

AY2013-14 Hive Networks

Connecting Youth: Digital Learning Research Project

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I. Executive Summary

This formative report is part of a larger multi-method study of attitudes, behaviors, and competencies around a diverse range of digital media and learning initiatives. In this report, we focus on documenting the experiences of Hive Chicago and Hive NYC educators and administrators who represent member organizations of the networks, as well as a sample of youth who participated in programming within Hive member organizations. During AY2013-14, 34 interviews were conducted with Hive member representatives in Chicago and 58 interviews in New York to understand their perceptions of the network's benefits, its influence on their practice and home institutions, as well as suggestions for how the network could improve. In addition, we present analysis of youth survey responses collected in both cities across all three years of research. This includes 1,617 pre-, post-, and one-day surveys across 66 programs in Hive NYC and 1,055 pre-, post-, and one-day surveys across 37 programs in Hive Chicago. Key findings from the research include:

Defining Hive: Representatives defined the Hive as a well-connected community of peers. They described Hive staff as administrators who fostered organizational collaborations while building a rich resource for youth-serving programs throughout the city. Representatives also believed that the network provided opportunities for experimentation with technology, the enactment of connected learning principles, and funding.

Defining Hive-like: Representatives believed that what made a program “Hive-like,” “Hive inspired,” or “Hivey” was largely centered around HOMAGO and connected learning principles, including that programs were youth or interest driven. They also felt that “Hive-like” programs were usually highly collaborative and incorporated technology in some form. However, some pointed out that their work had already been aligned with Hive’s goals, and that these learning models simply provided language to describe their existing practices.

Educational Innovation: Hive representatives felt that the network encouraged educational innovation primarily through encouraging organizational collaboration and offering grants that encouraged experimentation. They also viewed the connected learning and HOMAGO models as innovative and consistently reinforced during network activities. Representatives believed that educators from the school sector were missing from the network, and believed that Hive leadership should work to better bridge the gap between the informal and formal learning spaces.

Problematizing Growth: Representatives expressed mixed feelings about managing the network’s growth. They agreed that growing the network would provide increased opportunities for identifying organizations with like-minded goals and could serve a larger number of teens. However, it was feared that a network that became too large could potentially dilute each organization’s ability to build meaningful relationships and collaborations. Some were also concerned about the staffing and funding capacity required to manage a fast growing network.

Others suggested that the Hive leadership could manage growth by breaking members into subgroups and continuing to implement a tiered membership structure, while still working to recruit underrepresented institutions.

Hive Resources - Benefits: The two most valued benefits of membership were access to funding and organizational peers. For the latter, representatives emphasized the value of networking, exchanging ideas and resources, and partnering across areas of expertise.

Desired Resources: When asked what resources they would like access to, representatives highlighted the need for a resource hub where they could easily find information on all Chicago Hive member organizations, as well as their programs and projects. They also requested toolkits with best practices, stronger connections between the various Hive Learning Networks and Hive Learning Communities, and a more organized structure for monthly meetups and Minigroups.

Member Organizations - Institutional Support: None of the interview participants reported facing institutional challenges regarding their Hive membership. However, the level of active organizational support they experienced still varied. The most obvious way an organization supported a representative's network engagement was by allowing them to participate in Hive meetups. However, participants had to manage their time well in order to balance their involvement with other requirements of their jobs.

Alignment: Overall, representatives believed that their work was aligned with the Hive Network's goals. They saw the goals as a standard to strive for and as a means to keep themselves accountable.

Spread: There were mixed responses on whether concepts like connected learning and HOMAGO had spread beyond the Hive network. While some representatives believed that these concepts were spreading in their home institutions, others mentioned that their work had been aligned with these models before they were formally identified and promoted.

Hive Youth - Chicago: From 2011-2014, Chicago Hive youth were surveyed to glean demographic data and to understand their attitudes towards school, how they found out about their programs, and the perceived value of their program activities. Youth gender was evenly split, and a large majority self-identified as non-white or mixed race/ethnicity. A greater number of white teens had parents with degrees in higher education, but nearly all youth aspired to attain at least a college degree. Youth predominantly heard about their Hive programs through school, followed by family or friends. Over time, youth's awareness of the larger Chicago Hive initiative declined significantly from 59 percent in the first year to 11 percent in the third year. Nevertheless, more youth in year three agreed that what they learned was transferable to other areas of their lives compared to other years. A majority of all youth agreed that what they learned from their programs would be useful in school or a future job.

Hive Youth - NYC: From 2011-2014, New York Hive youth were surveyed to glean demographic data and to understand their attitudes towards school, how they found out about their programs, and the value they placed on their program activities. Across the sample, there were slightly more female participants than male, and a large majority self-identified as either a racial/ethnic minority or mixed race/ethnicity. A greater number of white teens had parents with degrees in higher education, but nearly all youth aspired to attain at least a college degree. Youth predominantly heard about their Hive programs through school, followed by family or friends. Over time, youth's awareness of the larger New York Hive initiatives declined significantly from 66 percent in the first year to 17 percent in the third year. Nevertheless, more youth in year three agreed that what they learned was transferable to other areas of their lives compared to other years. A majority of all youth agreed that what they learned from their programs would be useful in school or a future job.

II. Introduction

The Hive Learning Network is a space for youth serving institutions across the city to exchange expertise, ideas, and resources. Members were offered funding opportunities and were highly encouraged to build relationships and collaborate with like-minded organizations. As of December 2014, there were 57 and 56 member organizations¹ in Chicago and New York City, respectively, representing museums, libraries, non-profits, media companies, and universities.

In this report, we examine how network members defined the Hive and what they reported it meant for a program to be “Hive-like” or “Hive-inspired.” We also look in depth at the perceived value of network membership, as well as the benefits and potential challenges of network growth. Finally, we asked representatives whether concepts such as connected learning and HOMAGO had spread into other parts of their institutions, and to what extent their and the network's goals were aligned. While Chicago and New York City represent different implementations of the Hive model, upon analysis of the data the similarities between representatives' cross-city responses were striking. Thus, this report provides a comprehensive, cross-city look at Hive representatives' perceptions of the Hive Networks, with city-specific differences highlighted within the text.²

We conclude this report with an overview of Hive youth demographics across multiple programs in the past three years. We also present a summary of how youth found out about Hive programs, the perceived value of the skills they learned, and how this knowledge transferred to other areas of their lives.

¹ Both Hive Chicago and Hive NYC employ a tiered membership model. This numbers represent the highest, or most involved, level of membership.

² Analysis in this report reflects perceptions of Hive representatives at the time of interviews. Structure and operations of the Hive networks may have evolved since the interviews were conducted.

III. Network

A consistent challenge for both Hive Chicago and Hive NYC since the networks' respective implementations has been defining what a Hive network looks like in terms of mission, size, scope, and operational structure. In this section, we examine Hive member representatives' perspectives on the definition of a Hive network, ideal network size and membership, and benefits to participation.

A. Defining Hive

Representatives from both cities defined Hive using a range of terms; some called it “a consortium,” “a network,” or “a collaboration,” while others felt that it was “a community” or “a collection.” Most representatives defined Hive networks by pointing to the inter-connectedness of organizations and focusing on how relationships between Hive representatives constituted the Hive, rather than pointing to the Hive staff and administrators as its central elements. Their understandings of Hive placed the member organizations as the cornerstones of the Network and the Hive leadership staff in a crucial, but ultimately supportive role. As one NYC representative put it:

Well, using the analogy of a hive, Hive HQ, to me, is like the queen bee. The queen bee is really responsible for that whole network of worker bees and that division of responsibility and contribution to making that hive successful. I see Hive HQ and what they're trying to do is that they're—it can be really hard to come to common consensus for vision and strategies and work ethics and pathways for moving forward, what is innovation. Without Hive HQ, I don't know that any of that would be able to happen. I guess that's—using that analogy, it's the importance I see of them.

Defining the Hive as a “network” or a “collaboration” as many representatives did, pointed to the member organizations and the connections among them as the core elements of a Hive. For example, one Chicago representative explained:

It's a collaboration of organizations who are focused on youth programming and trying to provide more of a collection or resources to students throughout Chicago and New York, wherever the Hive is, so they have access to more programs and activities to learn about different things.

Across cities, representatives were closely aligned in their explanations of the purpose of the Hive Learning Networks. Overall, they felt the purpose of Hive was to bring together a host of youth-serving organizations that spanned the city in order to provide a place in which connections could be made, collaborations could emerge, and ideas and resources could be shared. They also pointed to the use of technology in programming and the concept of connected learning as central to the purpose of the Hive.

One representative used an analogy of the Chicago train system to illuminate the purpose of Hive. She said:

It's to use the city as a hive. Right? Create great networking possibilities within the city using the resources that are already there, connecting people in a different level. Think about how

disconnected Chicago is when you think of the train lines. Everybody knows that we need connections. I feel like the Hive tries to make those connections without waiting for the city to make them. Totally aligns 'em for you too. Do you know how we have the loop? People have talked since I moved to Chicago, since I know people, people have talked about having the big loop that connects all the lines. We have the tiny loop... I feel like the Hive is trying to do this with people. Trying to connect—create this big circle in the city.

Representatives were pleased that the Hive served this much needed and valuable function of connecting disparate organizations. One Chicago representative, who had been working with teens for almost 20 years, explained,

I think it serves as a great opportunity. I've been doing youth development work for just about 20 years now, and I've always, over the years, heard organizations or people representing youth work saying, "We should have a place to get together. There needs to be a collection of folks like us who can talk about these issues. We need a place for us to convene to make sure we're not duplicating services," because the more I'm in this space, I realize you're doing that and you're doing that, and you're going after the same funder. We should work together and maybe you could have really done that, and I could have done that, and this together makes this. I think the Hive provides a nice opportunity to really do that, to really bring us together, to allow us to collaborate, to allow us to find out ways to enhance our programming and to find ways to do it better. Like I said, it's a great opportunity for those in the space just to come together and learn. I've learned about so many resources for my teens and for me, as I've developed programming, that I didn't know was out there, so I'm just happy that the Hive is able to provide that for us.

A NYC representative from one of the founding organizations defined the ultimate purpose of the network as being willing to share ideas, successes, and failures with others. He said, "Hive's core value is creating community where you're encouraged to share your ideas, and I think we're also all more willing to share what doesn't work."

Collaboration was also mentioned by a Chicago representative who explained that the purpose of Hive was to:

Bring a diverse group of organizations together to collaborate, of course, in providing—I don't know if learning is the right word. Different types of learning, diverse learning to students, to young people. Again, using technology as part of it. I hear people asking, "What is the Hive?" It's basically a network that brings other organizations that work with young people together.

A NYC representative acknowledged the power of these kind of collaborations:

I think that the overall purpose was to bring like-minded organizations together and to give them the opportunity to connect and collaborate and, as an organization, as a community of organizations, make us all stronger from a cumulative basis.

In addition to touching on collaboration, representatives also highlighted that the use of "technology" was a central component of the purpose of the Hive. This was mentioned by other representatives as well. A representative from New York stated, "It's a consortium of institutions across New York City that serve young people and do digital media projects." One from

Chicago said, “The main focus is working with young people and incorporating technology also into the process, and whatever they’re learning.”

Connected learning was also identified by representatives as a significant part of the Network’s purpose. Many felt that to “facilitate” or “enact” connected learning in the city was central to the Hive’s work. A Chicago representative explained,

I think the purpose is to enact connected learning in the city. Doing that by creating this community of practice among program designers and implementers. Do that in a way that programs in the Network have common goals, seek a collective impact on the learning landscape in the city, and be an example for other cities. Or be an example for formal schooling.

Few respondents mentioned funding when describing the purpose of the Network. When they did, funding became part of a larger logic. As a NYC representative explained, “I would say that it’s a way for expanded learning organizations to get a handle on best practices and research, both through network conversations and peer-to-peer conversations. To get access to seed funding for innovation and experiments.” Similarly, a Chicago respondent emphasized that Hive’s purpose was multi-faceted and was evolving beyond funding:

I think it’s becoming more than just a funding pool, and more than just a network of folks who do certain things, to a collaborative network of folks who do certain things, who can give and take and share and build together around key concepts or key challenges around the city.

Representatives indicated that they believed the purpose of the Hive was to bring together a breadth of organizations, with all of their diversity and expertise, in order to “help organizations do their work better by leveraging other organizations.” In doing so, organizations, their representatives, and, most importantly, the youth would benefit. As one representative put it, “Because the collective is more than the sum of the parts, we can make a bigger difference. Share best practices. Facilitate partnerships. Ultimately, do a better job for the young people in the community.”

B. What does it mean to be Hive-like?

Representatives were asked what about their programs was “Hive-like,” “Hive inspired,” or “Hivey.” The most common traits that were identified as “Hivey” were a program’s basis in HOMAGO and connected learning principles, the presence of interest-driven and youth-driven programs, a focus on connecting informal and formal learning spaces, the collaborative nature of a program, and the incorporation of digital technology.

Representatives from both cities highlighted HOMAGO and connected learning as defining features of Hive-like programming. A Chicago representative stated:

I think the two things that stick out for me, for Hive, is really that connected learning and the connected learning principles. Really connecting youth with their interests, what they’re doing in school, along with their peer community culture. [...] I also think another piece that tends to pop out in Hive, when I think of Hive-like program, are HOMAGO spaces. The teen Learning Lab doing that, but also just thinking about the types of program that we have and the varying levels of engagement. We really do have programs that allow teens to just be curious and explore some

interests, to ones that are more they already know that's their interest, and trying to allow them to dig deeper type of thing. I would say that's why.

The connected learning principles, however, were not always clearly understood throughout the network. In part, this may be because the connected learning principles encompassed many aspects of youth programming. Therefore, although a number of representatives mentioned connected learning, they each tended to focus on a different aspect of the model. Some, as quoted above, focused on interest-driven programming, while others focused on connecting informal and formal learning spaces:

I think like there's definitely this piece of connected learning associated with it, so I see that as sort of Hive-like. Especially with our connections with a couple specific schools, I've been able to sort of bridge gaps with working with the teachers and making sure they know what some of their students are doing outside of school here...Yeah, so I feel like that connection between out-of-school time and what they're doing in school is one of the principles of the Hive. Then we do a lot of collaborative efforts with other Hive organizations.

To help mitigate this issue, Hive NYC funded a connected learning, professional development workshop series that was co-taught by two Hive NYC member organizations. When one of the workshop instructors was asked what made a program Hive-like, he reiterated the issue of connected learning compartmentalization and identified one component most organizations agreed upon:

After teaching the connected learning workshop, I really do think that a lot of these programs have a commitment to connected learning. As we've discovered, not all of them know what that means. I do think at least from the technology angle and from the student interest angle, they're connected. Even though I'm not even quite sure they really understand student interest. Maybe not so much they don't understand it. They don't necessarily know how to massage it and bring it out of the students to really understand it. Maybe they're so focused on workshop programming. The technology piece is important for these students and for these groups. Student-directed learning at the bare least is also something that makes the program seem Hive-y.

Like connected learning, collaboration was understood as a strong component of what it meant to be "Hivey," as many representatives explained that they have adjusted their approach to youth programming in order to make it more collaborative than it would have been otherwise. One Chicago representative attested to this by stating,

I think that they've all, because of the focus of Hive to collaborate with others and connect young people to other young people in Chicago, it's changed the way we do some of those programs. Because of needing to be competitive in our grant-writing process, we've had to think more critically about how we're doing the work we're doing and be a little bit more collaborative and innovative...Okay. That's one way that it's "Hivey," in that the way we've switched it up, based on being a part of the Hive and learning around what it is to collaborate and support young people across programs that aren't just in our program.

A NYC representative stated,

Hive members look to each other, share resources, and collaborate with each other. That's an ethos that's been developed through the Hive community that identifies something that is Hiveish. [...] The thing that's Hivelike in the programs is looking to collaborate with others, knowing we're not the only one in the room with the expertise and knowledge we need, and that there's others who can benefit from what we have, and that we can have programs that can meet both our educational objectives.

For many representatives, the network's emphasis on collaboration led to novel partnerships and a different way of seeing their peers. One NYC representative put it this way,

[T]he idea of us working together for a shared audience, instead of competing against each other for funds and students wasn't the vibe out there yet, right. Saying, I'm gonna take four days off this week and go spend all day at this workshop trying to work together with people that I'm usually competing against, would not have flown as easily as it would, if it wasn't sponsored by the MacArthur Foundation.

Teaching digital skills and incorporating digital technology were also seen as expressly Hive-like. One Chicago representative who referred to this as "21st century skills" explained,

Then I'd like to think that 21st century skills are the point of Hive youth programs. That is definitely something we're on board with—especially in terms of the tech, obviously.

Others felt that incorporating technology or learning to use digital media tools were not necessarily key when making a program Hive-like. One NYC representative explained,

Well, we think of ourselves as subservient to the creative practice of the master or the designer. Therefore, we do not think of ourselves as technology-based or anything-based, because what we are interested in is fulfilling a design. Whatever that design requires is what we want the kids to experience. It just so happens—and of course, we live in a world where one of our most important tools—one of our most important tools is a digital-based environment. We always manage to have one of those things. Whether it's video editing, whether it's coding, they play a part alongside the physical, applied skills that we also work with the kids on.

This representative prioritized the importance of the creative design practice over technology, all the while recognizing that the growing "digital-based environment" increased the necessity of technological tools. Another NYC interviewee shared that strategically developing learning objectives was more important than technology itself.

It's developing curriculum around technology that doesn't start with the technology. It starts with, "What do we want kids to learn? What areas do we want them to grow?" Then to ask the technology, "Oh, what technology will support us in that mission?" It starts with the idea that kids' interests are central. Then says, "Oh, well kids seem to be interested in mobile devices. What can mobile devices do?" We know kids are also interested in storytelling. How can we bridge those two? It's innovating in [pause] applied use of technology to accomplish specific ends to benefit students.

A handful of representatives expressed frustration when asked what made something Hive-like. One Chicago representative shared her frustration with the absence of a formal definition for the term:

I get a little frustrated with that term sometimes [...] We should define that. I'm using the digital media and learning principles. That's very clear to me. Being networked is very clear to me. If we just had a shared understanding of what Hivey meant to us. I'm not sure that we do. We use it, but are we all using it the same way? If we're using the digital media and learning principles, then that's very clear to me, 'cause they're written down. We can go and look at them. We're using those, we're applying those. I understand the mission. I understand the goals. If we're gonna say "Hivey" means we're meeting our mission, "Hivey" means we're meeting our goals, or "Hivey" means we're applying the digital media and learning principles, or "Hivey" means all of the above, then that would be helpful to me, 'cause then I would just know. I in particular have been told twice now that our proposal wasn't "Hivey" enough. That's not—I wanna know what that means so I can address it, 'cause we've been applying digital media and learning principles. We've been looking at the mission and the goals of Hive. If it means we need more badging, then you should just say that to me. If "Hivey" means badging, there wasn't a strong enough badging element, then just tell me that, and we'll make a stronger badging element.

This representative felt that a lack of a clear understanding of what was "Hivey" made it difficult to secure Hive funding. None of the other representatives exhibited this same level of frustration. However, others believed that some of the traits often attributed to the Hive did not originate with the Hive. As one Chicago representative explained,

Well, we are "Hivey," and I think we are very collaborative, and we want to work with people. I believe in the concept. I just think that they didn't invent it. I mean, MacArthur didn't invent it. The Hive didn't invent it. We're here. We want to collaborate. [...] I know that we—I mean, we're all about—we've always been about technology, cutting edge, amazing curriculum.

Similarly, a NYC respondent did not want to discount the fact that her organization had been collaborating with multiple institutions prior to joining the network:

We were Hive before Hive was Hive [laughter]. We have a number of programs. We have a summer jobs program, so we employ about 100-120 low income teenagers across [the city] to produce public art. It's a full-time summer job. All of our projects are collaborations with community partners, to the agencies, wall owners. Every single project we do is a Hive, in a sense, because they're all collaborative.

Other representatives stated that they preferred their organization's programs thought of as being "Hive-aligned" rather than "Hive-inspired," because the latter term presumed that the programs had been developed based on the Hive. One representative stated,

I wouldn't call them Hive-inspired, only because they developed outside of and before Hive. I think they're Hive-aligned, is the word I would use. In the [Design Lab], I think one of the main pieces there is that it is—there's a digital focus. While I know the Hive has taken the sharp digital lens off as the main focal point, it is still this embedded piece around digital learning and having access to digital media and tools for learning. That's clearly a part of it.

