The Unique Hackathon Experience

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ABSTRACT

In this paper, we give insight into the growing student hackathon movement. Student hackathons are weekend events where students come together to create, build, and share projects of any kind. These events are typically software and hardware focused, but have been expanding to broader disciplines. These events give students opportunities to learn and experience computing in ways that are not seen in a typical computer science classroom.

Out study collected data from 7,800 students participating in over 300 student hackathons, hosted from 2013-2016. We describe the particular model of student hackathon this data was collected from. Our analysis focuses on how student hackathons are able to give unique experiences to these students, experiences that are difficult, if not impossible, to replicate in other computing learning environments. We focus on the small, elemental features of the hackathon and look at how they build into a cohesive and distinctive computing learning experience for student organizers and participants alike.

Categories and Subject Descriptors

K.3 [COMPUTERS AND EDUCATION]: Computer and Information Science Education – *computer science education, literacy*.

Keywords

Student hackathon; coding competition; gender; women; informal learning; broadening participation; project-based learning

1. INTRODUCTION

Student hackathons are events where computer scientists, engineers, and technology-enthusiasts come together in a weekend-long event (typically 24 or 36 hours), to build projects from scratch [1]. Generally, these events are software and hardware focused, with participants using existing APIs, frameworks, and microprocessors to aid in building their project. These events are free for students and will provide a hacking space and food throughout the event. Hackathons may also provide hardware and mentors to help students.

A student hackathon event does not embody "hacking" as it can be maliciously portrayed in popular culture; instead participants "hack" in two common ways [2]:

1. They build a project by using technology in an innovative and unintended way
2. They build projects quickly and crudely (as in "hacked together")

Student hackathons are primary seen as learning opportunities where students can build something cool or work on a project idea they've had, but never had the time, space, or resources to build before.

Student hackathons at the university level have been present since the early 2000s, but have recently been growing in popularity and magnitude. It is becoming increasing popular in the US for large colleges or state universities to have a club or group that organizes a yearly or bi-annual hackathon. These organizations are often student-led with minimal faculty intervention or university support.

In this paper, we describe, the growing student hackathon movement that has been supported by Major League Hacking (MLH), "The Official Student Hackathon League". MLH started in 2013 and helped a small number of student hackathons across the US promote and organize their hackathons. Over the last few years, the number of student hackathons has grown from less than 10 to over 250 per academic year. The organization now helps student hackathons in the US as well as Canada, Mexico, and parts of Europe. It is estimated that in the 2016 calendar year over 65,000 students will attend a MLH member hackathon. The data presented in this paper comes from feedback surveys from the student organizers and hackathon participants as well as experiential reports from team members and student hackathon organizers.

This paper covers (1) the standardized student hackathon model, a common format of hackathon that that most hackathons follow, (2) data from post-event surveys, and (3) our analysis and discussion about the unique and computing learning experiences that hackathons provide to students.

2. BACKGROUND AND RELATED EFFORTS

Hackathons are inherently a part of computer science and their educational efforts, despite their student-led and subversive roots. Hackathons embody a number of educational strategies that have been employed in computer science classrooms and strive to bridge gender and race gaps the same way that educators do.

Women and Minority Students. There have been tremendous efforts in making CS programs more inclusive and engaging for students. Since the 1980s there have been decreasing numbers of women graduating from CS and there are still significantly fewer underrepresented minorities graduating CS than whites [3]. There have been a number of efforts in the last few decades to bridge these gaps and create more inclusive environments for women and students of color. Starting in the mid-2000s, Harvey Mudd College redesigned their introductory CS course to show a broader application of CS, split students by ability, and engage in

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open-ended projects courses; and they boasted a successful 50/50 gender split in their future CS classes [4].

Project-Based Learning. Other engineering programs have shown success with project-based courses [5]; and project-based courses have been shown to positively impact women's interest and attitudes towards the engineering curriculum [6]. Project-based courses and courses with broader CS content appeal to a wider range of students, since they allow space for student to explore.

Large Classroom Strategies. A national focus on STEM and coding has also caused an influx of students to CS classes, making massive, undergraduate introductory computer science classes the norm. Computer science educators are challenged with educating at scale while keeping student engaged in large lecture halls. Many strategies for success have included pair programming, peer instruction, and self-paced courses [7] [8] [9]. These strategies shift part of the instructional work from the instructor to the student and their peers and give agency to the student's in the class.

