciplines
- plurality of knowledge

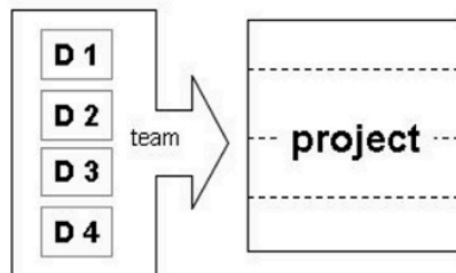


Fig 2. A multidisciplinary workshop structure. ‘D’ represents a discipline (Leblanc, 2009)

Benefits of multidisciplinary collaboration

From a design student's perspective, multidisciplinary team projects are seen as a rewarding experience as they offer them the possibility to create innovative products whilst working with people from diverse disciplines. Leblanc (2009) believes multidisciplinary collaboration facilitates in extending the knowledge base of a subject matter by viewing the problem statement from different perspectives. Hu et al. (2017) discovered that conversations and interactions between participants from different design backgrounds could potentially result in developing a new mindset. Mackay (2009) notes that a team comprising of experts from different disciplines can cover a broader range of approaches and take advantage of their expertise to alleviate any possible blindspots. Lastly, in a qualitative study to understand collaboration between students and industry partners, Tang and Hsiao (2013) found that working with multidisciplinary teams can have several benefits. However, if members lack experience in working with such a team structure, they might find it challenging to make the most of it.

Challenges faced while working in a Multidisciplinary Team

When people from different backgrounds come together to work towards a common goal, they are bound to run into arguments and conflicts. Qu (2020) believes that this is a result of lack of common definition of the problem statement. Each member views the same task through the lens of their own discipline, hence placing different values on different aspects of the problem. Hu, Li and Du (2017) mention that the jargons, skills and work style developed by these participants over time leads them to challenge each other's input and ideas, and label this phenomenon as 'contested collaboration.' The authors also build on the theory of cognitive conflict and affective conflict proposed by Amason and Sapienza (1997) which view the former as a result of task-oriented disagreement and the latter as a consequence of individual oriented disagreement. When these conflicts exceed a certain point, they lead to a 'coordination breakdown' which reduces the overall quality of design outcome and disrupts the design process. Therefore, the team members are not only responsible for completing their own work but also responsible for effectively communicating and responding to changes and ideas recommended by their peers (Tang and Hsiao, 2013).

Discussion

During the Collaborative Unit we had the opportunity to work with professionals from different disciplines such as music (Steph Singer), art (Ronnie Deelen) and material research (Anoushka Cole). Their expertise helped us extend our knowledge base and create experiences spanning various disciplinary boundaries, a finding similar to Leblanc's (2009) study. Focusing on the project of 'Violet Disruption' the team incorporated techniques from fashion design and music composition to amplify the overall impact of the design outcome.

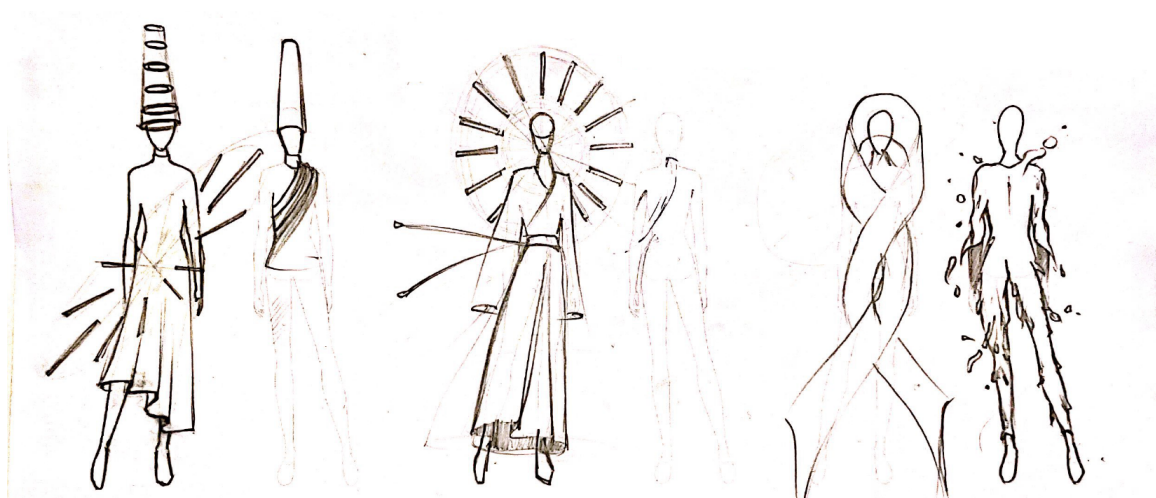


Fig 3. Using coquis (a technique in fashion design) to imagine how volunteers would embody Violet