While wanting to designate their work as Hive-aligned rather than "Hivey" or Hive-inspired, these representatives were not denying the commonalities between the models and concepts that the Hive advocated and their own approach to programming. As a representative stated, her organization and Hive have the "same philosophy;"

I wouldn't say that it's Hive inspired, but it's Hive aligned, because we started doing this before the Hive. Right? It's the same philosophy. I feel like it's Hive resonating, Hive reverberating. [Chuckle] Hopefully we inspire some of the members of the Hive by what we do... I really don't know any more who inspired who, but it's like it's this—I see as a deep, deep connection.

While some of the programming traits mentioned by respondents were adopted as a result of their participation in the Hive, representatives brought their own ideas and practices regarding youth programming to the Hive. It is this infusion and diffusion of ideas and best practices across the Hive network that made it so rich.

C. Growing the Networks: When is Capacity Reached?

While Hive representatives were often unsure about the exact number at which Hive membership should be capped, they did have insight into the tensions that surrounded Hive membership growth. Many described the difficulty of striking the appropriate balance between too big and too small. They felt that while inclusivity could increase diversity in programming expertise, the number of youth reached, and the likelihood of finding other organizations with similar missions, growing the Network too large could make it challenging to form meaningful relationships and collaborations. As one Chicago representative said:

I would worry about it getting too big, that then you can't help everyone. You can't, you start to lose your ability to do the outreach and collaboration that you want to do. But if it's too small, then you can't get the appreciation and the support that you need.

Another explained:

The more organizations that you have, the more likelihood you will find an organization that's either more aligned with yours or one that's easier to work with. The smaller it is, the harder it is to force fit some of the agendas and goals of the different organizations. Then you don't wanna have it so large that the Hive meetings become unwieldy because there's too many organizations. Nobody really gets a chance to hear from all the different organizations or that kind of thing. That's a copout answer, 'cause I don't know what the right answer is. You don't want it—just right.

Representatives in New York City expressed similar concerns:

On one hand, it's hard to limit numbers, I would think, just because of the inclusive nature of Mozilla and everything being open source, but then I also think that it can get noisy if there are too many organizations that are in there because there are different mindsets, and which I think are helpful cuz you need the whole diversity in thought and in programming, but I always think there has to be some type of cap, just to keep the whole culture and the whole direction of

everything. I can't really put a number, but I think it could become overwhelming. [...] I like the intimacy, and there are a lot more people now, but it still has some type of intimacy where you can, "Oh, that person's from [Organization X]." Or, "That person's from this. Let me go and reach out to them." When the room gets way to full, I think people just tend to continue to just talk to the people that they know, and so that won't really help to grow anything. That's just in my head.

Many representatives, while wary of excluding potential new member organizations, were content with the current size of the Hives. One stated:

I think now it's a good size now. I would hate to exclude organizations that want to be involved. As a relatively new member, we just found out about it, and it was like we have to be part of this. At the same time, the larger it gets, the harder it gets to collaborate and to network, and to make connections because you just don't know all the people there. That's something that I think is really nice is right now, it's kind of the size where every time I go to a meeting, I meet a new person, but I don't meet 100 new people. I know 80 percent of the people who are there, and there are always a few people I don't know, which is great because then you make new connections.

Another representative also stressed the importance of balancing network growth with member engagement:

I would say the size that it is now to smaller. I think it takes a while, especially with different kinds of exposure, to get to know a certain organization. If it's really larger, for example, I could see it as hard to get people to connect. Now it feels like there's certain faces in the room that I don't know. There's certain faces that I do know. That's the right mix for me in terms of being able to understand an old friends' continuum as well as a new friends getting to know what they do, mixing with them, understanding them.

One representative argued that the Networks needed to balance openness and exclusivity so far, taking into consideration the importance of maintaining network quality while continuing to increase city-wide impact:

I think that exclusivity is actually important. But I also think we need to, you know, weigh that with the risk of being too esoteric, you know. And being a sort of, you know, a small cult group that is getting some things done but doesn't really have the potential to see change city-wide.

A handful of representatives were also concerned about the distribution of funding as the networks grew. A Chicago representative stated:

How big the Hive should be is dependent on how much money is gonna be given out. There just needs to be some decision-making, I think, about whether it's about expanding the Network so that it's just more and more organizations are involved, but if you don't have the funding to

disperse to all those organizations to support the infrastructure it takes to run those programs, that's something that leadership Hive has to really think about very seriously. It feels like on one hand, it used to be a little bit too much of a private club. The money was just shared among the few that were involved. Sometimes, a few organizations were getting the bulk of the money. It didn't feel fair or equitable. Then when it opened up, it was good, but then the funding couldn't expand at the same rate as the membership was expanding. That's problematic.

A NYC representative raised issue with the potential consequences of Hive leadership having to look for external funding sources to accommodate a larger pool of grantee applications.

If there's only a certain amount of funding, the Hive shouldn't get so big that most organizations can't benefit from it. I think that that's so important. That the Hive comes with money is I think also where a lot of—it comes with a whole lot of other things that are useful and important, but it also comes with money. It comes with money that's tied to progressive causes and not tied to money that says, "Go open a charter school," is I think something you don't see a lot of. I wouldn't want it to get so big that it would depend on other kinds of money or other kinds of corporations to get its livelihood.

This interviewee expressed that maintaining the integrity of the network's purpose should be a priority when considering growth, particularly if Hive staff would have to look for external funding sources with a different set of interests or agendas.

Hive representatives also understood that there may be limits to what the leadership could support, with one saying, "Now that I've experienced some of what Hive HQ really tries to set out to offer us, in terms of support, that the bigger that membership network gets, potentially the more difficult that support system becomes." This administrator received a high level of support from Hive NYC, from planning and implementing her funded program, to being encouraged to be actively involved in network activities. He felt that with continued Network growth, Hive leadership would have to reconsider how much personalized support could realistically be offered.

Recognizing the tensions around membership growth, others felt that Hive leadership needed to be strategic. As one Chicago representative put it:

I mean, the bigger you get, the more diluted your mission becomes, but also the more you have access to serving these parts of the city that are lacking. I think as it grows, it needs to be more intentional. What communities are disregarded? What communities do we not? What kind of orgs are we not incorporating? Where are all the arts orgs? Things like that, and not big, institutional arts, but more of the of the art world. I think if there are gaps in services and gaps in neighborhoods, that they should grow to incorporate that and be more inclusive, but, at the same time, if you can't support growth, I wouldn't encourage growth, so I have no idea how to answer "How big should the Hive get?"

Long-time Hive representatives who joined the Networks when they were smaller and more intimate were more likely to express concerns about forming relationship within the current Hive structure. One Chicago representative felt that Hive had already grown too large. For him, the Network was beginning to feel “impossibly big” which made forming relationships more challenging:

To me, right now it seems big. I don't know that many people. It seems impossibly big, especially since people swap out. Even though the real “members” of the Hive are the organizations, the way I organize it in my brain is members are the people who get sent to Hive meetups, basically. With the members getting swapped around, it's hard to—you judge the size of a social group by how many people you know. I just know a very small fraction. It seems like it ought to be smaller, in that sense, because if you wanna get a firm grasp on what everybody's doing, you can't do it with Google forms. You just have to talk to each other. Then again, maybe I would be familiar with everybody if we had a little more time for that.

A representative from NYC echoed this concern:

I would hate to see it get bigger than it is now, 'cause I feel as a member, and as one of the founding members—not only organizationally wise, but personally, I find I wish I knew more about the other organizations. There should be some ebb and flow of members. I guess that won't happen. People won't drop out of the Hive. It's always good to get new blood into organizations, so maybe it should grow. It seems too big for me to know right now. I'm about as well plugged in as you can be, you know?

When asked about the growth of the Hive network, one long-time member acknowledged the value of a smaller Hive, while still championing its growth:

There was some value, I think, when we were smaller because I find myself coming like, I don't know how many people are in the room. Because there's no opportunity to really network, I don't really know what organization you're from. When we were smaller, I was able—I knew, "He's from [Organization A]. He's from the planetarium." I knew everybody. Then on the flip side, I find myself saying, "Where is [Organization Z]? They need to be at the table." I like the fact that it's grown. I think we're still the size we're able to be productive. I don't think it has gotten too big, but I do think there's a possibility for that to happen.

As alluded to by the previous interviewee, another long-time representative from Chicago, who thought Hive should and could continue to grow, felt that the meetup structure was contributing to a feeling of disconnection for some founding members:

I don't think that the Hive has gotten too big. I don't. I don't. I mean, I liked the small intimate connections that there were before, but at the same time, I think this has gotta be huge. This has got to involve organizations great and small across the city of Chicago to really reach neighborhoods that we don't normally reach, to really bring together huge powerhouses with

really tiny organizations so that they can then create projects together. I think there—maybe I’m wrong, but I don’t exactly know what the projects are right now that are being funded, and maybe that’s part of it, because it was very obvious before that [Org A] and [Org B]. I mean, you could see them at work because they’re giving presentations during meetings or whatever. We don’t have time for that, I guess, in a way, but I don’t know how to share that information with each other so that we can see what those projects are in a way that will inspire other people to do those cross-partnerships.

No representatives from Hive NYC mentioned the meetup structure as contributing to disconnectedness or alienation within the network.

Representatives newer to the Hive, however, were more likely to see potential for continued Hive membership growth. As one explained:

People who have been around longer—the longer-term members--probably were able to formulate a stronger bond altogether. But, is it important for the whole network to be a place where everybody knows everybody? Probably not. Is it a place where you can make connections that are meaningful to you? Probably. It could probably be bigger than it is. I think probably it needs to be, to bring in other organizations that aren’t currently participating. Especially—I hadn’t thought about this before, but this makes sense to me right now—if one role of Hive is to share out something like connected learning as a vision for what learning is. If a purpose of Hive is to mentor, as well as be a place for connecting up, then including organizations that don’t quite fit when they come in is important because then you could spread the vision, and you can make change in the city because you’re sharing what’s good and happening in other organizations; you maybe don’t have something going on. [...] If you got to a place where you can’t all fit in a good size room, then you can’t be physically together. Does that all of a sudden change things? If it’s too unmanageable for a small set of people. I don’t know. I’m sure there are limits somewhere, but it seems like it has room to grow.

Providing youth with as many opportunities as possible was a frequently cited reason representatives thought the network should be open to continued growth. A NYC representative explained:

I think growth is important because, personally, I’m very concerned about the educational opportunities for the majority of youth in our country. I think the programs, the organizations, that are part of the Hive, together, are doing very exciting and meaningful things to engage young people in their education and develop the skill set that they really need.

As a potential resolution to growth tensions, members from both cities suggested breaking into sub-Hives. When asked how big Hive should be, a Chicago representative offered:

That is such a good question because I am already having a hard time keeping track keeping track of all these relationships. I mean it kind of goes to like, “Well, should there be Hives and sub-

Hives?” I wonder if like—I did an interesting activity at one of the Hive meetings where we broke off in this huge room, into like kind of sections of the city—kind of neighborhoods. It created groups of about ten people and I could really focus and talk to those people and really find out more about what they’re doing and how we can connect opportunities and create pathways. [...] I’m already kind of at my limit for how many of these relationships I can keep up and maintain in meaningful ways. [...] How big do I think it should be? I think it would be easier for me to keep track of, let’s say, like 15 organizations in a sub-Hive, even though I think there’s plenty of room for many, many organizations to be involved in a larger Hive.

Another Chicago representative echoed this suggestion:

So not overly large because then you lose all of the—connected everything goes out the window if people don’t have the ability to keep track of everyone. [...] I mean it’d be cool if it got larger to have like west-side and south-side and north-side meetings, and then have delegations come meet up and talk about—share out the same way that Hive Chicago and Hive New York communicate. That would also make getting to the meetings so much easier. Yeah, I think getting bigger is not a problem as long as it’s done intentionally, I guess.

Instead of geographically-based breakout groups, one NYC representative suggested creating affinity groups or smaller branches within Hive NYC as one way to help maintain relationships and foster collaboration while still allowing the Network to grow:

If it evolved in the right way, I’m sure it could happen. And when I say that right way, I mean in a way that’s still—has small enough branches for good sharing and collaborating to happen. [...] You could reach 500 different organizations, but I think then you would have to have smaller groups within that. Smaller Hives within the ‘Hive’ or affinity groups who are focused on [particular topics or interests].

Last year, Hive Chicago instituted a tiered membership structure that allowed new members to join at different levels: at the individual level as community members, or at the organizational level as either partners, affiliates, or allies. Representatives felt that this had the potential to become a productive way to manage the Network’s growth. As one representative put it:

With the membership process, there’s partners, affiliates, and allies, and folks like that. I think it’s exploring what that key partnership level looks like, and is there a limit to the number of actual partners. Maybe there’s not as small as a limit to some of the outer rings of allies and affiliates and end pieces like that. It’s a great question. I don’t know what the answer is, and I don’t think Hive has gone long enough [with the new membership process], with such a high number [of organizations] yet, to understand what could be.

In New York, interviewees felt that establishing clear expectations around different levels of member engagement would be critical, particularly if schools became involved. For instance,

one new representative suggested that school teachers' involvement could be limited to attending open forum meetings rather than being expected to become full Hive members.

There's a lot of traffic in and out of the Hive. There are people. There are non-member affiliates. There's the indie members. I'm sure all of them have something to share, but the traffic can become confusing. I mean, it doesn't confuse me, but I can certainly see how all of that humanity flowing in and out would confuse someone who is an employee of an organization that goes to Hive member—goes to Hive meetings. I'm the founder. I get to go, and get all the pure gold and put it into practice as it applies. [...] I think there should be forums where it's just members. Then there should be forums where it's everybody who's interested in what we're doing.

A Hive Chicago representative also felt that tiered membership levels were a good first step to addressing Network growth, but that ultimately growth would be limited by the resources available:

I think the better question is what's the right distribution? Because you could imagine having a network of 300 orgs, but only 60 of them probably are active in any meaningful way. I would argue that it's not necessarily a number; it's a distribution. The real number is how many active members can we maintain and manage. You'll have the people who are in Hive, in name only. They don't need money, they may not come to meetings, but they're interested in being connected. They wanna be available, but they're not aggressively or actively seeking things. I think that's fine, as long as they come to meetings, which I think is a member requirement. Then you might have the people who are really actively engaged, and they're applying for things, and they're at all of the events, and actively seeking out partnerships. [...] If Hive is to fulfill whatever vision it has for itself, then you'd want every organization that serves youth to be in the Hive. If the goal of the Network is to support, sustain, maintain the Network, then the expansion has to be aligned with the resources dedicated to managing it. In theory, you could have every youth-serving organization invited to be in the Network, but then I think leadership would need to commit to sufficient staff to manage and support that. Three people's not enough.

A Hive NYC representative also recognized that growth would be limited by the resources available to help manage the Network, she said:

I think it could grow to just encompass every organization that's doing youth education in the city. I don't think that would be a limiting factor. I think if it's too big—I don't think it could be too big. I wouldn't think it could be too big. I say that you just would have to manage the network very differently as it gets bigger. I mean, the challenge isn't so much that it can't be done. The challenge is just that as the network grows, you need to increase the resources that the Hive has to actually manage the network. I think that's become difficult to do, cuz I don't know that there's an economies of scale. I don't think that you could manage 20 organizations with the same number of staff as you would managing 40 or 50 organizations.

In all, there was no consensus on a hard number to serve as a cap for Hive membership. However, representatives did provide insight into issues Hive leadership might want to consider when developing a roadmap for membership growth. While most representatives recognized the importance of representing a diverse array of neighborhoods, youth served, and programmatic focus, they were concerned that increased membership growth would dilute the inter-organizational relationships formed through Hive participation.

While representatives were split on continued membership growth, several identified organizations and groups they felt could or should be involved in the Network in some capacity. Across both cities the most commonly identified underrepresented group was the public school system. Representatives often pointed to the absence of school leaders and teachers in Hive, including those from higher education. One said:

I would like to see more schools involved. School administrators, teachers, even students. It'd be great to have student voices in there. It's great that we're doing these things out of school, out of school time, but they really should be changing the learning model in school. If we're just keeping it out of school and not really trying to change the thinking in school, I don't really know what we're doing.

A representative from Chicago explained:

I would love to see just a little bit more CPS (Chicago Public Schools) involvement because I think CPS can benefit greatly from the way that the Hive—I mean, I don't know how, what that would look like or who that would be or how they would come into the fold, but in just small ways. If there were certain schools or if there were—it's hard because it's during the school day. I mean, ChicagoQuest is there. Right? I mean, how are you going to be able to pull staff away from the CPS schools and be able to get them in there? Somebody from Central Office, I'm sure, has some time once a month to be able to come in and have them take a look at what's going on within the Hive.

Representatives also felt the Hive Networks were well positioned to help break through the divide between formal and informal education:

Having, I think, more school system representation in the Hive would be helpful because I think, especially in out-of-school programming, which is pretty much what all of us do, there has been this legacy of working around the system because the system is too hard. I think we can either perpetuate that because we can't figure out how to break through, or we can try to change that a little bit. I think that requires more invitations to the table, and some value-adding on what the Hive can do for the schools, and what can the schools help teach us to do better. I think those are groups that should be in the Hive.

While representatives acknowledged the challenges of actively involving formal educators in Hive, they felt strongly that it was an important aspect of creating a true connected learning environment for youth:

I don't feel like there's much of a school presence there. I think that's really missing—it's one of the pieces of connected learning and it's not there, but then I know it's hard. I mean they can't miss school.

One representative thought that including folks from post-secondary institutions would be an effective way of exposing youth to higher education.

It's about continuing the pipeline for the youth. I'm on both ends. If there were a 'Hivey' incentive for us to work with an institution of higher learning—because we did do a project like that, partnering with [an Academic University]. It's that—that was an opportunity to introduce young people to graduate students who were doing technology-based work that was production focused. That was really important to us. I don't see so much of that happening in the Hive right now.

In addition to garnering support for recruiting under-served youth, representatives were also concerned with tapping into the best resources to help youth develop career and academic pathways. One, when asked who else should be involved in Hive, offered this suggestion:

I'm thinking of like an admissions officer from a university. That to me, would be a really interesting—they would have a lot, I think, to contribute because a lot of what we are talking about it—I mean not explicitly about college, but it is about pathways to careers. A lot of those pathways go through college; not all of them, but a lot of them do.

While less common, a handful of representative also suggested that social service agencies could help Hive more effectively reach and serve under-resourced youth. One said:

I think some of the social service agencies that serve youth could really benefit the Hive in providing some larger and more complex sets of data and information and perspective on kids who we're trying to target. There's this big conversation in the Hive now around how to serve the students who are not actively seeking, who don't have the resource-seeking parents, who aren't in the communities that are already getting all the resources. How do we get outside of that? I just feel like we all have these very specific interactions with students, but there are communities and agencies in the city that understand that net of kids, and who's not getting served, and what are the types of things that they need. It's not about just having a good program, but what are the other things we need to be sensitive to? Transportation and nutrition and all of the other things. It feels like we would be best—we would be better served, as a network, by being informed by participation from DCFS or the CHA youth programs or something.

For NYC, at the time these interviews were conducted, integrating these types of new ‘members’ would necessitate the development of formal membership roles, perhaps similar to those in place in Chicago. One of the founding members implied that this has been an ongoing conversation within Hive NYC:

I think we need to do a better job figuring out what the role of formal institutions are. So we have this great partner from a small office of the DOE (Department of Education) right now doing stuff like digital ready programming. But we really still haven’t defined how and when that partner is a part of the network. I still tend to feel like a, you know, like Hive-curious but not committed. And we need to figure out what that role looks like and how to make those folks appear on the roster alongside the other organizations. So that if I’m writing a grant that involves a vision where schools participate we have some, you know, we have people to turn to. [...] And I don’t know whether that’s at the district level or school level, or something else; or its educators who can join as individuals.

In the time since these interviews were conducted, Hive NYC implemented new membership guidelines that allowed anyone to join the network, but only a select group of members to serve as the lead organization when applying for Hive funding.³

Overall, Hive representatives felt the current members were a “good mix” of organization types and programming emphases. Their suggestions for other organizations to involve in Hive primarily centered on finding ways to connect youth across the multiple domains inhabited and provide enhanced support for the challenges faced.

D. Hive Resources: Benefits and Needs

1. Benefits.

When discussing the resources that they have access to by virtue of their Hive membership, representatives’ highlighted educational innovation, including access to funds to help support their own innovations, the collaborative relationships they were able to build with their peers that allowed them to connect their organizations, and Hive leadership support in the form of high expectations for progressive thinking and programming. Hive funding gave member organizations the opportunity to engage in programming endeavors that other sources may not be willing to fund. Additionally, the networks brought together a diverse group of educational professionals who were able to benefit in various ways from one another’s experience and expertise. Finally, Hive leadership supported educational innovation through promoting connected learning and HOMAGO. Some representatives were unsure of Hive’s role in fostering educational innovation because they perceived a lack of formal resources from Hive staff and administration.

