

I used to think:

Our System was Fair For everyone.

Now I think:

We need to help build a level playing field

It's challenging to find the right tools to make it work!

students need constant encouragement and wise feedback to believe they can achieve
teachers & staff play a huge role in making students feel welcome
But now I think

I used to think caring was enough.

Now I think purposeful action is necessary.

I used to think:...

Implementing equity would be quick & easy/increased awareness

But now I know... Earned

Change requires time, discussion and buy-in from all stakeholders, including students

I used to think that multiple choices on essay things other than a Praxis paper lowered rigor

Used to Think... All students feel they can take Adv/AP
But Now I think Build leads confidence, there is a disconnect in student agency + believing they CAN

Now I think That Multiple Circles are necessary for success but do not necessarily lower rigor

I used to think... If a school presented a rationale that was solid why students should take an AP course, students would jump on it. But now I think... It's a bit more nuanced now here for more benefits

Used to think... Many barriers at step out Now... It's through targeted intervention that we have the best chance at success for the greatest amount of students

I used to think if we were going to level all students for advanced coursework, we would have to be more rigorous. But now I think that regardless of the form it's more important to write it if it must be done... regularly

about → Obviously the district cares enough to allocate those resources
more → I know there is many more strategies to try
at the got the → I have a deeper understanding of how important it is to make sure the students feel like they belong in the class
I liked the analogy of showing up to a party and then the host telling you that you weren't invited. I have reflected quite a bit on all of the ways we might be telling the kids that they are not invited.
Now I think

A Leader in Equitable Access to Education Leverages AI for Impact

An Advanced Information Architecture Case Study

FEBRUARY 2023

Information Architecture: Equitable AI for Evidence Building & Use

Information architecture refers to organizing, structuring, and labeling content with the goal of helping users find information and complete tasks. *Artificial Intelligence (AI)*, a subfield/related field, describes systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect; examples include natural language processing, chat bots, and recommendation engines.

In the social and education sectors, AI is not easily accessible as a result of gaps in technical knowledge, lack of funder support, and a gap between practitioners' equity commitments and the current lack of anti-bias focus in most AI technology products and services. Consequently, practitioners rarely deploy AI to collect, synthesize, and mobilize data to drive impact, scale, and equity.

***Information Architecture: Equitable AI for Evidence Building & Use, led by Project Evident and funded by the Bill & Melinda Gates Foundation*¹, aims to address barriers to the effective and equitable adoption of AI in the education and social sectors.** The goals of this work are:

- For artificial intelligence (AI) to become more accessible to organizations in the social and education sectors through knowledge and through funding from philanthropy and governments
- For AI to drive better, more meaningful, and more equitable outcomes for practitioners and communities by embedding anti-bias design in AI planning
- For organizations to feel confident in their ability to seek out, design, and build AI systems

In 2022, a small group of Gates Foundation education grantees participated in a learning cohort focused on advanced information architecture, facilitated by Project Evident. Based on the common needs of the members, the goal of the **Advanced Information Architecture (AIA) cohort** was for each team to design an AI-powered recommendation engine to advance their organization's work. Program, technology, data and evaluation, and strategy leaders took part in group sessions, independent exercises, and expert coaching. Each nonprofit produced a "solution blueprint" laying out the key features of its proposed recommendation engine alongside the necessary preparation and implementation steps.

This case study profiles one of the organizations in this Advanced Information Architecture cohort. To see other cases and learn more about *Information Architecture: Equitable AI for Evidence Building & Use*, please visit <https://projectevident.org/information-architecture/>.

¹ This report is based on research funded in part by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.



A Leader in Equitable Access to Education Leverages AI for Impact

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Equal Opportunity Schools (EOS) is a national nonprofit focused on increasing access, belonging, and success in rigorous college and career-prep secondary school courses for students of color and students from low-income households. Its program model, Action for Equity (A4E), provides schools with the data, professional learning and tools needed to identify and enroll students in Advanced Placement (AP)/International Baccalaureate (IB) courses and positively impact student experience, school culture, and adult mindsets.

EOS' goal is to create equitable systems that lead to greater college matriculation and career readiness for the students it serves. Given the breadth of data it collects to identify students, a recommendation engine was something EOS always saw on the horizon. Still, the organization was concerned about the unknowns: the required level of investment, staff capacity, and expertise. Following a deeper exploration of how artificial intelligence (AI) might fit into its program and blueprinting of a potential solution, AI became a tangible tool that EOS is pursuing in the near term.