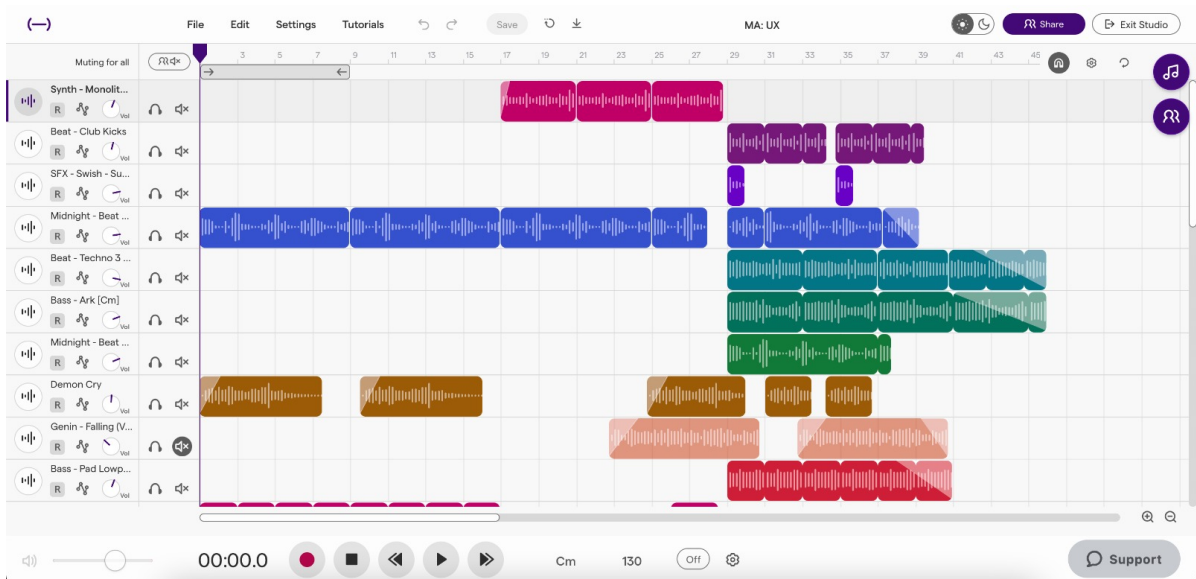


Fig 4. Anya composing music on Soundtrap for the summoning ritual. Photo credit Anya Li.

However, towards the end of the project while ideating on the overarching concept for the ritual, ‘cognitive conflict’ was observed within the team. We all struggled to settle on one idea for the summoning ritual. Consequently, we decided to write our individual story lines on the Figjam board and decided to pick the best parts from each of them. Aligning with Tang and Hsiao’s (2013) study, the method of well-mannered and effective communication enabled us to break through our disagreements.

