

Creating Innovative Educational Hackathons as a Means for International Institutions to Collaborate While Also Assisting NGOs

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Abstract

Educational hackathons offer a unique learning opportunity for participants. They provide a platform for individuals to learn new skills, collaborate with others, and solve complex problems while working on real-world projects and gaining hands-on experience. This approach is particularly rewarding when used to connect universities across continents and to partner with international NGOs. This paper will outline how one university in the US partnered with another in the UAE to create a hackathon that was focused on media ideas aimed at spurring on mental health awareness campaigns specifically for the global NGO, Médecins Sans Frontières. For this event, students from both countries collaborated in teams to develop proposals focused on mental health awareness. In the paper, we will describe how hackathons can bring students together across the world in order for learners to discuss relevant and trending events. We also provide 10 suggestions as to why hackathons can be beneficial and some ways to increase success.

Keywords: Hackathon, NGO, University Students



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Introduction

Educational hackathons offer a unique learning opportunity for participants. They provide a platform for individuals to learn new skills, collaborate with others, and solve complex problems in a competitive yet supportive environment. By working on real-world projects, hackathon participants gain hands-on experience and develop valuable skills that assist them in their academic and professional pursuits. Additionally, educational hackathons foster a sense of community and collegiately among participants resulting in an environment that encourages learning, creativity, and innovation. As highlighted by Garcia (2022), institutions of higher education are progressing toward creating a nexus among practical, theoretical, and technical dimensions. Participation in educational hackathons allow for development of these skills through project-based learning.

Why Hackathons Align to Learning

The hackathon described in this paper was initiated to provide hands-on experiences assisting the NGO Médecins Sans Frontière (Doctors Without Borders/MSF) in developing mental health awareness campaigns in the UAE and US. Graduate students from The Chicago School in the US and The Abu Dhabi School of Management in the UAE formed teams to focus on developing a digital media project aimed at promoting mental health awareness in local communities with a focus on COVID-19 and stress and how there is “no health without mental wellness.” This specific focus was formed out of the COVID-19 pandemic research that showed mental illnesses including depression and anxiety were rising rapidly (Wong et al., 2021). Students often have a great desire to help solve these problems and yet feel overwhelmed or unable to narrow down to specific ideas. Engaging in a hackathon gives them this hands-on learning project and thus raises engagement in learning and increases motivation which are the strongest determinants to student success (Garcia, 2022). The experience also encourages innovation and how to work quickly in a team situation. These are all skills highly emphasized in 21st Century learning (Irani, 2015).

Global crises or disasters unfortunately need these fast and innovative approaches to problem-solving. COVID-19 provided a much-needed demand for innovation and indeed it spurred on the European Innovation Council to lead the EUvsVirus hackathon which involved 30,000 people across Europe and resulted in more than 2,000 projects (Bertello et al., 2022). This much larger project than the one focused on in this paper, however, had similar goals focused on establishing new and innovative collaborations models across countries (Bertello et al, 2022). Laudable at all levels.

Organizing a Hackathon

The term ‘hackathon’ is comprised of the words ‘hacking’ and ‘marathon.’ We define hacking as a problem-solving process requiring creativity and out-of-the-box thinking. Then marathon refers to the push for working under pressure in a shortened time frame. Flores et al., (2019) suggested 48-72 hours as the intended completion time. However, the hackathon described in this paper was set at 96 hours due to time zone considerations between the UAE and US. Flyers were created and shared across the two institutions and students were encouraged to sign up in teams of three (or be assigned to a team) and then given instructions via a kick-off Zoom meeting. Each day they received an email with encouraging messages, information, and short videos from multiple stakeholders including MSF leaders and university administration. Then at the end of the allotted time, everyone met again in Zoom

where the teams were given time to present their work. The judges then moved to a private Zoom room and deliberated using the criteria:

- Project creativity
- Mental health awareness demonstrated
- Professionalism and quality of the work
- Public speaking and presentation of material (on the video and representative)

During the deliberation time, students and faculty from both countries chatted with each other as well as with the MSF staff. This time allowed for informal idea sharing and connecting across cultures. Once decisions had been made, the judges returned to the main Zoom room and announced the winners with cash prizes, certificates, and digital badges distributed the following day. Student participants were able to share these digital badges on social media and include them in their ePortfolios thus demonstrating their ability and desire to engage in global problem-solving.

Identifying Key-Outcomes of Hackathons

Yuan and Gasco-Hernandez, (2021) analyzed 19 hackathons across the US and identified some key outcomes: two of which were digital prototypes and public engagement and relationship building. Tying this to university work with NGOs, we see similar links in that some hackathons may produce prototypes to be used by the NGO. Students were informed in the current project that MSF may use any or parts of their work as desired and this spurred them on in the hopes of having work adopted by the NGO. It was important to have full transparency as to the end product ownership. We also found the students to be more interested and wanting to develop further relationships with MSF and international NGOs in general.

