VLDS Research Compendium Papers

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IES **Institute of Education Sciences**

FOREWARD

Jen Piver-Renna, Ph.D.

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Our plan was straightforward: bring together a diverse group of leaders from research institutions, government agencies, and advocacy organizations to create the first-ever research agenda for the Virginia Longitudinal Data System (VLDS). We intended the research agenda to be a first step in our strategic roadmap to impact state-level policies and practices contributing to systemic inequities and bias. We never imagined a global pandemic. We never imagined a national reckoning on racial bias in policing. With this backdrop, the necessity and the urgency for change turned our straightforward task of creating a research agenda into an once-in-a-lifetime opportunity for a collective call to action.

For about the last decade, VLDS has provided statewide, longitudinal data on individuals matched across participating agencies for research purposes. With each year, and with each new project, VLDS has grown into an incredibly powerful data source to answer critical questions about state policies and service delivery models, including who accesses services, and the return on investment of state-funded programs. Without a common research agenda, however, individual agencies defined their own purpose for VLDS. The collective power of VLDS – as a source of data that could quantify whole systems and institutional-level impacts on individuals – was not yet fully realized.

At the onset of our process, we leaned heavily on the trusting relationships we developed over the years between agency staff and researchers. We also brought new voices to the table to have critical conversations about the meaning of equity, about the role of data in supporting equitable solutions, and about how each of us, individually and collectively, could be a part of the solution. Beyond just identifying research questions of priority, the individuals we invited to the proverbial table to develop a research agenda were inspired to define the type of research VLDS should support: research that reflects the values of the communities studied, that focuses on social issues of importance, and that uses data ethically. Holistically, members of VLDS should seek out and support research that collectively affects equitable, material outcomes for all Virginians.

The VLDS Research Agenda is a stand-alone document that reflects a shared commitment among VLDS members to prioritize the critical exploration of equity in Virginia's policy and service delivery models. However, it is not the complete story. Development of this compendium, a natural outcropping of the research agenda, adds important context to our work. The essays contained herein provide an expanded opportunity for conversations about equity and equity-centered research. Each essay poses important questions about the use of administrative data for research, and provides recommendations for incorporating equity-centered principles into research. Importantly, the compendium also reflects just a subset of the perspectives and passions of a group of people dedicated to change. I hope you will find inspiration in these essays to join us in engaging in tough conversations, in questioning the status quo, and in bringing to light, through data analytics and research, solutions for change.

EQUITABLE AND TRANSFORMATIVE LONGITUDINAL RESEARCH AGENDA

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Should research serve as a tool for advancing social transformation? The Virginia Longitudinal Data System (VLDS) Research Agenda strongly encourages and invites researchers to engage in research and evaluation that promote equitable and inclusive policies and programs.

While there will always be a space for research that advances academic knowledge, data sources such as the VLDS provide unique opportunities for investigations about the impact of social and public policy on the Commonwealth's residents. The VLDS Research Agenda acknowledges the validity and importance of academic pursuits for knowledge's sake. However, research that provides actionable implications and recommendations are critical and welcomed by public policy and ground roots professionals who fund, administer, and engage directly with citizens.

Research as an Instrument toward Social Justice

The VLDS Research Agenda encourages researchers to engage in research that aims to advance social justice. In other words, we believe that VLDS data is beneficial for research that is ethical, equitable, inclusive, and anti-racist.

The Critical Need for Social Change

Because systemic injustices disproportionately affect some Commonwealth citizens over others, an equitable Virginia requires changes at the institutional and policy level. While Virginia has many qualified and engaged public service employees, there is limited time for research. Ongoing administrative duties, data reporting requirements, and direct services responsibilities exhaust public service workers' time to engage in research to inform the development and evaluation of new programs that can foster positive social change. The collaboration between academic scholars and public employees has immense potential to guide social change by supporting public policy that advances positive social transformation.

Particularly in the social services field, there is a critical need for research and evaluation around child abuse and neglect prevention, on ways to mitigate the benefit cliff, and the educational outcomes of children in the welfare system and the Fostering Futures program, just to name a few potential areas of study.

However, institutional and policy change can have profound and continuous negative consequences that may affect residents differently depending on multiple historical and systemic factors. Public policy decisions without equitable and anti-racist research have had catastrophic outcomes in the lives of marginalized populations (e.g., government-supported segregation and redlining, three-strikes laws, healthy inequity, and environmental racism). As such, there is a critical need for policies that are research-informed and evidence-based but which take into consideration the impact policies can have for all Virginians, but mainly on the lives of black, Indigenous, and people of color (BIPOC) individuals as well as people with different abilities, gender identities, and sexualities who can experience negative impacts the

most. As such, when engaging in social justice research, we recommend several considerations, including the following:

- A lucid exploration, understanding, and acknowledgment of the researcher's positionality vis à vis the population under study. Moreover, researchers desiring to engage in equitable research must consider their own research teams' demographics and pursue diverse collaborators.

- A historical understanding and contextualization of the outcomes of harmful social policies and their role in perpetuating social inequality. Dr. Kenneth Anderson provides additional information about understanding the historical context of inequities in the research development process (see page 7 of this Compendium)

- The application of an intersectional approach to data analysis.

- Consider the language that is used in the narrative and ensure it does not perpetuate negative stereotypes.

- Consider participatory and feminist research methodologies that engage the population under study and consider the expertise of marginalized people as part of the research design and research process. Dr. Scott Murrah et al. provide in-depth insight into participatory research by discussing Western Methodologies and radical inclusion (see page 30 of this Compendium).

- Be proactive in reviewing and citing the work of people in multiple social locations as appropriate for the research project.

- Finally, understand that results may not necessarily provide a clear understanding of the population under study but rather a picture of the consequences of systemic inequality and racist social practices that have supported de facto discrimination. Again, placing results within their proper historical context can prevent incomplete and harmful conclusions.

In addition to these considerations above, the VLDS Compendium includes additional pieces to clarify further the VLDS research agenda and its aim to advance positive social change. I encourage you to review each piece as you prepare to explore the VLDS and its many research opportunities.

STORIES BEHIND THE DATA:
UNDERSTANDING THE HISTORICAL CONTEXTS OF INEQUITIES

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As the Virginia Department of Education embraces this exceptional initiative to transform data use in the Commonwealth, I pen this essay to urge all data users to not only embrace this data initiative, but to also work diligently to understand the stories behind the data. Behind data are real people, influential policies, connections to the past, and much more. In many ways, data are often used to illuminate or place blame. At times, placing blame may be appropriate. However, when dealing with the complexities of inequities, proper illumination should be an essential aim of data use. Historical events often provide windows that offer essential insight that is necessary to achieve proper illumination.

Windows are very important because they provide prospective. I use the windows metaphor because windows have direct implications for research. For example, I recently recall looking through a side window of our home, one day after a snowy day, and noticed that almost no snow remained on the ground or sidewalks. Thus, I concluded, "things are not that bad." However, in the distance, I heard a consistent dull clanging sound. As I moved closer to the window, I saw my neighbor on the other side of the street using a steel scraper to break the ice on his steps that formed after the snowmelt-refreeze process. I subconsciously thought, "I am glad that we don't live over there." Had I looked out of the front window instead of the side window, I would have been reminded that the snow was bad for some. The homes on the other side of the street sit on a steep hill. They have many steps to climb and based on their positioning, they do not reap the morning benefits of being on the sunny side of the street. If this were a research study, my conclusions would have been extremely biased, had I not considered the perspective from the front window.

The previous scenario is a metaphorical example of why researchers must not stop with one perspective. Although our side of the street reaps the benefit of the morning sun, we also must manage storm water runoff to aid in preventing basement flooding. Hearing this updated perspective (in the spirit of a Bayesian analyst), it is safe to conclude that no conditions are perfect. Just like in education settings, some conditions lead to systematic and meaningful advantages for some students. Likewise, tensions can arise when it seems that formally good conditions must get worse before other conditions get better.

In the example of the snowmelt, residents on our side of the street may start to resent the neighbors across the street because we feel that people across the street need to manage their own water better. Not surprisingly, it is sometimes frustrating for one group to adjust when they feel like they had "nothing to do with the bad conditions in the first place." Metaphorically, this shows that change is uncomfortable, but literally, "*the sun is for everybody.*" Researchers must remember this old adage when trying to illuminate issues. When the sun rises and sets, conditions change for everyone. A good researcher understands and accounts for this evolution.

In the next section, I use the example of school safety and climate to highlight historical events that have contributed to the evolution of school safety, climate, and equity. I conclude by using key themes of the essay to provide three recommendations for VDOE data users to consider.

Historical events that have contributed to school safety, climate, and equity.

The use of school resource officers and the data collected about school resource officer programs may be thought of as a normal component of school security plans. However, a curious data user should pause to ask questions. Some of these questions might include… "Where and when did school resource officer programs begin? When did it begin in my local context? What were the reasons for the use of school resource officers? How have expectations changed over time? Who uses school resource officers? What data are collected? How have the roles of school resource officers evolved and how have data points changed over time?"

Below, I provide commentary on events from the 1950s that may still influence current day school safety and climate. I discuss societal issues that occurred nationally and in Virginia. I present these issues as a reminder that schools are economic and political institutions and history can cast a long shadow. Thus, history should be considered in present-day research, but done in a way that allows for a path forward.

1950s

In this section, I hope to motivate researchers to think about innovative ways to improve research designs by considering the stories behind data. I describe some key historical moments from the 1950s that have influenced school safety and climate. I spend most of my commentary discussing the complexities of history that are evident on one page of a Virginia-based newspaper article from 1955. I use these complexities as a metaphor of the complexities of current-day education research.