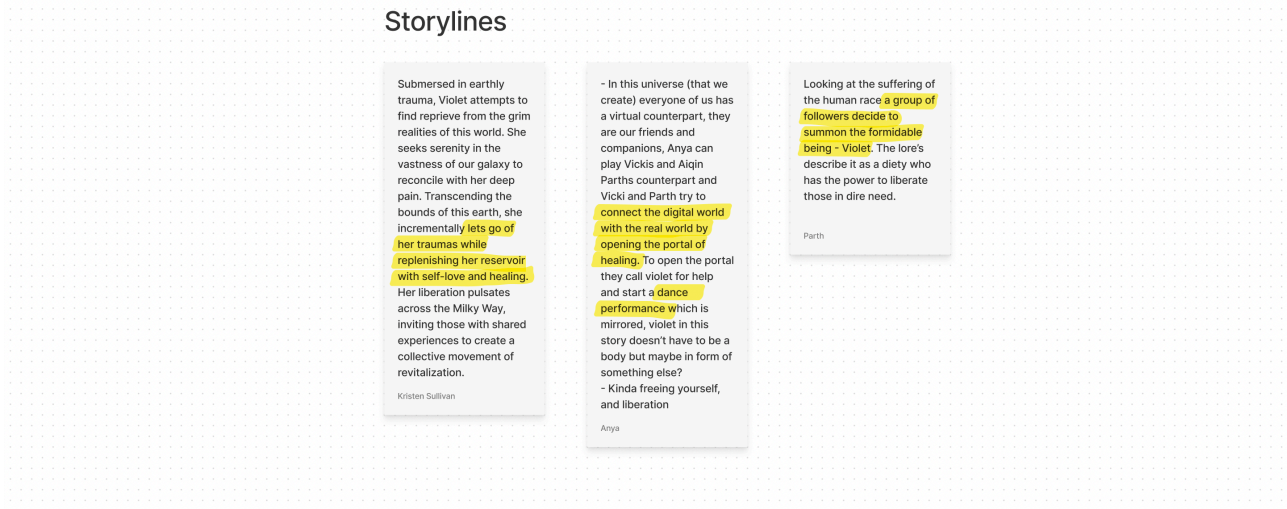


Fig 5. Picking the best parts from individual story lines.

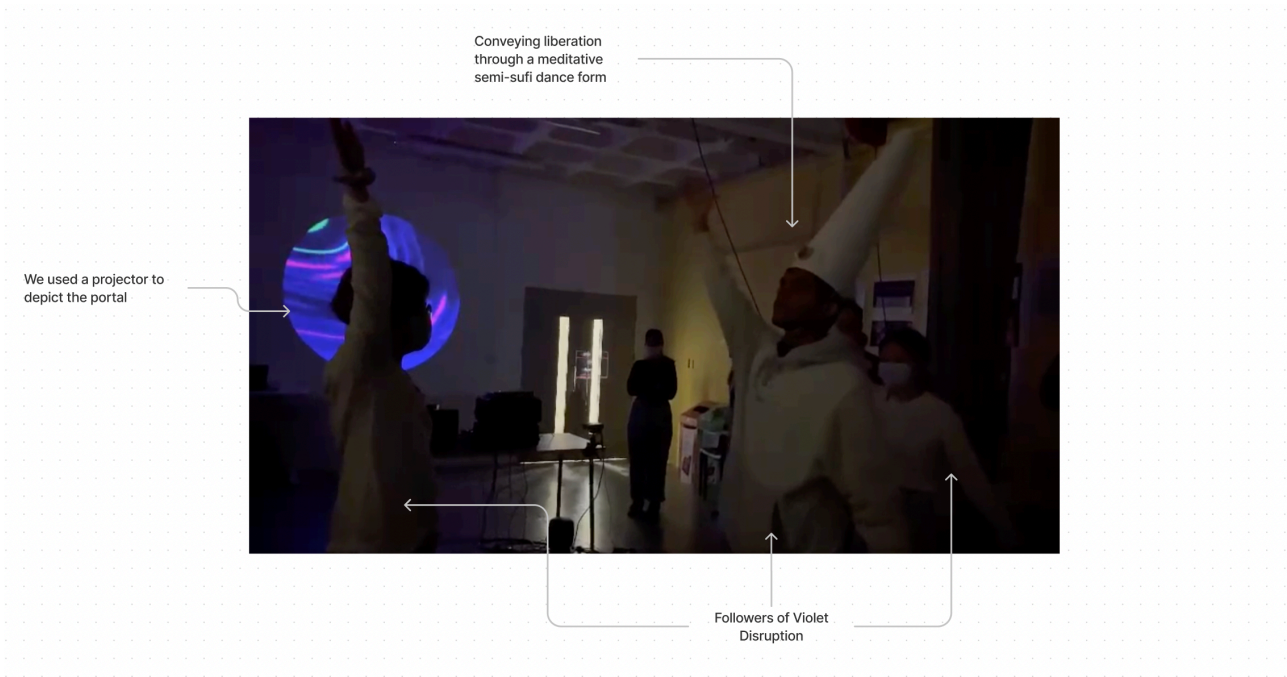


Fig 6. Executing the individual contributions made by the team members.

Conclusion

To summarise, collaborating in a multidisciplinary team has proven to be beneficial for the overall quality of the project. However, challenges relating to effective communication may result in frustration for some of the team members. The above literature on multidisciplinary collaboration can serve as a step in the direction towards understanding cohesion amongst teammates. Furthermore, it can also be used to develop frameworks to amplify the positives and weaken the challenges faced during collaboration. While a growing body of study addresses the topic of multidisciplinary collaboration, a similar comparison can be extended to other cross-disciplinary structures (Adams et al. 2009) such as interdisciplinary and transdisciplinary to simultaneously analyse their impact on the holistic design outcome.

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