Data Design Initiative Progress Update – Fall 2019

Overview   November 2019

Every year, about 1600 Head Start programs around the country serve nearly 1 million vulnerable children and their families. Through classroom teaching, home visits, health supports, family engagement activities, and more, Head Start benefits its enrollees with higher educational attainment, greater labor market success, and other benefits to health and well-being.[1]

The Challenge:

Head Start programs could be even more successful, however, with better use of data, analytics, and well-designed trials. Every Head Start program collects reams of data, including data about program characteristics, children served, families of those children, teacher characteristics and practices, and children's developmental progress. Sadly, the way those data have historically been structured, collected, analyzed, and shared has yielded limited insights that help Head Start program managers, teachers, parents, policymakers, and others help Head Start children and their families.

The Opportunity:

The National Head Start Association (NHSA), the network of Head Start program providers, is working to fix this. In January 2016, NHSA and three other organizations released the "Moneyball for Head Start" report, offering a vision for how Head Start programs could use data, evidence, and evaluation to improve outcomes at all levels of the Head Start program, continuously. Fortunately, the federal government embraced these recommendations when it updated the Head Start Program Performance Standards in September 2016.

To bring the Moneyball report and new standards to life in the most constructive way, NHSA launched the Data Design Initiative (DDI.) Since the first meeting in December 2017, the DDI regularly convenes Head Start program leaders, data experts, policymakers, advocates, and vendors to devise projects, and iterate on those projects, in concrete ways to make Head Start data more useful and to improve on multiple dimensions of Head Start performance. The DDI is incredibly action-oriented: many of the projects conceived of in December 2017 are actively underway.

To learn more about the genesis of the DDI projects, read about the initiative's goal-setting and barrier identification process at: https://www.nhsa.org/our-work/initiative/data-design-initiative.

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[1] See: https://www.nhsa.org/head-start-advantage

Project Status

The original Data Design Huddle in December 2017 produced more than a dozen possible projects to improve the way Head Start generates, organizes, shares, and analyzes data. Since then, the participants in the DDI have continued to meet regularly and make progress on these projects. These projects have been assigned, flexibly, to five categories and their current status and next steps are described below.

People Projects: Practitioners working with Head Start children and families need data management, analytic, and evaluation skills. The DDI is working on several projects to strengthen the capacity of those working in and with Head Start programs to handle and interpret data and apply data-enabled insights.

- **"Developing Data Capacity" Toolkit** (go.nhsa.org/DDC)
  The "Developing Data Capacity" toolkit was developed to help Head Start programs hire or contract for data and analytic skills. It includes resources like sample job descriptions and an assessment of organizational capacity. NHSA continues to disseminate the toolkit and build awareness within the Head Start field. It also collects feedback to inform continued improvement of the toolkit and development of additional resources.

- **Head Start Data Analytics Playbook** (go.nhsa.org/DataPlaybook)
  To build the capacity of all Head Start staff members, from those with no previous data knowledge to those proficient with complex visualization tools, NHSA developed the Head Start Data Analytics Playbook, which it launched in November 2019. The Playbook is populated with examples illustrating how data helps different users (e.g., Head Start program leaders, staff, association directors, and more) to ask better questions and make data-informed decisions. NHSA will continue to add new examples to the Playbook regularly and is committed to heavily promoting it to the Head Start field, including through online marketing and various online and in-person training opportunities. NHSA intends to regularly collect feedback and is seeking funding to continually develop and improve the tool.

- **Data Training and Data Analytics Network**
  In an effort to provide increased capacity for data analytics in Head Start, there are several data training projects currently being proposed. These include:
  > (a) data visualization fellowships using tools such as Tableau or Power BI;
  > (b) a data training curriculum delivered via webinar;
  > (c) curated "hit lists" of videos, readings, on-line courses, and other resources that teach data analysis skills; and
  > (d) a networked community of data analysts that help each other identify and work on common problems, solutions, and opportunities.

  Some DDI partners have developed training sessions for Head Start practitioners on topics such as data dashboards and using data as a Head Start program leader. These partners have begun testing and improving their sessions by presenting at NHSA conferences. DDI will continue to support these partners in presenting and developing their sessions and additional modules.

- **Outcomes-Oriented Management Training**
  NHSA has developed and currently offers a one-day training on data use and continuous quality improvement, which it conducts in conjunction with another DDI partner. NHSA will continue to conduct these trainings and is looking into offering them at the state level, taking advantage of already existing communities of practice that could strengthen the impact for attendees. Trainings such as these will be included for evaluation on The Junction (see more below.)