A Recommendation Engine to Facilitate Equitable Access to Education

The Action for Equity (A4E) program model at Equal Opportunity Schools (EOS) centers on identifying and enrolling students of color and students from low-income households by broadening the definition of readiness for Advanced Placement and International Baccalaureate courses. EOS currently uses survey and school data to identify students who are good candidates for AP/IB placement and wraparound supports. EOS was cognizant of the limitations of this process, which is labor-intensive and dependent on Partnership Directors' and Partnership Managers' ability to manually glean insights from large quantities of data. For this reason, when EOS was invited to join the Advanced Information Architecture (AIA) learning



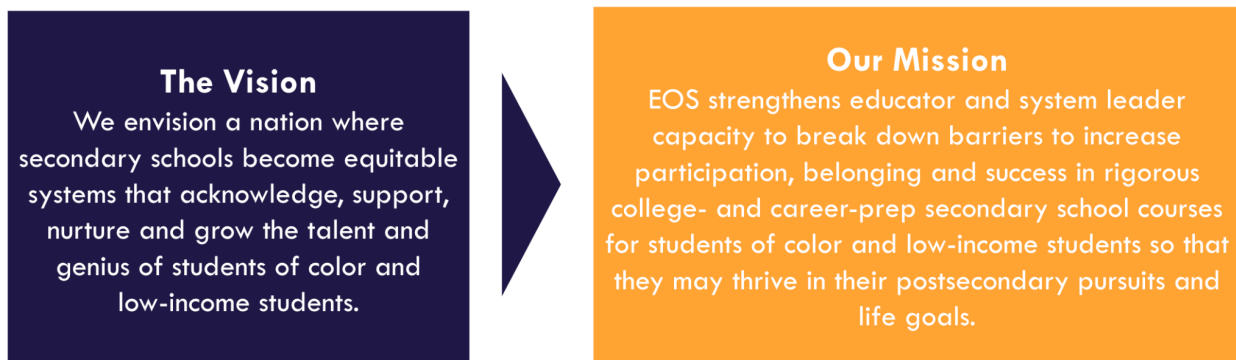
cohort, it struck President Sasha Rabkin as timely: “We get invited to participate in communities of practice, but most of them feel six months or even two years too late -- like foundations are trying to play catch-up. This [cohort] felt a little ahead of its time relative to other cohorts, which was exciting. This feels like where philanthropic organizations and others should be putting their money.”

EQUAL OPPORTUNITY SCHOOLS’ AIA COHORT TEAM
 Titles at time of cohort participation

- **Dr. Sasha Rabkin**, President
- **Jessica Paulson**, Senior Director, Reporting, Analytics & Impact
- **Dr. Amatullah Stanback**, Senior Partnership Manager
- **Matt Tanguay**, Director of Reporting and Analytics

The EOS team identified three areas where implementing a recommendation engine might strengthen the program and extend the reach of Partnership Directors/Partnership Managers. Equitable use of AI would allow Equal Opportunity Schools to 1) reconcile a perceived value conflict between being data-driven and oriented to equity, 2) increase the accuracy and efficiency of the student identification process, and 3) scale the program while preserving impact. Ultimately, the implementation of an AI-driven recommendation engine would bring EOS closer to its vision of holistic and equitable secondary school systems in the United States:

FIGURE 1: Equal Opportunity Schools Vision and Mission Statements



Before implementing a recommendation engine in the student identification process, EOS sought to reconcile a perceived value conflict internally between being data-driven and oriented to equity. “There’s an existential worry at EOS, the more reliant on data we become, the more risk we have of missing the value proposition that feels very much a part of our adaptive [human-driven] work versus our technical [data-driven] work” says Rabkin. EOS worried that, as it transitioned some of the human-driven elements of its student identification process to a recommendation engine, the organization might miss students by reducing the capacity of Partnership Directors and Partnership Managers to manually add students to the list that were not identified by the survey. In this context, building an AI system intentionally and with equity and debiasing in mind was a crucial element for EOS. Rabkin notes that this is an area that the team has discussed before but has not come to much agreement on: “Bridging equity broadly, and talking about race in terms of the adaptive quality of work versus technical quality of the work, is a huge conversation for EOS and tends to invite lots of questions but not many



answers.” He points to the inclusion of staff at all levels of the organization as the key to ensuring that the shift to a more technical system for student identification would preserve equity, not hamper it: “We knew we needed to have diverse representation on this team to guard against the feeling that organizations lose the equity piece at this stage—when they turn more deeply into data.” He also clarifies a critical shift in EOS’ thinking on the reality of the risk of losing equity in the shift to more reliance on AI; that ultimately the equity piece could be preserved and was still very much in its control. The key point was not what data they have, but how they would use it: “Sure, we can all criticize the data, but we have it, we’re in charge of it, and no one is telling us what to do with it.”

