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What Keeps Kids Engaged in Summer Learning?

RESEARCHER

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Summer offers a unique opportunity for students to connect with content in ways that may be very different from school. With such a short period of time to generate impact, programs need to maximize their time and keep youth actively engaged in learning. We spoke with Neil Naftzger, a principal researcher at AIR working on afterschool and expanded learning initiatives, to learn more about a recent study examining how interest and engagement develop in STEM-oriented summer learning programs serving middle-school aged youth.

about the study:



WHAT GOT YOU INTO THIS WORK?

I spent the early years of my career in afterschool collecting performance data for the 21st Century Community Learning Centers program, and grew interested in what quality looks like across the many variations of out-of-school time programs. Although there has been lots of research on quality, I wanted to know more about how youth experiences intersect with program characteristics, to further our understanding of how quality practices engender youth

having certain types of experiences that promote their development. In this particular study, we sought to understand the relationship between individual youth experiences and the manner in which activity leaders went about designing and delivering STEM-oriented programming. Key to the study was measuring youth in-the-moment interest and engagement while participating in the STEM activities being offered.



data and findings:



HOW DID YOU COLLECT DATA TO MEASURE YOUTH ENGAGEMENT?

For this study, we partnered with Boston After School and Beyond and the Providence After School Alliance to study nine STEM-oriented summer learning programs serving early adolescent youth from low-income communities during the summer of 2015. The programs ranged from 4 to 6 weeks in duration and provided STEM-oriented programming daily for 3.5 to 4 hours, four days a week.

We used the Experience Sampling Method to survey youth at several points during select programming days and asked them to report their level of interest and engagement in program activities at that moment. These responses were then compared with video of the activities they were participating in, so we could isolate times when students were highly interested and engaged and explore what was happening in the room at that moment, focusing on the presence of practices, supports, and opportunities associated with existing program quality frameworks. This method created a really unique opportunity to connect youth experiences directly with what was happening in a given activity.



WHAT KINDS OF PRACTICES WERE FOUND TO BE ESPECIALLY ENGAGING?

We discovered that three kinds of program practices were especially related to in-the-moment engagement and related youth experiences. First, we found a positive correlation between youth reporting that the activities they were doing were relevant, meaning that youth perceived the activity as having meaning, importance, or utility beyond the learning activity they are currently engaged in, and **relevance statements** made by activity leaders. The statements represented times when the instructor articulated why the content served some larger purpose or explained how things work, connected the content to individual career or college goals, or explained why the content is helpful for solving a community problem. We found that the more staff talked about this, the more youth found the material relevant. Girls in particular expressed that they were learning more when activity leaders made more of these statements. In a similar fashion, youth who were not particularly motivated to attend programming at the outset were more likely to report activities as being relevant the more activity leaders made these types of statements.

Second, providing **opportunities for youth to experience a sense of agency** improved engagement in terms of youth being challenged by program activities. In this sense, when staff shared control of planning and carrying out the activity with youth, the students were more likely to feel challenged.

And finally, the **quality** of the activity mattered. With higher quality activities, we found a variety of positive effects, such as youth feeling (a) more challenged, (b) that they were learning more, (c) a greater sense that what they were doing was relevant, and (d) engaged.

In addition, we also found that STEM activities that took place in field-based settings were found to be effective in helping youth feel challenged, perceive what they were doing as relevant, and learn more about the STEM content being addressed.



DOES THIS ENGAGEMENT IN SUMMER LEARNING TRANSLATE TO LONGER-TERM INTEREST IN LEARNING?

In this study, we did not collect data beyond the summer session. We only asked about interest and future aspirations regarding STEM at the beginning and end of the summer. However, the more that youth experienced in-the-moment engagement with STEM-specific content during the span of the summer, the more likely they were to report growth in STEM interest and future aspirations. So, there is the potential for a connection between engaging summer activities and promoting longer-term outcomes related to STEM interest.

And while summer programs may be short, there appears to be a meaningful set of practices program leaders can employ to foster engagement in STEM activities (by promoting relevance, providing opportunities for agency, and adopting quality-related practices), which in turn may serve to support long-term interest in STEM. The body of research on interest indicates that the value is in giving kids an opportunity to explore whether they have an interest or not. For some kids STEM just isn't their thing – but the process of allowing them to discover and decide if STEM is something that they want to pursue is itself valuable. This research speaks to the ways that summer programs can allow that latent interest to emerge.