Flipped Classrooms. Flipped classrooms are another strategy that educators use to give students more ownership of their material and put an emphasis on "doing over knowing" [10]. These classrooms run on a model that students will come prepared with some base knowledge and learn while making in a brief, intense, collocation environment [11]. Hackathons create a similar learning environment and have been shown to have positive results in the classroom and affect student interest in the course [12].

Computing Mindset. Computer science can seem intimidating and difficult to learn for incoming students [13], so retention and perceptions of the field can be places where educators can change this mindset. Hackathons are uniquely posed as a place where students can explore ideas without the accountability or commitment of a computing class. These experiences can have a major impact on students and their mindset about a computer science program or the field of computing. Hackathons can be shaped to provide their participants with these exploratory and diverse experiences and to show positive results in retaining students in a college program [14] and broadening their perceptions [15].

3. CONTEXT AND DATA COLLECTION

Hackathons can be classified as tech-centric: "focus on software development with a specific technology or of a specific application"; or focus-centric "target software development to address or contribute to a social issue or a business objective" [16]. These terms can cover high school, undergraduate, and industry hackathons. In this paper, we will focus on a subset of hackathons, called student hackathons, that can be focus or tech-centric, but are narrowed by the demographic of hackathon participants: students.

We recognize that there are a number of colleges and universities across the US that host student hackathons, however, this paper specifically covers MLH student hackathons. This the only organization providing outreach to student hackathons and, as a result, they have helped 180 student hackathons and reached over 51,000 students in the 2015-2016 school year alone.

This organization provides a baseline hackathon model. All of these student hackathons have gone through similar vetting processes and provide similar experiences to student organizers and participants. This has provided a large dataset where we can make generalizable claims about student hackathons.

3.1. Becoming a Student Hackathon

Major League Hacking (MLH) is an organization that helps and empowers student hackers across the globe [17]. They do not directly sponsor or host student hackathons, but instead they give resources to the students planning the hackathon, the "student organizers", so that the students can be enabled to create better hackathons themselves.

The student organizers drive the process to becoming an "MLH-Member Event", which involves begin planning their hackathon on their own, keeping in contact with throughout the planning process, and providing event data from their hackathon.

To become a MLH-Member Event, the students must first create a group, club, or organization that will become the hackathon organization committee. Usually this consists of a core group of students with one director and a handful of co-directors. The students decide on the primary elements of their hackathon, such as name, logo, length, date, time, and venue. Next, the students apply for membership. When a hackathon gains membership, the organizers are assigned an Mentor. The Mentor will meet with them (often over a video call) and help the organizers plan their event. These meetings provide mentorship and guidance to the student organizers until the time of their event.

MLH requires that a hackathon have a name, logo, venue, date and time, length, and estimated number of participants before they apply for membership. All of these hackathons must be longer than 24 hours long and have a minimum of 80 participants to qualify for membership. There is a Code of Conduct [17] that all participants must follow and agree with before participating.

Before the hackathon, the student organizers must send a list of the registered participants to MLH. This list serves two purposes: (1) to get demographic data of hackathon registrants and (2) to analyze the list for banned people. Individuals on the banned list have participated in previous hackathons, but violated the Code of Conduct. This serves as a safety precaution for all the hackathon participants.

At the event, MLH will send a Team Member or Coach to help the student organizers with the event. These Team Members will give in-time advice to students, act as mentors to the participants, and help support the event.

After the hackathon, the student organizers will send a final list of participants to MLH. The MLH mentor will follow up with the organizational team to discuss improvements for the future.

3.2. Data Collection

3.2.1. Survey Data

All student hackathons are required to report two types of data: (1) A list "Registrants" list, which includes all students who have registered for the hackathon beforehand, and (2) A list "Participants" list, which includes all students who participated in the hackathon.

In both of these lists, organizers must include name, school, email, and phone number of the participants. The student organizers facilitate the process of data collection. During the event, the organizers will have a check-in process for their participants where they will keep track which of the registrants has come to the hackathon. The organizers are responsible for compiling a finalized list of who has checked into the hackathon and sending

this Participants list to MLH within two weeks of the hackathon's end date.

Once MLH receives the Participant list, they will send a feedback survey to all participants of the hackathon. This is a brief survey that asks for more detailed demographic data and feedback about the hackathon.