An AI-driven recommendation system offers the potential for EOS to improve the accuracy and efficiency of its student identification process and maximize the potential of the data the team is already collecting. This will increase both the speed of the initial identification through automation and the accuracy in which students are selected through the ability to process and make sense of more predictive data than was previously possible with a human-driven system. Specifically, it will help EOS better understand “why students aren’t entering the classroom...and the things we care about in terms of immediate outcome (enrollment and persistence) and long-term outcome (do they return to courses year to year)” says Senior Director of Reporting, Analytics & Impact Jessica Paulson. EOS President Sasha Rabkin similarly emphasizes the opportunity with AI to reach students more effectively and ensure that none are excluded: “It’s part of our narrative of ‘you’re missing students because you don’t have data.’”

Initially, there was an organizational fear that, as EOS grew, scaling impact alongside that organizational growth would be a challenge, a concern that losing the “human” element of the work would correlate with lost outcomes. Rabkin notes that “trying to find ways that we evolve to think about what is relationship-driven, or relational—and what can be adapted to technology—is still very complicated. We worry that as we grow we won’t have as much impact as the smaller version of EOS.” This concern gave way to the understanding that the predictive AI element would ultimately help EOS scale its impact by reducing the labor-intensive student identification process. Rather than having a Partnership Director or Partnership Manager working intensively in individual schools, manually sifting through survey data, artificial intelligence enables the automation of that system and frees up partnership managers to serve more schools and do more direct work with students.

How a Feasible AI Solution Can Drive Scalable Equity for Students

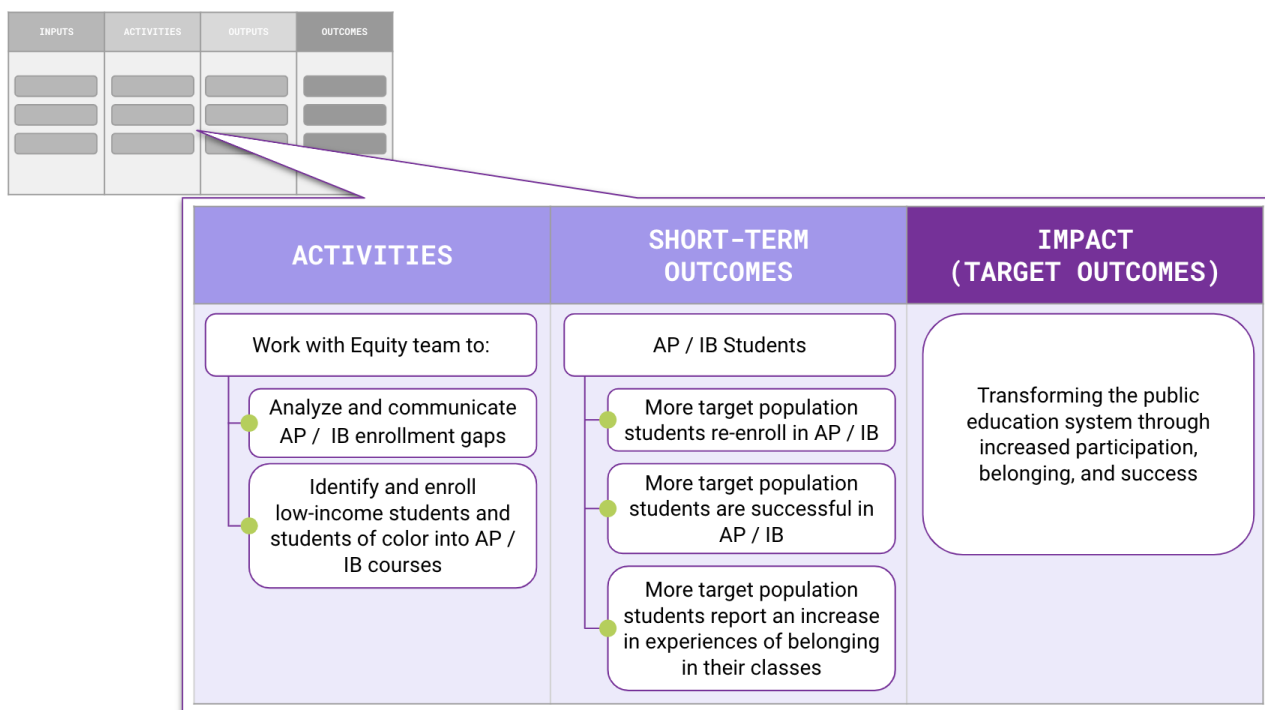
During the cohort, the EOS team worked through a series of group learning sessions and activities, in partnership with Project Evident staff and subject matter experts, to further affirm its three critical goals in AI implementation: reconcile the perceived value conflict between data and equity, increase the accuracy and breadth of the student identification process, and scale while preserving impact. With these three goals in mind, EOS landed on the student identification process as the “right” area for AI application because it is an area where the organization collects a lot of data but still has the potential to better use it for insights.