Although there is not universal agreement on when the first school resource officer program began, several sources suggest that the first school resource officer program began in Flint, Michigan. One source indicates that the Flint program marked the first instance of officers being placed in schools on a full-time basis.[1] The officers did not wear uniforms, and there seems to be common agreement that the goal was to improve relationships between youth and police. What is not readily evident is where the officers were placed and why. For example, more than 97% of Black residents resided in six of Flint's 41 census tracts. However, it is not clear how the school resource officer programs were used in these tracts of the city.

Although the rationale for the creation of SROs is not fully evident, the 1950s marked a period of fierce debate about racial integration in the United States and, not surprisingly, in Virginia as well. On March 1, 1955, The *Farmville (Va), Herald* reprinted an article by Garland B. Porter entitled "Segregation Not A Moral Issue".[2] Per the article, Porter was the editor and general manager of *Southern Advertising and Publishing Magazine*. This article was the second of a series entitled "A Southern View of Segregation." The article touched on a several topics including keeping schools racially segregated and maintaining "racial integrity", rebuking the 1954 *Brown v. Board* decision to integrate schools. It opened by stating, "it is not morally wrong for Negroes to go to their schools and whites to theirs." The author further noted that it was legal for Negroes to have equal but separate schools and that this model was working.

Although I reject many of the author's positions, the author does address complexities associated with equity in schools. For example, many Black Americans did not universally agree with school integration and there where fierce debates within the NAACP and among Black families in the 1950s (and currently) about the best way to educate Black students. In some

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[1] For more information, see: http://blackfootpolice.org/sro/sro_history.html
[2] The Farmville (Va.) Herald. Tuesday, March 1, 1955.

ways, the *Brown v. Board* decision allowed some Black Americans access to educational settings that were indeed better than what they experienced before the *Brown* decision. For others, education took a turn for the worse. As anticipated by some Black leaders who were skeptical of integration, many Black students faced constant discrimination, traditions were lost, and legions of Black teachers were fired. Many of the effects are still felt in schools today. In fact, poor schooling experiences led to the emergence of popular education topics like culturally relevant pedagogy and culturally affirming practices.

On the same page of the newspaper that contained the article on segregation, there was a letter to the editor about Farmville, VA. The letter is entitled "Farmville a Growing City!" and began with the question, "Are we proud of Farmville?" It goes on to describe some advancements in Farmville. The writer boasted about the benefits of Farmville's central location, having one of the best hospitals in the country, two theaters, several churches with multiple denominations, good restaurants, and more than 15 filling stations. The writer also commended the fire department, city services, and notably mentioned the cooperative nature of the "City of Farmville." The unknown author specifically noted that courthouse staff minimized trouble with a 'fine, kind, not "bigotty" police force.'

On this single page of the *Farmville (Va) Herald*, there is a lot for an equity researcher to unpack. Windows matter! This point leads back to current day research issues in that researchers should include multiple perspectives and refrain from promoting agendas. Perhaps the editor of the *Farmville (Va) Herald* was trying to exert his influence over the mindsets of Farmville residents by including the segregation article from another jurisdiction. Perhaps many agreed. However, if only the segregation article was considered and the letter to the editor was ignored, then some might cast Farmville, VA solely in a negative light. The complexities on this one page of the newspaper reflect a fundamental research concept: decisions must be made without having all the information.

Noted statistician, Keith O'Rourke, uses the analogy of shadows. He notes that we only have access to the shadows, but in many cases, we are unable to directly access the object that casts the shadow. Therefore, we must carefully study the shadow to learn more about the object. The complexities present on one page of a newspaper highlight the extreme difficulty of doing equity research. Rather than solely paint broad strokes, researchers should try to understand what works in given situations. Doing this takes courage and researchers must remember that courage is required when doing contentious equity research on topics such as school safety.

Recommendations

In the introduction, I encouraged data users to work diligently to understand the stories behind data. I intentionally used the plural form "stories" instead of the singular "story" because there are usually multiple contexts and perspectives to consider when framing research questions, analyzing data, and interpreting findings. Researchers must make choices, which brings to fore my first recommendation, employ cross validation techniques.

1. **Employ Cross Validation Techniques.** Cross validation can be described as a statistical technique designed to estimate the error that would occur if the same analyses were conducted on new, unseen data.[3] Cross validation is also used to determine how

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[3] For more information, see: Hastie, T., Tibshirani, R., & Friedman, J. (2009). *The elements of statistical learning: Data mining, inference, and prediction* (2nd ed.). Springer.

much flexibility is needed to appropriately estimate a statistical model. Given that researchers can choose different sets of variables and key events to include in models, cross validation is critical for education research. In other words, there is usually no one right way to conduct research. However, any research design should pass muster if reasonably scrutinized. Cross validation helps to ensure that research is reliable and actionable.

In this essay, I talked quite a bit about history. However, it might not be exactly clear how quantitative researchers might incorporate history into their studies. This brings me to my second recommendation, conduct event studies.

2. **Conduct Event Studies.** Event studies, which are generally more popular in the finance and economics literature, are generally thought of as the study of planned events.[4] In education, I think that it is important to try to capture the nature of planned and unplanned events (e.g., new planned public policy or major unplanned health pandemic). The idea is to refrain from limiting studies solely to the topic of interest. For example, in a study about school resource officers, researchers should attempt to account for other planned and unplanned events that may influence school safety outcomes. For example, suppose that there were five divisions in the Commonwealth that received a grant to institute some alternative discipline programs. If models do not account for these programs, then important stories are lost.

Although every event cannot be captured in a single study, simple things that researchers could do beyond the traditional steps of the research process are to: ask questions of stakeholders, read press releases from key offices, and conduct internet searches to identify key events that may not be captured in the data. Once events are identified, researchers can then enhance their models by codifying the length and nature of the events, as well as incorporate other key indicators that come to mind.

Before presenting my final recommendation, I would like to note that, generally speaking, I am unenthused by buzzwords such as social emotional learning and trauma-informed research. I understand the sentiment, but I would like to see more research that focuses on the efforts of organizations, such as schools and divisions, not just focusing on the problems of children. Many, but not all, challenges that students face are treated as if the students themselves self-selected these issues or as if organizations have no role in perpetuating student issues. Thus, I think education researchers could benefit from a re-orientation of how issues are framed in education research. This brings me to my final recommendation, conduct organization-centered research.

3. **Conduct Organization-centered Research.** Organization-centered research can be thought of as an orientation that focuses on how schools and divisions best use their resources to mitigate a problem. Rather than simply describing or quantifying problems, researchers should try to assess how organizational resources, policies, or other efforts are working to improve education.

Consider this. Concerning school resource officers, the *Code of Virginia* requires "The Department of Criminal Justice Services, in coordination with the Department of Education and the Department of Juvenile Justice, shall annually collect, report, and publish on its website data

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[4] For more information, see: Corrado, C. J. (2011). Event studies: A methodology review. *Accounting and Finance, 51*(1), 207-234. https://doi.org/10.1111/j.1467-629X.2010.00375.x

on the use of force against students, including the use of chemical, mechanical, or other restraints and instances of seclusion; detentions of students; arrests of students; student referrals to court or court service units; and other disciplinary actions by school resource officers involving students. Such data shall (i) be published in a manner that protects the identities of students and (ii) be disaggregated by local school division and by student age, grade, race, ethnicity, gender, and disability, if such data is available."[5]

The *Code of Virginia* is a good first step. However, researchers should work to systematically identify the organizational strategies that are being used to improve the safety conditions noted above. In other words, do not solely rely on systematically collected administrative data. No matter how good VDOE's data system gets, it is still prudent for researchers to identify additional data in nontraditional ways such as using software to scrape the internet, identifying themes from school board minutes, and analyzing financial documents that capture organizational efforts to improve conditions.

In sum, education research is not easy. Although many of the examples used in this essay focused on school safety, climate, and equity, the major themes in this essay are generally applicable to most any education equity issue because most education data have stories. Overall, I hope that my recommendations are useful in pushing VDOE data users to move away from the comfort zones of easy, clean research. Instead, I hope that researchers continue to use their creativity and ingenuity to develop novel approaches that may benefit the Commonwealth. Be courageous!

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[5] *Code of Virginia*, § 22.1-279.10, available at: https://law.lis.virginia.gov/vacode/22.1-279.10/

A COMMON GROUND FOR LEGISLATION:
WHEN DATA SCIENCE INTERSECTS PUBLIC POLICY

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While the impetus for crafting new legislation or amending existing policies usually has various points of origin, the relatively recent growth of data-rich resources has helped to highlight the ways in which data science can support discussions around policy matters. During the global pandemic, in particular, governments and agencies around the world underscored the fact that their actions are "following the science" or using data and metrics to determine appropriate responses to the health crisis. Such applications of the pandemic data are clearly evident in the areas of emergency health protocols, supply chain analytics, identification of viral "hotspots," workplace safety metrics, unemployment issues, education policies, and so much more. Whether in the midst of a global crisis or in routine modern-day governance, the collection, analysis, and application of data are essential to policymaking decisions. The challenge in front of policymakers and relevant government agencies is how to best identify data needs, secure effective data, analyze it with integrity, communicate it properly, and integrate it appropriately in the decision-making process.