³ As of December, 2014 the process for becoming a LEAD member of Hive NYC was not outlined on the website: <http://hivenyc.org/community/>.

Educational Innovation

Representatives felt that Hive funding was crucial for encouraging educational innovation. One Chicago representative explained, “I think through a lot of their funding, they try to push the envelope and try to create a lot of new opportunities that are new and innovative.” This understanding was shared among a number of representatives who felt that the financial support obtained through their Networks allowed them to pursue educational innovations that would not have been possible otherwise. A NYC representative said:

Hive is willing to fund real scrappy ideas, you know. Like I think we should do this thing with like 20 kids. And usually you just do that out of other funding sources. But to have an institution saying, “You know what? We’re going to put some money behind this. And we’re going [to] find you a great thought partner. And you’ll work together. And you’ll share it out.

The Hive was able to offer this support in a way that reduced some of the pressure that may impede educational advances. Another representative said:

It provides a place for prototyping new types of learning experiences. It provides that freedom for failure as well. There’s less pressure in trying to create innovative new types of programing. Obviously that support will only go so far. If it’s a continued failure, they’re not gonna continue to support it. I think it provides examples of new possibilities and new ways to think about learning, and really this example of a collective impact.

Like the previous excerpt indicates, many valued Hive funding more than other “traditional” funding sources because they saw it as free of many of the constrictions that normally accompany grants. Recipients of Hive funding appreciated that they were able to experiment with program design. One explained:

Funding, having access to funding, whether or not you get it. I think it’s really nice to be able to know that if you have some kind of experimental idea that maybe a more traditional foundation is not gonna wanna fund or if you wanna do something that’s much more quick and you don’t wanna have to report out on it for the next year and a half and go through all the things that you might have to go through these hoops for more traditional grants and funding. It’s nice to know that there’s an alternative that is not guaranteed, but that is a better place to think about those innovative quick, or nimble I guess, ideas.

Developing innovative ways of successfully engaging and teaching teens was often a process of trial and error. However, without funding that encourages organizations to attempt new methods and test new practices, innovation and development may not be possible. As one representative put it:

Specifically with the project that we’re working on, they’re funding the project, so we do—now, as we’re trying to figure out the badging world, this is helping us. [...] It’s like a trial-and-error thing, and they’re open to it. They welcome it. We don’t feel the stress that you would traditionally feel by getting a grant or a funder because it’s so—it’s attached to all these different elements. This is where it’s allowing us to figure out, that doesn’t work. This works. That may not work. I love that because any other grant is like, we got to make it work. With this, if this doesn’t work the way that we planned, it may work a different way, but we—it’s just open. I just

love it. [Laughter] That's a main resource for us right now as we're trying to figure out this badge world.

Representatives appreciated that Hive created space for 'failure.' As one put it, "Hive is one of the few places that allows you to succeed if you've failed. If you can come up with a really good reason for why things haven't worked [...] that's just as valuable to them [the funder], as they're trying this stuff out."

Across both cities, representatives also felt that the Hive's mode of funding also fostered educational innovation by supporting inter-organizational collaboration. When discussing educational innovation, they often mentioned collaboration in conjunction with funding, as exemplified by one representative who stated, "I think the collaboration is important, and the grants are important." The funding opportunities offered by the Hive encouraged and privileged inter-organizational collaborations between Hive members. This both brought together organizations that had similar foci as well as individuals that operated in vastly different subject areas. When asked if Hive encouraged educational innovation, a Chicago representative said:

Educational innovation? I think by organizations who wouldn't traditionally work together, by them funding these different "Hivey" projects, I think that that's a way of doing it, like we're working with [Program A], which is a [Organization X] program. We have nothing to do with that. For us to come together on a project because at the end of the day, we're still trying to help motivate these young people, just in different spaces.

Bringing together organizations that historically had not worked together encouraged Hive representatives to think differently about teen education and consider other perspectives. In addition to formal organizational partnerships, representatives also appreciated the network as a rich resource for expertise and ideas that continually helped push members to higher levels of innovative thinking. As one Hive NYC representative explained:

[Hive NYC] gives us access to a lot of the most innovative educators. Just that constant access to new ideas or different ways of learning, the different ways that people are integrating technology. I think it really helps expand our thinking.

As this person described, representatives felt Hive's commitment to educational innovation went beyond dollars. Another representative described the importance of Hive leadership support:

They push in a certain direction, which is innovation. It's not at all top-down. It's much more, "This is what we believe in. This is how we can support you. These are the direction we think we should all be going in," rather than saying, "No, you have to change." The ethos is very strong [...] when they [Hive] fund you, it means that they believe in you for the long-term and they try to help you. They try to help you develop your programs. They think of you as if you got in one level, you're gonna get the next. They are gonna scaffold you to get that. It's a level of commitment that—not that I'm that knowledgeable about the grant-making world, but that I've never seen elsewhere.

Representatives from both cities felt that Hive leadership was committed to innovation through setting high expectations for progressive thinking and programming goals. They described how

Hive fostered educational innovation through promoting connected learning, HOMAGO, and badging. One Chicago representative stated:

I think the badges were a big thing for most people. I think you'll still get people who are yea or nay for badges. I think just the fact that they're promoting this research of connected learning and HOMAGO. It's good for hopefully other orgs who are not doing it or for schools, even, to start considering new ways of teaching.

Many representatives, when asked about the role that the Hive played in fostering educational innovation, mentioned that they would like to see more of the ideas and practices developed and/or implemented by Hive members migrated into formal classrooms. A representative who also affirmed that the Hive played a role in educational innovation stated:

Some of the things that I see happening in the programs should definitely be happening in the classrooms. Trying to think what. 'Cause I feel like the school system is very traditional. [...] Like I said, a lot of the things or the projects that come from the Hive are things that should be in the classroom, especially the way that we're moving with technology. I think using that—a lot of the connected learning could—the principles, those principles can actually be taken into the classroom, whether you're learning science, history, art—they should be part of it. Learning is way more—I guess it is fun. More engaging when you're taking what the students wanna learn about.

This desire was echoed by another representative who explained,

I mean, I like the idea of having research-based pieces that are being tried out on this small scale in organizations that have a lot of flexibility that don't have to deal with things like all the restrictions around schools and being in a large district and all that stuff. I like that. It's like a playground. It's a playground for education where educators all come together, and we say, "Let's have this great idea. All right. Let's do it." Right? How can we then take those ideas and all those wonderful moments that you're able to define through the Hive and put that into greater practice? That's the part where I think it's kind of missing, where we're not necessarily having those moments defined and those practices defined and being broadcast more into traditional education... I wanna see it broadcast more widely.

This representative believed that the Hive was properly situated to serve as a "bridge" between the educational innovation happening among member organizations and formal educational settings. Because a significant proportion of youth education happens in traditional settings (e.g. formal classrooms), some representatives felt that fostering meaningful innovation in education necessitated having an impact on schools. Consequently, one representative who was asked about the role of the Hive in fostering educational innovation responded,

Well, I think that that's the whole goal so huge. Huge. Now, whether that is effective or not I don't know because ultimately if you really want to foster innovation in education then a lot of education happens in schools.

This representative proposed that one way for impacting formal classrooms would be to incorporate more "classroom teachers" into the Hive. Indeed, other representatives felt that solely focusing on out-of-school learning would limit the Hive's influence on the educational landscape:

I think they're playing a pretty substantial role [in educational innovation]. Like I said, I think that the goal—sort of the mission of Hive as I understand it, is to revolutionize education. I think the one suggestion I would have is one I already made, which is to connect more explicitly with the formal education community because unless we do that, we're not gonna be successful because that's—and I don't want to take away from the informal aspect, but unless we have that conversation, we're not gonna be successful.

Although this representative believed that the Hive played a substantive role, she also felt that the effects that the Hive could have in fostering educational innovation would be hampered without establishing a greater connection with “the formal education community.”

Some Chicago respondents were unsure whether or not the Hive actually played a role in fostering educational innovation, because they did not believe the Network was formally promoting specific techniques for making programming more innovative. As one representative stated,

I don't know if Hive itself necessarily fosters innovation. I think it connects you to folks who might inspire you to think differently, or show how they've done something, which might make you think differently how you do it. I don't think innovation is the biggest piece that Hive moves on. I know it's part of the Hive goals, but I don't think they outwardly share ways to be more innovative. Now, I know that they—thinking about the Makerspace, Makerspace is looking at innovation in how other individuals, but I don't know how much they do that. I feel like the resource sharing is really just between organizations, which is Hive, I guess.

This representative did not believe that the Hive (likely referring to Hive staff and administration) formally provided resources for member organizations to develop more innovative programming or approaches to education. However, this representative did note that membership in the Hive provided connections between member organizations, and that these connections afforded inspiration and resource sharing that lead representatives to “think differently.” A similar sense of skepticism was expressed by another respondent:

I don't know that it does. Or, I don't know that I've seen that it does. I think what—I think what I have seen is that it helps to elevate educational innovations that were either happening already and people just didn't know about it, or were happening on a different scale because of resources. I think Hive has enabled scale, in some cases. It's enabled partnerships, in some cases. I'm not sure that I would say Hive, itself, sparks or fosters the innovation itself. I think it supports it. I think it can elevate it and highlight it.

Interestingly, each respondent who reported uncertainty about Hive fostering educational innovation still provided a response that indicated ways in which the Hive supported educational innovation. For example, the first quote suggested that connections between Hive members were important for fostering education innovation. The second quote points to the Hive's role in scaling of educational innovations. It is likely that these representatives overlooked the role of the Hive in fostering educational innovation because they did not see these instances as a formal push for innovation coming from Hive staff and administration.

Access to Peers

As Hive members, representatives felt they were often afforded the opportunity to meet peers from organizations that they would not have come in contact with otherwise. These interactions often took place during monthly Hive member meetups and in Minigroup. In both forums, membership in Hive created a shared understanding that broke down barriers of communication between disparate or unfamiliar organizations. These relationships also facilitated ready access to information and ideas that flowed through the Networks.

Although some Hive member organizations were familiar with or had working relationships with one another prior to their membership in the Hive, the ability to establish connections outside of their typical networks was specifically highlighted by representatives when speaking about membership resources. A representative from a Chicago Hive member museum exemplified this point when specifying Chicago Hive member resources:

Collaboration—I mean access to all of those people gathering together in one room. A lot of organizations, though the Chicago museum community are fairly connected, but there are a lot of people who come to meetings who I would never talk to otherwise. I mean I would—in our sort of immediate circle are nature museums and natural history museums. I would probably not end up talking to someone from the Art Institute, or someone from DYN, or other community organizations that are not science. Even the Museum of Science and Industry, we don't—I wouldn't talk to on a regular basis, or the Adler. That to me, I think is really—that is a huge resource, is just the ability to get all those people together in the same room; obviously, the funding sources—the Hive grants; and I mean sort of the intellectual resources as well.

As alluded above, it was fairly typical for individuals from similar organizations to interact, as they could easily share relevant resources or collaborate around a common goal. The structure of Hive member meetups, however, pushed representatives out of this normal mode of networking by bringing representatives from all of the member organizations together at once rather than organizing around disciplines. This created an environment that encouraged representatives to network across specialties and niches, and representatives felt that Hive meetups provided a “safe space” for doing so.

The number one value I see is networking and being able to meet organizations and people who we would not have met at any other situation. It's like a safe space, I think, because a lot of times, you go to networking events, and you might go to someone's fundraiser or whatever, it's just different. Within Hive, it's just really friendly. Everybody just comes with this open—you know what you're there for. It's like you can't walk through the doors unless you're ready to be "Hivey". [Laughter] I just like the environment that it creates.

The above quote indicates that representatives developed a shared culture of friendliness and open communication, which facilitated interaction. Representatives reported that identifying themselves as members of the Chicago Hive created ease in initiating connections with representatives from other Hive member organizations.

Well, I think it's just, you know, if you want to approach someone like I feel like I can. Even if I don't know them, even if I've never met them, if I'm like, “Hey, Person doing this thing training sea monkeys, that sounds like there might be a collaboration there. I'm also a Hive member.” That would result in a meeting where maybe it wouldn't otherwise because there's maybe a

shared set of vocabulary and a shared set of values there. I think that's really great. I think that the people in the Hive are really amazing so those have been the main resources, I think.

Similarly, representatives from New York also placed high value on cross-collaboration and networking. One stated, "I think the value is bringing together into a shared space similarly minded groups to discuss best practices, shared challenges, exchange resources, and provide the groundwork for future collaborations." Another stated:

I think the biggest resource is all the other groups in the Hive. I think they're some of the most creative educational innovators in the city of New York, and just being able to chat with them off the cuff and to do collaborations with them and not be this strange foreign entity but be another Hive group and even apply for a grant together from selective money pools. It's the connections to those groups I think that's most valuable.

Through membership in Hive, representatives were able to form network connections and adopt a shared language to describe their pedagogical approaches. For instance, a NYC administrator shared the value of being able to use research-backed language to describe their work:

I think, in some ways, we take some of those ideas of connected learning and make sure that they serve a purpose in the real world. I think that's really important to our work. The piece that you're bringing up before about exchange with peers, that's something—and the connection to their school or their community. That's something that has always been part of our work, but we never really recognized as, "Oh, look, this is something that you can really point to as a pedagogical tool that has a real impact." I think that's been really useful and interesting to have these models and these definitions to work off of and say, "Yes, actually, these things that we've been doing for many years, they're working for a reason, and we can point to these other pedagogical models that say and prove there is a lot to be gained out of doing it this way." In the past, we'd always had some sort of public final event for students to bring all their learning together and be able to present it out to their peers and adults and the people that are involved in the issue. It just always was a, of course you would do that. I think, having been part of the Hive community, it's like, oh, right. We're doing that for a really specific reason."

Furthermore, the ability to form such connections outside of one's usual professional network was an opportunity that representatives reported as being of great value, as it created access to new ideas and information. One representative called this "people power," and explained that while having access to funding as a Chicago Hive member was important "ideas are the things that comes out to me more." Moreover, informal conversations at meetups or online and formal presentations at meetups and DeepDives, helped expose members to their peers' ideas, experiences, and expertise.

Yeah, I think access to—like there's access to people at different places—is really valuable. I mean when places do share out their work or do the DeepDives—like those types of resources have been pretty valuable and seeing what everyone is doing and what they're discovering as they're going through some of these things.

This exposure provided a varied set of perspectives and ways of approaching the tasks and challenges of teen education. Representatives were able to learn both their own and their peers' successes and failures. In both cities, representatives also reported being encouraged by their peers to improve programming at their own organizations. One representative said,

Again, I mentioned this already, that I feel like every time I go to these meet ups I meet someone or have a part of a conversation that's exciting that makes me want to do more. Personally, that's very valuable but I think it's also valuable for our work; the center itself.

Their peers made them question what was possible for their own work. As one representative explained:

[T]he value [of Hive membership] is in the relationships I believe that we built and in keeping us constantly thinking about what else could we be doing within our program? How can we push this a little bit further? It's a great way to keep yourself current and keep yourself constantly questioning how you can do things differently, better, what doesn't work.

One representative felt that the networks provided him with opportunities he did not receive through his organization:

I feel like when I'm at Hive events or when I'm at Hive meetings I really feel rejuvenated in terms of figuring out how can I improve the programs I do here at the museum. There's also the exposure to things that I never even knew about. It really does feel like professional development opportunities for me that I don't really get that much of an opportunity here at the museum.

Beyond improving their own programming, by becoming informed about programs and practices at other Hive member organizations, representatives could also help teens locate services and programs beyond their home institutions. One representative said, "I think that it's really useful to know what other people are doing so it's really useful to hear about this camp for students and this opportunity for kids to get involved here."

Another representative emphasized that the Hive Minigroup was a great place to find information regarding events and programs offered by other member organizations, "It is nice to see, 'Oh, that's happening. How can we connect? Lemme post that to our young people and see if they wanna jump on it.'" The information culled from the Minigroup and meetups allowed representatives the opportunity to try to link their teens to more opportunities across the city. Because of the Networks, representatives were able to provide youth participants with opportunities that ranged from after-hours museum access to working with new technology tools, and invitations for presenting their program projects to large audiences. One listed several opportunities that had been made available through partnerships with other Hive members:

I forgot to mention something really cool, which is also a collaboration with the Hive. [...] Because of our involvement with the Hive, we had the chance to send one of our students to the White House for the third annual Science Fair last year. [...] She's a superstar. She's gonna have a chance to do lots of cool things in life, [laughter] but I think that was one of the cooler ones. [...] Honestly, there's countless examples of how we're just part—as part of this network, we just—we seem bigger.

Representatives were able to look to their peers not only for inspiration but also for support. One representative, when asked what resources he had access to through Hive stated, “I mean, mostly, it feels to me right now, at least, like people and expertise. I know there are people I could call and ask questions.” Additionally, because the specialties of member organizations were so highly varied, the support and expertise available through connections to other representatives was vast. As one representative explained,

I think any kind of expertise or resource that you would need, somebody in the Hive network would probably have. Have it or know who has it. That’s been pretty incredible.

In reflecting on member benefits and experiences, one founding member shared how he used the network for professional development.

I think that more now than ever we see and use the Hive as a professional development opportunity for young staff. If we want, you know, if we’re hiring somebody new to the field there’s no better way to help them see programming and see what good programming looks like than to have them do some sort of surfing across member organizations.

Another administrator shared that being a Hive representative was intellectually stimulating. He specifically identified a meeting that helped him gain new perspective on an issue he had struggled with for years.

She was untying knots that have been tied in my head for years in terms of what that [scale and spread] really means. How you think about it, and what it is that you’re actually—what is the language that you use in order to articulate what making the program larger is. I always thought of scale simply as how many kids are you serving? Through my conversations with both Hive members and in those meetings, I’ve learned that it’s not necessarily about heads. It’s about ideas and how you propagate them.

By providing venues for interactions across specialties as well as venues for sharing, members were able to tap into Hive’s resource rich environment to further develop and improve their work. Members saw Hive as an important resource for funding, networking with peers, sharing best practices, and finding valuable programmatic and professional support.

Desired Resources

Representatives were also asked to identify resources that they wished they had access to through Hive membership. Representatives frequently mentioned the need for new modes of information sharing. This included multiple calls for a centralized, online resource hub that would house up-to-date information on the programs and projects of all Hive member organizations and provide toolkits with best practices that had been developed by various Hive members. Representatives also sought meaningful connections established between the various Hive Learning Networks and Hive Learning Communities that now span the globe. Additionally, representatives suggested that they would like to see additional targeted professional development opportunities.

Sharing Information: Minigroup and Meetups

As respondents spoke about desired resources, they made it clear that they perceived an issue with how information was shared within the Networks. Representatives from both cities noted that the information that they wanted most was often not easily accessible, and the vast amount of information that was distributed via monthly meetups or the Minigroup was overwhelming and, consequently, less effective. As one representative put it, “I feel like one of the things that the Hive suffers from is that there’s so much information that it’s hard to make sense of any of the information.” Another representative was more direct in his critique of the ‘Hive information overload:’

They ask a lot of me. They send emails a hundred times a day, a million different meet-ups. I mean, you’re interviewing me, other people are interviewing me, the research. Give me a fucking break.

When asked how he would improve the process, he added:

I have a lot of people to know. I think they should minimize how much—I mean, the emails are, like, “I’m having a film screening at my program.” You know what I mean? It’s just too much. I think it’s just too much. Then, so then you just start deleting, deleting, deleting every time I see something from Hive. I think they need to say, “Here’s the 12 things.” One thing a month, which still would be a lot. Because we want to try to keep our foot in the door, so that we can get support to do the work. There’s only so much time I can spend to do that.

The overwhelming amount of information that is distributed via Minigroup was a source of frustration for some representatives. A number of representatives made complaints about the unwieldy Minigroup posts and suggested that the Chicago Hive find a more streamlined way of disseminating information online. One representative stated,

Then in terms of Minigroup, I don’t really know how to solve the problem of there being so many emails, but maybe some kind of like convention for how to title things or something, like “Opportunity”—colon—or something, so that you know ahead of time whether or not it’s worth it to you to open something, which is definitely—I mean I just don’t even know how to deal with all of the communication on Minigroup.

Another representative shared a similar response regarding the difficulty of managing the sheer amount of Minigroup posts.

I wish I got more information in one chunk instead of stuff all the time because one of the things that I find so hard about the Hive is that I really want to know what’s going on and I really want to pay attention to collaborations but I can’t read about one every day. I can’t read about the 57 things that come through my inbox through the Minigroup so I think that I would love to see more case studies that were about one thing. I would love to spend 15 minutes thinking about one collaboration and one partnership than spending an hour thinking about 50. That’s one of the things that I have trouble with but that would be useful.