3.2.2. Experience and Observational Data

Two authors of this paper are team members of MLH. Team Members travel to hackathons throughout the school year, visiting two hackathons per month. The remaining author has acted as a participant, mentor, or organizer of six separate [REDACTED] hackathons. Our experiences have been collected through extensive ethnographic observation and participatory design work.

4. THE STUDENT HACKATHON MODEL

By creating a governing body over competitive student hackathons, MLH unintentionally created a common student model as well. The Code of Conduct and membership requirements shape the type of hackathon organizers can hold, allowing a common hackathon model to emerge.

When we were deciding how to report on the hackathon model, we decided against providing a list of disjointed elements, but instead will describe a hackathon from the eyes of two types of students: the organizer and the participant. Our aim with this narrative approach is to give perspective into what types of experiences students face when *planning* and *attending* a hackathon.

4.1. The Organizers: Planning a Hackathon

Organizing a hackathon can take anywhere from one year to three months. To make the planning process easier and simpler to manage, the organizers will often break into smaller teams and that will each be responsible for a different portion of the hackathon. We often see these teams split and cover the following responsibilities: sponsorship, logistics, and user experience.

4.1.1. Sponsorship

Hackathon costs can run anywhere from a few thousand dollars to well over one-hundred thousand dollars. If the organizational team is a student club, sometimes there will be seed funds from the hosting university, but often a majority, if not all, hackathon costs will be covered by sponsorship donations or goods donations.

First, the team will develop a sponsorship package, which lists the different sponsorship tiers and what the company will receive in turn. Tiers can range anywhere from 250 to 20,000 USD, depending on the budget of the hackathon. Common things companies receive for their sponsorship is their logo on the hackathon website, their logo on the hackathon t-shirt, a sponsorship table where recruiters can set-up during the hackathon, a keynote speech during opening ceremonies, ability to demonstrate their product during the opening ceremonies, sponsoring a track or prize, access to the participant email list, and access to participant resumes.

Another type of sponsorship or partnership is in-kind donations or goods and services donations. Organizers will reach out to local (or sometimes national) companies and ask them to directly sponsor with their goods or services. Food donations or discounts, t-shirt discounts, sticker donations, and free shipping are common types of goods donations that students may receive. Often we see students trade a company's goods for promoting that company's logo on the hackathon website and t-shirt.

4.1.2. Logistics

Logistics covers a broad range of topics and decisions that the organizational team will have to make during the planning process, such as venue, food, travel, and scheduling.

Venue. The first logistical decision a team should make is where the hackathon will be hosted. Participants, mentors, sponsors, and the organizational team will all be present at the same time, so finding a space that will accommodate everyone can be difficult. We see two common layouts for hackathons: (1) a single, large venue and (2) multiple smaller rooms. Organizers will largely be limited by the space available on their campus, the cost of reserving the venue, and their budget.

Venues will also need to be equipped with adequate wireless internet. Some universities will have wireless internet that will can cover small to medium sized hackathons. Larger hackathons must look into alternative means of providing internet, which will be dependent on the hackathon's campus' IT group. We recommend that organizers should estimate 2.5 devices per participant (phone, computer, tablet) and 1.5 devices (phone, computer) for all other people attending the event (mentors, sponsors, organizers).

Power is another issue that will need to be planned beforehand with the venue in mind. We recommend that the team learn where the outlets are in the space, so they can plan where to set up extension cords and power strips ahead of time.

Tables and seating arrangements is one of the last items that is dependent on the venue space. If the organizers use classroom or study spaces, there might be tables and chairs that the hackathon participants can use. If the hackathon venue is an open space or multi-purpose room, the organizers will have to rent tables and chairs. There are two common table configurations at hackathons: (1) barracks-style and (2) group table style. Barracks-style hackathons have banquet tables, arranged in long rows to seat all participants. This option is the most cost effective and the best use the space, however, students may feel cramped and wish to spread out more. The second option, group tables, will assign one small table per group. This option requires the most space, allows participants to claim their space and spread out more.

Food. Food will be the next largest piece of a hackathon that will require the largest budget and detail. All [redacted] events are required to provide free meals and snacks to their participants for the duration of the event. In a 24-hour hackathon, providing 3-4 meals is the norm, and at a 36-hour hackathon, providing 5-7 meals is the norm. Snacks offered every few hours, especially overnight, is also recommended. Food should also cater to the participants and their dietary needs. Organizers should expect to have a large number of participants who are gluten-intolerant, lactose-intolerant, vegetarian, vegan, or a combination of any of these.