The uses of data science and, specifically, the applications of "big data" are still an evolving field of study. Collections of digital data are largely the products of the past two decades, and only a small fraction of this digital output has actually been analyzed or applied in meaningful ways in the context of policy decisions. In "Ten Great Ways Data Can Make Government Better," analysts suggest that we have "ample opportunity to apply more data analysis to the improvement of government operations using a variety of methods including descriptive statistics, predictive models, and data visualization" (Wiseman & Goldsmith, 2017), and they identify these following specific areas of essential data applications as examples for both local and state governments to consider:

- Emergency responses enabling more efficient and life-saving 911 response times
- Inspections leading to improved public safety
- Pretrial justice to reduce costs, improve safety, and increase fairness
- Water management that uses sensors and analytics to reduce leaks and water main breaks
- Travel and transit data to improve commute time and traffic safety
- Demand-based parking pricing to reduce congestion, increase safety, and increase revenue
- Energy analytics that reduce energy use and expense
- Tax fraud reduction to increase revenue
- Procurement data to evaluate areas of cost savings, supply chain issues, and equity
- Staffing shortage identification to help address evolving workforce needs

As these foundational examples demonstrate, the ever-increasing access to data that is comprehensive, complex, and gleaned from various tools has the potential to help shape policymaking and governing in significant ways. Additionally, a greater dependency on data may be an opportunity to transform not just how policymakers consider their legislative priorities but may also provide the chance to shift public perceptions of government and its capacity to enhance the public good. To make these types of cultural shifts, "[d]ata needs to be seen as an

asset rather than a byproduct of administrative activity, in order to be valued, curated and shared where appropriate. This could be part of a broader movement to transform the public sector away from the bureaucratic model inherited from the 19th century and towards a more agile, 21st-century version" (World Bank Group, 2017). As we observe the need for more, increasingly responsive, and efficient policymaking solutions, the ability to use reliable data effectively and with transparency becomes more urgent.

This urgency, therefore, lays the ground for further development of the policy process itself and the necessary incorporation of data tools within that process. Additionally, this urgency brings into sharp relief the need to enhance the communication vehicles of data science as researchers translate their analysis into usable information that can be incorporated within policy development. In its intersectional relationship to policy work, the term *data science* encompasses not just the collection of data but also the meaningful analysis of that data so that it can be integrated more readily into the contexts that inform our understanding of economics, health, the environment, and every other construct and system that is a part of our social structure. The development of data science and its relationship to public policy and governance also provides a dispassionate and objective framework that may challenge the orthodoxy of traditional legislative models that are often compelled by more subjective approaches. Innovative and solution-driven policy decisions, informed by reliable data, have the potential to address the oftentimes well-deserved critiques of legislative processes that are motivated by expediency and ideology rather than expertise and evidence.

The framework of such solution-focused engagement requires trust, meaningful dialogue, and a collaborative process that enables data scientists and policymakers to interact within a model of information sharing that can "help us to gain a deeper and more transparent understanding of our world, while improving the way we identify and assemble the choices made by people when faced with a number of possible options" (Arnaboldi & Azzone, 2020). As policymakers and government agencies consider the structures of such a collaborative model, they should follow the established processes of the *policy cycle*, a term that identifies the methodology of defining, implementing, and assessing policy. This structure works effectively in business, industry, education, and other relevant organizational settings, and it translates well into the legislative decision making process also. Within the policy cycle, the use of data science can be incorporated effectively into every step of the process:

- Agenda setting
- Formulation
- Decision-making
- Implementation
- Evaluation

In order to make effective use of the policy cycle and of the data that emerges at each stage, it is important that policymakers ask the right questions and use those questions to develop better research agendas that are instructive about the information that is needed and that present the chance to evaluate that information at both macro- and microscopic levels. A sound research agenda effectively interrogates the insights that emerge from the data and considers how those insights translate into meaningful policy.

For the policy process to intersect effectively with data science, policy discussions need to couple an effective research agenda with plans for capacity, quality assurance, effective communication strategies, and sustainability. Policymakers can take five basic steps in order to maximize the use of information (Huh, Ivey, & Kitson, 2018):

1. Plan ahead by setting up guiding goals and structure
2. Build an organizational capacity to effectively use data
3. Ensure that quality data can be accessed and used by relevant stakeholders
4. Analyze data to create meaningful information
5. Sustain the support necessary for continued data efforts

Such a conscious and deliberate process is essential for effective legislation. This process creates opportunities for careful decisions, objectivity, and better chances to build support and stakeholder buy-in. Policy built on the emotional reactions to the current news cycle demonstrates poor planning and may be ultimately counterproductive because of the missing structural support that is necessary for effective implementation. Data-informed policy decisions follow the policy cycle, identify clear objectives through a research agenda, and establish the processes by which effective implementation can take place.

To build public trust in the use of data as a guiding principle for policy work, the tools for data collection must be apparent, the issues of security around data need to be openly addressed and guaranteed, and the reporting of data should be accessible to stakeholders and other collaborative partners. Public trust and reliance on data-driven policy must also be supported by fair and accurate analysis and presentation of the data. Communication of the resources used and the grounding analysis should be disseminated appropriately to build public awareness, trust, and engagement. For data to be communicated well and translated into meaningful public policy, both policymakers and data scientists should learn the craft of "telling the story" of the data. All good storytellers understand that they must first know their audience and how to connect with that audience. Effective narratives are also compelling, and they engage the audience on a level that enables it to understand the connection of the information to their own lives or to their community. Visual representation of the data and analytical narrative help to establish this public understanding and support the rationales for policy development.

Effective narratives of data that translate well into policymaking efforts also provide the necessary contexts for understanding the data's significance and relevance. With the help of data science, policymakers can position discrete elements of data points within a broader canvas and connect the dots in various ways, such as across time, by providing historical contexts, across space, by bridging seemingly unrelated pieces of information, or across disparate communities by evaluating social trends. Translating data and research into such contexts helps to merge scientific reasoning with the sensibilities of the humanities, a combination from which more effective policy decisions may emerge and more public support may be drawn.

While public and private organizations are often at the forefront of data analytics and understand how to apply data within strategic development, the expansion of legislative efforts built on data science is still somewhat new. Movement towards evidence-based legislation sometimes competes with politically-based rationales, issues of expediency, and, frequently, the ideological persuasions of party politics (Van Gestel & de Poorter, 2016). As the complexity of policymaking concerns increase, however, the reliance of the effective uses of data and the analysis of that data becomes only more critical. One desired result of more evidence-based practices is, of course, the achievement of *common ground,* or the opportunity to develop coherent public policy based not on ideological underpinnings but, rather, on the desired achievement of a broader public good, the balance of equitable actions, and the movement towards greater economic and social justice. While such a larger purpose for the uses of data

may not be immediately achievable, it does present an intriguing possibility for the direction and goals of policy efforts.

References

Arnaboldi, M., & Azzone, G. (2020). Data science in the design of public policies: dispelling the obscurity in matching policy demand and data offer. *Heliyon, 6*(6), e04300. https://doi.org/10.1016/j.heliyon.2020.e04300

Huh, K., Ivey, A. & Kitson, D. (2018). Using data to improve policy decisions: Insights to help governments address complex problems. The PEW Organization. https://www.pewtrusts.org/en/about/news-room/opinion/2018/08/13/using-data-to-improve-policy-decisions

Van Gestel, R., & de Poorter, J. (2016). Putting evidence-based lawmaking to the test: Judicial review of legislative rationality. *The Theory and Practice of Legislation, 4*(2). 155-185. https://doi.org/10.1080/20508840.2016.1259899

Wiseman, J., & Goldsmith, S. (2017). *Ten Great Ways Data Can Make Government Better. Data-Smart City Solutions.* Ash Center for Democratic Governance and Innovation. Harvard Kennedy School of Government. https://datasmart.ash.harvard.edu/news/article/ten-great-ways-data-can-make-government-better-1041

World Bank. (2017). *Big Data in Action for Government: Big data innovation in public services, policy and engagement.* World Bank Group. http://documents.worldbank.org/curated/en/176511491287380986/Big-data-in-action-for-government-big-data-innovation-in-public-services-policy-and-engagement

COUNTING TO ONE AS A MATTER OF EQUITY

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When it comes to education data in particular, researchers often resort to data suppression to protect the privacy of individuals represented by the data. When this happens, it is usually a response to the Family Education Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99), a federal law to protect against misuse of education records and ensure that parents of minor students or students 18 years of age and older are regarded as having specific rights of access to these records. Over the years, the interpretation of the law has evolved to be far more about privacy and restricting use than perhaps was intended in the year it was created and the more general Privacy Act of 1974 (U.S.C. § 552a) was passed. Privacy protection is a good thing and VLDS meets, or exceeds, all applicable state and federal privacy laws. Taken too far though, privacy protection can almost become an act of violence in that hides the existence of a group of people, or even multiple groups. It is a form of erasure. For this reason, I try to teach people about the importance of "counting to one."

The essence of counting is to define what is being counted.

To count, we first define the distance (the difference) between zero and one. Counting to one is not merely pointing to an object and saying, "One." Instead, it is, or should be, a conscious decision to decide what is being counted. Apples, dogs, Golden Delicious apples, Irish Setters, ripe/unripe Golden Delicious Apples, male/female Irish Setters, etc. From the gross to the specific, we can decide what to count and how to count it. In doing this, we define the distance between zero and one, and that distance remains constant across all the objects we are counting. It is like a number line of objects.