- **T/TA Systems and National Centers**
  NHSA is exploring whether and how the T/TA system and national centers can help Head Start operators learn to use goals, data, and other evidence to improve on multiple dimensions. NHSA provided formal feedback to the Administration for Children and Families about its planned survey of current Head Start providers regarding current needs and previous experiences with the T/TA system. NHSA intends to follow the progress of this study to see what can be learned. T/TA providers will also be included on The Junction platform (see more on this project below) to allow for more publicly-available, fast feedback on the T/TA providers and national centers.

Data Projects: Data in Head Start serves many purposes, from determining community needs and service gaps to setting priorities, mentoring and coaching teachers, and selecting effective curricula and other interventions for children. Those who work in and fund Head Start need meaningful, timely, accessible, accurate, and safely sharable data in order to serve children and families. The DDI is working on multiple projects to identify more useful indicators and better, simpler ways to generate and collect data.

- **Better, Simpler Assessments** (www.nhsa.org/files/better_simpler.pdf)
  Good assessments are essential to effective early learning programs. Widespread concerns exist about the amount of time required for training and conducting screenings and assessments, as well as the fidelity of implementation, accuracy of results, and validity of some assessment tools. NHSA put out a challenge to vendors laying out the desired characteristics for better, simpler assessment. DDI will continue to encourage existing and new vendors to make their products better, simpler, and more meaningful, without compromising quality or increasing cost.

- **Technology-aided Assessment, Screening, and Curricular Tools**
  DDI is evaluating the existence, quality, and appropriateness of technology-aided tools that reduce demand on staff time while providing better insights on how to assist children's learning and development. NHSA continues to look for additional technology-assisted screening and assessment tools and seeks Head Start operators interested in trying the tools it has identified and sharing their experience with the developers and other Head Start operators. A working group within DDI is developing guidance around when and for whom technology-aided tools are and are not appropriate, along with guidelines for their use.

- **Useful Outcomes and Other Indicators for Improvement, Benchmarking, and Evaluation**
  This project entails identifying outcomes and other indicators that Head Start programs can use to learn (from their own and from others' experiences) how to increase program impact. A group within DDI is currently working to map out "vital signs" that every Head Start program should track, and possibly share in de-identified ways, which will next go to the full group for discussion.

It is also expected that the Data Analytics Playbook and the "Helping Children Thrive" Multi-Site Pilots will advance progress in this area.

- **Harvesting Greater Insight on Head Start Using Child-level Data**
  In the spring of 2019, a group of graduate students from Carnegie Mellon University's Heinz College conducted a capstone project creating data visualizations from Head Start's Program Information Report (PIR) to bring value to the field from this administrative data set. The two dashboards created (go.nhsa.org/TeacherDashboard and go.nhsa.org/EnrollmentDashboard) were well-received by both practitioners in the field and policymakers in the federal administration. DDI is currently working with a new group of students on a capstone project relating to child-level data. The group is working to create a tool that will allow Head Start programs nationwide to tie together data from two different data systems in order to analyze the relationship between classroom quality, related demographics, and children's development. NHSA hopes to continue to work with students from CMU and other similar programs to experiment with visualizing data in more informative ways.

- **Safely Interconnected Data and Compliance Systems**
  NHSA is exploring opportunities for safely connecting Head Start data systems with K-12 and other data systems to improve the ability to track children's long-term success. In the future, this project will also look for opportunities to connect with state and local early childhood compliance systems to lessen the reporting and monitoring burden on programs and licensing agencies. NHSA is exploring partnerships with others working on these issues, including the Georgetown University Massive Data Institute, which has been thinking about data sharing agreements, and EdFi.org on data standards.

Information Systems Improvement Projects: Data relevant to the Head Start work is currently collected in a variety of siloed information systems even within a single Head Start site, much less across sites and across the country. Being able to analyze data across systems in real time and across multiple years is essential to identifying promising practices, testing for replicability, studying long term impacts, and more. Data sharing must be feasible in timely, understandable, accurate, and affordable ways. The Data Design Initiative is currently working on 5 projects to understand and advance agreement on data system design features to facilitate sharing and learning over time:

- **"Helping Children Thrive" Pilot** (go.nhsa.org/HCT)
  NHSA, in partnership with BrightHive, won the Early Childhood Innovation Prize in 2018 for a project to tackle critical data infrastructure needs. In the first phase of the project, NHSA and BrightHive worked with four Head Start programs to write up preliminary use cases detailing the kinds of data and analyses needed, when and where the data can be found, who needs the information, and how to protect privacy. NHSA and BrightHive are seeking additional funding to cover phase two: the development and testing of the open-source, interoperable data modules detailed in the use cases.