Hackathons provide opportunities for collaborative work on difficult issues whether those be close to home or on a global level. Multiple organizations including the National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), the United Nations, and various cities such as Toronto (Open Social Innovation, 2021) have held hackathons to tackle varying social issues. Hackathons usually take place outside formal learning (such as coursework) and thus can encourage active engagement in more creative and fun approaches which may engage a wider range of students who might not feel as successful in formal learning. This provides another approach to inspire students across a range of learning styles.

In addition to engaging various learning styles, a range of skills can also be employed. Students who work in teams can each propose and tackle aspects of the work that they are most competent with or lack expertise. This has even worked in general communities with people of varying education levels such as the i-Hive event organized by Random Hacks of Kindness which runs socially oriented hackathons a couple of times per year in Australia. The goal is to connect people who want to make a difference and promote social change in their communities (Swist & Magee, 2019). Our work included US students from bachelor to doctoral levels and UAE master's degree students and the quality of the experience was similar across groups and they did form collaborations across abilities and interests. Endrissat and Islam (2022) stated that hackathons are *transdigital* as they take place physically (in varying locations) while also being embedded in digital connectivity. In our situation, some of the teams were fully remote and worked virtually, but this did not seem to lessen their enthusiasm or ability to be creative and engaged.

Aspects and Take-Aways of Hackathons

Whether remote or in-person, hackathons can serve as exciting platforms to promote international collaboration among students and link them to NGOs. They provide an engaging environment for students from different countries to work together on innovative projects. Here we propose ways that hackathons can be used and some aspects to be aware of:

1. **Diverse Teams:** We suggest forming teams with participants from various countries. This diversity brings different perspectives, cultural insights, and problem-solving approaches to the table.
2. **Virtual Hackathons:** Organizing virtual hackathons allow students from around the world to participate without the need for travel. Virtual platforms enable global collaboration regardless of geographical boundaries and are relatively easy with the preponderance and comfort level of virtual technology platforms.
3. **Identify Global Challenges:** Work with NGOs to identify specific challenges or problems that align with their missions and objectives and aim to place these within a global theme that would engage students from around the world. These challenges could be related to social justice, environmental issues, healthcare, education, poverty alleviation, or mental health as our work focused on.
4. **Cross-Cultural Understanding:** Encourage participants to share their cultural experiences and viewpoints during team discussions if possible. This promotes cross-cultural understanding and opens up opportunities for creative problem-solving. This can happen during presentations of the work when building in time for question taking.
5. **Collaborative Problem Solving:** During the hackathon, encourage participants to collaborate closely with NGO representatives and to align their projects to the mission of the NGO. This allows students to gain insights into the real challenges faced by the NGOs and ensures that the solutions are well-aligned with their needs.
6. **Time Zone Consideration and Technology:** Be mindful of time zone differences when scheduling hackathon events, ensuring that they are convenient for participants from different regions. Our work needed to include an extra day because of time zones and live virtual meetings need to be carefully scheduled to allow all to attend at reasonable times. We were able to use Zoom for virtual meetings which also allowed for recording the information sessions and presentations. Email and WhatsApp were used daily to send out encouraging videos and check-ins with participants. We also encouraged students to use collaborative tools such as google docs for shared document creation.
7. **Global Judges and Prizes:** Include judges from the NGO and/or various countries to evaluate projects. Offering prizes that align to the cultural groups involved in the work is important. In our situation, one country valued trophies and certificates more than cash awards so adaptations were made.
8. **Post-Hackathon Networking:** Create avenues for participants to stay connected after the hackathon ends. This could include online communities, social media groups, or platforms designed for ongoing collaboration or work with the NGO.

9. Professional Development: Provide certificates and digital badges shortly after the hackathon and encourage students to use these on their own social media sites such as LinkedIn. Explain how sharing these can show evidence of global engagement and may be positive to future employers.
10. Partnerships with International Institutions: Collaborate with universities and institutions from different countries to co-host the hackathon. This can broaden participation and enhance the global nature of the event. Collaborations provide learning experiences for faculty as well as students so encourage wider attendance during the final presentations in order to engage and support cross-cultural connections. Research ideas or co-teaching and learning experiences can come out of these types of virtual events.

Conclusions

In summary, promoting international collaboration through educational hackathons with NGOs not only enriches the learning experience for students but also can help foster global awareness, empathy, and the ability to work effectively in diverse teams. This paper has outlined our experience working across two universities in different countries in conjunction with the international NGO, Doctors Without Borders, and we offer 10 ways to approach this learning experience. Hackathons provide a creative way to engage students in helping to help solve problems in an increasingly complex world and can be part of a toolbox of ideas for universities to engage in.

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