Now we can communicate about the thing we can count because we have defined the thing we are counting. The basic communication loop (sender, message, recipient, feedback) is possible because the sender and recipient both have a shared understanding of what is counted. Whether the definition is at the highest, most generic level, or the most specific, it allows two or more people to talk about it. Once we can talk about something, we can express ownership of it, we can exchange it for another thing, we can monetize it. We can control it. Definition allows control and systems that exist to provide services exert control to manage and ration expenditures. Categories of gender, race, ethnicity, disability, are often secondary or tertiary issues for these systems, depending upon when they were built.

When we conduct or support studies with VLDS we are looking first for understanding what has happened, and second, we are looking for levers of control in the form of "How can we improve outcomes?" Our effectiveness in attaining either of these goals is implicitly tied to how well we defined our population, or how well our population is defined for us – who we count, who we observe.

And this is the challenge.

The data stewards of VLDS data at the partner agencies and the researchers who use VLDS are hobbled to one degree or another by the choices of the past. Over the decades of data collection our understanding of concepts of gender, race and ethnicity, disability, and what we now understand is important to know about students and clients to properly serve them

through policy has changed dramatically. For example, following guidance from the US Department of Education (USED) through its data collection efforts, the State Council of Higher Education for Virginia's (SCHEV) student-level collections defined gender as strictly binary – male or female – and unknowns were defaulted to the majority population of the institution. The same was true for race and ethnicity. Further, USED modified its reporting standards on race/ethnicity for the 2010 collection year to bring them in line with standards of the US Census. The Virginia Department of Education follows a slightly different standard, in that international students are not grouped separately as non-resident aliens. Other agencies may have similar data histories.

These differences are not merely a challenge to the researcher to structure the data meaningfully and interpret the results. More importantly, they hide the existence of populations. In just using the data as reported, one might assume that non-binary gender identities did not exist in Virginia higher education prior to 2003. To be fair, SCHEV's data still hide the non-binary population of students but make room for them in a category of "Unknown/Unreported." Thus, it is impossible at the state-level to report on the number of non-binary college students and their characteristics. There is a moral or ethical argument that this is wrong, that we should address this need to give a voice to the population and strengthen its ability for self-advocacy. There is also an opposing argument as well: a state agency, and thus the state, does not need to know by name and student identification every non-binary college student as such data can further increase the power differential between citizens and government and create unnecessary risk.

The fact is that the choices we have made regarding gender in our data collections hide the existence of a population of students. There are implications to this lack. First, we cannot enumerate or describe this population. Second, we have no way (particularly through VLDS) to support research that can improve service to these students and improve outcomes. In other words, we may not effectively serve these students, nor does our standard reporting acknowledge their existence. This is a matter of equity and information justice (see Jeffrey Alan Johnson's book, Toward Information Justice, 2018, Springer International) which is about "the distribution of information and its effects on self-determination and human development." Doubtless, there are similar issues across all the data spanned by VLDS. Our original mandates to collect and store data on individuals for various programmatic reasons were informed by the needs and common wisdom at the time. Large datasets in public agencies are often slow to change in structure, evolving slowly over time, and so not all the issues of today can be addressed with the data of yesterday. While this creates challenges for partners and researchers, it also presents opportunities in evolving our datasets to meet the needs of the future.

For the present, I offer the following guidelines for interpreting VLDS data:

- Recognize that while everyone may be counted, they may not be identified in the appropriate populations.
- The ability to properly address issues of equity is limited to what we can discern in the way the data are coded, that smaller populations are often hidden.
- The stories we tell from the data represent choices in counting that generally represent different values in identity and equity than we might have today.
- It is almost a given that older data represent something other than equity as choices in definition are inherently a reflection of systemic power.
- Be open and clear about what we do not know from the data.

- Engage with partners about the holes in the data and the definitions. VLDS is a long-term strategy for improving service and equity in the Commonwealth.
- Be clear, in all cases, what is meant by "one," in other words, who is being counted.

In counting to one, and then beyond, we define who counts, who matters. Hopefully, we do this intentionality with an eye towards equity in representation, treatment, and outcome. Unfortunately, we are shackled by the decisions of others, decisions of the past, and the common wisdom. The common wisdom often leads us to focus so much on protecting privacy, that we hide, we suppress, small groups, denying their existence. Our responsibility as VLDS partners, as researchers, is to ensure that everyone in the data has a voice, that we dignify their existence by acknowledging it, even if we simply acknowledge that we cannot identify a population in the data or describe their outcomes. VLDS is designed in both technical detail and in process to protect the privacy of those in the data, but it is up to the users to give appropriate voice to those in the data.

WHY DID IT TAKE A PANDEMIC FOR CHILD CARE TO BE A PRIORITY?

Kathy Glazer

President, Virginia Early Childhood Foundation

At the onset of the COVID-19 pandemic, a compelling hue and cry brought attention to the need for and value of accessible and affordable child care, initially and especially so that essential workers could return to the front lines. The urgency of need triggered concerted problem-solving over the past year along with productive identification of policy and financing changes needed for the child care ecosystem as our country looks to "build back better." Yet the challenges of access to affordable, high-quality child care have been around for generations. So why did it take a pandemic for child care to be a priority?

Equity as Context

In the years and decades prior to the consequential year of 2020, the issue of early childhood care and education ("child care") has been riddled with inequities that determined which children and families had access to child care and whether those available options were safe, affordable, and met criteria important to families. That child care "divide" has had persistent and pernicious impacts, with the educational and economic outcomes directly affecting the most disadvantaged families but indirectly affecting us all. Income, race and ethnicity, language, special needs, age of child, and location of residency are a few factors that have influenced disparity among children and families with access and those excluded from opportunity.

Income and Race/Ethnicity. Family income has been a significant determinant for access to child care: without a subsidy, child care is unaffordable for 95% of low-income families.[1] Child care cost is an economic burden that consumes 18% of average median family income for infant care and 13% for toddler care.[2] The burden is all the more concerning in that more than a third (36%) of Virginia's children under five years old live in low-income households.[3] Due to decades of policies that systemically excluded minority families from access to educational, employment, and residential opportunities, race and ethnicity are correlated with income and therefore can be determinants of access, too. Nationally, higher percentages of working parents who are Black (32%) or Hispanic (40%) are in low-income households, compared to non-Hispanic White parents (13%).[4] Not only is access to child care constrained for some groups of children, but participation in high quality child care that can help bridge educational and economic gaps is even more so. For example, in a study across 26 states, only 1% of Hispanic 3- and 4-year-olds and 4% of non-Hispanic Black 3- and 4-year-olds were enrolled in high-quality state preschool programs.[5] Low rates of participation should not be assumed to indicate

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[1] As suggested by the US Department of Health and Human Services, Administration for Children and Families.

[2] Workman, S. & Jessen-Howard, S. (2018). *Understanding the true cost of child care for infants and toddlers.* Center for American Progress. https://www.americanprogress.org/issues/early-childhood/reports/2018/11/15/460970/understanding-true-cost-child-care-infants-toddlers/

[3] U.S. Census Bureau. (2013-2017). American Community Survey estimates, Table B17024.

[4] Baldiga, M., Joshi, P., Hardy, E., & Acevedo-Garcia, D. (2018, November). *Child care affordability for working parents.* http://www.diversitydatakids.org/files/Library/ policy/ChildCare.pdf

[5] Gillispie, C. (2019, November). *Young learners, missed opportunities: Ensuring that black and latino children have access to high-quality state-funded preschool.* The Education Trust. https://edtrust.org/resource/young-learners-missed-opportunities/

lack of interest or need but rather should be explored to understand why certain barriers to access have not been addressed and what underlying dynamics – such as unwitting systemic discrimination – might be behind that statistic. In Virginia, for example, underwhelming uptake by some communities in the state's Virginia Preschool Initiative and attrition in participation in the federal child care subsidy program should motivate not complacency but keener understanding of what works and what does not for families in the Commonwealth.

Age of Children. Some groups of children are more or less likely to attend early childhood education programs. While 3- and 4-year old children are more likely than infants and toddlers to be enrolled in early childhood education, nationwide, only about half of this age group participates in preschool programs.[6] Bars set for eligibility for accessing federal child care subsidies are meaningless; only one in six families eligible for financial assistance with child care for their infant actually receives that benefit.[7]

Supply/Location. Another factor limiting access to safe, high-quality childcare experiences is supply by location, whether families live in childcare deserts[8] (where options are few to none), rural regions (where options may be few and far away), or under-resourced communities (where options may be scarce or in unsafe or inadequate facilities). In the US, 51 percent of people (and in Virginia, 47 percent of residents) live in a child care desert. Child care supply is especially low for certain populations in Virginia, with 50 percent of Hispanic/Latino families, 63 percent of rural families, and 61 percent of low-income families living in areas without enough licensed child care providers.[9]

Industry/Workforce. In addition to disparate access to high quality child care, inequities persist for the industry and its workforce. The business model and environment for child care administration is challenging, driven by personnel costs (due to required ratios of staff to children in classrooms) which without financial assistance can very quickly put the ticket price out of reach for working parents who need affordable services the most. This conundrum of cost structure, replicated across hundreds and thousands of independent programs within an under-resourced ecosystem, drives notoriously thin margins for the industry and results in persistent low wages, inadequate access to training, and high turnover in the workforce. Within this vicious circle of scarcity, many child care programs are small businesses or sole proprietorships often led by women of color, and the workforce is disproportionately and persistently low-income women of color, as contrasted with more highly resourced school-based preschool programs within the formalized K-12 system. The lower wages and working conditions for early educators

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[6] Kids Count Data Center. (2013-2017*). Young children not in school by race in the United States.* The Annie E. Casey Foundation https://datacenter.kidscount.org/data/tables/9012-young-children-not-in-school-by-race?loc=1&loct=1#detailed/1/any/false/1691,1607,1572,1485,815/4038,4040,4039,2638,2597,4758,1353/17977,17978

[7] Jessen-Howard, S., Malik, R. & Falgout, MK. (2020, August). *Costly and unavailable: America lacks sufficient child care supply for infants and toddlers.* Center for American Progress.

