Design thinking sprints as a facilitation process to enact change in the residency match process and beyond

Le *sprint de conception creative* pour faciliter la réalisation de changements dans le processus de jumelage des résidents et au-delà

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Implication Statement

Enacting change in medical education requires effective facilitation processes. Medical education lags behind other fields in systems innovation and radically disruptive approaches to the challenges we encounter. Design thinking "sprints," widely used in many other settings, serve as an opportunity to fill the gap as a facilitation process during periods requiring extensive and/or rapid change. Though resource-intensive, our experience using design thinking sprints for a situation requiring urgent change management with high-stakes implications for Canadian medical education to demonstrate their utility. A more widespread, adoption can contribute to innovation within all aspects of education including curriculum design, policy development, and educational process renewal.

Énoncé des implications de la recherche

La mise en œuvre de changements dans la formation médicale exige un processus de facilitation efficace. Comparée à d'autres disciplines, l'éducation médicale est à la traîne en ce qui concerne l'innovation des systèmes et l'adoption d'approches radicalement transformatrices en réponse aux défis rencontrés. Le *sprint de conception creative (design thinking sprints)*, approche largement utilisée dans de nombreux contextes, pourraient permettre de combler le manque de processus de facilitation lorsque des changements importants ou rapides sont à l'œuvre. Notre expérience de l'utilisation de tels *sprints* dans une situation nécessitant une gestion urgente de changements à enjeux importants pour l'éducation médicale au Canada démontre son utilité, malgré les ressources considérables qui ont dû être mobilisées. Une adoption plus large de cette approche peut contribuer à l'innovation dans tous les aspects de l'éducation, y compris la conception des programmes d'études, l'élaboration de politiques et le renouvellement des processus éducatifs.

Introduction

The Future of Medical Education Postgraduate recommendations in 2012 noted the importance of improving transitions along the educational continuum and helped spark debate and discussion about the residency match process in Canada.[1] Discussions from residency match stakeholders regarding the need to improve residency selection processes had been ongoing for several years.[2-6] The COVID-19 pandemic substantially accelerated pressures that had been building in recent years to disrupt the Canadian R1 residency matching process. In response

to the unprecedented need to quickly transition to virtual interviews and cancel visiting electives for the 2021 learner cohort, the Association of Faculties of Medicine of Canada (AFMC), led an urgent, collaborative change management process. The AFMC Resident Matching Committee (ARMC) tasked a virtual interviews and program promotion (VIPP) subcommittee, comprised of all relevant match stakeholders (e.g. postgraduate, undergraduate, student affairs deans, learner organizations), to make recommendations on issues related to transitioning to virtual interviews and supporting the virtual promotion of residency programs. The subcommittee initiated an urgent

change management process, utilizing design thinking sprints as a facilitation process to ensure a fruitful 2021 match for programs and applicants.

Description of innovation

Design thinking sprints, validated by end users, are a process intended to develop innovative solutions to challenges. The process encourages focusing on user desirability as opposed to practicality and aims to lead to creative, innovative ideas.[7-9] In keeping the "end user" at the centre of the innovation process sprints support an important underlying principle for medical education innovation—always place the learner at the centre of education innvoation. Generally, design thinking sprints are conducted in a modified fashion from the initial sprints employed by Google ventures, which were conceptualized to be completed in-person over 3-5 days.[7-9] We chose sprints due to their success in other fields alongside the fact that they are utilized when a "fast" solution is needed. In reviewing different potential methodologies, design thinking sprints met the needs of the moment. Prior to our work, design thinking sprints had not been used for national level innovations in medical education in Canada. Our modified design thinking sprints were facilitated virtually using both synchronous (three-hour intensive sessions) and asynchronous delivery (pre and post meeting work) over eight weeks. A dedicated non-physician facilitator with expertise in design thinking sprints was employed alongside administrative and technical support. It is important to note that these human resources are critical to a successful design thinking sprint. Figure 1 describes our design sprint process in further detail. The committee was co-chaired by VD and PS to ensure the work was grounded in learner and faculty perspectives and all methodology adaptations were co-decided with our facilitating partner.
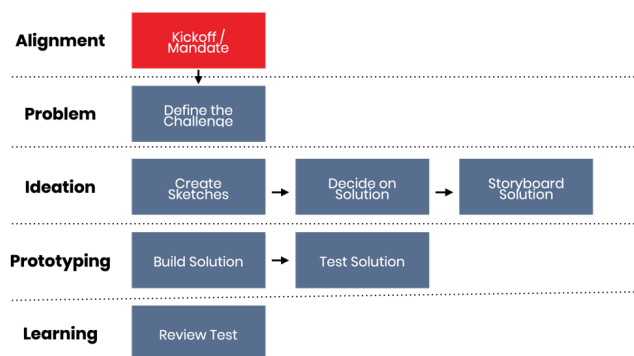