While there was more variation in responses from NYC representatives, several expressed the same frustration. One said:

The Minigroup, honestly, it's hard for me to get on it regularly. It's just too much info sometimes. I get lost in it, to be very honest with you. I'm already a victim of social media. I suck at it. I'm not gonna lie. I don't really spend much time on it as it is on my own. It gets a little daunting.

One suggested Hive leadership should send out official emails for important announcements or events:

The other completely random thing that is not really related to either of those is I think that actual emails instead of Minigroup for important things would be cool.

However, one representative pointed out that the survival of the Minigroup as a frequently utilized means of communication was itself a success:

It's probably the most successful listserv [to] come out of the DML initiative. Now, I've been around from the very beginning. I have seen every single one, and they've all failed, dramatically so, in such interesting ways. Yet, this one hooks. This one worked. This one was poised to fail just like every other one had with great intentions in place and just not working. It used a really stupid system that nobody was a part of, so it's like it was a heavy lift to use a technique where you couldn't even post to it from email. It was like it totally didn't make any sense, and it's worked fantastically. It's active. [...] People share resources all the time, and somebody will say, "We hired somebody." Someone will write, Congratulations." Those are the things a community needs. [...] It's amazing to me that it's worked. I participate like everyone else does. I'm happy about that. [...] It works in spite of itself. That's the most amazing thing.

In addition to keeping up with the Minigroup, the time commitment required for the monthly meetings was burdensome, particularly for representatives with full-time workloads. Several Chicago representatives felt that the goals of monthly meetups would be better served by taking advantage of the affordances of digital technologies, like asynchronicity or storage capacity. As one Chicago representative explained:

[T]here's an opportunity for a more interactive database, and a way to use technology and networks, virtual networks, to open up. I would love to share what we're doing with Hive members in a more structured way as opposed to, "Here's a blurb on a Minigroup." "Here we get to talk ten minutes in front of a Hive meeting." "Cause the Hive meetups are really becoming too unwieldy. They're not fun anymore. They're too many people, and people are sending their program staff and not executive directors. They just try and do so much in such a small amount of time. It just doesn't feel—it definitely doesn't feel like I can afford to send tons of my staff, and let alone myself. I feel like, "Oh my gosh. I'm here for three hours, and I really have a lot of work to do." [...] They need to rethink how they're making those meetups more beneficial for people. Maybe just offering ways to connect online would be good.

Given the time commitment required of meetups, some representatives - especially those from Chicago - were frustrated when the information and activities at meetups did not feel significant to them. One representative suggested making "at least the important parts of the meeting shorter." Another representative suggested that Hive administrators distribute "an agenda ahead

of time so that people can figure out what parts might be useful to them, and where they might be useful to other people.” Having a clear understanding of the activities of the meetup would allow representatives to better prioritize attendance at certain meetups or parts of meetups, thus alleviating some representatives’ frustrations.

Sharing Information: Resource Hub

Despite the enormous amount of information shared at meetups and via Minigroup, many representatives did not feel that they had a good understanding of the work of all their peers. Accordingly, the most frequent request made by representatives was for a resource hub that would house various forms of information that could be easily accessed and searched for by Network members. One New York educator commented that one of the strengths of the Hive was the varied skill sets that different members contributed, but emphasized the need to “compile” and “combine” resources in a beneficial manner:

You know what, I don’t think I’ve experienced or had enough experience with working with other members of the Hive to request things from them. I feel like everyone brings something to the table. It’s how you compile those resources and combine them with other resources that can either make or break a program. You just need to find the correct partnership within the Hive. There’s a lot of members to choose from, so it’s a matter of kind of sifting through who does what, who specializes in what, and who is strong at teaching what, and kind of mixing that into a beautiful pastry to have your children consume and learn from.

While part of the lack of knowledge of peer organizations may be due to the growing size of the Hive, this issue was not new and was fairly salient across member organizations. Consequently, a Chicago representative referred to this issue as a “super known problem,” a problem that had existed long enough to gain familiarity:

Maybe some element, which is like a super known problem, it feels to me like, but some element of better understanding who’s out there that I could connect with. I mean, I think they’re really trying to do that. Maps of where people are located and just lists of who people are. Maybe something like that exists already that I haven’t seen. [...] I don’t know that there’s a lot of other people that are doing this spatial aspect, like the community engagement that’s around geospatial tools. If there was a keyword search and a database of Hive members where I could put in GPS and see who comes up, then those connections. Again, that probably exists, and I just don’t know about it. That would be—that would be great. I don’t think there are other things I wish it offered to me.

Although this representative assumed that this resource “probably exists,” it has not been fully realized to date.⁴

⁴ The current map that is on the Chicago Hive “Our Members” page displayed the geographic location of its 57 members across the City of Chicago. By clicking on a highlighted location, a pop-up box displayed the name of the organization and its address, email address, website, and what type of organization it is (i.e. civic or government, museum or cultural, community-based). On this page, there was also a list of all 57 organizations with links to their home websites. This page provided no specific information about the type or focus of any of the organizations’ programming or projects. Consequently, in order to find any of that information one would have to go to each individual website and browse for it; a task that could be considerably time consuming.

In coming up with solutions, some representatives thought that time during monthly meetups could be allotted more intentionally for learning about others' projects. One Chicago representative stated:

Maybe at the end of each meeting, everybody have two minutes to explain what their organization is and who it is that—whatever. Just do it quick. Here's who I am. Here's what we do. Here's what I need. Here's what I want or whatever. I feel we do do that sometimes through the end slides or whatever, but I feel like it could be more explicit as a—everybody needs to get up and introduce themselves at some point. “Within the next six months, your organization will be represented in one of these. Here we go. We're gonna start scheduling people. I want everybody to introduce themselves. If you're a member, you have to be represented. You have to be present. You have to talk about yourself and why you are a member in some way.”

One New York representative suggested that Hive create an organized document focused on possible partnerships:

I was just thinkin' about that as I was sitting here. I think everyone at [Sequoia] knows Hive: the term, the phrase, and that it's a large collection of organizations, but I don't know exactly how much they know about the partnership and what benefits we get as being a partner within that Hive. I was just tryin' to think if we've had a training—I mean, last year we had a large staff meeting. They had a giant graph with all the different Hive network members on it. I mean to—that just looks like a large clog. It's just sensory overload. I think if we had a direct, not training, that sounds way too formal, but just document or something that explicitly states the partnerships and what we can get. It would be utilized more often.

The majority of representatives would like to see this information put into an electronic format which would allow for easy searching and reference. One Chicago representative suggested the creation of a directory:

I guess even thinking about that is like those meetups are so short that what if we had a directory or something that Hive could put together where it lists exactly what we're doing. Maybe through that data try to make these connections, maybe using tags, tagging words or certain ideas, themes that pop out that they may see these things visually maybe where they're like, “Well, [Paisley Museum] is working with soldiers that are self taught. Let's look at [Feeling Art] because they work with self-taught artists so how could they pair up on this project.” Right now we're still sort of left to our own devices to make that connection. Maybe Hive could help better by helping us make those connections without having to physically do it, but more having a directory where category, organizations are listed by category and specialties and programs.

Many representatives felt that improved access to this information would encourage them to collaborate more. For example, one New York representative commented that her programs would benefit if she were able to share notes with organizations that run similar projects:

Yeah, I definitely would like to know what programs are going on, especially the ones that are similar to the ones that I teach specifically. What kind of problems they run into and what has been working for them so that I can play around with those things as well? An example of that that I think might be good to know is printing in 3D—like 3D printers. I'm having trouble seeing how to use it.

A database would allow representatives to access information easily about partnerships and to reach out to their peers who are involved in projects or programming of mutual interest. Another representative explained how a database of Hive partners would allow him to seek out collaborative partners more actively:

Again, some sort of searchable type of database of different organizations, what they're doing, when they're working on, so that it's not that I have to wait until somebody sends an email for me to say, "Oh, yeah, what that person said is really interesting. I wanna get involved with them." More I can then be more active and search and see what I could get involved with more.

The idea of creating a database of potential partnerships within the Hive also extended to youth programs. One member suggested creating a youth facing program directory: "You know, if we're not offering programming over President's week or something I wish that there was an obvious youth facing directory where they could go find something to do."

Representatives also recognized that an electronic resource hub could also serve as a place where Hive members could share and access toolkits, manuals, and other documents that highlighted best practices. One Chicago representative stated:

I'm thinking the different workshops or toolkits and things like that, so the badging toolkits and social media toolkit. Yes, they're out there and there's a link to them somewhere, but it'd just be nice if there was a nice resource hub for the organizations.

Specifically, in addition to general information about programming and projects of Hive members, representatives mentioned that they would like to see information regarding some of the Hive concepts in an accessible resource hub. For example, "The toolkit of best practices, or exposing spaces that do connected learning or have HOMAGO, and do it in a very good way. Exposing those resources, so folks can see it in action," explained another Chicago representative. A few other representatives expressed that they would like to access shared resources for program evaluation. One representative suggested that a standardized set of evaluation materials could be added to a shared, online resource hub:

I think standardizing some of the evaluation things across organizations in the Hive would be really helpful. I know that's a lot of—from my experience just in informal places and non-profits, that's one of the first things that gets cut when you're strapped for a budget or time—is the evaluation pieces. I'm sure that would be a valuable resource for people to share some of the assessment tools that we use.

As noted above, representatives greatly valued the information that they received through the Hive, especially that which came from their peers. However, they hoped for a more efficient manner of distributing and accessing that information so that they could make better use of it.

Professional Development

While many representatives were satisfied with current professional development opportunities, several from both cities expressed a desire for additional opportunities and provided examples of what they would like offered. One Chicago representative felt that the meetups had lost focus and should be more ‘workshop like.’ She explained:

The last few meetings have been more about these very kind of vague concepts, but not solutions. Like, they’ve been really big about no solutions. And I don’t understand it. I don’t quite understand—I’m sure they have a great grand scheme to their process, but I haven’t currently felt a lot of, “I’m really glad I went to that meeting!” Cuz there isn’t any solutions and there’s no real applied information, where it’s like, I can take that with me and put it in my toolkit and use it. Instead, it’s sort of like putting issues out there without knowing really why. [...] I definitely feel like they could do more workshops and projects which are actually discussing what connected learning is and why they do it and how we can become a part of it, or how we can even showcase and talk about what we’re doing to share with others in the group. Sort of professional development. [...] I like having, like when we do the CSOL workshops, sometimes they can be exhausting, but it is I think always really good to be reminded of what other people are doing and successful practices in developing curriculum.

Many of the Hive Chicago representatives were critical of the meetups and hoped they would become more focused on either relationship or skill development. Another Hive Chicago representative said:

I think there’s two kind of things. I think (a) it would be really great if Hive could have some really nuts and bolts types of ways to help their members. That would be actually like, “I did this. This worked. This really didn’t work.” That could happen. If that could happen in the monthly meetings, that would be great. I think what’s hard is that I think sometimes those happen outside of the monthly meetings. It’s like, “Well, if we’ve already spent three hours a month in a meeting, and then I’m asked to spend another two hours on this DeepDive, that sounds really cool, but that’s a ton of time for any staff member to be giving to the coalition.” I think that would be really helpful if they could happen at meetups.

Others felt that skills could be best developed outside of meetup time, in separate workshops or through online resources. For example, when asked how the Hive could better facilitate the introduction of connected learning and HOMAGO, one Chicago representative responded:

I think that’s a great question. My mind automatically jumps to they should offer workshops and things like that, to make sure. I think it’s more than just workshops. I feel like I’m starting to see a little bit of a toolkit of best practices. Mentoring, I know that’s not specifically HOMAGO or Connected Learning, but it does filter into it, I think, and how to instill that within your organization. I think it’s just always keeping that mind, when they’re building agendas for the Hive, or building out their resource bank, that there are many ways that you can introduce something outside of a workshop or having somebody to come talk about it. The toolkit of best practices, or exposing spaces that do Connected Learning or have HOMAGO, and do it in a very good way. Exposing those resources, so folks can see it in action. I think also, just keeping open dialogue about the two, and really understanding and learning what the network has been doing for that.

This representative articulated several ways to offer professional development for Hive members, ranging from workshops to demonstrating best practices through more creative means, including open dialogue and sharing successful work with others. Her response also echoed previous calls for the development of an online resource hub.

Other respondents tended to emphasize professional development for either soft or hard skills. A handful of respondents suggested professional development centered around teaching and social interactions. One Chicago representative described professional development aimed at the broader social needs of youth:

I think one thing that I posted was maybe more resources to provide professional development or training for educators, especially to work with social issues. Because we're in a way becoming more or less a part of the fabric of social work when we're working with youth that are troubled. More along those lines, PD sessions, training, offering more opportunities to meet youth, too, to get them in one place without doing an activity, and then seeing them go. Being able to connect with them in a way that is more meaningful maybe?

Others commented that they would like the Hive to offer professional development around hard skills, like operating particular software programs. One New York representative suggested specific skill development that could be taught by Hive representatives for each other:

Wouldn't it be great if Hive had some capacity built in once in a while for members? [...] Let's say, for example, [Organization A] has a workshop where all Hive members can come and learn sound design or edit sound, or [Organization B] can have a workshop about how to teach media literacy. Those things could be for Hive members, right?

Another, who felt that the Hive's greatest resources was exposure to "these types of thinkers" and having "accessing to other innovative spaces" also wanted to see more opportunities for Hive members to share their skills and help educate their peers. She said:

I would love to see, for example, an opportunity for some of our staff to work at another space. Swapping programs, you know what I mean? [...] Like anything related to technology; anything that pushes our work technology-wise. For example, opportunities to just learn how to do Badge Stack, just spend a year studying Badge Stack to develop a training ground for that.

She continued on to suggest that these workshops or trainings could be filmed and archived so that others could watch and learn at their own pace:

Maybe having a Hive channel where you can go and see all the different workshops. We're recording these experiences and giving it to people back in a way that they can learn from it.

One New York respondent was less sure about what kind of professional development Hive should provide, even though he was able to pinpoint facets of his organization in need of development:

I think sometimes—I feel like, in thinking about different ways we could have our kids dabbling with certain technology, sometimes I’m not necessarily familiar with how to—I don’t code. Trying to think of programming ideas where we can incorporate that aspect into a program can be challenging, when I don’t even truly understand it. Or, certainly the staff underneath me don’t understand it. Professional development opportunities in those areas maybe, but I don’t even necessarily know if that’s Hive—if that should be Hive—one of their focuses. We can go elsewhere for that type of training.

Because the respondent felt that his organization could go elsewhere for technical training, he was hesitant to say that this was a kind of training the Hive should provide. Similarly, a Chicago representative did not think that additional professional development sessions would be logistically viable for most representatives. Instead she suggested sharing “case studies”:

I think there’s two kind of things. I think (a) it would be really great if Hive could have some really nuts and bolts types of ways to help their members. I think that’s what I was talking about when I was saying the case studies. That would be actually like, “I did this. This worked. This really didn’t work.” That could happen. If that could happen in the monthly meetings, that would be great. I think what’s hard is that I think sometimes those happen outside of the monthly meetings. It’s like, “Well, if we’ve already spent three hours a month in a meeting, and then I’m asked to spend another two hours on this deep dive, that sounds really cool, but that’s a ton of time for any staff member to be giving to the coalition.” I think that would be really helpful.

While few representatives identified specific skills or topics for professional development sessions, many felt that Hive should better utilize the vast technical knowledge and diverse resources available through membership to organize trainings for representatives and member organizations.

Connecting Across Cities

With the number of Hive Learning Networks and Hive Learning Communities expanding, both in the U.S.A. and abroad, Hive Chicago representatives expressed interest in having all of the Hives more demonstrably connected. Representatives hoped that if connections were extended between the various Hives, it would be possible to tap the resources and ideas of Hive member organizations in other locations. For example, one Chicago representative expressed interest in establishing connections between networks:

I think it’d be nice if there was more connection between networks around the country and beyond. I don’t feel like we’re super connected to what’s happening in New York or Pittsburgh. I’m sure there’s a lot of really interesting things happening in different spaces and connections in those different spaces.

Another Chicago representative who was working on creating branches of a program in other cities also expressed interest in meeting members of other Hives:

I would like to meet other people from Hives across the country because we are branching the organization. We're branching [Rome Media] to other cities. We're doing a pilot program in Denver this summer, and we have [Lemonade] and [Notation] interested. It would be great to have connections in other cities as well. Like I said, I don't know that that's not available, but I would like that.

While connections between Hives could benefit the reach of a particular program, a New York representative commented that connected Hive organizations need not necessarily feel “a bond,” but may be linked simply to provide the youth they serve with opportunities that may not exist within a single organization:

Listen, there’s one answer for those of us who make our living running these programs, and another answer for the kids. It needs to be as big as it needs to be for any kid to get any kind of stuff they want, when they want it. I mean seriously. They need to be able to get access and information to anything they want that they’re interested in. One of the—again, the legacies of Hive has been for me to think about, again, I’m in a big, stuffy museum, mansion on [Avenue 18], but I want a kid to have the same level of informality with this museum as they do at the library, and that’s based—a kid goes to a library when they want something or need something, and they go in and get it, and they go—if they got it, and it made sense for them, they will then go back and use it whenever they need something. Very different model from museums, where we’re often special places where someone comes once for a special occasion, and they don’t feel intimidated by it. That idea of forcing all of us to think more about the youth, so on that level, as big as it gets. Any kid should be able to get anything, and the other tricky part is not necessarily feel a bond with the cultural institution that gave them that. We would like that to happen, and certainly we want it to be a way perhaps, of insight, so that you come physically, but Hive should be big enough that a kid from California, who might never walk through these doors, gets something they want from [Smithfield]. What I would like ultimately is not for them to hijack a plane and get here, but perhaps, for them to say, “Oh, I’m more and more interested in design. Whenever I have a design question, I’m gonna go to [Smithfield].” [...] That’s really tricky on an administrative level cuz we don’t get credit for that kid. We don’t get money for that kid. We can’t get a grant based on that kid. All of that’s fine ultimately because this should be about what the kids want, but it’s thinking through that.

The Hive network was aware of its members’ desire to connect with other members outside of their local networks. A member of Hive leadership in New York envisioned the future of the Hive as connected organizations within and between cities, nationally and eventually internationally:

I think and hope and look forward to the global Hivey-ness taking—having more effect on local Hives cuz I think local Hives like New York City is—there’s gonna be a shuffle. There’s always gonna be probably more—some people who are participating more than they move out. Then there’s more that participate—it’s gonna be an insulated movement of people that are constantly shifting through this community, which is—has great benefits. In addition to that, there’s these—the Hive communities that are evolving in other cities. I think when we connect those Hives together and have collaboration and sharing across cities and eventually countries, hopefully, I think that that’s what I envision as the next growth for—I wouldn’t say just growth. I would say huge, like huge goal or growth for the idea of Hive.

The Hive representatives in Chicago and New York quoted above, in addition to the employee at Hive headquarters, all envisioned the connections between Hive organizations as beneficial, whether in terms of programming, the number of opportunities available to youth, or the evolution of the Hive as a whole.

IV. Member Organizations

A. Institutional Support

None of the Hive representatives in either Chicago or New York reported that their home organizations posed challenges to their participation in the Hive. Most representatives simply stated, “No,” “Never,” or “Not that I can think of,” when asked about such challenges. Although organizations did not actively discourage representatives’ participation in the Hive, not all organizations provided overwhelming support either. One representative stated that his employer simply did not present obstacles to his involvement with Hive:

No barriers. I think there’ve been times when I was questioned. Like what is that Hive—are we still doing that Hive thing? I’m always updating. They’re like, “Is that really worth it?” It’s like, “Yeah, I think so. We’ll see.” I’ve been given the autonomy, I think, to make that choice. I think if I said, “This isn’t for us. This doesn’t make sense,” I would be trusted. They would defer to that decision, as well. It’s the absence of support, but support hasn’t been needed, but no barriers.

Another said that she had received “nothing” in terms of support from her home organization.

The majority of representatives in both Chicago and New York did, however, express that their home organizations had been supportive of their participation with the Hive in one way or another. The primary way in which home organizations supported representatives’ Hive participation was by allowing them to take time away from their office in order to participate in Hive meetings and events. As one put it, “The freedom to go the Hive. That’s big. They say I can go, so I go.” Another elaborated, “I can go to meetings if I want. I can go to conferences. I can speak at conferences. I can share our work with Hive. I can talk with Hive members about potential partnerships. I could apply for funds.”

