# The Changing Roles of Educators

# The Data Specialist

# Written by

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# About Michigan Virtual Learning Research Institute

In 2012, the Governor and Michigan Legislature passed legislation requiring *Michigan Virtual*<sup>™</sup>, formally *Michigan Virtual University*<sup>®</sup>, to establish a research center for online learning and innovation. Known as *Michigan Virtual Learning Research Institute*<sup>®</sup> (*MVLRI*<sup>®</sup>), this center is a natural extension of the work of *Michigan Virtual*. Established in 1998, *Michigan Virtual's* mission is to advance K-12 digital learning and teaching through research, practice, and partnerships. Toward that end, the core strategies of *MVLRI* are:

- Research Expand the K-12 online and blended learning knowledge base through high quality, high impact research;
- Policy Inform local, state, and national public education policy strategies that reinforce and support online and blended learning opportunities for the K-12 community;
- Innovation Experiment with new technologies and online learning models to foster expanded learning opportunities for K-12 students; and
- Networks Develop human and web-based applications and infrastructures for sharing information and implementing K-12 online and blended learning best practices.

*Michigan Virtual* dedicates a small number of staff members to *MVLRI* projects as well as augments its capacity through a Fellows program drawing from state and national experts in K-12 online learning from K-12 schooling, higher education, and private industry. These experts work alongside *Michigan Virtual* staff to provide research, evaluation, and development expertise and support.

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# **Executive Summary**

This study, the fourth in a series examining the shifts in the roles and responsibilities of K-12 educators as a result of evolving instructional models, focused on data specialists or analysts who help to analyze data and provide just-in-time information to fellow educators to help improve learning outcomes in their school or district. The aim of this study was to better understand the ways in which data specialists inform instructional and other educational practices, as well as to understand their mindsets when working with others to help incorporate data into their practice. The study also touched on the potential benefits that data specialists anticipate as a result of incorporating data analysis in learning environments. Interviews and focus group responses were characterized by:

- A strategic effort to help schools and educators understand data that is accessible and relevant to them. Many teachers and administrators may be overwhelmed by the wealth of data prevalent in K-12 settings, and data specialists help them refine their understanding and work toward strategies based on the data available.
- A focus on change, achieving buy-in, and meeting student needs. Data specialists constantly approach the concept of change with teachers and administrators, making sure to demonstrate relevant, successful models and processes and maintain a focus on student needs.
- A desire to build supportive and trusting relationships with the education professionals with whom they work. As there can be a high level of sensitivity around school data, data specialists must be sure that the teachers and administrators they work with trust that the data will be used toward positive ends.
- A need to seek personalized professional development. Since the term "data specialist" is broad and can include a variety of different focuses, these professionals indicated that they look for and appreciate professional learning opportunities that are very specific and apply to the work that they are doing with data.

## Introduction

This report is the fourth in a series of studies focused on the changing role of educators resulting from the shift in instructional models in K-12 learning environments. The series examined various newly emergent positions and roles within the field of education and how the individuals who fill those roles approach their work. Half of the people working in K-12 schools are not classroom teachers (Loeb, 2016); understanding the important roles that they play in shaping the learning experience of students is critical. The first report in this series (The Changing Role of Educators Series: The Blended Learning Coach) focused on blended learning coaches, professional learning personnel who provide guidance on the development and implementation of high-quality blended instruction. The second report in this series (The Changing Roles of Educators Series: The Blended Teacher) concentrated on the blended teacher and how they practice blended learning and think about their work with students and colleagues, the mindsets they adopt when implementing change within their settings, and the benefits they anticipate by applying blended practices in their classrooms. The third report in this series (The Changing Roles of Educators Series: The Instructional Technologist) explored the work of instructional technologists and how they conceptualize their work, the approaches they employ when supporting teachers through the process of technology integration, and the ways they think about the evolution of their field of work.

This report focused on data specialists, data integrationists, data managers, data analysts, and others with job titles that connote analysis of data and provide just-in-time information to fellow educators to help improve learning outcomes in their school or district. A helpful resource for understanding some of the basic job responsibilities of data managers is the <u>Guide to Becoming an</u> <u>Effective Data Coach</u>, from the Michigan Department of Education. The aim of the current study was to better understand the ways in which data specialists inform instructional and other educational practices, as well as to understand their mindsets when working with others to help incorporate data into their practice.

This study was carried out by conducting individual interviews with the data specialists to gain an understanding of how they conceptualized their work in their own contexts, what sorts of mindsets and approaches have been necessary for implementing change in educational environments by incorporating data-driven strategies, and what perceptions they had about the practice of blended learning and its potential.

