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POLICY

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Racial Equity for Edtech Companies

EXECUTIVE SUMMARY

Education technology ("edtech") companies should prioritize racial equity during product design and development to better serve their users. Black and Brown students make up over half of students in American K–12 public schools today, yet these students face rampant racial discrimination on a daily basis. Their challenges are reflected in higher suspension and dropout rates, less ambitious academic tracks, and lower family engagement. Without active and rigorous oversight, edtech companies may amplify existing discrimination and introduce new biases into schools that use their products.

Companies that build education products should take responsibility for their impact on Black and Brown students by implementing critical practices to identify and mitigate racial bias during product development. We recommend utilizing the AI in Education Toolkit for Racial Equity (the "Toolkit") that provides a set of practices that edtech companies can follow to address racial bias at each stage of development, from ideation to implementation.

PROBLEM

Black and Brown students face discrimination on a daily basis. They are suspended more often, placed on lower academic tracks, and taught content to which they often cannot relate. These experiences categorize Black and Brown students in ways that exclude them from the education system, leading them down the well-researched school-to-prison pipeline. This discrimination is reflected in a range of "objective" outcome data that illustrate a race gap in attendance and discipline records, grades, and test scores. Edtech companies use such data to train algorithms that promise to personalize learning, identify at-risk students, and save teachers time. Without examining the biases that influence this data, companies code existing bias, along with their own assumptions, into the products schools use. Machine learning algorithms further exacerbate these issues, as they learn over time from biased data fed into them.

Technologies in other sectors have run into major racial discrimination challenges, with reports of racial bias in facial recognition for surveillance, in risk assessment for the criminal justice system, and in smart recruitment systems for corporate hiring. Similarly, technologies designed to "accurately" predict dropouts, behavioral issues, and the likelihood of student mastery will perpetuate the same outcomes from the past; algorithms built from historical education data will amplify existing biases, further encoding the racist history of our social and academic systems.[1] Even well-meaning companies can unknowingly introduce racial bias into their products.[2] Many companies test their products in partnership with schools that have small Black and Brown (and often low-income) populations. Without careful attention, algorithms are trained to optimize for the most common students in the sample pools, especially when race and income data are not collected. These algorithms will not work as well in predicting outcomes for students who were not well represented in the sample and not considered in the design and development of the algorithm itself.

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Education is far more than inputs and outcomes. It is impossible for edtech companies to capture the entire context of a student's experience in the form of data, especially when each edtech product focuses on a sliver of the educational experience. A math app will likely not develop a complete picture of a student's language proficiency, and so may fail to take into account their inability to solve word problems rather than the math problem at hand. Such an app is even less likely to encode a student's mental and physical health patterns, familial responsibilities, and interaction with law enforcement—factors that research has shown can have a significant impact on a child's ability to learn. Edtech companies that use machine learning have a responsibility to understand the context in which students of color live and learn, uncover their own assumptions and blindspots, and continuously test to assess the variable impacts of their products on Black and Brown students.

RECOMMENDATIONS

Edtech companies should embrace shared goals and work in partnership with schools to achieve a racially equitable and inclusive education experience for all students. This requires companies to adopt dedicated practices to understand the larger education context, uncover their own assumptions and blindspots, and continuously test for their product's impact on racial equity. Edtech companies that use student data, particularly in conjunction with machine learning, can use the AI in Education Toolkit for Racial Equity, which we developed to lead the industry toward more racially equitable products.

Not only will such efforts improve outcomes for Black and Brown students, but they also make good business sense. For companies to achieve large-scale product adoption across American schools, they must prioritize the needs of the country's largest districts. The 100 largest school districts educate nearly a quarter of all public school students. In the country's 20 largest school districts, 80 percent of students are considered minorities. It makes practical business sense for edtech companies to design and develop products for the most common users in their target market and prioritize these students' needs.

Balancing both ethics and resource constraints, we recommend the following practices:

- **Edtech companies should design products by engaging Black and Brown students, their teachers, and families.** This is critical throughout every stage of product design and development. Given that Black and Brown students make up over half of students in American K–12 public schools, edtech companies selling to public schools should source a significant percentage of user feedback from these students and their communities. The Toolkit provides specific practices for tech teams to investigate their assumptions and assess the risk of racial bias before moving past the product ideation phase. It also identifies several key points during development when companies should share their findings with Black and Brown families and their schools to ensure these users are comfortable with the data collected, the way data is used by the product's algorithms, and the way students and teachers will use the product. By bringing Black and Brown communities into the design process, companies can quickly uncover blindspots, catch potential risks, and ensure customers buy in to the value of their products.

- **Edtech companies should implement dedicated sprint time to detect and mitigate racial bias during product development.** Developing equitable algorithms is a complex endeavor that requires additional time and resources during development. The Toolkit describes tangible exercises, including code that companies can run, to identify blindspots and problem areas in training and testing datasets, critically analyze feature importance, and evaluate algorithms' outputs for racial or socioeconomic bias. Additional time should be allocated to ensure that feedback mechanisms intended to improve a product's algorithms do not simply reinforce existing biases. Companies should build time into each sprint to run these analyses and incorporate critical user feedback to ensure developers never need to sacrifice ethics to meet deadlines.

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▸ **Edtech companies should test for differences in experience across race and socioeconomic status.** Even the best-intentioned companies can unconsciously encode racial bias into their products. After perfecting their algorithms, companies should prioritize assessing differences in feedback from Black and Brown users during product design, testing, and implementation. User experience designers should understand how Black and Brown or low-income students experience their products differently than students of other races, as well as collect user feedback to investigate these assumptions. Edtech companies' internal testing scenarios should prioritize diverse student experiences, inclusive of ability, language, accent, wifi quality, and other differences, prior to a customer pilot release. During pilot testing, companies should explicitly test for diverse student experiences based on race and income and share any concerns with schools, students, and their families. The Toolkit provides helpful practices for companies to follow and common pitfalls to avoid as their products are ultimately used in schools.

CONCLUSION

Edtech companies should prioritize racial equity during each stage of product design and development. Companies that commit to racial equity and adopt the practices provided in the Toolkit will earn a competitive advantage with school districts, particularly urban districts that serve a large percentage of Black and Brown or low-income students. Major districts like New York City Schools and Chicago Public Schools have invested in culturally responsive training for teachers and administrative teams focused on reducing bias and improving equity. It is only a matter of time before schools and families demand that the edtech industry build products built with racial equity in mind. Edtech companies can use the Toolkit to uncover and address racial bias in their products used in schools.

Endnotes

1   Ruha Benjamin, *Race after Technology: Abolitionist Tools for the New Jim Code* (Cambridge: Polity, 2019).

2   Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (London: Penguin Books, 2018).

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