However, the time granted to Hive representatives by employers was time away and not time off. Therefore, although many representatives were often able to attend any of the Hive events that they wanted, workloads at their organizations were not reduced in order to accommodate their participation. One representative stated there was “that workload expectation of just taking on more if you want to do these kinds of things. Beyond that, I wouldn’t say that they’ve posed any challenges.” Another representative described a similar scenario in which organizational support was sometimes contingent upon human resources and capacity:

I think in the best of moments—in the best of moments with the organization, that has happened wholeheartedly. I’ve had a whole team behind me doing this work, which is why that reform school piece where we had [Austin] working with me, and we had a whole team behind us. It was a real infrastructure, and I really felt this powerful teamwork ethic. However, as time goes on and we individuals also realize that [Peace Makers] is an organization that was a hundred percent volunteer-run outside of their teaching artists, of which I was. If I had to put myself in that space a year ago, I’d say I was the only person getting paid in [Peace Makers] for the gigs. Right? I’m doing the gigs. Had volunteers come and be a part of. Naturally, as time goes on, the support aspect waxes and wanes. Volunteers: they either can make it or they can’t. A team is only as strong as their weakest link. There’s a number of folks who said, “Yeah, I’m down with , but, no, I can’t do it,” or “No, I can’t do it,” or “No, I can’t do it.” It’s, like, “Okay, if you can’t do it, then how can you really be a part of it?” That has produced a number of challenges in my ability to

coordinate and facilitate projects with the Hive through [Peace Makers]. It has also stifled some of the potentials that have would have been able to be put in place.

Some representatives related more active forms of support from employers; one reported receiving “great” support from her organization:

I think the support is great, actually. Knowing that we’re part of this network, and making sure that we’re represented in that network. Logistical support of making sure that I can get to meetings is there. Also, the support of hearing updates and how they may or may not benefit the [organization], to being part of those conversations, and to not only ask for funding, but how do we give back once we get that funding. What did we learn that can contribute to a bigger pool?... I guess supporting me more just seeing it as a valued thing for [the organization].

This representative explained that she believed that the support received was not for her as an individual but rather because the organization maintained a link with the Hive Network. Similarly, one representative’s institution allotted a percentage of time for its employees to pursue their own work-relevant projects, allowing her time to engage in the network:

They’ve been very supportive of it. We kind of have, I guess, 20 percent time kinda rule where you can pursue new initiatives with 20 percent of our time, and so, a lot of that has been spent going on Hive projects, doing something that has uncertain returns to our company. They’re very accommodating towards that, especially when I describe what sort of things they are.

Representatives who reported the highest levels of support from their organizations also tended to report that they felt that their organization and/or their supervisor saw great value in the work of the Hive and, consequently, the participation of their organization in the Hive. As another interviewee explained,

[My supervisor] is fantastic. She’s a supporter of my development and our participation in the Hive. I think she acknowledges—she believes in the importance of it, so she’s definitely allowed me to make the space in my schedule to participate in the Hive initiatives no matter what they are. [...] A lot of it has just been sort of like, yeah, we definitely want to be involved, but you just have to figure out how to make the time on your own. It’s not like other things go away because you’re involved in the Hive. There’s support in terms of allowing me to participate in things, but there’s not a lot of like, “Oh, you’re gonna do that, so let’s take this other thing off your plate.” It’s just sort of like you’re doing things on top of it.

Although this representative echoed the “workload expectation” mentioned above, she still felt supported because her supervisor valued their organization’s participation in the Hive. Similarly, some representatives mentioned enthusiasm and genuine interest from their employers in how network meetings and resources could bring greater value to their youth programs. A representative illustrated how his organization demonstrated support through thanks and acknowledgement:

I mean, we’ve gotten acknowledged. The teaching artists definitely are in it. The teaching artists definitely, “Oh, that was great that they had a great time.” Teaching artists definitely buy into it and love that the kids had such a great opportunity. I think the administrators—we just get acknowledged. Thank you for doing this for our students. We just get acknowledged enough.

Others experienced stronger support than simple acknowledgement. The following representative described how her colleagues expressed support by valuing her Hive activities:

Yeah, so they pretty much—every event, they see it as a priority that I go and it helped me prioritize. I mean, not always, 'cuz if we have other events and stuff going on that are really important then those come first. But otherwise I would say usually if I say, "Oh, there's this Hive event," or, "There's this workshop," it goes through all the channels and then it's usually okay for me to participate if I can make a good argument for why I think it will benefit us. I think, yeah, they've been extremely supportive in seeing the benefit of it and seeing the benefit of me specifically participating. [...] But a lot of times I'll come back from workshops or presentations that different partner organizations have done, and I'll be like, "Oh, my gosh. This is so cool. They're doing this and this." And then they look into it, and—I don't know. Sometimes we come back to it, sometimes we don't, but I think it's always good for other people in to hear what other organizations are doing, especially organizations of similar size. And as a result, they've all asked to join the Minigroup, so I've added all [Strength] [laughs]. Almost every staff member, at least the ones that have to do with programs are on the Minigroup and interested in wanting to participate in more Hive events. They're like, "Oh, you get to do such cool things. We want to do such cool things."

Institutional support in both cities varied from passive (e.g. allowing a flexible schedule to attend meetings) to active forms (e.g. prioritizing Hive-related share-outs, explicit executive-level support). While there were no active instances of discouragement from home institutions for Hive involvement, staff capacity influenced how much support a representative received. Some representatives were encouraged to prioritize Hive meetings, while others had to squeeze in time, but all engaged in the network in addition to their existing workloads.

B. Spread

Connected learning and HOMAGO were concepts located at the center of the Hive and its work. There were numerous practices and ideas that corresponded to these concepts, such as teen-adult mentorship, the incorporation of technology, and badging. Representatives were asked if these concepts and ideas (to which they were frequently exposed through their participation in the Hive) had spread throughout their home organizations, or if they had been siloed into particular youth programs. Responses were largely split. Some representatives were unsure if the ideas and concepts promoted by the Hive had been incorporated throughout their organizations. Other representatives clearly articulated the effects that Hive concepts had on their programs and organizations.

Many representatives were unsure whether the ideas that they were exposed to by virtue of their participation in the Hive (e.g. connected learning and HOMAGO) had spread to other members and departments of their organizations. These representatives reported being unsure because they felt that the ideas and practices promoted by Hive fit closely with the approach that their organizations already took. For example, one representative spoke about the 'embeddedness' of Hive-like concepts in his organization:

HOMAGO is sort of inherent in nature play, so it's not explicitly known as that. It's sort of embedded in it. [...] Like I said, we kind of—so in terms of the mentorship, it's sort of embedded in our culture anyway...I think a lot of it is there. I think a lot of it was there already.

Two others explained that the ideas and practices promoted by Hive had always been present in their organizations: “They've always been an intrinsic part of our organization, so it's nothing new for us” and, “I think we have already had those. I mean, we've been teaching kids video, hands-on, student-centered technology forever, and exposing them to new technology constantly.” One also believed that Hive concepts had already been a part of her organization's practice, stating that her takeaway from the Hive was support and relationship-building:

I feel like a lot of what I've learned from them we're already doing in a lot of ways. I feel like I just talk about how awesome they are in helping us out with stuff and how they're a big proponent of it and can connect us to other organizations.

Because of the overlap between Hive concepts and pre-existing ideas and practices within organizations, it was not entirely clear to some representatives whether the ideas and practices that guided their organizations' work originated from the Hive or from their organizations. One representative described this overlap as a “fine line,” regarding the actors and actions behind the spread and influence of Hive concepts:

I don't know if it's the Hive necessarily, or—because again, it's sort of like a fine line between what I feel like I was doing, or what was happening anyway, but then obviously as a member of the Hive, then it spreads. We've definitely expanded the role of education in upcoming shows. [...] Now it's more integrated. I don't know if that's necessarily Hive-based, but I know that all the support you get kind of helps influence your decisions as you go.

As this representative shows, it was not always possible to delineate where the organization's particular ideas about and approaches to teen education originated.

Those representatives who felt that their organizations had developed Hive-like concepts and practices before joining the Hive explained that the Hive provided them with other kinds of knowledge and support they had not previously enjoyed. Several representatives who felt they already employed Hive concepts before becoming members appreciated how the network provided them with greater understanding for applying concepts. When asked whether Hive-like concepts had spread, one interviewee responded, “Yeah, I think a lot of 'em were, I guess, there to some degree before we even really started collaborating with Hive. I don't know if they integrated as much as they were always kinda there. We were just understanding how to apply them.” Another representative explained while many of the practices predated their Hive involvement that Hive provided a new, shared language for communicating the principles behind her organization's programs: “A lot of [Hive concepts and principles], [...] had already existed in our programing, in our online campaigns, in our curriculum, in our youth programing, but it was great to really have this tool and framework to talk about it.”

A number of representatives also believed that the concepts and ideas that they were exposed to through their membership in the Hive had been incorporated in their own work and had spread into their organizations. Badging was one such concept. One Chicago representative claimed that thanks to the Hive, a badging system was currently being developed at their organization. The plan was to extend the badging system to incorporate all of the organizations' programs.

The badging, the whole ecosystem—that's something that we're developing and that's gonna be a part of our program regardless if we get Hive funding or if, for whatever reason, don't continue being a member. That will carry through into all our programs, not only for [Science for Girls] but whatever other programs come on board with new partnerships. We'll be able to carry that badging system on with every student that comes through. [...] We've sent our program manager to the DML conference, and she spoke about badging and the importance of that. It's really taken a life of its own that Hive cultivated.

Badging was also addressed by another representative who felt that the concept had made an impression at his organization. “It's just changed their ideas of what a badge can be or just how we are recording what the young people are learning.”

Badging was not the only idea or practice to spread. Representatives also spoke about how what they learned through Hive impacted programmatic decisions at their organizations. Several representatives shared examples of discussing or incorporating connected learning into their meeting agendas, professional development, and youth programming. One felt that commitment to connected learning and HOMAGO principles reached beyond departmental structures:

Those principles are infused throughout all of our programming. Not just our programming, but our administrative side too, I think. We often play test things with our entire staff here. Not just the program staff, but also our development director, for instance, was at a play test that we did the other day. Everyone gets to participate in the learning here too and in the development of our programming.

Another representative shared that she had incorporated connected learning into her organization's program development, assessment, and educator professional development:

I've been incorporating the connected learning stuff into the programming development and assessment. Then I actually had a professional development with my facilitators where I incorporated a lotta that stuff.

Similarly, when asked about the spread of Hive-like concepts to other parts of his organization, another representative shared how employees became familiar with Hive concepts through his efforts at incorporating connected learning concepts into team meetings:

We started actually, last year, an integrated teen programs meeting, which involves a couple different departments. I think through those meetings they have spread a little bit because we've started to frame our youth programming in terms of hanging out programs and messing around and geeking out. I know definitely our [Open Sky] team—the astronomy group—has become more familiar with those terms and is thinking about how their programs fit in with that—not pipeline—but into that structure a little bit. I think there's some spreading in that way and then in terms of connected learning, I feel like there's been—I don't know if this is actually related to our Hive participation. There has definitely been more focus on really connecting the things that people are doing at home with what they're doing at the museum and school through our social media team. Some of the initiatives are going through them.

In addition to the spread of HOMAGO, this representative also indicated that because of his participation in the Hive there was an increased understanding of the importance of digital technologies and collaboration for teen education:

I think there's more awareness of the use of digital technologies as a result of Hive involvement and meeting youth at their level and how they wanna connect with us. Then also I think just greater awareness of who are the youth we're not meeting or reaching. What organizations are? You can like partner with on certain things, so I think since being involved in the Hive, at least, I feel that there's more efforts across the whole organization to collaborate with different groups—being strategic about their collaborations in terms of what they're doing with youth and with programs.

One New York representative felt as though her participation in the Hive changed her approach to programming in general. She shared that creating youth-focused programming influenced her thinking about the experience she wanted to create for all visitors to her organization's space:

All of this focus on the user, as opposed to us as a museum and what we want people to get, has really influenced the way—we're changing the way we're writing the tombstone information. [...] The whole museum is opening up with a visitor focus that's far more concrete and intense than it was previously, [...] Digitally and virtually, which I think again, isn't—there might not be a straight line through that, but that constant reflection on the user definitely is part of that.

Although she acknowledged that Hive principles may not be directly correlated, the Hive ethos of innovation and re-imagining programs influenced her thinking around visitor experience.

Some representatives also mentioned barriers to the spread of Hive concepts. A few representatives in New York stated that there had not been enough time for the concepts to spread beyond specific Hive programs, pointing out that concept integration required familiarity with the literature around those concepts. “I think it's more because we're so busy. It's so busy running programs that I think—I think that to understand those concepts, you have to read the literature and then being there to really get it. Yeah. I don't think it has sunk in yet.”

The extent of the spread of Hive concepts throughout an organization may be tied to the amount of support given to the Hive representatives by their home organizations. As one Chicago representative stated, “I think the folks who are able to go to the events, are able to take more away.” Given that, concept spread may also be linked to whether the representative who attended Hive events was a part-time contracted educator or a full-time administrator.

In all, representatives indicated that the ideas and concepts of the Hive are reflected in the work of their organizations. Some were clear that this was due to ideas spreading from the Hive into their home organizations while others found it difficult to determine whether their ideas and practices had originated with the Hive or if they had originated in their home organizations.

V. Hive Youth

In Y1-Y3, Hive-affiliated programs were invited to participate in pre-, post-, and one-day surveys of participating youth. In Years 1 and 2, survey collection efforts were focused on

programs receiving funding through Hive-specific funding sources in each city. As the Hive networks expanded and aimed to broaden impact even in youth programs that did not receive Hive-specific funding, our data collection in Y3 also expanded to include any program that administrators identified as "Hive-like" or "Hive-inspired." As such, our sample is limited to programs that self-identified as Hive-aligned and opted to participate in research.

Surveys asked youth about their educational attitudes and aspirations, program experiences, and aspects of connected learning. Years 1-3 of data collection included 1617 pre-, post-, and one-day surveys across 66 programs in Hive NYC and 1055 pre-, post-, and one-day surveys across 37 programs in Hive Chicago.

A. Hive Chicago Youth

1. Demographic of Survey Participants Across Years

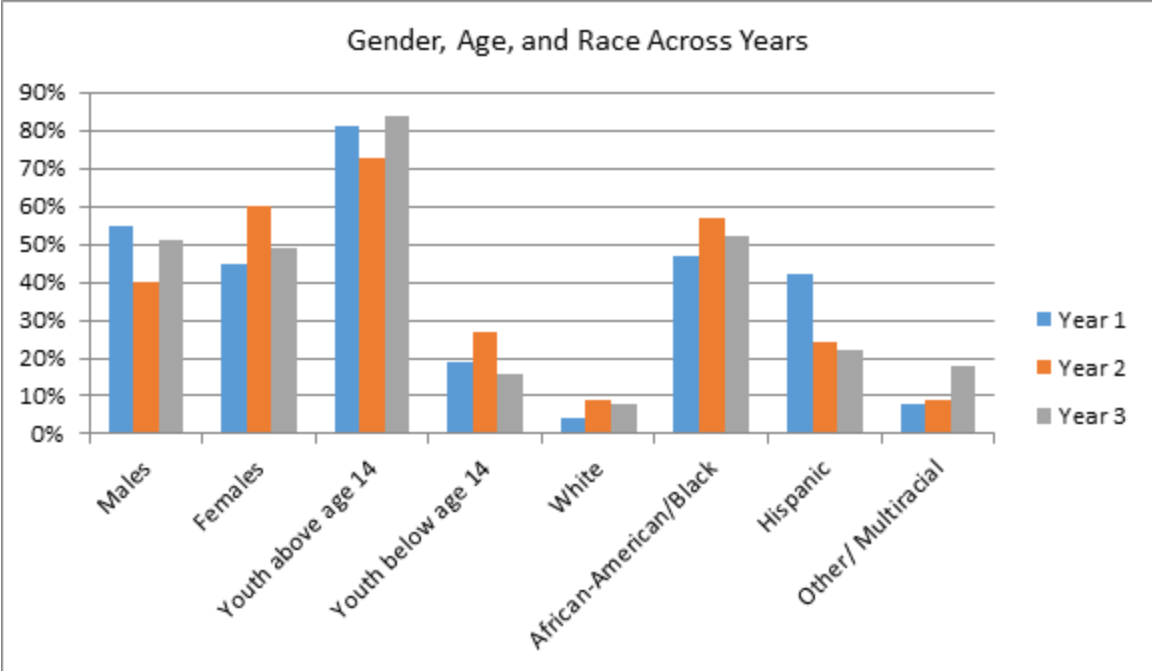
This section describes the demographic and household characteristics of the 718 Hive Chicago participants included in the combined Year 1 (Y1), Year 2 (Y2), and Year 3 (Y3) survey samples. First, we examined the full sample (e.g. spanning all three years) and compared changes in participants' composition over time (e.g. Y3 compared to Y1). Then we took a closer look at the full sample by cross-tabulating data to investigate variation by sex, parents' education, age, and race/ethnicity.

1a. Demographic Composition of Youth Sample

In the full sample (see Table 1a), about half were female (53%), most were over age 14 (79%), and a large majority self-identified as either a racial/ethnic minority or mixed race/ethnicity (92%). Most (81%) also reported living in households with one or more siblings. Forty-one percent of the respondents reported living in single-parent homes, with 52 percent having regular contact with their fathers and 92 percent reporting regular contact with their mothers. More than half of the respondents reported that at least one parent or guardian held either a Bachelor's (30%) or Graduate Degree (29%).

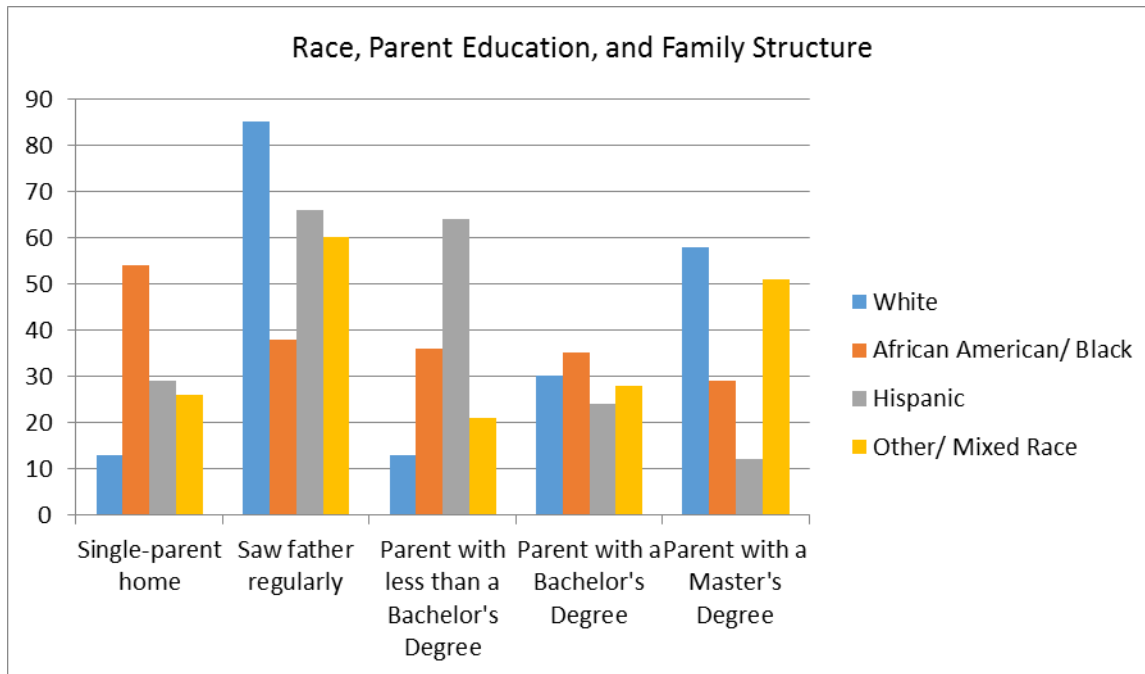
1b. Demographic Comparison Across Years

When comparing the demographic and household characteristics of youth in Y3 with the Y1 and Y2 samples, some statistically significant differences emerge (see Table 1a). In contrast to Y1, the Y3 sample included fewer Hispanics (22% versus 42%) but more mixed race individuals (8% versus 18%). Compared to Y1, Y3 also included significantly fewer youth whose parent(s) had less than a Bachelor's Degree (36% in Y3 versus 54% in Y1), and consequently significantly more youth whose parent(s) had a Graduate Degree (35% in Y3 versus 19% in Y1). When comparing the Y3 with the Y2 sample, the Y3 sample had fewer females, more youth above age 14, and more mixed race individuals.



