



A Research
Brief:
**November
2023**

Placing TeachMichigan Fellows: Considerations Around Critical Mass

DISCLAIMER

The Education Policy Innovation Collaborative (EPIC) at Michigan State University is an independent, non-partisan research center that operates as the strategic research partner to the Michigan Department of Education (MDE) and the Center for Educational Performance and Information (CEPI). EPIC conducts original research using a variety of methods that include advanced statistical modeling, representative surveys, interviews, and case study approaches.

Results, information, and opinions solely represent the author(s) and are not endorsed by, nor reflect the views or positions of, grantors, MDE and CEPI, or any employee thereof. All errors are our own.

NOVEMBER 2023

Research Brief:

Placing TeachMichigan Fellows: Considerations Around Critical Mass

AUTHORS

Shane Turnage, *Research Assistant, MSU*

Madeline Mavrogordato, *Associate Professor, MSU*

Jason Burns, *Research Specialist, MSU*

GUIDING QUESTIONS

1. Should TeachMichigan expand into new partner schools / districts or place more fellows in current partner schools / districts?
 - a. Does the research suggest a “critical mass” or proportion of a school / district staff needed to meaningfully effect positive change?

Research into high-performance teams and critical mass theory provide insights that can inform these questions. In particular, relevant research findings focus on team structures for organizational performance and the ability of small groups of actors to influence institutional change.

TEAM STRUCTURES IN ORGANIZATIONS AND SCHOOLS

In organizational studies, the research literature highlights the importance of team structure on organizational performance. High-performing teams require developing the right mix of expertise through inclusion of individuals with the necessary skills, experience, and qualifications (Bolman & Deal, 2003). Researchers have analyzed how recruitment and retention efforts focusing on skill diversity can positively affect organizational goals. Recruiting and selecting individuals with different qualifications leads to better organizational thoughtfulness, breadth, and openness to innovation (Kim, 2019). Innovation is led through communal work (thinking/action) based on a variety of perspectives. Organizations recruiting and selecting individuals representing a multitude of skills improve their performance and are better able to meet innovation goals (Kim, 2019).

High-performing teams of educators within schools function similarly to those within the broader organizational literature. Research highlights the effect a greater number of highly effective teachers with diverse skills and roles can have on institutional goals. For example, teams of educators with members representing a diverse set of educational experiences, certifications, education, and organizational roles possess an increased breadth of cognitive resources and overall problem-solving abilities (Drach-Zahavy & Somech, 2002). Teams of educators comprised of members with diverse organizational roles (leader, counselor, teacher) result in increased environmental scanning, generation of multiple alternatives, and multiple interpretations of information. These teams are associated with being more effective and enhance teaching and learning outcomes (Drach-Zahavy & Somech, 2002).

CRITICAL MASS FOR DRIVING INSTITUTIONAL CHANGE

Critical mass is used to describe a representation of the discernable impact on policy outcomes once a group number reaches a critical threshold in an institution (Park, 2017). Political and educational institutions operate like organizational workplaces, each institution having its own unique rules, norms, and culture which influence the decision-making process. Their organizational similarities allow research into critical mass within the legislative policymaking arena to provide insight into the power of a small group of teachers to effect change (Dahlerup, 1988).

In political science, the research literature on gendered representation and policy outcomes provides guidance on the proportion of the population a group with a minority position must reach within an institution to create a critical mass effect. In a study of gendered representation and social spending in 22 Organization for Economic Co-operation and Development countries, the relationship between percentage of women legislators and representation of women's interests provides support for a critical mass effect (Park, 2017). Below a 10% level of representation,

women legislators were found to have little to no effect on education spending policy outcomes, while above this threshold were found to have a positive and continuous effect (Park, 2017). Important to note is that different proportions of minority position holders in an institution may be necessary depending on policy outcomes sought (Grey, 2006). These findings support an argument that concentrating fellows to some degree in current TeachMichigan schools or districts could work towards building a critical mass of fellows in the school capable of effecting change.