Travel. Traveling to hackathons can be a large burden for students and is one of the largest deterrents for participants. We are seeing more and more schools, which are geographically close, coordinate with one another and send large groups of students to each other's hackathons. Organizers will create a buss or carpooling schedule to bring participants from all over to their hackathon.

Scheduling. The hackathon itself will also need to be scheduled. A hackathon will have registration, meals and snacks, opening and closing ceremonies, mini events, hacking beginning and ending, and demoing. All of these events will need to scheduled beforehand, especially since many of them depend on other parties. Food caters will need windows when they should bring food (and, if applicable, when they should clean up). Judges will need to know when and where demoing will take place. Hackers will need to know when registration is. All of these events will also need locations and directions on how to get there. This information will be different for each of these groups, so organizers will need to think through what information each category of people will need to be informed of.

4.1.3. User Experience

Hackathons have borrowed the term "user experience" from the HCI field and describes the *style* of hackathon the organizers want to promote.

A common item that is handed out at every hackathon is custom hackathon t-shirts. These are designed with the hackathon logo on front and the sponsor's logos on back. T-shirts are a great souvenir, can keep the hackathon fresh in people's minds, and can help build community at the hosting school. However, getting t-shirts printed is often costly and only increases with the number of attendees.

Sponsor and technical workshops are common events held during the hackathon. These workshops can introduce new technology or teach a new skill. Sponsors might hold workshops to demonstrate their technology, especially if they are sponsoring a track or prize and they want participants to participate. Other workshops can cover introductory techniques, such as how to use version control or how to get started with a microprocessor; these workshops can helpful for beginner programmers and can make the event feel more welcoming.

Finally, organizers must organize all the prizes at a hackathon. MLH will sponsor the prize for first, second, and third place, but the organizers will have to provide judges. The sponsors can also help with additional tracks or prizes. These tracks can be for certain causes, such as best hack that supports or helps a social cause, or technology tracks, such as most innovative use of a company's API. The sponsor company will provide judges and awards for these tracks and can promote their competition through workshops, in opening ceremonies, or around the hackathon.

4.2. The Students: Attending a Hackathon

Most Major League Hacking hackathons follow a similar timeline of events. 36-hour hackathons usually start on Friday night and 24-hour hackathons start on Saturday mornings, and both will end Sunday afternoons. There will be a registration period where participants, mentors, and sponsors can check in. Usually registration will happen during a 2-3-hour window, so lines are not too long. Participants can set-up at a hacking table or wait in the opening ceremonies room.

Then opening ceremonies will start. This is time for the organizers welcome the participants and tell them about how their hackathon will be run. There may be a keynote speaker that will encourage hackers to pursue fun and creative ideas. Sponsors may speak and demo their products or introduce their track or prize. The organizers will then cover hackathon expectations and the Code of Conduct.

Next can be a combination of simultaneous events happening at once. Hacking usually begins immediately after opening ceremonies, so some participants may get started working on their project right away. Team formation will also take place for any participants who have come alone or are looking for extra team members. Usually one or two organizers will be there to help facilitate this process. Hardware checkout will start during this time as well. Hardware will be provided by MLH for participants to checkout for the duration of the hackathon. Hardware checkout during this time will be extremely busy with many participants checking out hardware at once, so the MLH team member and 2-3 organizers will help facilitate this process. Depending on the time of day, food may be served during this time as well.

During registration and team formation and throughout the hackathon, sponsors will be setting up their sponsor tables and talking with participants. Sponsors will be busier during the start of the hackathon, especially if they are sponsoring a track or prize. Participants will want to know more about the track and how they can appeal to the sponsors or utilize their technology to gain a competitive edge.

During the hackathon, mentors, sponsors, and recruiters will interact with participants, offering assistance and help where it is needed. The hackathon organizers may provide an online instant messaging system, such as Slack, to field participant questions and coordinate mentor efforts.

Mini events and challenges are fun ways to let participants take a break and keep energy up throughout the event. These events can be small competitions or activities that get the participants up and focused on something other than hacking for a short period of time.

Throughout the event, participants will be participating in mini events, attending workshops, stopping for meals, and sleeping, all while building their hack. Hackathons will be very busy and active, even throughout the night.