1c. Household Structure, Parent Education, and Race

Parent education and family structure are related to a host of youth academic and social outcomes (Blau and Duncan 1967; Lareau 2003). To better understand the social backgrounds of the Hive youth, we surveyed them about which parents lived at home and the educational level of those in-home parents (see Table 1a-1b). Across the full sample, when compared to Hispanic and black youth, more white participants had a parent with a graduate degree (58% for white youth, versus 29% for black and 12% for Hispanic youth). Similarly, when compared to white youth, more black and Hispanic youth had parents with less than a Bachelor’s Degree. Fewer youth who had a parent with either a graduate degree or a Bachelor’s Degree lived in a single parent home. A greater number of black and Hispanic youth lived in single parent homes relative to white youth (54% and 29% compared to 13% for white youth). Black, Hispanic, and mixed race youth were all less likely than white youth to report that they saw their father regularly.



2. Academics

Among the Hive participants surveyed from Y1 to Y3, 35 percent attended public school,⁵ with the remaining in charter, private, or alternative schools (see Tables 2a – 2b). Notably, while 79 percent of Y1 participants attended public school, only 35 percent of the Y2 sample and 51 percent of the Y3 sample reported the same. There were no significant differences in self-reported average grades over time.⁶ In the full sample, female participants reported significantly higher average grades than their male peers (3.19 for females versus 2.91 for males). Furthermore, black youth, Hispanic youth and mixed race youth reported significantly lower average grades than their white peers (2.99, 3.15 and 3.03, versus 3.45 for white youth).

Hive youth were also asked about their educational aspirations. Youth participants from these years were similar on most measures of educational aspirations and attitudes (see Table 4b). For example, about 92 percent of youth aspired to attain at least a Bachelor’s Degree, and 65 percent of those youth actually aimed for a Graduate Degree. Youth whose parent(s) had a Graduate Degree were more likely to report aspiring to a Graduate Degree themselves. Additionally, across the full sample, youth reported that they liked working hard on things that interested them (92%), attended class with proper supplies (73%), working on a problem until they solved it (71%), and always complete their homework (66%).

3. Program Discovery and Access

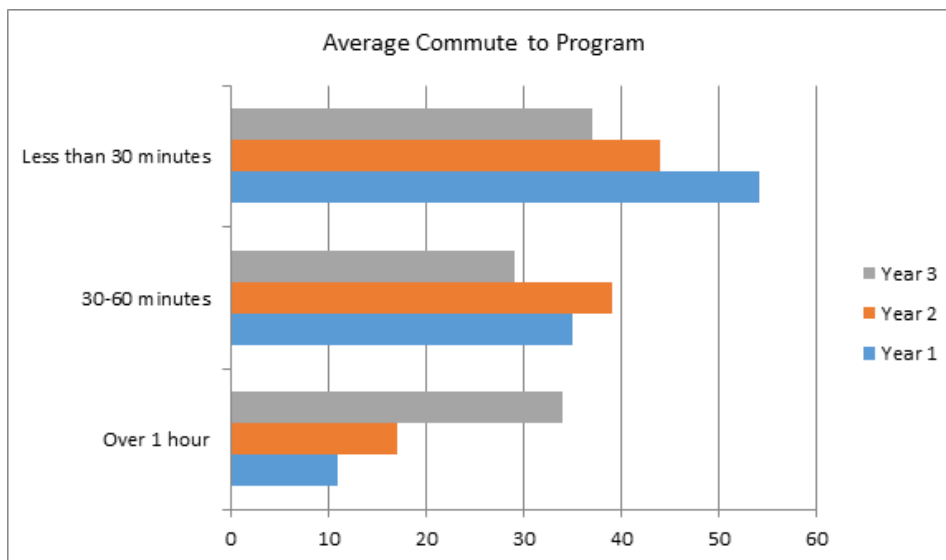
Youth first heard about Hive programs through a variety of institutional and social networks (see

⁵ The term “public school” refers to non-charter public schools, often referred to as neighborhood schools

⁶ Self-reported Grading Scale: F (0-64%)=0; D (65-69%)=1; C (70-79%)=2; B (80-89%)=3; A (90-100%)=4

Tables 3a -3b). Forty-four percent of the Hive participants across all three years heard about their respective programs at school, 34 percent from friends or family, and 22 percent through alternative or multiple channels. The distribution of information sources varied over time. For example, compared to Y3, youth in Y1 were significantly more likely to have heard of their program through school (58% for Y1 and 39% for Y3). Youth in Y3 were far more likely to have heard of their program through family and friends than youth in Y1 and Y2 (42% in Y3 versus 23% for Y1 and 28% in Y2,). Across the full sample, more males heard about the program through family or friends than their female peers (38% versus 29% respectively); significantly more females than males heard of their program through other sources (26% versus 18%, respectively).

Participants were also asked about their commute time to their program. Across all three years, about 42 percent reported that their commute was less than 30 minutes, 34 percent said it was between 30-60 minutes, and 24 percent said it was more than one hour. Significant differences by year emerged. More Y1 participants reported their commute was less than 30 minutes than participants in Y3. Significantly more youth in Y3 reported their commute was over an hour (34%) compared to Y2 (17%) and Y1 (11%).



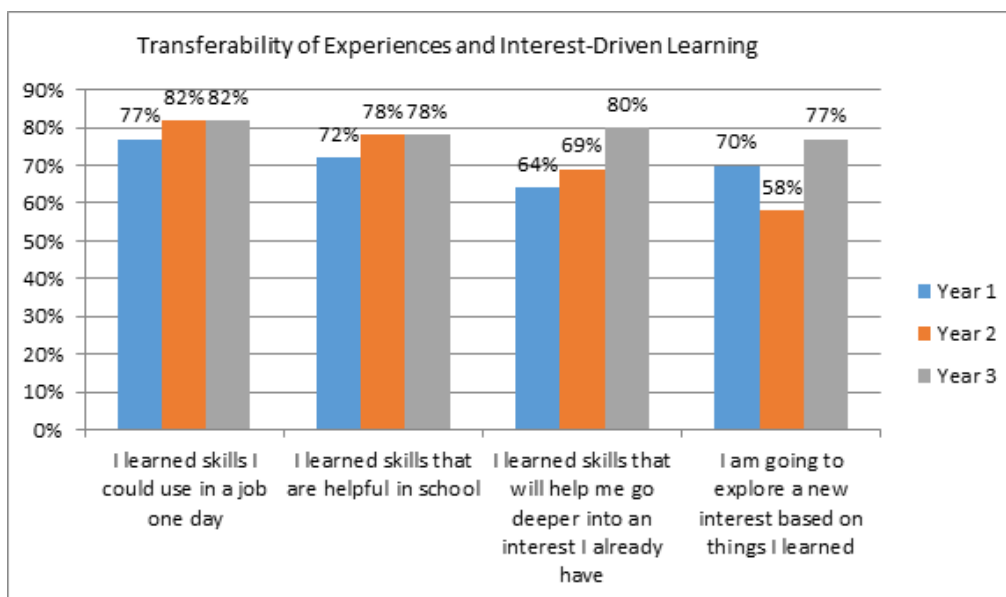
Youth attending Hive programs reported different levels of awareness around other Chicago Hive initiatives. Participants’ understanding of how programs fit within a broader Hive network declined each year. While 59 percent of those surveyed had heard of the Hive Learning Network in Y1, levels of awareness significantly declined to 31 percent in Y2 and then to 11 percent in Y3.

4. Connected Learning

The survey explored several aspects of connected learning: transferability of experiences, interest-driven learning, and interactions with others. For transferability, youth were asked about

the extent to which they agreed that what they learned or did in the Hive could be applied to other areas of their lives (see Tables 4a-4b)⁷. In the full sample, 81 percent of Hive Chicago youth agreed that their Hive experiences would be helpful for a job they may have one day, while 77 percent agreed that what they learned would be helpful for school.

For interest-driven learning variables, 73 percent agreed that their experience helped them go deeper into a hobby they already had when they started the program, and 68 percent of youth agreed that their Hive experiences led them to explore a new interest based on things they learned. For interactions with others, 85 percent agreed that they worked with other youth to create something; 84 percent agreed that they learned a lot from teachers/mentors; and 73 percent agreed that they learned a lot from other youth.



When comparing all connected learning variables across years, significantly more youth in Y3 agreed that they learned things that would help them go deeper into an interest they already had (80%) compared to both the Y2 sample (69%) and the Y1 sample (64%). In fact, when compared to Y2, significantly more youth in Y3 were in agreement on almost every connected learning item.

The connected learning items were also examined within the full sample by race, parent’s education, age, and sex. Significantly more black youth than white youth agreed that they learned things that would help them with school (80% versus 66%). Youth who reported having a parent with less than a Bachelor’s Degree, were more likely to agree that they learned things that could be used in a job, that they learned a lot from other youth, and that teachers/mentors helped them understand how the activities they did at Hive could be transferred to other parts of

⁷ Agreement Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0

their lives compared to youth whose parents had a graduate degree. Significantly more youth above the age of 14 agreed that the things they learned at their programs were transferable. No significant differences by sex emerged on any connected learning variable.

B. Hive New York Youth

1. Demographic of Survey Participants Across Years

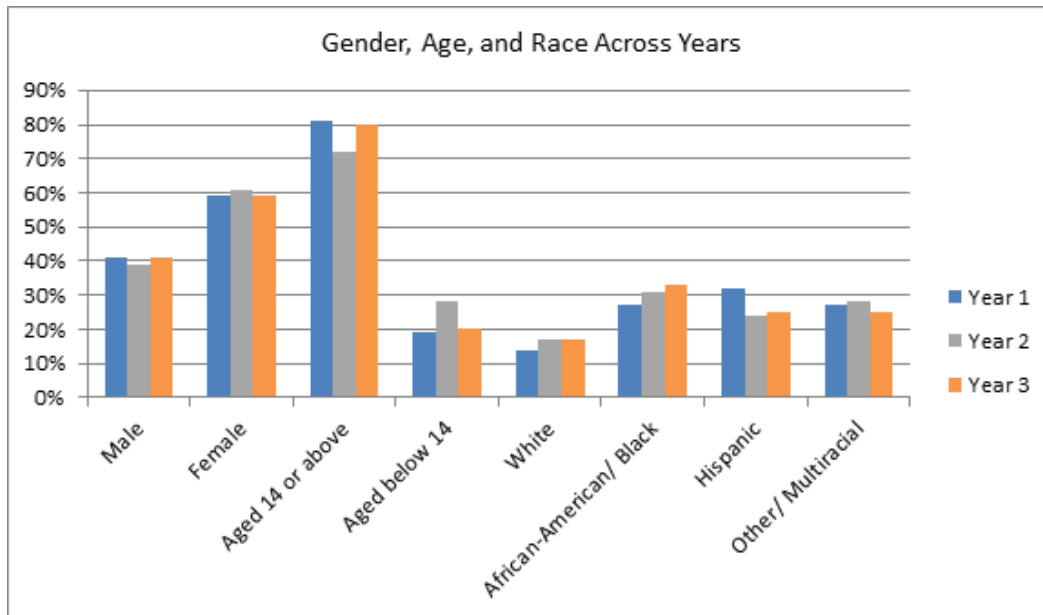
This section describes the demographic and household characteristics of the 1,038 Hive New York participants included in the combined Year 1 (Y1), Year 2 (Y2), and Year 3 (Y3) survey samples. First we examined the full sample (e.g. spanning all three years) and compared changes in participants' composition over time (e.g. Y3 compared to Y1). We then took a closer look at the full sample by cross-tabulating data to investigate variation by sex, parents' education, age, and race/ethnicity.

1a. Demographic Composition of Full Sample

In the full sample (see Table 5a), over half of youth were female (60%), most were over age 14 (78%), and a large majority self-identified as either a racial/ethnic minority or mixed race/ethnicity (84%). Most (81%) reported living in households with one or more siblings, with 42 percent having two siblings or more. Thirty-seven percent of the respondents lived in single-parent homes, with 58 percent having regular contact with their fathers and 90 percent reporting regular contact with their mothers. Respondents were also asked about the highest education completed by each adult in the household. More than half of the respondents reported that at least one parent/guardian held a Bachelor's (28%) or Graduate Degree (35%).

1b. Demographic Comparison Across Years

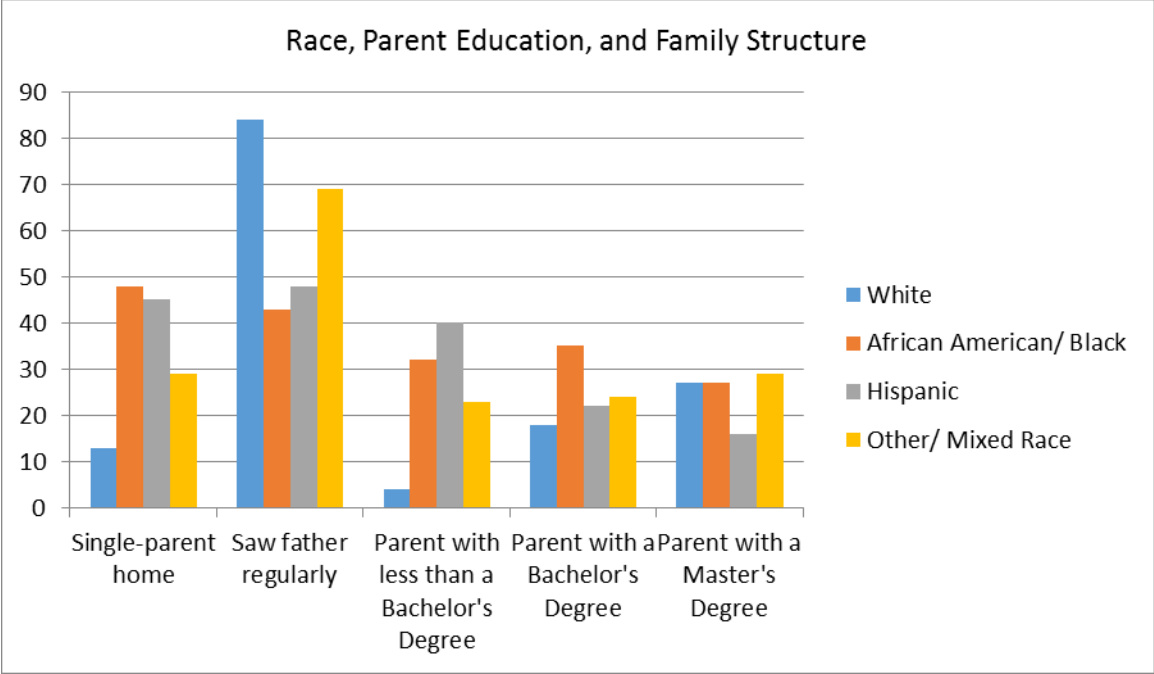
When comparing the demographic and household characteristics of youth in Y3 with youth in Y1, no significant differences emerge (see Table 5a). Some statistically significant differences emerge between the Y3 and Y2 samples, however. For example, the Y3 sample included more youth aged 14 and over, more youth with regular contact with a male guardian, and more youth whose parent(s) had a Bachelor's Degree. When combining all three years, gender differences and differences by age emerged among the participants. In terms of gender differences, significantly more male participants identified as white, while significantly more female participants were 14 or over and identified as mixed/other race. For age differences, when compared to youth under 14, significantly more youth 14 and over identified as female, identified as black or Hispanic, came from a single parent home, had two or more siblings, or had a parent whose highest education was less than a Bachelor's degree. Youth 14 and over were also less likely to identify as white, regularly see their fathers or mothers, and have a parent with a Graduate degree than youth under 14.



1c. Household Structure, Parent Education and Race

When we further examined demographic and household characteristics by parent education and race (see Table 5b), significantly more white youth had a parent with a Graduate degree compared to youth who identified as black, Hispanic or mixed race; and significantly more black, Hispanic and mixed race youth said that the highest education a parent had received was less than a Bachelor’s degree. White youth were significantly less likely to live in a single parent home or to have more than one sibling than black, Hispanic and mixed race-identified youth. White youth were also more likely to say that they had only one sibling compared to black and Hispanic youth. Furthermore, significantly more white-identified youth reported being an only child compared to Hispanic-identified youth.

When examining differences by race in relation to adults present at home or seen regularly, significantly more White youth had regular contact with their fathers compared to black and Hispanic youth, while significantly more black, Hispanic, and mixed race youth indicated they had regular contact with a female guardian compared to white youth. When looking at differences across parent education, if a participant had a parent with a Graduate degree or a Bachelor’s degree, he or she was more likely to identify as White, more likely to have only one sibling, less likely to have two or more siblings, less likely to live in a single parent home, and less likely 14 or over compared to youth whose parents did not have a Bachelor’s degree. Additionally, significantly more youth who reported that at least one parent or guardian had a Graduate degree also reported having regular contact with their fathers.



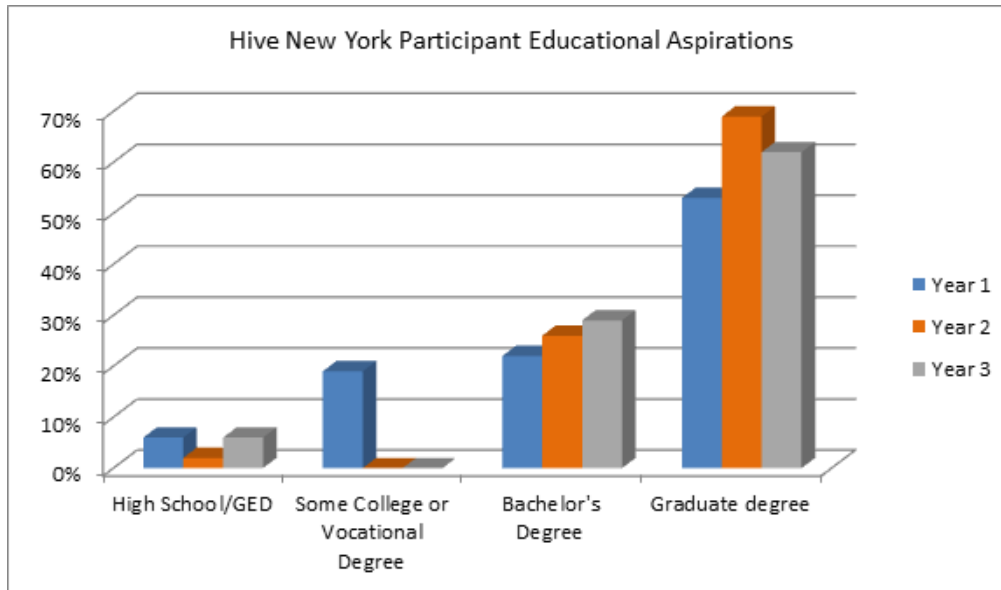
2. Academics

Among the Hive participants surveyed from Y1 to Y3, 90 percent attended public school, with the remaining in charter, private, or alternative schools (see Tables 6a – 6b). The average grades that participants self-reported remained relatively constant, at just over a B average across all years.⁸ In the full sample, however, female participants reported significantly higher average grades than their male peers (3.31 versus 3.03, respectively). Furthermore, black youth and Hispanic youth reported significantly lower average grades than their white peers (2.98 and 3.01, versus 3.58 for white youth). Students whose parent(s) had a Graduate Degree also reported higher average grades than students whose parent(s) had less than a Bachelor’s Degree (3.38 versus 3.11, respectively).