More generally, even if youth attending STEM activities find they don't have a passion for STEM, attending programs like those we studied can still have the potential to have a positive impact on youth. For example, the future workforce has to be comfortable in an environment where they are constantly learning new skills, information, and technology. Having a sense of agency while participating in STEM activities can serve to enhance the confidence of youth in their ability to learn and apply new things they may encounter, either in their education or career. This sense of agency is particularly important for adolescents, allowing them to utilize emerging cognitive skills, such as higher-order reasoning and greater executive control of one's own thought processes to more effectively solve problems and take the steps needed to achieve goals they are pursuing. This provides youth with feedback about what they can accomplish and their ability to solve problems and overcome challenges, enhancing an underlying sense of self-efficacy and competence. These practices can be applied in any kind of summer program serving adolescent youth.

the way ahead:



WHAT SHOULD POLICYMAKERS AND FUNDERS TAKE AWAY FROM THIS RESEARCH?

There are several important lessons for investing in effective programs. First, there are practices that activity leaders can employ that will support the in-the-moment interest and engagement of participating youth and that sustained engagement over time supports changes in STEM interest and engagement. It's important that program funders and policymakers take steps to make program staff aware of these practices and support their efforts to design and deliver programming that support these elements. In order to support this process, we've taken study findings and put together an online toolkit which can be found at <https://www.niu.edu/stemie/> which provides videos and training materials oriented at helping staff working in informal STEM program adopt these practices.

Second, there is a logical pathway from engaged youth to 21st century workforce skills. Programs that adopt quality youth engagement practices are more apt to develop in students the sense of agency and confidence to learn new things, adapt to new technology, and address new problems that we can't even conceive of yet.

Finally, we need to invest in the ability of staff to implement these kinds of practices. We have heard from programs that it's challenging to find program staff with the full complement of skills needed to create developmentally appropriate learning environments for participating youth. In this economy, we need to create pathways to a more readily available youth program workforce prepared to provide youth with engaging learning environments. Allowing programs the time and resources for planning as well as staff development would go a long way to improving quality.



WHERE SHOULD THIS RESEARCH BE HEADED NEXT?

Quality has been part of the OST conversation for 15 years, but we haven't talked much about specific practices that help youth appreciate the relevance of the content they have been exposed to as a specific quality practice. I think more work can be done to explore how this concept can be embedded more fully in our quality frameworks and tools.

It's also important to keep thinking about youth participating in these programs as individuals – they each bring different knowledge, skills, and needs with them to programs that will affect their engagement. Our study demonstrated that some practices are especially effective in supporting program engagement for certain groups of youth (e.g., those not particularly motivated to attend the program at the outset, girls, etc.). We need to continue to invest in research that helps us better understand what practices are particularly effective in supporting engagement among different populations of youth.

We also haven't spent much time yet looking at longer-term effects, like how substantive engagement in a summer program affects the next year of classroom learning. We also need to keep working on effective ways to measure short- and long-term engagement of youth in these types of activities and what this means for the longer-term educational and career trajectory of participating youth. When these types of studies are done, we'll have a clearer sense of how programs like those we studied that appear to support the positive development of youth in areas like interest development and perceptions of the relevance of STEM lead to a cascading set of experiences that influence the larger educational and career trajectory of participating youth.

CITATION

Naftzger, N., Schmidt, J. A., Shumow, L., Beymer, P. N., & Rosenberg, J. M. (2018). Exploring the link between STEM activity leader practice and youth engagement: Findings from the STEM IE study. Washington, DC: American Institutes for Research. More about the study and the full study report can be found at <https://www.informalscience.org/exploring-link-between-stem-activity-leader-practice-and-youth-engagement-findings-stem-ie-study>.





ABOUT THE NATIONAL SUMMER LEARNING ASSOCIATION

The National Summer Learning Association is the only national nonprofit exclusively focused on closing the achievement gap by increasing access to high-quality summer learning opportunities. NSLA recognizes and disseminates what works, offers expertise and support for programs and communities, and advocates for summer learning as a solution for equity and excellence in education. NSLA's work is driven by the belief that all children and youth deserve high-quality summer learning experiences that will help them succeed in college, career, and life.



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