# **Research Methods**

This study, along with the others in this series, employed a form of heuristic research (Moustakas, 1990). Heuristic research "is a search for the discovery of meaning and essence in significant human experience ... Heuristics is concerned with meanings, not measurements; with essence, not appearance; with quality, not quantity; with experience, not behaviour" (Douglass & Moustakas, 1985, pp. 40, 42). For this study, heuristic research was applied to determine how data specialists understood their roles within their own settings, how they experienced their work on a daily basis, and how they interacted with others in their field to develop and grow professionally. This study's intent was to understand more deeply the experience of being a data specialist and focused

specifically on data specialists' mindsets, thought processes, and philosophies in their approach to informing instructional practice. Discussion in interviews also centered on intent and goals for data specialists as they inform and deploy data-driven instructional strategies in their settings. Three data specialists participated in this study, each of them employed by intermediate school districts in Michigan. Though their roles differed slightly in terms of focus, each participant's primary responsibilities involved working with stakeholders to develop strategies based on various pieces of data. Each data specialist participated in one or two semi-structured individual interview(s), lasting between 45 and 60 minutes. (The protocols for interviews can be found in the appendix of this report.) Interviews were transcribed and coded by the author for the purpose of conducting thematic analysis of the data gathered. Member checks were also conducted with the participants when data analysis was complete (Guba & Lincoln, 1989; Miles & Huberman, 1994). Data analysis revealed four distinct themes apparent in the data specialists' thought processes and outlook regarding blended learning implementation. The next section delves into those themes and supporting data.

#### Results

Four themes were identified through analyzing interview data collected by the researchers. Exploration of these themes provided detailed understanding of how these data specialists approach their work in informing change through the use of data analytics in the practice of blended learning. Each theme is listed below, followed by a description of the theme and supporting data.

#### Helping Schools and Educators Understand Data

All the data specialists emphasized that more and more schools are seeing the importance of data and the need to use it to inform their processes. Two of the three recollected that in their past roles as teachers their data collection and analysis was usually based on information they collected on paper. Additionally, they recalled their colleagues sharing "hunches" about students' performance and reflected on the inaccuracy of those hunches given the nature of the various factors involved in student learning. Now, with the incorporation of digital technologies, data is at educators' fingertips.

The data specialists felt their primary roles in this new data-heavy environment was to share with educators what the data "say and do not say." They reflected that often educators misconstrued the data because of the lens through which they look at it. With the help of the data specialist, educators can understand what information is necessary and not necessary when it comes to implementing change in the system. Because this role is relatively new (the data specialists in this study were employed for no more than five years in their positions), the job that they do is often split between multiple roles, for example technology integration and data specialization. The primary challenge in this situation was lack of time to devote to working with the large amount of data available across the system, given the other demands of their position.

One misconception about data specialists' work with schools and educators was that they do the data analysis for the schools and educators. While they might have been asked to do the analysis, they encouraged and empowered educators to analyze data themselves so that they could be

involved in developing and implementing strategies for improvement at the classroom, school, or district levels based on their own analysis and understanding. One of the data specialists noted, "I'm there to help teachers understand how to interpret the data … Some of these systems have been in place for a while, and teachers are just starting to take hold of the data that is available to them." Another added the following:

I'm here to empower them to look at their data to see how it makes sense for their context and what it means for what's happening in their district, school, classroom, and/or learning environment, and how they can use the data to improve their own work. Most of the people just want me to tell them what to do to be better. I'm showing them how to look at, analyze, and interpret the data themselves.

#### Data specialist, personal communication, fall 2017

One study participant noted that school administrators asked the data specialists for assistance because the administrators valued understanding student performance when coming into the school, how they progressed while they were in the school, and what their path was after they left. Using data to track this narrative and progression was an important process in identifying student needs and targeting support based on the needs identified.

At the district or school level, the data specialists employed a process to give educators the tools and resources they needed to develop their own methods for examining gaps and developing plans for how to improve on a continuous basis. No matter what the school's demographics or performance were — whether they were poor performing or high achieving — it was still about establishing a process that worked within that context.