Hive youth were also asked about their educational aspirations. Approximately 90 percent of participants aspired to attain at least a Bachelor’s Degree, and 63 percent of those youth aimed for a Graduate Degree. When examining differences across years, 19 percent of youth in the Y1 sample reported aspiring to a Vocational degree/some college compared to 0 youth in the Y3 sample, while significantly more youth in the Y2 sample reported aspiring to a Graduate Degree than the Y3 sample. When exploring differences in educational aspirations across race, significantly more white youth reported that they aspired to a Bachelor’s degree compared to other/mixed race youth, and significantly more black and Hispanic youth aspired to only complete High School or a GED than white youth. When examining how youths’ parent education played a factor in their own educational aspirations, youth whose parent(s) had a

⁸ Self-reported Grading Scale: F (0-64%)=0; D (65-69%)=1; C (70-79%)=2; B (80-89%)=3; A (90-100%)=4

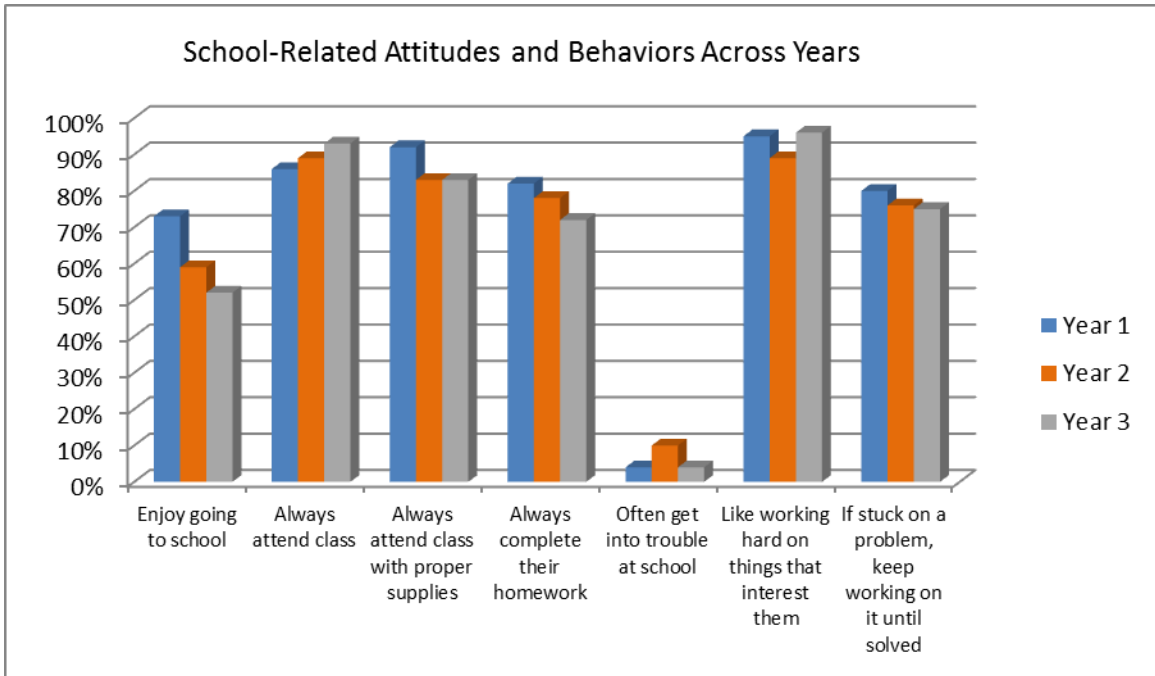
Graduate Degree were more likely to aspire to a Graduate Degree themselves, and less likely to aspire to a Bachelor's Degree.



The Hive participants were also asked about the extent to which they shared several school-oriented attitudes and behaviors.⁹ On average, participants agreed that they like working hard on things that interest them (94%), that they always attend class (91%), that they always attend class with proper supplies (84%), that if they get stuck on a problem they keep working on it until they can solve it (76%), and that they always complete their homework (74%). Just over half (58%) agreed that they enjoyed going to school, while a small percentage of participants agreed that they often got into trouble at school (about 5%).

There were several statistically significant differences on these school-related attitudes and behaviors across years and demographics. When examining differences by years, youth in Y1 were more likely to agree that they enjoyed going to school than youth in Y3 (73% versus 52%, respectively); youth in Y1 were more likely to agree that they always attended class with proper supplies (92%) compared to youth in Y3 (83%); more youth in Y2 agreed that they often got into trouble than youth in Y3 (10% versus 4%, respectively); and finally, significantly more youth in Y3 agreed that they liked working hard on things that interested them (96%) compared to youth in Y2 (89%).

⁹ Agreement Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0

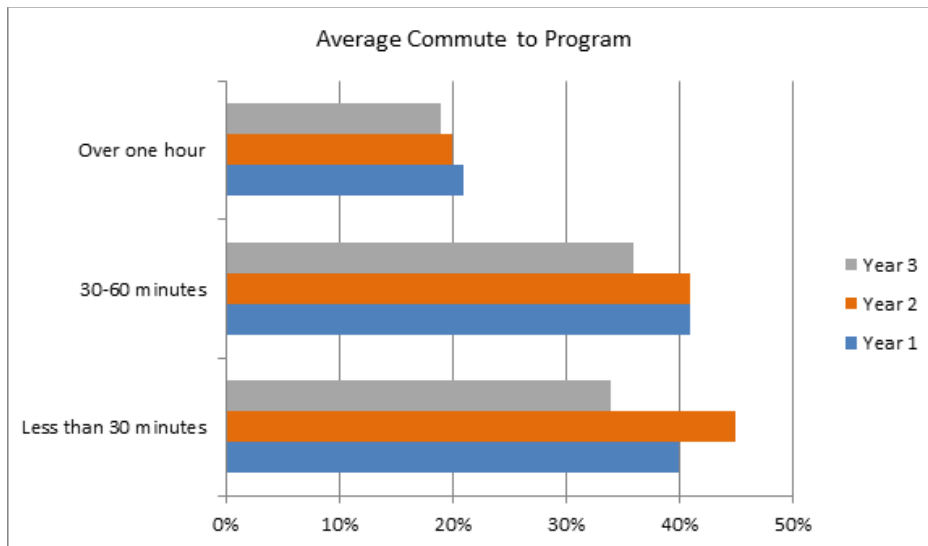


When examining differences by subgroups such as gender, age, race and parent education, significantly more females and youth 14 and over agreed that they always attend class with proper supplies compared to males and youth under 14. Females and self-identified white youth were also more likely to report that they always completed their homework compared to males and black and Hispanic youth. Furthermore, youth whose parent(s) had a Graduate Degree were significantly more likely to agree that if they got stuck on a problem, they kept working on it until they could solve it (85%) compared to youth whose parent(s) had less than a Bachelor’s Degree (74%).

3. Program Discovery and Access

Youth first heard about Hive programs through a variety of institutional and social networks (see Tables 7a -7b). Forty percent of the Hive participants across all three years heard about their respective programs at school, 31 percent from friends or family, and 29 percent through alternative or multiple channels. This distribution of information sources varied over time. For example, compared to Y3, youth in Y1 were significantly more likely to have heard of their program through school, and significantly less likely to have heard of their program through family or friends. Youth 14 and over were less likely to hear of their program through school and more likely to hear of it through multiple sources compared to youth under 14. Students whose parent(s) had a Graduate Degree were more likely to hear of their program through family or a friend and less likely to hear of it through school. Significantly more Hispanic and mixed race youth heard about their program through school compared to white youth, while significantly more white youth heard of their program through family or a friend than Hispanic or mixed race youth.

Participants were also asked about their commute time to their program. Across all three years, about 38 percent reported that their commute was less than 30 minutes, 41 percent said it was between 30-60 minutes, and 21 percent said it was more than one hour. When examining commute times by year, significantly more Y2 participants reported their commute was less than 30 minutes than participants in Y3, while significantly more youth in Y3 reported their commute time was between 30-60 minutes compared to youth in Y2. Significantly more males reported their commute time as less than 30 minutes than females (43% versus 35%, respectively). Youth 14 and over were significantly more likely to report a commute time of over 30 minutes (68%) than youth under 14 (40%). Additionally, youth 14 and over were significantly less likely to report a commute time of less than 30 minutes (32%) compared to youth under 14 (61%).



Youth attending Hive programs reported different levels of awareness around other New York Hive initiatives. Participants' understanding of how programs fit within a broader Hive network was significantly higher in Y1 than in Y3 (66% versus 17% percent, respectively) but was significantly lower in Y2 than in Y3 (8% in Y2). Within the whole sample, there were lower indications of having heard of the Hive Learning Network among participants whose parent(s) had a Graduate Degree. In terms of communicating about the program to others, youth age 14 and older and black and Hispanic-identified youth reported telling more people about the program than youth under 14 and white youth.

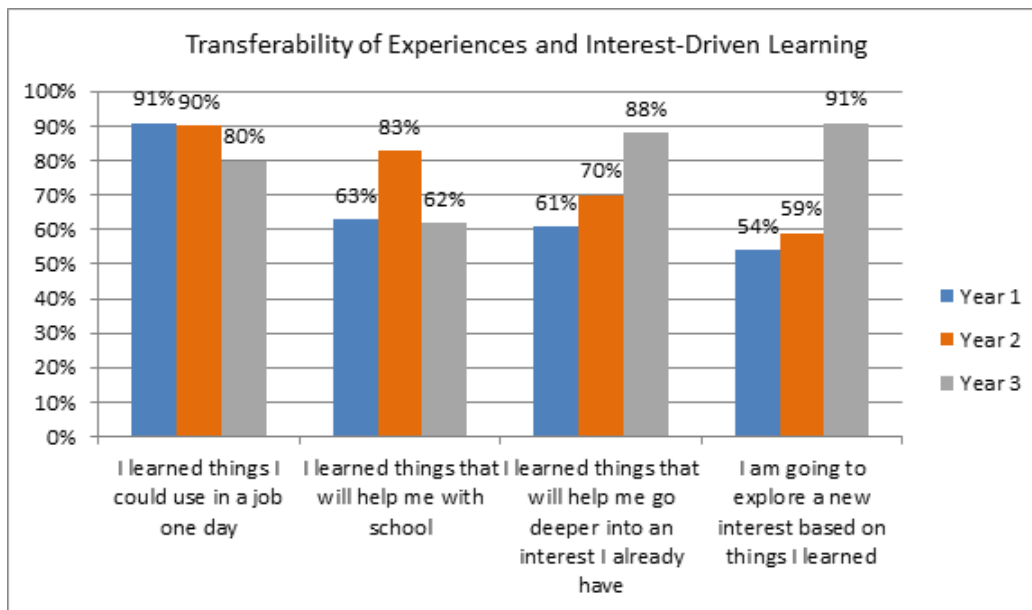
4. Connected Learning

The survey explored several aspects of connected learning: transferability of experiences, interest-driven learning, and interactions with others. For transferability, youth were asked about the extent to which they agreed that what they learned or did in the Hive could be applied to

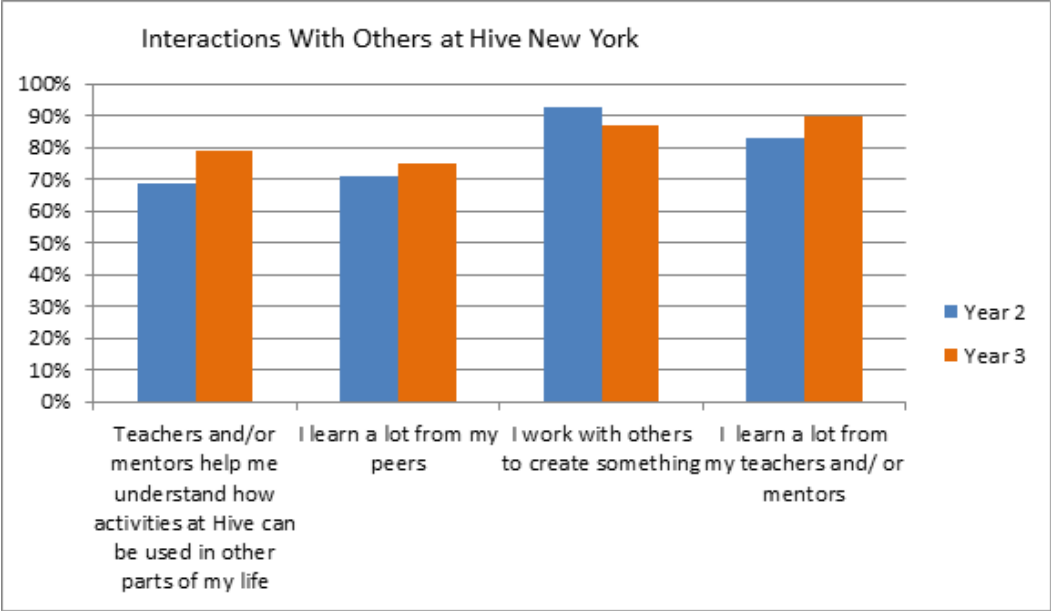
other areas of their lives (see Tables 8a-8b)¹⁰. In the full sample, 89 percent of Hive New York youth agreed that their Hive experiences would be helpful for a job they may have one day, while 71 percent agreed what they learned would be helpful for school.

For interest-driven learning variables, 70 percent agreed that their experience helped them go deeper into a hobby they already had when they started the program, and 61 percent of youth agreed that their Hive experience made them explore a new interest based on things they learned. For interactions with others, 88 percent agreed that they worked with other youth to create something; 89 percent agreed that they learned a lot from teachers/mentors; and 74 percent agreed that they learned a lot from other youth. 77 percent agreed that teachers/mentors helped them understand how the activities done at Hive could be used in other parts of their life.

When comparing all connected learning variables across years, significantly more youth in Y3 agreed that they learned things that would help them go deeper into an interest they already had (88%) compared to both the Y2 sample (70%) and the Y1 sample (61%). In addition, significantly more youth in Y3 agreed that they would explore a new interest based on things they learned at Hive (91%) compared to youth in Y2 (59%) and Y1 (54%). However, significantly more youth in Y2 reported learning things that would help them with school (83%) compared to youth in Y3 (62%).



¹⁰ Agreement Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0



The connected learning items were also examined within the full sample by race, parent’s education, age, and sex. Significantly more black youth and mixed race youth than white youth agreed that they learned things that would help them with school (82% and 76%, versus 54%). In addition, significantly more Hispanic and mixed race participants compared to white participants agreed that they learned a lot from other youth. No significant differences by gender, age, or parent education emerged on the connected learning variables.

VI. Appendix: Tables

1a. Hive Chicago Demographics by Year, Gender, and Age

Chicago Hive Demographics (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age									
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+	
Female	0.53	0.45	0.60 *	0.49	-	-	0.54	0.53	
Age 14 +	0.79	0.81	0.73 **	0.84	0.79	0.79	-	-	
Race / Ethnicity									
White	0.08	0.04	0.09	0.08	0.09	0.07	0.15	0.06 ***	
African American / Black	0.54	0.47	0.57	0.52	0.51	0.56	0.44	0.56 *	
Hispanic	0.25	0.42 ***	0.24	0.22	0.27	0.24	0.32	0.24	
Other / Mixed Races	0.13	0.08 *	0.09 **	0.18	0.14	0.12	0.09	0.14	
Household Composition									
Single Parent Home	0.41	0.44	0.40	0.41	0.40	0.41	0.34	0.42	
Only child	0.19	0.19	0.18	0.20	0.21	0.18	0.14	0.20	
1 sibling	0.31	0.26	0.33	0.30	0.32	0.30	0.31	0.31	
2+ siblings	0.50	0.54	0.49	0.50	0.47	0.52	0.55	0.49	
Adults at Home or Seen Regularly									
Father	0.52	0.64	0.49	0.52	0.56	0.48	0.57	0.50	
Mother	0.92	0.82	0.95	0.91	0.91	0.93	0.95	0.92	
Other Male Guardian	0.12	0.07	0.12	0.12	0.11	0.13	0.16	0.11	
Other Female Guardian	0.12	0.07	0.11	0.13	0.10	0.13	0.09	0.12	
Highest Ed of Any Parent									
Vocational Degree, Some College, or Less	0.41	0.54 **	0.40	0.36	0.40	0.41	0.38	0.41	
Bachelor's Degree	0.30	0.27	0.33	0.29	0.29	0.31	0.30	0.30	
Graduate Degree or Higher	0.29	0.19 **	0.27	0.35	0.31	0.28	0.32	0.29	
	<i>n=</i>	718	163	263	292	278	311	124	470

Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001
Reference categories for breakouts are: by Year (Y3); by Gender (Male); by Age (Under 14)

1b. Hive Chicago Demographics by Parents' Education and Race/Ethnicity

Chicago Hive Demographics (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	All	Less than BA	BA	Grad +	White	Black	Hispanic	Other/ Mixed
Female	0.53	0.54	0.55	0.51	0.48	0.56	0.50	0.50
Age 14+	0.79	0.82	0.81	0.79	0.61	0.83 ***	0.75	0.87 ***
Race / Ethnicity								
White	0.08	0.03	0.08 *	0.16 ***	-	-	-	-
African American / Black	0.54	0.49	0.61 *	0.53	-	-	-	-
Hispanic	0.25	0.42	0.20 ***	0.11 ***	-	-	-	-
Other / Mixed Races	0.13	0.07	0.11	0.21 ***	-	-	-	-
Household Composition								
Single Parent Home	0.41	0.50	0.37 *	0.29 ***	0.13	0.54 ***	0.29 *	0.26
Only child	0.19	0.15	0.21	0.23	0.30	0.21	0.10 **	0.20
1 sibling	0.31	0.28	0.33	0.38	0.38	0.30	0.28	0.38
2+ siblings	0.50	0.57	0.45 *	0.40 **	0.33	0.49	0.61 **	0.42
Adults at Home or Seen Regularly								
Father	0.52	0.42	0.54 *	0.62 ***	0.85	0.38 ***	0.66 *	0.60 **
Mother	0.92	0.92	0.93	0.95	0.96	0.91	0.95	0.93
Other Male Guardian	0.12	0.09	0.13	0.17 *	0.13	0.10	0.12	0.20
Other Female Guardian	0.12	0.10	0.10	0.15	0.15	0.11	0.08	0.17
Highest Ed of Any Parent								
Vocational Degree, Some College, or Less	0.41	-	-	-	0.13	0.36 **	0.64 ***	0.21
Bachelor's Degree	0.30	-	-	-	0.30	0.35	0.24	0.28
Graduate Degree or Higher	0.29	-	-	-	0.58	0.29 ***	0.12 ***	0.51
<i>n=</i>	<i>718</i>	<i>209</i>	<i>154</i>	<i>150</i>	<i>47</i>	<i>311</i>	<i>148</i>	<i>75</i>
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001								
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)								

2a. Hive Chicago Learning Orientation by Year, Gender, and Age

Chicago Hive Learning Orientations (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age									
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+	
Attends Public School	0.48	0.79 ***	0.35 ***	0.51	0.47	0.45	0.25	0.51 ***	
Average Grades (1)	3.07	2.88	3.13	3.06	2.91	3.19 ***	3.11	3.06	
Educational Aspirations									
High School/GED	0.06	-	0.05	0.06	0.05	0.05	0.05	0.05	
Some College or Vocational Degree	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	
Bachelor's Degree	0.27	-	0.25	0.28	0.30	0.24	0.25	0.27	
Graduate Degree	0.65	-	0.69	0.62	0.63	0.69	0.70	0.65	
Attitudes Toward Learning (2)									
I enjoy going to school.	0.55	0.63 *	0.53	0.52	0.50	0.54	0.50	0.53	
I always attend class.	0.93	-	0.94	0.92	0.93	0.93	0.91	0.94	
I always attend class with proper supplies (pen, paper, etc.).	0.73	0.78	0.71	0.73	0.71	0.75	0.65	0.75 *	
I always complete my homework.	0.66	-	0.65	0.66	0.65	0.67	0.61	0.67	
I often get into trouble at school.	0.12	0.12	0.15	0.11	0.13	0.11	0.09	0.13	
I like working hard on things that interest me.	0.92	0.94	0.93	0.91	0.92	0.93	0.93	0.93	
If I get stuck on a problem, I keep working on it until I can solve it.	0.71	-	0.71	0.70	0.75	0.68	0.63	0.73	
	<i>n=</i>	718	163	263	292	278	311	124	470
1 - Scale: F (0-64%)=0; D (65-69%)=1; C (70-79%)=2; B (80-89%)=3; A (90-100%)=4									
2 - Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0									
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001									
Reference categories for breakouts are: by Year (Y3); by Gender (Male); by Age (Under 14)									

2b. Hive Chicago Learning Orientation by Parents' Education and Race/Ethnicity

Chicago Hive Learning Orientations (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity									
	Less than							Other /	
	All	BA	BA	Grad+	White	Black	Hispanic	Mixed	
Attends Public School	0.48	0.53	0.38 *	0.54	0.55	0.37	0.54	0.53	
Average Grades (1)	3.07	3.07	3.13	3.08	3.45	2.99 ***	3.15 *	3.03 **	
Educational Aspirations									
High School/GED	0.06	0.06	0.05	0.01 *	0.05	0.07	0.03	0.03	
Some College or Vocational Degree	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bachelor's Degree	0.27	0.33	0.32	0.10 ***	0.27	0.27	0.30	0.19	
Graduate Degree	0.65	0.58	0.60	0.89 ***	0.64	0.64	0.66	0.76	
Attitudes Toward Learning (2)									
I enjoy going to school.	0.55	0.50	0.53	0.58	0.63	0.51	0.52	0.53	
I always attend class.	0.93	0.91	0.94	0.94	0.88	0.93	0.96	0.91	
I always attend class with proper supplies (pen, paper, etc.).	0.73	0.71	0.72	0.75	0.61	0.71	0.79 *	0.73	
I always complete my homework.	0.66	0.62	0.69	0.71	0.66	0.64	0.73	0.60	
I often get into trouble at school.	0.12	0.10	0.14	0.12	0.03	0.14	0.13	0.10	
I like working hard on things that interest me.	0.92	0.91	0.93	0.96	0.94	0.91	0.93	0.95	
If I get stuck on a problem, I keep working on it until I can solve it.	0.71	0.67	0.72	0.76	0.79	0.68	0.75	0.67	
	<i>n=</i>	<i>718</i>	<i>209</i>	<i>154</i>	<i>150</i>	<i>47</i>	<i>311</i>	<i>148</i>	<i>75</i>
1 - Scale: F(0-64%)=0; D(65-69%)=1; C(70-79%)=2; B(80-89%)=3; A(90-100%)=4									
2 - Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0									
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001									
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)									