- **The Junction: Yelp and Amazon.com-like Functionality for Head Start**
  The Junction is an online consumer review platform that will help Head Start programs make more informed purchasing decisions, while also placing healthy pressure on those providing products and services to Head Start programs to improve continually. Drawing on the lessons of Yelp, Amazon.com, and Consumer Reports, users will submit reviews of the products and services they use, read reviews from peers around the country, report technical glitches, request new features, and troubleshoot. NHSA is working with DDI partners to get sufficient information on the platform before launching to the full field. NHSA is also currently seeking funding to develop from a minimum viable product to a high-quality, continually improving product.

- **Information System Needs, Principles, & Data Standards** (www.nhsa.org/files/principles.pdf)
  In an effort to develop a set of principles and data standards to govern the data systems used in Head Start, NHSA has identified several other organizations and experts who are working in this area, including BrightHive and the Ed-Fi Alliance. NHSA will continue working with and identifying other organizations in this space to collaborate on principles and data standards for Head Start programs and the products they use.

- **Data-Sharing Agreement Repository**
  Data sharing holds enormous potential for revealing common needs and effective practices. The goal of this project is to reduce the amount of time Head Start programs need to spend on developing data-sharing agreements. NHSA has begun assembling a repository of sample agreements and resources others can adopt and adapt. NHSA has identified similar efforts underway at Georgetown University, Child Trends, and Actionable Intelligence for Social Policy (AISP) that can be resources and, possibly, implementation partners.

- **Data Storage and Sharing Options**
  NHSA is exploring ways that Head Start programs can safely and efficiently share protected, useful, child-level data in a timely manner, whether through data warehousing, blockchain technology, or other means for data federation. NHSA is currently learning more about what the different options are and the pros and cons of each. This work will eventually build off of the lessons learned from other currently active projects. In addition, the DDI will explore opportunities to work with and learn from others already sharing data.

Knowledge and Learning Enhancement Projects: From in-classroom programming to research studies, significant resources have been devoted to Head Start and early childhood education. As programs strengthen their data and analytic capacity and participate in measured trials, useful insights worth sharing across program operators will become increasingly available. Unfortunately, the system for sharing information, best practices, and research findings in ways that practitioners can easily use, understand, access, and apply has not historically been strong. NHSA is working to find ways to build new knowledge worth sharing and to share it effectively.

- **Knowledge and Tool Sharing**
  NHSA is constantly trying to improve the various methods it uses to communicate with the field. NHSA has recently adopted and launched an online user platform (theblock.nhsa.org) to allow

members to better communicate with NHSA and with each other, which may provide a useful venue for sharing research findings and data analytic tools.

- **Connecting Research to Practice**
  An important component of knowledge sharing is ensuring that existing research is accessible to and understandable for those who would benefit from the findings. NHSA has taken several steps towards strengthening the connection between research and practice to both improve the utilization of existing research finds and to involve practitioners in driving the research agenda moving forward. Steps taken so far include: (a) a recent conversation with the Office of Planning, Research, and Evaluation (OPRE) in the Administration of Children and Families (ACF) in the U.S. Department of Health and Human Services about the newly passed federal Foundations of Evidence law, which requires every Cabinet department—and encourages operational units, such as ACF—to develop and periodically update a learning agenda; (b) discussion with OPRE about the possibility of building a stronger researcher-practitioner network and making curated research more findable, useful, and understandable for Head Start practitioners; (c) working with the conference organizers of the National Research Conference on Early Childhood on opportunities to engage practitioners and connect them with researchers at the 2020 conference; and (d) conducting literature reviews on various critical topics and testing various methods for writing and disseminating those reviews in ways that make them more useful.

Policy Project: Measurement and other forms of monitoring should encourage and support continuous quality improvement of all grantees, both higher and lower performing ones. Monitoring information should be used to flag areas in need of attention, find more effective and cost-effective practices, and motivate everyone to improve. It should not be used in ways that create fear of data, especially fear that the data will be used for punishment, or temptations to game the system to win rewards. NHSA is identifying ways to incentivize and support continuous quality improvement with minimal dysfunctional side effects.

- **Accountability Expectations and Incentive Structures**
  The requirements and incentive systems governments use when mandating data collection and sharing need to be designed in ways that encourage use of data to discover how to do better and to avoid making organizations and people working in them afraid of data because they fear punishment. The DDI wants to understand the kinds of accountability and incentive arrangements that successfully motivate continuous improvement, identifying those that have and have not worked well in the past and sharing that information with grant policymakers.

- **Learning and Motivating with Monitoring Information**
  The DDI is beginning to explore and discuss ways that monitoring data might be organized and shared to be more useful and motivating. The Office of Head Start and the company that conducts monitoring reviews have piles of data that the field could learn from, but the information is difficult to access, when it can be accessed at all. The DDI is looking into ways that the results of monitoring reviews could be used to identify and share information more quickly and prominently on everything from exemplary practice to patterns of common problems and areas of recent progress.