[8] According to the Center for American Progress, a child care desert is any census tract with more than 50 children under age 5 that contains either no child care providers or so few options that there are more than three times as many children as licensed child care slots.

[9] Malik, R. & Hamm, K. (2017). *Mapping America's child care deserts.* Center for American Progress. https://www.americanprogress.org/issues/early-childhood/reports/2017/08/30/437988/mapping-americas-child-care-deserts/

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of color and in child care settings[10] that many families prefer belie the benefits that come from teacher-child racial/ethnic match.[11]

Access Matters

Why does having access to game-changing early childhood education matter?

A large body of research has produced inarguable evidence of the value of high-quality early experiences and environments to participating children and their families, with value also accruing to the greater communities in which they live and work. This evidence quantifies both the high return to society and individuals when investment is made and access is ensured as well as the high cost to society and individuals from gaps in investment and access.

For whom does the impact from access to early opportunity matter?

The difference for the "haves" and "have-nots" - in both short- and long-term impact - are stunning, sobering, and sub sequential: before a child's first birthday, differential experiences between children in low-income vs. more advantaged households can lead to gaps in cognitive development. Further, extensive research warns that gaps present early on in life "fail to narrow in the years that follow."[12] So certainly, access matters for children who participate in early education experiences.

But access to child care also matters to parents and families, for whom this good has dual value. Child care both nurtures the growth and development of their children as well as serves as a job support as they work to provide for their families. Access to this public good is especially important for women, their stable employment, their income, and their contributions to the labor force and economy.[13]

Child care access matters to our economy, too, and accrues to all citizens, with an annual cost of $57 billion to the US in lost earnings, productivity, and revenue from gaps in child care and to US employers, who face $12.7 billion in losses from their labor force challenges with child care.[14]

2020 Vision

The 2020 onset of the pandemic not only exacerbated the problems and disparities of a long-brewing crisis for some demographic groups, but also brought the reality to a broader

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[10] Austin, L., Edwards, B., Chávez, R., & Whitebook, M. (2019). *Racial wage gaps in early education employment.* Center for the Study of Child Care Employment. https://cscce.berkeley.edu/racial-wage-gaps-in-early-education-employment/

[11] Bassok, D., Doromal, J., Holland, A., & Michie, M. (2020, August) *Who teaches Virginia's youngest children? Sector differences in the racial/ethnic composition of early educators.* EdPolicyWorks at the University of Virginia. https://www.vecf.org/wp-content/uploads/2020/09/SEE_Partnerships_VAPDG-Report_Racial-Composition_Revised.pdf

[12] Garcia, E. & Weiss, E. (2017, September). *Education inequalities at the school starting gate: Gaps, trends, and strategies to address them.* Economic Policy Institute.

[13] Glynn, S.J., Farrell, J., & Wu, N. (2013, May). *The importance of preschool and child care for working mothers.* Center for American Progress. https://www.americanprogress.org/issues/education-k-12/reports/2013/05/08/62519/the-importance-of-preschool-and-child-care-for-working-mothers/

[14] Bishop-Josef, S., Beakey, C., Watson, S., & Garrett, T. (2019, January). *Want to grow the economy? Fix the child care crisis.* ReadyNation.

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stage. The pool of those negatively impacted by limited access to the good of child care – those "in pain" – suddenly expanded.

Almost immediately, attention was brought to a new population of working parents impacted by constrained access to child care. The challenge of limited access to emergency child care for health care personnel made headlines in the media, followed quickly by the need experienced for other front-line workers and essential personnel to enable them to get to the front lines. Employers felt the pain points of absenteeism among essential personnel needed to keep supply chains moving and began to vocalize need for emergency child care and to seek solutions. For some of this expanded population, access was constrained less by financial means or affordability, and more by availability of a needed and newly-valued good.

As the pandemic droned on and school systems were forced to close and/or chose to shift to virtual formats of instruction, the child care crisis spiked, as did the outcry of working parents and employers who had never thought twice about how they count on public schools for "free" child care for children from age 5-12.[15]

A February 2021 poll[16] revealed that two-thirds (67%) of Virginia parents' jobs had been negatively impacted by lack of access to child care in the pandemic term, including needing to take time off, reduce work hours, forego a promotion, or leave the workforce altogether. Nearly a third (32%) of employers nationally have reported seeing voluntary departures since March of 2020, with half of their departing employees noting child care challenges as the reason. Forty percent of employers fear that some of their employees may never return fully to the job site.[17] At a much higher rate, women have borne the brunt of work insecurity due to child care challenges, impacting both income and career.[18]

In response to these dynamics, it has been encouraging to see problem-solving solutions emerge for both immediate relief and longer-term reform in addressing gaps in accessible child care. The federal government has included resources for the child care industry and parental costs in multiple stimulus packages, and most recently in the American Rescue Plan Act. Many states have initiated blue ribbon commissions and task forces to identify ways to utilize the crisis to mobilize commitment to more effective and equitable child care systems. Employers are considering more expansive strategies to support the child care needs of its workforce. Researchers are taking a deeper dive into child care and other early childhood data to uncover the deep-seated inequities and inefficiencies in the systems that are supposed to support our families and economy. And philanthropy has stepped up its engagement in policy and advocacy.

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[15] Covert, B. (2020, October). *School is (whisper it) a form of child care*. The New York Times.
[16] Virginia Promise Partnership. (2021, February). *2021 Virginia poll on early childhood education.* https://www.vapromisepartnership.com/node/30
[17] Center for Education and Workforce. (2020, November). *Piecing together solutions: Employer childcare assistance now and looking ahead.* U. S. Chamber of Commerce Foundation.
[18] Heggeness, M.L. & Fields, J.M. (2020). *Working moms bear brunt of home schooling while working during COVID-19.* US Census. https://www.census.gov/library/stories/2020/08/parents-juggle-work-and-child-care-during-pandemic.html; Kashen, J., Glynn, S.J. & Novello, A. (2020, October). *How COVID-19 sent women's workforce progress backward.* Center for American Progress. https://www.americanprogress.org/issues/women/reports/2020/10/30/492582/covid-19-sent-womens-workforce-progress-backward/; Ellingrud, K. & Segel, L.H. (2021). COVID-19 has driven millions of women out of the workforce. Here's how to help them come back. Fortune. https://fortune.com/2021/02/13/covid-19-women-workforce-unemployment-gender-gap-recovery/

Center Stage for Child Care Access

Barriers to equitable access to child care have been long-standing but primarily confined to a subset of the population that is typically invisible or unheard by stakeholders who have the power to make changes. The issue has now flooded into the lived experience of groups of individuals with more social capital, louder voices, and greater impetus and influence to make change. If we ask the question from above again – "For whom does access matter?" – the answer is now different. And it's poignant to recognize how much that matters.

While perhaps from a moral and equity perspective this pill may be difficult to swallow, it also must be vigorously leveraged. Increased will and momentum for greater access to child care raises the tide for all children, families, and quality of life. And it turns up the volume on public will, as evidenced by a recent poll of Virginia voters:[19]

- Eighty-two percent (82%) say expanding access to early childhood education is important to them, with thirty-nine percent (39%) of Virginians ranking it extremely important.
- Ninety-four percent (94%) say it is important for state and local elected officials to do more to make sure families have access to affordable early childhood education, with forty-five percent (45%) of Virginians ranking it extremely important.

"Don't agonize; organize."[20]

So where do we go from here?

The issue of accessible child care has become the great equalizer, rising to the forefront for an expanded proportion of citizens, and recognition of the value of accessible child care is at an all-time zenith. Any delay on swift implementation of systemic solutions could be lost opportunity, since maintaining a sense of urgency for an assertive but sensible change agenda to increase access in this essential societal good will produce strong outcomes and effect for all.

As we implement a new and relevant equity research agenda in Virginia, we must redouble commitment to principles including tracking and publishing more relevant and actionable equity data to drive solutions based in the new reality in which we live and against which to measure progress. We must prioritize and document expansion of access to child care in historically underserved communities and more vigorously engage those families who have traditionally been unheard or left out by an insufficiently resourced system rife with implicit bias. We should facilitate access through improved program and policy design, expanded eligibility, and streamlined enrollment processes that are family-centered. We should reconsider and redefine quality benchmarks, measures, and supports to make sure they reflect and support all children, all families, and all early childhood programs and practitioners. We must make systemic improvements and investments for diverse program types that meet the variable and volatile preferences and needs of families, and support a richly diverse and talented early education workforce who better reflect and support the children in their care.

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[19] Virginia Promise Partnership. (2021, February). *2021 Virginia poll on early childhood education*. https://www.vapromisepartnership.com/node/30
[20] Quote is attributed to Florynce Kennedy, American lawyer, feminist, civil rights advocate, lecturer and activist.

And throughout, we must ensure that we utilize data not to perpetuate the status quo, punish, label, or diminish but rather to expand and motivate improvement of programs and systems so that early childhood experiences and environments uplift and honor every child's fullest potential.

It took a pandemic to make child care a priority; let's not waste it.