The data specialists all conveyed that they have been in educational roles working with data previously, whether it was as a classroom teacher, athletic coach, school- or district-level curriculum coordinator, or through school- or in district-level improvement committee work. In their various roles, they expressed an interest in the information available to them and what that information said about what was happening. The process of helping schools and educators understand data has become easier because the digital technology involved in the process has eliminated the need for the data specialists to chart and graph the data. Instead, data is available through a number of different digital applications and dashboards. Data specialists now focus on helping educators analyze and contextualize the results and then understand how those results might influence changes made to policy and practice. More and more, the data specialists have seen an increase in excitement from the teachers as they realize how integrated the systems are, as there are now platforms that bring tests, standards, and curriculum together, making it easier for a wealth of information to be aggregated and represented in such a way that is understandable and not as overwhelming. The main focus for the data specialist was to bring relevance to the data for educators and encourage the educators to incorporate it in ways that were meaningful to them.

The data specialists also mentioned that working with data has changed for the educators because now they actually have basic access to the data. In contrast, not so long ago, they were not able to

get into such systems, let alone fully understand and interpret the data within. A major issue that data specialists mentioned was that teachers and administrators have had increased access to more data but did not know what to do with it all. The data specialists saw their role as helping educators and school systems interpret and act on that data and understand that there are multiple measures that help identify gaps. Additionally, they helped teachers and administrators integrate data in meaningful ways into instructional practice.

Data specialists have been approached with a myriad of concerns and appeals with questions like, "What can I do to improve? How does my school look? What standards should we be focusing on? How do we compare across the state? What are the gaps that we are trying to close? and how can I help my students?" They stressed that it was becoming easier to get in-depth analysis across the building and the district to understand how best to integrate multiple systems with the end goal of making the whole system work more efficiently and effectively to address these concerns. Keeping in mind the big picture and remembering that all parts of a system have a way of affecting other parts around it, were revealed to be crucial aspects of their approach to working with schools and educators.

That's where a lot of our ideas on school improvement fall flat is that they don't take into account every factor and understand how those factors are working together. It's a challenge to change when you're not taking everything into account as you make decisions.

Data specialist, personal communication, fall 2017

#### Focusing on Change, Achieving Buy-In, and Meeting Student Needs

As one data specialist noted, "Every conversation that I have has some twist or component that has to do with change in practice, looking at data, and improving our practice in the classroom." The conversations begin and end by considering what students need to be successful and how to have a positive impact on students by improving teaching and learning. The data specialists shared various ways in which they talk about change management with those with whom they work.

At the teacher level, the data specialists expressed that they found it easier to implement change when they had concrete examples to offer. If the data specialists had something to show the teacher that had been done before and there was evidence that it had worked, it was easier to get buy-in. If it was something that was new and teachers were not already familiar with, they had a lot more difficulty saying, "Yes, let's do this!" An additional point of emphasis for achieving teacher buy-in for data integration was the need to develop shared understanding of how data could help teachers improve their effectiveness. In order to help teachers understand this, study participants noted that they needed time to allow ideas to sink in, as well as time for teachers to be creative and modify their work and practice to change the way they do things. Data specialists continually tried to demonstrate how data integration and data-driven strategies had an impact on student achievement. A valuable example that one data specialist noted in this regard occurs when teachers give a test but do not revisit the results in order to make changes in their instructional practices. The same goes for administrators. If there were no models to follow, and it had not been done before, it was harder to get buy-in. Challenges, however, sometimes arose when schools were not

approached with parallel examples, sharing similar characteristics in demographics, socioeconomic status, etc. In those cases, one study participant noted, the role of the data specialist has been to go deeper, beyond the broader surface-level characteristics, to find applicable similarities.

The data specialists also mentioned how important it was to understand the vision of the leaders with whom they worked while implementing change. Data specialists, depending on their role, shared data with school and district leadership to try to achieve an understanding of learning contexts. When working with a school or district leader, the data specialists gather additional information and fill in gaps of understanding that the data might not capture. The data specialists are keen to make sure all the leaders involved share an understanding and are on board with proposed changes or strategies. One of the data specialists shared that sometimes she helped lead the administrators and other leaders down the path to an "A-HA" moment, but gave them credit for arriving at that moment, which helped to further increase the buy-in needed to make a model successful. The data specialists felt that having support from leadership was key and approaching leadership in a way that helped them see the changes being proposed situated in the research available was very important. One study participant noted that as long as leadership believed in the change the data specialists were trying to help create, then change typically happened in a meaningful way. Additionally, one of the data specialists emphasized that when working with educators it is imperative to keep in mind that the field of education itself is in transition between the practices of the past (physical) and the changes taking shape now and into the future (digital). She shared, "We're trying to meet the changing needs of the learners while also changing our practice."