EOS began by using a tool to address bias in evaluation and technology development, created by Heather Krause of We All Count, called a “motivational touchstone.” In identifying a motivational touchstone for this work, EOS centered the outcome and equity components it sought to preserve in the transition to AI-based student identification and built them into its blueprint to ensure that equity was not only considered, but that it would be embedded in the eventual system itself. Incorporating the voice of diverse stakeholders on the team, especially program-level staff, was a critical element in capturing those equity pieces and ensuring none were missed.

Next, EOS worked to agree on the outcome (its “target variable outcome” in AI terms) it wanted to enhance by creating a recommendation engine. EOS identified its target variable outcome as transformation of the public education system in the United States through increased participation, belonging, and success of students of color and low-income students in advanced courses. An AI system would enable inclusion of more students in outreach lists and better predictions of outcomes for students based on their survey responses, driving that participation, belonging, and success. EOS articulated an equity-focused logic model for its work that embeds this core organizational mission:

FIGURE 2: Key Variables/Data in Equal Opportunity Schools’ AI Student Identification Logic Model



Finally, EOS worked with Peter York of BCT Partners to dive deeper into its current data to scrub for quality and consistency. In doing so, EOS realized that it essentially already collects the necessary data, but needs to better use it. Over the course of the cohort, EOS had articulated its equity commitment in the development of a recommendation engine, agreed to the desired target variable outcome for the engine, defined a logic model that defined the target variable outcome and the use of a recommendation engine, and reviewed and cleaned its data. EOS had completed the blueprint to engage its staff, board, and an outside vendor in deploying a recommendation engine.

In reflecting on the cohort-based learning model, the participants from EOS highlighted the value of being in a shared space with other organizations doing this work concurrently. Jessica Paulson, Senior Director of Reporting, Analytics & Impact, highlights one particular session where “we paused and had a talk about why you include race or why you don’t [in different artificial intelligence scenarios], and folks were engaged in being in a shared conversation. Those are spaces where my team and I really value being in conversation with other practitioners – both to discuss values and potential negative ramifications. Be a learner, don’t rush to a solution.” EOS President Sasha Rabkin appreciated the time and structure: “Having the intentional dedicated time was key; we don’t get that inside EOS where everyone is busy and the focus is often on what is due immediately.”

Additionally, the cohort allowed the participants from EOS to have deep conversations among members of its own team that had previously interacted in a limited capacity. Senior Partnership Manager Dr. Amatullah Stanback highlights that “with Jessica, Matt, and Sasha, after this process started there was definitely an opportunity to build that community” and Paulson shares that she “didn’t have the opportunity to work in this kind of collaborative learning space before with Amatullah. Now, Amatullah is a go-to for me. So beyond the professional enhancement of what I’ve learned, it’s also just the personal relationship from being in a collaborative space together.”

Next Steps

Following additional refinement of blueprint components during Summer 2022, EOS is now turning towards how it will build the solution it designed. EOS contracted with Peter York from BCT Partners to: (1) jointly develop a prototype recommendation engine, using EOS’s precision model and PowerBI; (2) offline test and revise the prototype with the user group feedback and input; and (3) live-test the recommendation tool with a sample of partnership managers, making needed changes, and finalizing for a beta launch of the tool.

Down the road, EOS sees an opportunity to benefit the field by demonstrating its solution. The organization contrasts the endemic lack of funding in the social sector for this work with the need for staff with data and evidence expertise: “We don’t have a ton of money. If we were a private company, we’d be selling our data and private equity firms would be pumping millions of dollars into us by Wednesday of next week. So this question of what does it cost for an



organization like us to be ahead of the curve 3-5 years from now is something we can't explain, but part of it is having 3-5 more data scientists on our team," notes Rabkin. EOS's artificial intelligence solution, as guided by Project Evident's Advanced Information Architecture cohort and built in concert with BCT Partners, will provide a powerful example in the field that demonstrates a) this work is attainable for social sector organizations, b) investing in internal capacity is critical, and c) ultimately, artificial intelligence in the social sector when controlled for equity and bias can and will drive better, more meaningful and more equitable outcomes for students and communities.

For More Information

For more information about Equal Opportunity Schools' Equitable AI project, please [contact Jessica Paulson](#), Senior Director, Reporting, Analytics & Impact.

For more information about *Information Architecture: Equitable AI for Evidence Building & Use*, please [visit the initiative's website](#) or [contact Sarah Di Troia](#), Senior Strategic Advisor, Product Innovation, at Project Evident.