CAREER PATHWAYS: A RETROSPECTIVE LOOK AT REGISTERED NURSES AND LICENSED PRACTICAL NURSES

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Introduction

The lack of diversity at the upper cadre of many healthcare professions is concerning and indicates a need to better understand the career pathways to these professions (Edmunds, Bezold, Fulwood, Johnson, & Tetteh, 2015). Diversity promotes cultural competence, which is critical to advancing healthcare quality, access, and equity (Health Policy Institute, 2021; Wilbur et al., 2020). Betancourt, Green, and Carrillo (2002) defined cultural competence as healthcare providers' ability to successfully deliver services that meet the economic, social, cultural, and linguistic needs of patients. Providing culturally competent care is associated with improved healthcare quality and access for minority patients (Haqq-Stevens et al., 2017). Research has shown that minority patients' health can be substandard when patients' cultures and values are not respected or considered as part of their healthcare plan (AHRQ, 2016, Sullivan, 2004). Further, cultural concordance between minority patients and their healthcare providers are linked to higher patient satisfaction and better healthcare outcomes (Cooper et al., 2003; King, Wong, Shapiro, Landon, & Cunningham, 2004).

With the increased racial/ethnic diversity in the United State as a whole, and in Virginia particularly, healthcare profession groups need to reflect the population's diversity to provide culturally competent care. Unfortunately, there is a lack of racial and ethnic diversity in professional nursing (Phillip & Malone, 2014). Registered nurses (RNs), who tend to have at least two to three years of post-secondary education, higher work autonomy and higher income, have low levels of racial/ethnic diversity compared to licensed practical nurses (LPNs), who often have two or less years of post-secondary education and lower income are racially/ethnically diverse. In Virginia, in 2020, 24% of RNs were non-White compared to 40% of LPNs (Coyle, 2020a, 2020b). Although 39% of the state population are non-White, African Americans only comprised of 19% of the state's population but 30% of the state's LPN population. By contrast, they make up only 12% of the state's RN population (Coyle, 2020a, 2020c). These racial/ethnic and economic distribution differences have important socio-economic implication for RNs and LPNs. RNs earn more than LPNs and often have higher access to employer-provided benefits.

To meet the healthcare needs of our increasingly diverse population, it is vital to address the lack of diversity among RNs (Valentine, Wynn, & McLean, 2016). To do this, it is important to investigate whether racial/ethnic and economic disadvantage group membership limit the pathways to RN rather than LPN. Career and technical education (CTE), which teaches specific career skills to middle and high school students, is an important pathway that may have implications for whether a student becomes a RN rather than a LPN, or otherwise. CTE programs allow students to investigate careers and identify the classes they need to take to

advance their career goals. In addition, public versus private college attendance may also vary for students of different racial/ethnic and economic backgrounds, and have implications for whether students become a RN versus a LPN or otherwise. Research varies on the net effect of public versus private college enrollment on students' career and income. The relationship between the type of college attended and income can also be rather complex, involving students' K-12 characteristics, college type and experiences, job characteristics post-graduation, and type of employment organization (Smart, 1988). Regardless, it is vital to examine whether CTE enrollment and/or the public versus private college pathway increases or decreases the likelihood of students of different racial/ethnic and economic backgrounds becoming a RN rather than a LPN. Only through understanding this complex interplay of the career pathways can the racial/ethnic and economic diversity of RNs be increased to reflect that of the state and nation. Given that healthcare workforce diversity is critical to advancing healthcare quality, access, and equity, this is a matter requiring immediate attention.

Using VLDS to Describe LPN and RN Career Pathways

The Virginia Longitudinal Data System (VLDS) allows this study to have a retrospective look at the K-12 and post-secondary characteristics of RNs and LPNs who are licensed in Virginia and who attended K-12 education in state. We used data from VLDS to examine whether there are differences in the career pathways of RNs and LPNs. Preliminary results, described below, speak to the need for further investigations about whether there is racial/ethnic and economic background equity in the use of the CTE and/or the public versus private college pathways into both nursing professions.

Do different racial/ethnic groups transition to RN rather than LPN differently through CTE and public versus private college pathways? The CTE pathway and the public college pathway were both associated with a higher likelihood of becoming a RN rather than a LPN for Black and Hispanic nurses. For example, 83% of Blacks who took the CTE pathway in high school were more likely to become a RN compared to 75% of those who did not take a CTE. Similarly, 81% of Blacks who took the public college pathway became a RN rather than a LPN compared to 70% of those who took the private college pathway. The pathway was also important for Asians but played no major role in Whites and individuals of other races becoming a RN rather than a LPN. Given these findings, it is important to encourage CTE and public college enrollment for Black and Hispanic students, and public college enrollment for Asians.

For RNs and LPNs, do different racial/ethnic groups participate differently in CTE programs and public college versus private pathways? The no-CTE public college pathway was the most prevalently used for RNs and LPNs of all races/ethnicities. Despite the role that the CTE-public college pathway plays for Black RNs, Blacks were not more likely to use the CTE-public college pathway compared to the no CTE-public college pathway (24% versus 64%, respectively). Blacks' higher use of the no CTE-public college pathways may explain why Blacks are over-represented among LPNs since the use of the no CTE-public college pathway was associated with a lower likelihood of Blacks becoming a RN rather than a LPN.

What are the implications of the pathways taken on the median income of the racial/ethnic groups? Using the CTE-public college pathway was well-rewarded for Hispanic RNs and LPNs. For instance, there was a $20,000 difference in median income between Hispanic RNs who used the CTE-public college pathway ($65,000) and those who used the no CTE-public college pathway ($45,000). By contrast, there was a CTE penalty on income for Hispanic RNs who attended private colleges, with those who took the CTE-private college pathway reporting $5,000 less in median income compared to those who took the no CTE-

private college pathway. Among Black RNs, there was only a no CTE pathway advantage on the median income as Black RNs who took the no CTE-public and private college pathways reported higher income than the CTE-public and private college pathways. In fact, Blacks who took the no CTE-private college pathway had the highest median income at $65,000 per year. Additionally, the CTE-public college pathway was associated with an income disadvantage among Black LPNs, earning $5,000 less in median salary than those following the CTE-private college pathway. Thus, even though the CTE-public college pathway increased the likelihood that both Blacks and Hispanics would become RNs rather than LPNs, the pathway was associated with an income benefit only for Hispanic RNs. Thus, there are different income implications of the pathways taken to become a nurse for different races/ethnicities in response to the third research question.

Do different economic groups transition to RN rather than LPN differently through CTE and in-state public/private college pathways? The no CTE-public college and the CTE-public college pathways were associated with the highest likelihood of becoming a RN rather than a LPN for those who were economically disadvantaged. Of those who took these pathways, 82% and 78%, respectively, became a RN rather than a LPN compared to 67% and 65% of those who took the CTE-private and the no CTE-private college pathways. Therefore, it is important to ensure public college access for economically disadvantaged students seeking to become nurses. There is not much need for such an effort among those who were not economically disadvantaged because the likelihood of becoming a RN rather than a LPN did not differ much for the different CTE-college pathways. The public college pathway may be beneficial for getting economically disadvantaged students to become RNs rather than LPNs because it generally offers lower tuition and fees for the longer years of education required to become a RN rather than a LPN. By contrast, students who were not economically disadvantaged may have the financial wherewithal to complete their RN education even when taking the typically more expensive private college pathway.

For RNs and LPNs, do different economic groups participate differently in CTE programs and public versus private college pathways? Although the no CTE-public college pathway was the most prevalent among both RNs and LPNs who were economically disadvantaged, the CTE-public college pathway was the next most prevalent. Among RNs who were economically disadvantaged, 60% took the no CTE-public college pathway and 28% took the CTE-public college pathway. Thus, the CTE-public college pathway was not just important for increasing the likelihood of students becoming RN rather than LPN, but it also played an important role in the education of LPN. The CTE pathway probably provides a cost-effective pathway of receiving the education needed to complete entry-level certifications to start a career for students who are economically disadvantaged. Consequently, it is important for CTE access to be provided and expanded, particularly in school districts with high poverty rates. In the same vein, access to public colleges is critical for economically disadvantaged students seeking to become nurses.

What are the implications of the pathways taken on the median income of the economic groups? Although the no CTE- and CTE-public college pathways were the most commonly used by nurses regardless of economic disadvantage status, economically disadvantaged LPNs used the private college pathway at a higher rate than nurses who were not economically disadvantaged. This higher use of the private college pathway seems deleterious, as it will likely be associated with higher college cost. However, all is not negative for using this pathway as the CTE-private college pathway was associated with some income benefit for economically disadvantaged LPNs. However, the private college pathway was associated with an income penalty for economically disadvantaged RNs who had taken the CTE pathway. The group had a median income that was as low as that of LPNs.

Conclusion

While the analysis presented are mainly descriptive and have limited generalizability beyond nurses who completed their education and work in Virginia, the availability of longitudinal data on a significant proportion of licensed nurses in Virginia is an indomitable strength. As such, descriptive research such as this stands to make an important contribution to the understanding of whether there is equity in the pathways that students of different racial/ethnic and economic background take to become nurses among recently graduated nurses.

The findings suggest that there is still a lot of work to be done with regards to equity in access to educational pathways and income equity for people of difference races/ethnicities and economic status. This issue of access may also extend to other indicators of equity like gender and disability. Further, it appears that equity in becoming a RN rather than a LPN is only half of the story. There also needs to be income equity. The differences observed in the median income of RNs and LPNs by race/ethnicity and economic status even when the same pathways are taken is of concern. However, this study has limited information on other important characteristics that may affect income like job tenure, job performance, work setting, and other important determinants of income. Future studies with other relevant variables should examine issues of equity in nurses' income.