Figure 1. Design sprint process undertaken by ARMC VIPP subcommittee

Outcomes

To seek opportunities to improve the process and help understand feasibility for wider spread adoption we undertook qualitative interviews with design thinking sprint participants. Participants expressed high levels of engagement and satisfaction in the process and a strong recommendation that others adopt the methodology. Participants recognized the importance of having adequate staffing support for the initiative. In particular, participants noted that the facilitation method contributed to an increase in creative thinking and met the need of a high-pressure, time-limited situation. They expressed a desire to be involved in future sprints. Evaluation of user products conceptualized during the design sprints is ongoing. Our first sprint resulted in our recommendation for a centralized portal for program promotion. CANPREPP (Canada's Portal for Resident Program Promotion) was launched in November 2020 and saw active engagement from 469/517 (91%) R1-entry residency programs across Canada. In total, CANPREPP saw over 20,000 site visits from launch to end of the R1 match cycle in its first year. CANPREPP has continued to evolve, and engagement remained high during its second year of operation, with further evaluation ongoing. Our second sprint resulted in our recommendation to create virtual interview guides for programs and applicants which were widely used and positively received.[9-11]

Suggestions for next steps

Our design thinking sprints experience was successful. Design thinking sprints may have great potential as a facilitation process in medical education and should be explored when educators are looking to enact disruptive change under time constraints. Further work is required to improve and adapt the process to different medical education contexts from curriculum design to policy development while ensuring feasibility. We acknowledge the resources required to undertake this facilitated process can be inhibitory. As more individuals in medical education experience and then learn to facilitate the process, these barriers should be reduced. We noticed the value of collaborating with professionals from other fields. Design thinking sprints could have high utility in addressing ongoing issues related to the match such as further embedding principles of equity, diversity, and inclusivity, continuing to address the issue of unmatched graduates and further optimizing the match timelines and selection

materials. We look forward to collaborating with others interested in utilizing this methodology.

A general outline of the steps

1. Kickoff/Mandate:
Introduce the sprint team to the process and working principles.

2. Problem phase:
Define the goal of the sprint, set out key questions and core problem(s). At phase end the sprint team should understand the long-term goal and opportunities ahead.

3. Ideation phase:
Create new ideas to address the problem(s) identified. Innovation techniques are used to help individuals create ideas, work towards team consensus, and then develop a detailed plan and testing prototype. This phase has three parts:

- Create Solutions: Brainstorm several potential ideas/high-level solutions to the problems identified.

- Decide on a Test: Analyze the ideas and solutions put forth and decide which best address the purpose/goals and should undergo user testing.

- Storyboard Test: Create a detailed storyboard of the solution that we want to test.

4. Prototyping:
After an idea has been chosen and storyboard developed, it is time to build the solution.

5. Learning:
The most critical part after the testing phase is what the group learns from testing.

There are four general sprint outcomes which determine next steps:

1. "We Nailed It"–user feedback is very positive, and all involved are excited about a solution that clearly addresses the problem(s) identified. Build the solution!

2. "Almost There"–user feedback was overall positive but there are also significant opportunities to continue to improve the solution. Returning to the storyboarding or prototyping phase would be prudent!

3. "Yes, But"–users were lukewarm about the solution(s). There were more areas of concern identified than positives though there are strengths that may point to

future directions. Return to the "create solutions" phase or work to find another direction.

4. "Pivot"—the solution was not liked by the user. Return to the problem phase to ensure everyone is clear on the goal outcome.

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