It is often said that individuals or small groups of people are incapable of effecting change in large group behavior or beliefs. However, individual, or small groups of fellows can effect change through engaging in critical acts. Critical acts are those which individuals engage in which considerably change the political position of a group within an institution and may lead to further changes (Dahlerup, 1988). Critical acts work to empower a group within the institution and allow for mobilization of its resources in realizing their goals (Dahlerup, 1988). For example, a fellow may work to recruit other educators in joining together to form a group in support of a proposed policy change. Feelings of responsibility and ability to represent group interests will increase as membership grows (Tremblay, 2006).

To engage in collective action capable of effecting change, large numbers of educators will need to be brought together in pursuit of a common goal. To reach a proportion necessary to create a critical mass effect, fellows must build coalitions with other non-fellow educators. Using a theoretical model for collective action in large groups, one study found that greater numbers of individuals with similar aims clustered together increased the likelihood of achieving common goals (Centola, 2013). Through successful coalition building with others whom they were tightly connected, small groups can successfully bring other actors from the larger group into their coalition. This can result in a critical mass effect which makes collective action possible. However, this study also highlights the detrimental effects to collective action that coalitions built among members with weaker ties present (Centola, 2013). In other words, fellows attempting to build coalitions with non-fellows with whom they do not have strong connections will be less successful at effecting change through collective action. Findings also showed that in the absence of others with similar goals, finding others to engage in coalition building could be “nearly impossible” (Centola, 2013, p. 24). With regard to TeachMichigan this suggests that placing lone fellows in new schools could constrain their ability to successfully build coalitions, particularly if they are not well connected with fellow in other schools in the district. Conversely, placing groups of fellows within current TeachMichigan schools could create the conditions necessary to allow fellows to build coalitions capable of effecting change.

KEY TAKEAWAYS

- Improving teaching and learning within TeachMichigan partner schools requires developing high-performing teams of fellows. Fellows should be intentionally placed to represent a diversity of educational experiences, certifications, education, and organizational roles within each school for maximum effectiveness.
- Reaching a proportion of fellows within a school or district capable of creating a critical mass effect would require placing groups of fellows in current TeachMichigan partner schools. Groups of fellows in a smaller number of schools will likely be better able to form coalitions capable of effecting change through collective action efforts than lone actors in a greater number of schools.
- It is important to note that a key goal of the TeachMichigan Fellowship Program is to test a possible intervention that could be brought to scale around the state. Given this goal, it is important to be realistic with the number of fellows that could reasonably be clustered in a school/district if the TeachMichigan Fellowship were scaled up across the state.

REFERENCES

- Bolman, L. G., & Deal, T. E. (2008). *Reframing Organizations: Artistry, Choice, and Leadership*. San Francisco, CA: Jossey-Bass
- Centola, D. M. (2013). Homophily, networks, and critical mass: Solving the start-up problem in large group collective action. *Rationality and Society*, 25(1), 3–40. <https://doi.org/10.1177/1043463112473734>
- Dahlerup, D. (1988). From a Small to a Large Minority: Women in Scandinavian Politics. *Scandinavian Political Studies*, 11(4), 275–298. <https://doi.org/10.1111/j.1467-9477.1988.tb00372.x>
- Drach-Zahavy, A., Somech, A. (2002). Team heterogeneity and its relationship with team support and team effectiveness. *Journal of Educational Administration*, 40(1), 44–66. <https://doi.org/10.1108/09578230210415643>
- Grey, S. (2006). Numbers and Beyond: The Relevance of Critical Mass in Gender Research. *Politics & Gender*, 2(4), 492–502. doi:10.1017/S1743923X06221147
- Kim, A. (2019). Human resource strategies for organizational ambidexterity. Employee Relations: *The International Journal*, 41(4), 678–693. <https://doi.org/10.1108/ER-09-2017-0228>
- Park, S. S. (2017). Gendered Representation and Critical Mass: Women's Legislative Representation and Social Spending in 22 OECD Countries. *Sociological Perspectives*, 60(6), 1097–1114. <https://doi.org/10.1177/0731121417710458>
- Tremblay, M. (2006). The Substantive Representation of Women and PR: Some Reflections on the Role of Surrogate Representation and Critical Mass. *Politics & Gender*, 2(04). <https://doi.org/10.1017/S1743923X0624114X>