The results are informative for education policies and programs, and can have immediate implications on the diversity of the nursing healthcare workforce in the state. Surely, there can be no harm in expanding CTE and public college to racial/ethnic minorities and economically disadvantaged students even nationwide to increase diversity among RNs. Access to CTE and/or public college pathways is integral to achieving equity in nursing education. Access to both are critical if the nursing healthcare workforce is to reflect the growing racial/ethnic and economic diversity in the state and nationwide. Such diversity is key to advancing healthcare quality, access, and equity (Health Policy Institute, 2021; Wilbur et al., 2020) and should be promoted urgently.

Implications for Other Healthcare Professions

The observed lack of diversity among a higher paying nursing profession compared to a lower paying one is not limited to nursing. In my experience analyzing data from surveys of healthcare professionals, the higher the percentage of White and Asian professionals, the higher the median income of the profession. Conversely, the lower the percentage of White and Asian professionals, the lower the median income of the profession. However, as seen in the study presented, the educational pathway taken plays a critical role in workforce outcomes. So, this leads us to ask what role has education played in the lack of diversity observed in higher paying healthcare professions? Is there equity in access to educational pathways to all healthcare professions for students of all races, ethnicities, economic backgrounds, abilities, and orientations? How can we use VLDS data to address these questions and redress this situation? What other systems contributes to this disparity? This potential for addressing such policy-informing questions is a key benefit of VLDS.

References

Agency for Healthcare Research and Quality. (2016). *2015 National healthcare quality and disparities report and 5th anniversary update on the national quality strategy (Report No.*

16-0015). U.S. Department of Health and Human Services. https://nationaldisabilitynavigator.org/wp-content/uploads/news-items/AHRQ_2015-Disparities-report_May-2016.pdf

Betancourt, J. R., Green, A. R., & Carrillo, J. E. (2002). *Cultural competence in health care: Emerging frameworks and practical approaches*. The Commonwealth Fund.

Cooper, L. A., Roter, D. L., Johnson, R. L., Ford, D. E., Steinwachs, D. M., & Powe, N. R. (2003). Patient-centered communication, ratings of care, and concordance of patient and physician race. *Annals of Internal Medicine, 139*, 907–915. https://doi.org/10.7326/0003-4819-139-11-200312020-00009

Cantor, J. C., Miles, E. L., Baker, L. C., & Barker, D. C. (1996). Physician service to the underserved: Implications for affirmative action in medical education. *Inquiry, 33*, 167–180.

Coyle, C. (2020a). *Virginia's licensed practical nurse workforce: 2020*. Virginia Department of Health Professions. http://www.dhp.virginia.gov/media/dhpweb/docs/hwdc/nurse/0002LPN2020.pdf

Coyle, C. (2020b). *Virginia's licensed practical nurse workforce: 2020*. Virginia Department of Health Professions. http://www.dhp.virginia.gov/media/dhpweb/docs/hwdc/nurse/0001RN2020.pdf

Edmunds, M., Bezold C., Fulwood C. C., Johnson B. H., & Tetteh H. (2015). *The future of diversity and inclusion in health services and policy research: A report on the Academy Health Workforce Diversity 2025 Roundtable*. Academy Health. http://www.academyhealth.org/publications/2015-09/future-diversity-and-inclusion-health-services-and-policy-research-report

Haqq-Stevens, E., Zavotsky, K. E., Kelly, S., Duffy, C., Pagani, C., Young, M., & Colineri L. (2017). New paths to professional nursing: Using encouragement to prepare a minority workforce to enter the nursing profession. *Creative Nursing, 23*(3), 158-166. doi: 10.1891/1078-4535.23.3.158. PMID: 28789734.

Health Policy Institute (2021). *Cultural competence in health care: Is it important for people with chronic conditions?* Georgetown University. https://hpi.georgetown.edu/cultural/

King, W. D., Wong, M. D., Shapiro, M. F., Landon, B. E., & Cunningham, W. E. (2004). Does racial concordance between HIV-positive patients and their physicians affect the time to receipt of protease inhibitors? *Journal of General Internal Medicine, 19*(11), 1146–1153. https://doi.org/10.1111/j.1525-1497.2004.30443.x

Phillips, J. M., & Malone, B. (2014). Increasing racial/ethnic diversity in nursing to reduce health disparities and achieve health equity. *Public Health Reports, 129*(Supplement 2), 45–50. https://doi.org/10.1177/00333549141291S209

Sullivan, L. W. (2004). *Missing persons: Minorities in the health professions*. The Sullivan Commission. http://www.aacn.nche.edu/media-relations/SullivanReport.pdf

INDIGENOUS RESEARCH METHODOLOGY

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Note: As a settler and someone who hopes to aid in the decolonial struggle, I first want to acknowledge the past, present and future of the Monacan, Manahoac, Tutelo, and Powhatan peoples, pay respect to elders past, present, and emerging, and pay respect to the land itself. By acknowledging the historical trauma of so-called Virginia through the horrors of colonization, I hope more of us will take up the task of returning sovereignty to Indigenous people, decolonizing our way of thinking, and dismantling systems of oppression.

This piece was written in community with Katrina Hamilton, Lauren Garcia, and Leo Campos.

Much of the data within the Virginia Longitudinal Data System (VLDS) are data of pain and suffering: incarceration, poverty, issues of health, denial of resources, and many others. Stories of people's lives and generational misery that often are decontextualized to a point where we forget there are people on the other end. When research is performed on this type of data for the sake of a finding without returning anything to said community, this becomes a method of extraction and exploitation. The researcher, through gaining credentials and publications, which often sit isolated within the channels of academia, is further exploiting the lives of those who are being studied for their own benefit. Yes, findings are made, but what direct benefit is being given to these communities in exchange? This method of study likewise isolates researchers from the contexts and relationships within what is being studied, thus not only are communities exploited but findings are distorted as well. As researchers, what methodological changes can we make to both stop the exploitation of communities in already precarious standing as well as strengthen our findings? How can we better enter into a mutual research relationship, rather than one grounded in exploitation, with those being studied? By critiquing and correcting our research methodology, we can begin to answer these questions.

The underlying assumptions about ourselves and the world around us informs our viewpoints and therefore our worldview. As researchers, a similar mechanism is at work. Our own obscurations create and inform bias in both method and analysis of which we must be aware. It is these deep assumptions from which the scientific framework grows that I wish to identify and challenge. The definition of Science as we know it is a culturally relative outlook, hereafter referred to as Western methodology. When I speak of Western methodology and the countries that practice it, I am speaking of those that are WEIRD (Western, European, Industrialized, Rich, Democratic). While this methodological framework is accepted as default, these WEIRD countries only represent 12% of the world's population (Henrich et al., 2010). Like our own personal obscurations, the Western methodology likewise has assumptions within it. What are the blind spots in Western methodology? What are the harms they cause, their sources, and what are their alternatives? I argue that through a process of radical inclusion and by entering into a research relationship with those being studied, rather than a one sided process which takes and does not give, it is possible to minimize if not eliminate these aspects of our work.

Western Methodology & Strong Objectivity

Western methodology, rooted in ancient Greece and flourishing during the Enlightenment era of 17th and 18th century Europe, fundamentally involves isolating the desired

object of study in order to enact various interventions upon it. The intention of this isolation is to limit confounding variables in hopes of demonstrating a specific outcome, which can be deemed objective. This process and the findings that it produces are largely isolated to academic circles, as much now as they were then. During the Enlightenment, this work took place within the Universities and among the salons, gatherings of middle to upper class citizens revolving around political, philosophical, and scientific discussion, and then distributed via academic journals (Kale, 2004). Similarly, this isolation occurs today through those same academic journals, which are a professional necessity for researchers but are unaffordable to the public. It is this contradiction, a process rooted in objectivity while denying access to participation based on class, which forms the root issue within Western methodology.

As an example, we can look to how credit for scientific discovery is applied to plants. Shiva (2014) argues that the production of knowledge is only perceived as valid when performed by settlers in lab coats while simultaneously denying the contributions of those not within that class. Farmers for millennia have been performing experiments and still do, yet it is not until the creation of intellectual property rights and the enclosure of Science within the academy that this would be considered Scientific, provided farmers do not perform it. For instance, we can look at the apple, which traveled from Afghanistan to Europe, and then to Turtle Island (now known as the United States), being tended to and experimented with in order to bring about all the varying apples we now know today (Pollan, 2002). Millions of people have engaged in what we would refer to as Science to develop the scores of different apples we now know, and yet many are not regarded as Scientists. Instead, they are Just Farmers. Rather, the Scientists and institutions get the credit and compensation for new creations. This is Shiva's point: that the Western methodology is a process of enclosure - determining who is and who is not allowed to perform Science - and extraction, by taking the knowledge of those outside of the scientific enclosure and using it for profit with nothing given in return. This enclosure occurs along many different identities.

The evidence of the exclusionary nature of the Western academy is massive. In addition to class divisions, gender also plays a role. One of the most fitting examples is that of the Nobel Prize for Physics, which has been awarded to someone who identifies as a woman only four times since its inception in 1901 (The Nobel Prize, 2021). Think of what discoveries have been lost due to the suppression of over half the world's population. Further still are divisions by race. Evidence of racist exclusion has been documented in fields from Astrophysics to Birdwatching (Harvard University, 2021). In addition to exclusionary practices are outright violent histories, with the Tuskegee Experiments (Baker et. al, 2004) being one of the most egregious. We also see discrimination within scientific fields by sexual orientation (Yoder & Mattheis, 2016) and Indigenous status (Walter & Suinia, 2019). This enclosure of science to a privileged class calls into question the targeted objectivity of the Western methodology.