After hacking ends, the participants must submit their project. MLH hackathons use the website Devpost.com, a hackathon sharing website where participants can create online project portfolios and submit to the hackathon online. Using a submission website helps the organizers and judges coordinate and keep track all the project submissions and which tracks and prizes the projects are aiming for.

Demoing is one of the last events that happen at a hackathon, and will require a lot of coordination between judges, participants, and the organizers. There are two popular styling of demoing that student hackathons use:

(1) The "science fair" model. This type of demo will have the participants stay in the hackathon space and demo their projects as judges, mentors, and other people walk by each table to check out projects at their leisure. This style of event can make it easier for judges since they will get a chance to interact with the participants and their project. However, participants may not get the chance to see many other hackathon projects.

(2) The "presentation" model. This event is usually located in the same space that the opening and closing ceremonies took place in. Participants will prepare a 2-3-minute demo and presentation of their project and show it off in front of everyone. This is the most utilitarian model, since everyone gets the same chance and time to speak and all the participants will be able to see all other participant's projects,

but it does not allow for questions or more detailed interactions with the projects.

After demoing, the judges will take a short break and decide on the winners for each track and the overall hackathon. These awards will be presented in the closing ceremonies, which should be brief and concise, since everyone will be drained and fatigued at this point. The organizers will then conclude the ceremony and release everyone.

5. POST-EVENT SURVEYS

MLH sent out post-event surveys during four different semesters over the last three school years: Spring 2014, Fall 2014, Fall 2015, and Spring 2016; there were 900, 1,339, 2,747, and 2,914 responses to the surveys, respectively. In the 2015-2016 school year, there were 51,201 participants across 180 separate hackathons and a we received 5,661 responses to the post-event survey. This means the response rate for the post-survey is just over 11%. We acknowledge this low response rate and will be reporting on data as it concerns this subset of the participant population. However, our dataset contains 7,900 student responses and is one of the largest hackathon feedback datasets to be amassed. A dataset of this magnitude, with a wide-ranging breadth of events is also the best representation of the student hackathon movement that exists currently.

Demographics. In terms of gender, we have seen an increasingly diverse group of students participating every semester (Table 1). Given the demographics of the tech industry and computing majors, it is not surprising that there is a majority of men attending these hackathons. However, we are seeing a steady rise of women and non-binary participants as well.

	Spring 2014	Fall 2014	Fall 2015	Spring 2016
Men	85.3%	84.7%	74.4%	73.3%
Women	13.2%	14.4%	23.7%	24.7%
Non-Binary	Not reported	0.4%	0.9%	0.8%

Table 1: Participant gender breakdown per semester

In terms of ethnicity and racial identity, we see a large number of Whites and Asians participating in hackathons and low numbers of Hispanics, Blacks, and Natives (Table 2). There are fluctuations in almost every racial group, but a small and steady increase in Hispanic and Black participants. If we look at enrollment and graduation rates in computing programs, these statistics are also unsurprising for every racial group expect Asian and Pacific-Islanders. There is a large percentage of Asians at hackathon, but we do not see this same pattern in enrollment in computing programs [3].

Majors. We also see a more diverse group of degree-seeking students participate in hackathons (Table 3). Hackathons are traditionally software engineering and programming focused, but we can see a decrease number of computer science majors attending and more students from other engineers and creative fields ("Other" category) start to participate. Nearly 1/3 of hackathon participants are from fields other than computer science and computer science-related fields. Spring 2016 also marked the first semester we saw a majority of hackers majoring in a field other than computer science.

	Spring 2014	Fall 2014	Fall 2014	Spring 2016
White and Caucasian	43.9%	48.1%	45.9%	42.7%
Asian and Pacific-Islander	42.4%	41.8%	40.3%	41.8%
Hispanic and Latinx	4.6%	6.3%	9.7%	10.3%
Black and African American	2.1%	3.3%	3.6%	4.5%
Native American and Alaskan Native	0.6%	0.4%	0.5%	0.7%
Mixed Race	6.5%	Not reported	Not reported	Not reported

Table 2: Participant ethnicity breakdown per semester

	Spring 2014	Fall 2014	Fall 2015	Spring 2016
Computer Science	61.3%	61.0%	54.6%	49.5%
Computer Engineering	10.9%	8.7%	10.4%	10.2%
Software Engineering	3.8%	4.0%	4.7%	4.9%
Electrical Engineering	4.2%	5.7%	6.1%	5.3%
Other	19.7%	20.7%	24.1%	30.1%

Table 3: Majors and fields of study breakdown per semester.