3a. Hive Chicago Program Pipeline by Year, Gender, and Age

Chicago Hive Program Pipeline (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age								
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+
How did you hear about the program?								
School	0.44	0.58 **	0.45	0.39	0.44	0.44	0.57	0.40 ***
Family or Friend	0.34	0.23 **	0.28 ***	0.42	0.38	0.29 *	0.30	0.35
Other / Multiple Sources	0.22	0.18	0.27 *	0.19	0.18	0.26 *	0.13	0.25 **
Average Commute Time to Program/School								
Less than 30 mins	0.42	0.54 *	0.44	0.37	0.44	0.40	0.52	0.39 *
30-60 mins	0.34	0.35	0.39 *	0.29	0.34	0.34	0.35	0.33
More than 1 hr	0.24	0.11 ***	0.17 ***	0.34	0.22	0.26	0.12	0.27 ***
Learning Network Awareness								
Has heard of the Hive Learning Network	0.28	0.59 ***	0.31 ***	0.11	0.25	0.27	0.14	0.28 *
How many people have you told about the program?	5.48	-	5.14	5.69	5.54	4.75	2.51	5.91 **
<i>n=</i>	718	163	263	292	278	311	124	470
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001								
Reference categories for breakouts are: by Year (Y1); by Gender (Male); by Age (Under 14)								

3b. Hive Chicago Program Pipeline by Parent’s Education and Race/Ethnicity

Chicago Hive Program Pipeline (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	All	Less than BA	BA	Grad+	White	Black	Hispanic	Other/ Mixed
How did you hear about the program?								
School	0.44	0.45	0.46	0.37	0.38	0.41	0.49	0.41
Family or Friend	0.34	0.29	0.35	0.34	0.40	0.36	0.27	0.38
Other / Multiple Sources	0.22	0.26	0.19	0.29	0.22	0.22	0.24	0.22
Average Commute Time to Program/School								
Less than 30 mins	0.42	0.40	0.46	0.37	0.48	0.42	0.39	0.38
30-60 mins	0.34	0.34	0.28	0.45 *	0.39	0.32	0.38	0.34
More than 1 hr	0.24	0.26	0.26	0.18	0.14	0.26	0.23	0.28
Learning Network Awareness								
Has heard of the Hive Learning Network	0.28	0.26	0.34	0.27	0.29	0.24	0.25	0.28
How many people have you told about the program?	5.48	6.64	4.67	4.42	2.22	4.97 *	6.50	5.17
<i>n=</i>	718	209	154	150	47	311	148	75
Significance tests use alpha levels: *p<=.05								
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)								

4a. Hive Chicago Connected Learning by Year, Gender, and Age

Chicago Hive Connected Learning (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age								
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+
I learned things that will help me with school.	0.77	0.72	0.78	0.78	0.78	0.76	0.67	0.79 *
I am going to explore a new interest based on things I learned.	0.68	0.70	0.58 ***	0.77	0.70	0.65	0.64	0.68
I learned things that will help me go deeper into an interest I already have.	0.73	0.64 *	0.69 *	0.80	0.74	0.71	0.65	0.74
I learned things that I could use in a job one day.	0.81	0.77	0.82	0.82	0.79	0.83	0.68	0.85 ***
Teachers and/or mentors helped me understand how the activities we did here can be used in other parts of my life.	0.74	-	0.62 *	0.78	0.71	0.75	0.50	0.77 ***
I learned a lot from other youth.	0.73	-	0.67	0.74	0.72	0.69	0.51	0.74 **
I worked with other youth to create something.	0.85	-	0.76 *	0.88	0.79	0.87	0.69	0.85 *
I learned a lot from my teachers and/or mentors.	0.84	-	0.74 *	0.86	0.82	0.83	0.69	0.85 *
<i>n=</i>	718	163	263	292	278	311	124	470
Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0								
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001								
Reference categories for breakouts are: by Year (Y1); by Gender (Male); by Age (Under 14)								

4b. Hive Chicago Connected Learning by Parents' Education and Race/Ethnicity

Chicago Hive Connected Learning (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	Less than							Other /
	All	BA	BA	Grad+	White	Black	Hispanic	Mixed
I learned things that will help me with school.	0.77	0.79	0.81	0.72	0.66	0.80 *	0.77	0.78
I am going to explore a new interest based on things I learned.	0.68	0.70	0.72	0.59	0.76	0.65	0.73	0.64
I learned things that will help me go deeper into an interest I already have.	0.73	0.72	0.76	0.75	0.81	0.71	0.75	0.71
I learned things that I could use in a job one day.	0.81	0.86	0.86	0.75 *	0.72	0.81	0.85	0.86
Teachers and/or mentors helped me understand how the activities we did here can be used in other parts of my life.	0.74	0.82	0.71	0.68 *	0.76	0.73	0.74	0.73
I learned a lot from other youth.	0.73	0.83	0.71	0.58 **	0.81	0.70	0.76	0.58
I worked with other youth to create something.	0.85	0.86	0.83	0.81	0.95	0.83	0.77	0.85
I learned a lot from my teachers and/or mentors.	0.84	0.85	0.92	0.77	0.81	0.81	0.83	0.90
<i>n=</i>	<i>718</i>	<i>209</i>	<i>154</i>	<i>150</i>	<i>47</i>	<i>311</i>	<i>148</i>	<i>75</i>
Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0								
Significance tests use alpha levels: *p<=.05; **p<=.01								
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)								

5a. Hive NYC Demographics by Year, Gender, and Age

New York Hive Demographics (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age								
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+
Female	0.60	0.59	0.61	0.59	-	-	0.44	0.65 ***
Age 14 +	0.78	0.81	0.72 *	0.80	0.69	0.84 ***	-	-
Race / Ethnicity								
White	0.16	0.14	0.17	0.17	0.20	0.14 *	0.29	0.13 ***
African American / Black	0.31	0.27	0.31	0.33	0.33	0.31	0.24	0.34 **
Hispanic	0.26	0.32	0.24	0.25	0.26	0.26	0.19	0.28 *
Other / Mixed Races	0.26	0.27	0.28	0.25	0.22	0.29 *	0.28	0.26
Household Composition								
Single Parent Home	0.37	0.31	0.42	0.36	0.37	0.37	0.22	0.41 ***
Only child	0.19	0.16	0.18	0.20	0.19	0.19	0.20	0.19
1 sibling	0.39	0.38	0.41	0.38	0.41	0.38	0.45	0.38
2+ siblings	0.42	0.46	0.41	0.41	0.39	0.43	0.34	0.43 *
Adults at Home or Seen Regularly								
Father	0.58	0.63	0.55	0.57	0.58	0.58	0.75	0.53 ***
Mother	0.90	0.87	0.90	0.91	0.90	0.90	0.95	0.88 **
Other Male Guardian	0.10	0.13	0.06 *	0.10	0.09	0.10	0.04	0.11 **
Other Female Guardian	0.10	0.12	0.08	0.11	0.12	0.10	0.10	0.10
Highest Ed of Any Parent								
Vocational Degree, Some College, or Less	0.37	0.37	0.41	0.35	0.36	0.38	0.23	0.40 ***
Bachelor's Degree	0.28	0.31	0.22 *	0.30	0.30	0.28	0.28	0.28
Graduate Degree or Higher	0.35	0.31	0.38	0.35	0.35	0.34	0.48	0.32 ***
	<i>n</i> = 1038	231	263	544	373	558	205	720

Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001
Reference categories for breakouts are: by Year (Y3); by Gender (Male); by Age (Under 14)

5b. Hive NYC Demographics by Parents' Education and Race/Ethnicity

New York Hive Demographics (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	All	Less than BA	BA	Grad+	White	Black	Hispanic	Other/ Mixed
Female	0.60	0.63	0.60	0.61	0.52	0.58	0.60	0.66 **
Age 14+	0.78	0.89	0.82 *	0.75 ***	0.61	0.83 ***	0.84 ***	0.76 ***
Race / Ethnicity								
White	0.16	0.04	0.18 ***	0.27 ***	-	-	-	-
African American / Black	0.31	0.32	0.35	0.27	-	-	-	-
Hispanic	0.26	0.40	0.22 ***	0.16	-	-	-	-
Other / Mixed Races	0.26	0.23	0.24	0.29	-	-	-	-
Household Composition								
Single Parent Home	0.37	0.49	0.40 *	0.25 ***	0.13	0.48 ***	0.45 ***	0.29 **
Only child	0.19	0.17	0.23	0.22	0.22	0.22	0.12 *	0.19
1 sibling	0.39	0.30	0.43 **	0.50 ***	0.53	0.34 ***	0.31 ***	0.45
2+ siblings	0.42	0.53	0.33 ***	0.28 ***	0.24	0.44 ***	0.57 ***	0.35 *
Adults at Home or Seen Regularly								
Father	0.58	0.46	0.53	0.69 ***	0.84	0.43 ***	0.48 ***	0.69
Mother	0.90	0.88	0.90	0.91	0.94	0.88	0.88	0.92
Other Male Guardian	0.10	0.13	0.12	0.08	0.05	0.09	0.13 **	0.09
Other Female Guardian	0.10	0.08	0.11	0.11	0.04	0.14 **	0.11 **	0.10 *
Highest Ed of Any Parent								
Vocational Degree, Some College, or Less	0.37	-	-	-	0.10	0.38 ***	0.56 ***	0.33 ***
Bachelor's Degree	0.28	-	-	-	0.32	0.32	0.24	0.27
Graduate Degree or Higher	0.35	-	-	-	0.58	0.30 ***	0.21 ***	0.40 **
	<i>n= 1038</i>	<i>272</i>	<i>210</i>	<i>257</i>	<i>150</i>	<i>291</i>	<i>241</i>	<i>243</i>

Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)

6a. Hive NYC Learning Orientation by Year, Gender, and Age

New York Hive Learning Orientations (Means) - Full Sample and Breakout by 1) Year, 2) Gender, and 3) Age									
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+	
Attends Public School	0.90	0.96	0.89	0.90	0.91	0.90	0.93	0.90	
Average Grades (1)	3.21	3.23	3.22	3.19	3.03	3.31 ***	3.32	3.18	
Educational Aspirations									
High School/GED	0.05	0.06	0.02 *	0.06	0.05	0.04	0.02	0.05	
Some College or Vocational Degree	0.02	0.19 ***	0.00	0.00	0.01	0.03 *	0.00	0.03 *	
Bachelor's Degree	0.27	0.22	0.26	0.29	0.31	0.25	0.25	0.28	
Graduate Degree	0.63	0.53	0.69 *	0.62	0.61	0.66	0.68	0.63	
Attitudes Toward Learning (2)									
I enjoy going to school.	0.58	0.73 ***	0.59	0.52	0.58	0.58	0.56	0.58	
I always attend class.	0.91	0.86	0.89	0.93	0.90	0.93	0.89	0.92	
I always attend class with proper supplies (pen, paper, etc.).	0.84	0.92 *	0.83	0.83	0.77	0.89 ***	0.75	0.87 ***	
I always complete my homework.	0.74	0.82	0.78	0.72	0.70	0.78 *	0.79	0.73	
I often get into trouble at school.	0.05	0.04	0.10 **	0.04	0.06	0.05	0.05	0.05	
I like working hard on things that interest me.	0.94	0.95	0.89 **	0.96	0.93	0.95	0.93	0.94	
If I get stuck on a problem, I keep working on it until I can solve it.	0.76	0.80	0.76	0.75	0.78	0.74	0.75	0.76	
	<i>n</i> =	1038	231	263	544	373	558	205	720
1 - Scale: F (0-64%)=0; D (65-69%)=1; C (70-79%)=2; B (80-89%)=3; A (90-100%)=4									
2 - Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0									
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001									
Reference categories for breakouts are: by Year (Y3); by Gender (Male); by Age (Under 14)									

6b. Hive NYC Learning Orientation by Parents' Education and Race/Ethnicity

New York Hive Learning Orientations (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	All	Less than BA	BA	Grad+	White	Black	Hispanic	Other / Mixed
Attends Public School	0.90	0.91	0.91	0.86	0.86	0.91	0.90	0.92
Average Grades (1)	3.21	3.11	3.20	3.38 ***	3.58	2.98 ***	3.01 ***	3.48
Educational Aspirations								
High School/GED	0.05	0.05	0.03	0.02	0.01	0.05 *	0.06 *	0.02
Some College or Vocational Degree	0.02	0.02	0.02	0.02	0.01	0.02	0.04	0.01
Bachelor's Degree	0.27	0.32	0.36	0.13 ***	0.29	0.28	0.34	0.19 *
Graduate Degree	0.63	0.61	0.58	0.80 ***	0.66	0.62	0.56	0.75
Attitudes Toward Learning (2)								
I enjoy going to school.	0.58	0.61	0.54	0.60	0.62	0.59	0.53	0.61
I always attend class.	0.91	0.91	0.91	0.96	0.94	0.91	0.88	0.94
I always attend class with proper supplies (pen, paper, etc.).	0.84	0.87	0.82	0.84	0.85	0.78	0.85	0.89
I always complete my homework.	0.74	0.70	0.76	0.79	0.84	0.70 *	0.66 **	0.84
I often get into trouble at school.	0.05	0.05	0.02	0.06	0.03	0.06	0.05	0.06
I like working hard on things that interest me.	0.94	0.96	0.93	0.95	0.97	0.92	0.94	0.94
If I get stuck on a problem, I keep working on it until I can solve it.	0.76	0.74	0.70	0.85 *	0.81	0.71	0.75	0.78
	<i>n=</i>	<i>1038</i>	<i>272</i>	<i>210</i>	<i>257</i>	<i>150</i>	<i>291</i>	<i>241</i>
								<i>243</i>

1 - Scale: F(0-64%)=0; D(65-69%)=1; C(70-79%)=2; B(80-89%)=3; A(90-100%)=4
 2 - Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0
 Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001
 Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)

7a. Hive NYC Program Pipeline by Year, Gender, and Age

New York Hive Program Pipeline (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age								
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+
How did you hear about the program?								
School	0.40	0.69 ***	0.36	0.35	0.41	0.40	0.37	0.42
Family or Friend	0.31	0.05 ***	0.35	0.36	0.31	0.31	0.49	0.25 ***
Other / Multiple Sources	0.29	0.26	0.29	0.29	0.28	0.29	0.14	0.33 ***
Average Commute Time to Program/School								
Less than 30 mins	0.38	0.40	0.45 **	0.34	0.43	0.35 *	0.61	0.32 ***
30-60 mins	0.41	0.41	0.36 *	0.44	0.37	0.44	0.31	0.44 **
More than 1 hr	0.21	0.20	0.19	0.22	0.20	0.21	0.09	0.24 ***
Learning Network Awareness								
Has heard of the Hive Learning Network	0.25	0.66 ***	0.08 **	0.17	0.25	0.24	0.18	0.26
How many people have you told about the program?	4.97	6.05	4.98	4.79	5.11	4.83	2.87	5.77 ***
<i>n=</i>	<i>1038</i>	<i>231</i>	<i>263</i>	<i>544</i>	<i>373</i>	<i>558</i>	<i>205</i>	<i>720</i>
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001								
Reference categories for breakouts are: by Year (Y1); by Gender (Male); by Age (Under 14)								

7b. Hive NYC Program Pipeline by Parent's Education and Race/Ethnicity

New York Hive Program Pipeline (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	All	Less than BA	BA	Grad+	White	Black	Hispanic	Other/Mixed
How did you hear about the program?								
School	0.40	0.46	0.42	0.35 *	0.30	0.36	0.51 ***	0.42 *
Family or Friend	0.31	0.24	0.27	0.37 **	0.41	0.32	0.25 **	0.29 *
Other / Multiple Sources	0.29	0.30	0.31	0.29	0.29	0.31	0.24	0.29
Average Commute Time to Program/School								
Less than 30 mins	0.38	0.33	0.37	0.37	0.42	0.31	0.37	0.45
30-60 mins	0.41	0.46	0.40	0.39	0.37	0.44	0.44	0.38
More than 1 hr	0.21	0.21	0.23	0.24	0.21	0.25	0.19	0.18
Learning Network Awareness								
Has heard of the Hive Learning Network	0.25	0.28	0.33	0.19 *	0.23	0.20	0.30	0.23
How many people have you told about the program?	4.97	5.49	4.48	5.41	3.57	6.03 *	5.85 *	3.82
<i>n=</i>	<i>1038</i>	<i>272</i>	<i>210</i>	<i>257</i>	<i>150</i>	<i>291</i>	<i>241</i>	<i>243</i>
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001								
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)								

8a. Hive NYC Connected Learning by Year, Gender, and Age

New York Hive Connected Learning (Means) - Full Sample and Breakouts by 1) Year, 2) Gender, and 3) Age								
	All	Y1	Y2	Y3	Male	Female	Under 14	Age 14+
I learned things that will help me with school.	0.71	0.63	0.83 **	0.62	0.65	0.73	0.81	0.69
I am going to explore a new interest based on things I learned.	0.61	0.54 ***	0.59 ***	0.91	0.58	0.64	0.58	0.63
I learned things that will help me go deeper into an interest I already have.	0.70	0.61 **	0.70 *	0.88	0.71	0.71	0.69	0.72
I learned things that I could use in a job one day.	0.89	0.91	0.90	0.80	0.91	0.88	0.91	0.89
Teachers and/or mentors helped me understand how the activities we did here can be used in other parts of my life.	0.77	-	0.69	0.79	0.82	0.76	0.69	0.80
I learned a lot from other youth.	0.74	-	0.71	0.75	0.80	0.71	0.70	0.76
I worked with other youth to create something.	0.88	-	0.93	0.87	0.91	0.87	0.83	0.91
I learned a lot from my teachers and/or mentors.	0.89	-	0.83	0.90	0.92	0.87	0.92	0.89
<i>n=</i>	<i>1038</i>	<i>231</i>	<i>263</i>	<i>544</i>	<i>373</i>	<i>558</i>	<i>205</i>	<i>720</i>
Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0								
Significance tests use alpha levels: *p<=.05; **p<=.01; ***p<=.001								
Reference categories for breakouts are: by Year (Y1); by Gender (Male); by Age (Under 14)								

8b. Hive NYC Connected Learning by Parents' Education and Race/Ethnicity

New York Hive Connected Learning (Means) - Full Sample and Breakouts by 1) Parents' Education and 2) Race / Ethnicity								
	Less than							Other /
	All	BA	BA	Grad+	White	Black	Hispanic	Mixed
I learned things that will help me with school.	0.71	0.73	0.68	0.69	0.54	0.82 ***	0.63	0.76 *
I am going to explore a new interest based on things I learned.	0.61	0.66	0.51	0.59	0.60	0.63	0.62	0.60
I learned things that will help me go deeper into an interest I already have.	0.70	0.72	0.69	0.71	0.73	0.74	0.69	0.68
I learned things that I could use in a job one day.	0.89	0.89	0.84	0.92	0.88	0.91	0.92	0.86
Teachers and/or mentors helped me understand how the activities we did here can be used in other parts of my life.	0.77	0.81	0.68	0.83	0.82	0.77	0.84	0.73
I learned a lot from other youth.	0.74	0.78	0.69	0.74	0.63	0.74	0.79 *	0.79 *
I worked with other youth to create something.	0.88	0.86	0.87	0.91	0.85	0.86	0.89	0.93
I learned a lot from my teachers and/or mentors.	0.89	0.93	0.83	0.89	0.84	0.87	0.93	0.90
<i>n=</i>	<i>1038</i>	<i>272</i>	<i>210</i>	<i>257</i>	<i>150</i>	<i>291</i>	<i>241</i>	<i>243</i>
Scale: Strongly Agree or Agree=1; Strongly Disagree, Disagree or Neutral=0								
Significance tests use alpha levels: *p<=.05; ***p<=.001								
Reference categories for breakouts are: by Parents' Education (Less than BA); by Race (White)								