The objectivity of the Western methodology is instead a subjective view: that of prestigious, settler men as well as those who have navigated their institutions. Western methodology covertly champions these privileged standpoints at the expense of those who are outside of the academy (Smith, 2012; Zuberi & Bonilla-Silva, 2008). Sandra Harding argues against the typical Western methodological idea of objectivity without throwing away the goal of objectivity, instead pushing for what she calls "strong objectivity" (1992): a practice of radical inclusion of populations relegated to the margins of the conversation. The current Western methodology is objectivity by exclusion since the "situated knowledge" (Haraway, 1988), embedded knowledge based upon the lived experience and values of an individual, of those participating is radically similar, which then increases the chances of similar conclusions based on those similar life experiences. In contrast to practices of simple inclusion, strong objectivity

proponents believe in crafting something entirely separate from the existing paradigm. Instead, Harding believes that research should embrace "a world of sciences" (Harding, 2015, p. 120), by ensuring the participation of those with varying situated knowledge, and not necessarily confined to the academy, to alter typical methodology and interpretations. This world of sciences would recognize, "the unique standpoints of diverse peoples and movements in shaping our collective understandings of social systems" (CounterPower, 2020, p. 22) as a method of strengthening findings as well as limiting harm. With this goal of strong objectivity, and the discussed limitations of the Western methodology, I present an alternative scientific methodology that seeks to serve its subjects of study rather than extract from them.

Indigenous Methodology

One such alternative to Western methodologies is centering Indigenous worldviews to inform how research is conducted. In contrast to Western methodology, Wilson describes an "Indigenous paradigm" (2001). According to Wilson (2001), rather than upholding an individualistic knowledge, an Indigenous paradigm characterizes knowledge as relational and shared. There is no such thing as objective knowledge since all knowledge is relational. Wilson exemplifies this difference by noting that many Indigenous peoples describe a chair as "a place to sit" rather than an objectively existing object named "chair". Its existence is only made substance in its relationality to those who would engage with it. It is from this concept that the methodological paradigm is built. In keeping with this approach, if all knowledge is relational, then the decontextualization of knowledge from the relationships in which it is generated is one of the utmost transgressions

In order to preserve the relationships and context of information, we can ensure the data sovereignty of communities involved in research. It is with this in mind that the topic of Indigenous data sovereignty arose (Kukutai & Taylor, 2016; Snipp, 2016). Indigenous data sovereignty is "the right of Indigenous peoples to determine the means of collection, access, analysis, interpretation, management, dissemination and reuse of data pertaining to the Indigenous peoples from whom it has been derived, or to whom it relates" (Walter & Suina, 2019, p. 237). It is the belief that often-exploited communities should have the final say in what is being done with information about their lives, similar to treaties ensuring Indigenous sovereignty of land and resources (Floistad & Lothe, 2010). That if researchers wish to take from them, theorizing data taken with nothing given as a form of extraction, then they must enter into a reciprocal relationship with that community to ensure the contexts and dignity of that community are being preserved. This helps to stop the process of extraction via research in these communities as well as increasing the strong objectivity of the findings due to the contextualized viewpoints available through the community's direct participation.

In an age of limitless, easily accessible data, researchers must be critical of the relations within their information. What do high arrest rates in a neighborhood mean without the acknowledgement of crippling poverty, over-policing, and targeted removal of social safety nets within that same area (Williams, 2015; Vitale, 2017)? Asking these questions are not only of methodological importance, but of ethical importance as well. Involving those who are directly related to the topic being studied represents a significant break from the typical Western methodological approach in both process and findings, and increases the strong objectivity of the work. It is the difference between exacerbating issues with social control, such as increasing police presence in areas with higher crime rates, and solving them by acknowledging resource scarcity and community need. I argue that we should extend this ideology beyond Indigenous populations to other exploited groups as well, such as rural areas, urban areas with high concentrations of non-white populations, and those who are incarcerated, among others.

What is to be done?

One way these two ideas of strong objectivity and relational, community-sovereign research can be summarized is as relational accountability: assessing whether or not your research is being done in such a way that it is fulfilling your part of the relationship of research. While the data within VLDS is secondary, we can still employ these frameworks in how it is utilized, supplemented, and what conclusions we draw from it. Do our findings perpetuate the same colonial pathways that have led to the current exploited state of Indigenous populations, non-white populations, those who identify as women, and hosts of others? How can we best achieve Harding's strong objectivity? What does fulfilling the research relationship look like? These are some of the most paramount questions we as researchers should be asking any time we undertake a project. To answer that, I offer some questions we can keep in mind:

- Who comprises the research team? What is their situated knowledge?
- Are you making research *for* a community, to be used by them for their benefit, or research *about* a community, to be used by others for your benefit?
- Has the community decided the "when, how and why" of their data being gathered, analyzed, accessed, and used? (Walter, 2018)
  - What relationships are being masked by your data collection methods?
  - How can a more complete picture be gained of the context surrounding the study?
- Who in the community being engaged with has been asked about this?
- Will the communities in your research relationship have a chance to review and critique your claims, and will you listen to them?
- Will those in your research relationship have access to the final data made of their lives for their own use or will it be privately held?
- If your research cannot or will not accommodate the wishes of those you are entering into a research relationship with, will you do it anyway?

VLDS is a wonderful tool that gives researchers an opportunity we would not have otherwise. However, the decontextualized nature of the data along with much of it being about marginalized communities, when combined with traditional Western methodology, has the potential to continue the same trends of exploitation and extraction. I have argued for the rejection of the typical Western methodology, as well as the exclusion from participation inherent within it, in favor of pursuing strong objectivity and engaging in a research relationship with the communities being studied. Through ensuring full participation of all those affected by research and a diversity of situated knowledge, researchers can fundamentally change the typical Western methodological approach in a more meaningful way than continuing on but with simple inclusion. By using these guidelines and questioning our assumptions as researchers, we can not only generate stronger findings but also do so in such a way that is in harmony with those we are working with rather than one of harm.

References

Baker, S. M., Brawley, O. W., & Marks, L. S. (2005). Effects of untreated syphilis in the negro male, 1932 to 1972: A closure comes to the Tuskegee study, 2004. *Urology, 65*(6), 1259-1262.

CounterPower. (2020). *Organizing for autonomy: History, theory, and strategy for collective liberation*. Common Notions.

Floistad, B. & Lothe, L. (2010). *ARCTIC: Indigenous peoples rights in the arctic*. ARCTIS
Knowledge Hub. http://www.arctis-
search.com/Indigenous+Peoples+Rights+in+the+Arctic.

Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of
partial perspective. *Feminist Studies, 14*(3), 575-599.

Harding, S. (1992). Rethinking standpoint epistemology: What is "strong objectivity?". *The
Centennial Review, 36*(3), 437-470.

Harding, S. (2015). *Objectivity and diversity: Another logic of scientific research*. University of
Chicago Press.

Harvard University. (2021). *Racial Bias in Scientific Fields*. Available at:
https://projects.iq.harvard.edu/antiracismresources/science.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world?
Behavioral and Brain Sciences, 33(2-3), 61-83.

Kale, S. (2004). *French salons: high society and political sociability from the Old Regime to the
Revolution of 1848*. JHU Press.

Kukutai, T., & Taylor, J. (2016). Data sovereignty for Indigenous peoples: Current practice and
future needs. In T. Kukutai & J. Taylor (Eds.), *Indigenous data sovereignty: Towards an
agenda* (pp. 1-22). Australian National University Press.
http://doi.org/10.22459/CAEPR38.11.2016

Pollan, M. (2002). *The botany of desire: A plant's-eye view of the world*. Penguin Random
House.

Shiva, V. (2014). *Close to home: Women reconnect ecology, health and development*.
Routledge.

Snipp, M. (2016). What does data sovereignty imply: What does it look like? In T. Kukutai & J.
Taylor (Eds.), *Indigenous Data Sovereignty: Towards an Agenda* (pp. 39–56). Australian
National University ANU Press.

Smith, L. T. (2013). *Decolonizing methodologies: Research and indigenous peoples*. Zed Books
Ltd.

The Nobel Prize. (2021). *All Nobel Prizes in Physics*.
https://www.nobelprize.org/prizes/lists/all-nobel-prizes-in-physics

Vitale, A. S. (2017). *The end of policing*. Verso Books.

Wilson, S. (2001). What is indigenous research methodology? *Canadian Journal of Native
Education, 25*(2), 166–174.

Walter, M. (2018). The voice of Indigenous data: Beyond the markers of disadvantage. *Griffith Review: First Things First, 60*, 256–263. Julianne Schultz AM FAHA. https://www.griffithreview.com/articles/voice-indigenous-data-beyond-disadvantage/

Walter, M., & Suina, M. (2019). Indigenous data, Indigenous methodologies and Indigenous data sovereignty. *International Journal of Social Research Methodology*, *22*(3), 233–243.

Williams, K. (2015). *Our enemies in blue: Police and power in America*. AK Press.

Yoder, J. B., & Mattheis, A. (2016). Queer in STEM: Workplace experiences reported in a national survey of LGBTQA individuals in science, technology, engineering, and mathematics careers. *Journal of Homosexuality*, *63*(1), 1-27.

Zuberi, T., & Bonilla-Silva, E. (Eds.). (2008). *White logic, white methods: Racism and methodology*. Rowman & Littlefield Publishers.