Learning. In the 2015-2016 school year, we added a question on the feedback survey that asked students to rate, on a Likert scale, their agreement with the following statement: "I feel that I gain skills at hackathons that I am not getting in the classroom". An overwhelming number of students agreed with this statement in the fall semester (88.5%), while a moderate number of students agreed in the spring semester (41.1%).

	Fall 2014	Fall 2015	Spring 2016
My friends	55.3%	48.9%	48.2%
Valuable prizes	N/A	26.1%	30.6%
Helpful mentors	N/A	60.9%	62.5%
Informative workshops	N/A	50.7%	53.6%
Attendees similar to me	N/A	N/A	24.4%

Table 4: Percentage of participants who agreed or strongly agreed with the statement, "A hackathon must have ____ for me to participate"

Reasons for Attending. Participants choose to attend a hackathon for a number of reasons. In Table 4, we present the top five statements that participants agreed with, on a Likert scale, as reasons they would attend a hackathon. This survey question has changed the most over time, but participants continually list friends as one of their top reasons for attending a hackathon. Mentors and workshops are also very important factors of a hackathon.

6. DISCUSSION

6.1. Inclusivity and Diversity

Overall, we've seen the hackathon movement making advances at becoming more inclusive in terms of gender, race, and major discipline. There has been a 52% increase in the number of women participants, 45% increase in the number of Hispanic participants, and 47% increase in the number of Black participants from Spring 2014 to Spring 2016. We've also seen a 65% increase in the percent of non-CS participants attending hackathons. As the hackathon movement has grown over the last three years, it is has adapted and is starting to accommodate a broader audience. Hackathons no longer represent the demographics of a computing program. There are now higher percentages of women, Asians, and Hispanic students attending hackathons than obtaining computing and information science degrees [18].

6.2. Organizer's Experiences

One of the key features of a student hackathon is that it is an educational space, organized by students for other students. It is rare to see learning spaces created by members of a target audience for their peers. The organizational teams contact sponsors, plan logistics, and create the complete user experience. In all of these decisions, the student organizers actively shape and control the experiences of their fellow students.

It is surprising that there is so much overlap between learning at a hackathon and popular educational efforts, such as project-based learning, peer instruction, and flipped classrooms. The student organizers do not plan a hackathon as an exclusive learning environment, complete with educational pedagogy. However, hackathons have been shown to provide a type of informal environment where learning can occur [1]. We assert the claim that hackathons can become informal learning spaces for the organizers themselves as well.

Students hardly ever get to exercise this much autotomy and control over their peer's (and their own) learning environment. During the planning process, organizers make decisions that have direct impacts on the hackathon experience. They are able to see the entire process unfold, from the initial decision, to the implementation, and finally the impact, if it is effective or not.

The student organizers will not be learning any direct computing content, but they will be able to talk with sponsors and recruiters, build their professional network, work and coordinate with a team, plan a and fall within budget, all while focusing on creating a computing experience.

6.3. Participant's Experiences

Hackathon participants are exposed to a number of computational, educational, and social experiences at a hackathon. These experiences can be pieced apart and singly studied, but at a hackathon, a student will be experiencing all of them *together*, which is makes the hackathon experience so unique.

Learning is one of the top reasons choose to participant in hackathons, however, at a hackathon participants are not learning from one single content area. Participants are constantly iterating on their project, performing rudimentary project management, and negotiating working on a team. They may be using an unfamiliar technology or software, so they are gaining new knowledge while continually leveraging old knowledge to move the project forward. This type of learning is incredibly hands-on and usually only seen in capstone project courses [19]. This hackathon experience takes a participant through the complete design process, from idea to demo stages.

However, this experience is unlike traditional education as well. The participants must be independent, but are able to ask mentors for help when needed. The competition element of the hackathon serves as a motivator, but not a negative deterrent. Participants are not graded on their efforts or completion and there are no negative repercussions for finishing the hackathon with an unfinished or buggy project. The entire learning process is dependent on the pace and needs of the participants. A hackathon is the combination of all of these elements and circumstances in a single location and compressed timeframe. It is a unique experience that is unparalleled in traditional computing education.

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