#### **Building Supportive and Trusting Relationships**

One of the key aspects of a data specialist's role is the importance of building supportive and trusting relationships with everyone with whom they work. The data specialists who took part in this study shared that, given the sensitive nature of school data, many of the educators with whom they work could be standoffish and worried that the data specialist was there to point out everything that was going wrong. But in reality, the data specialists emphasized that they were there to celebrate triumphs where data was showing improvement while also having conversations around the opportunities for improvement. These conversations take a bit of time to build up to because establishing trust with educators and other stakeholders is the first step in building supportive and positive relationships.

Another way the data specialists emphasized building supportive and trusting relationships was by meeting the educators where they are, especially when it comes to the technology and data systems they were already using. One data specialist emphasized, "[I] look into all of the different mechanisms that are already in place that can be used to collect data." Acknowledging teachers' use of technology is key in building the relationship to then further their knowledge about how that technology can collect data and then what can be done with that data in order to improve instruction with the ultimate goal of every student being able to learn to the best of their ability.

One of the interesting aspects of data specialists' work can be their participation in district- and school-wide improvement initiatives. With data driven-decision making, data specialists can help

schools and districts understand more clearly all the numerous initiatives being juggled across the system and how that might tax the relationship between district/school and educators. The other side to this is when there are positive outcomes from the data analysis to show that initiatives make a difference in student performance and achievement.

Even though the data specialists are there to help, some teachers expressed that they do not understand the need for data analysis to help them improve because of a belief that they're already doing everything right. In these situations, it was up to the data specialist to really make the relevant connection with the teacher and empower them to see ways in which they could celebrate and also improve. One data specialist likened these challenges to other initiatives that she helped support, including the move to more digital instruction and blended learning practices in the classroom. As she noted, any initiative involving change requires thinking and acting creatively and collaboratively with the stakeholders involved.

Another way data specialists worked to build those trusting and supportive relationships was to implement their work in a slow and deliberate manner rather than trying to approach multiple changes at once. Having a manageable structure for implementation that allowed for various phases of implementation and levels of support at each phase was important in the relationship building process. Another strategy mentioned was to emphasize that school teachers and administrators were not being tasked to do this work alone. One of the data specialists asked, "What is doable for them with everything else that's going on?" This same data specialist noted that she saw herself as a resource and that the process was a collaborative effort.

Regarding the issue of sensitivity in school data, one of the data specialists said that some of the schools with whom she worked wanted to know what exactly she was planning to do with their data. She emphasized to them that she was "not out to get them, judge them," especially because she was working directly with them in order to give them the information and tools they needed to improve their system. Another study participant emphasized the need to approach this work with a systematic viewpoint, not necessarily focused on individual actors, to avoid the perception of being accusatory when the data did not demonstrate success. She noted that all the pieces of the system fit together and affect one another, as well as the system as a whole. She explained:

To improve your school as a whole and improve things for students, we have to look at improving business office practices, meeting structure practices, so looking at whole-system practices and how it's impacting the data is really important as well. The decisions being made at the various levels have a trickle-down effect on what is happening at the other levels. Everything is connected and influencing everything around it. It's also important to gather qualitative data to understand perceptions and beliefs that are in place that could have an effect on the other parts of the system. To improve the system as a whole, it's important to understand everything that's happening so as not to isolate one particular component without its surrounding context.

Data specialist, personal communication, fall 2017

Furthermore, these trusting and supportive relationships are key when considering the various mindsets and perspectives represented in the decision-making process. Because data can be interpreted and used, it's important for the data specialist to establish a protocol, collaboratively with the educators who are involved, about how the data will be talked about, how it's going to be analyzed, and what the next steps are after the data is used. She emphasized the following with her stakeholders:

Once we're on the same page and we have the same understanding, then we can all move in the same direction ... How do we guide the parts in order to build a stronger system? ... When you're thinking about data analysis, you're thinking about problem solving. It really helps to have that problem-solving mentality in a systems framework and having protocols to do that.

Data specialist, personal communication, fall 2017

One of the other data specialists emphasized that while she was building these relationships, she was aware that she needed to see all her work in a positive light in order to keep these relationships supportive. She continued with the following:

Every problem can be an opportunity and those opportunities are all attainable. We might have to start small, you know, go slow to go fast, but eventually we can do better. A lot of people want to see immediacy, but really the immediacy will come after the proper structure and systems for support are identified.

Data specialist, personal communication, fall 2017

When approaching teachers, she urged data specialists to focus on the immediate support that teachers have available when making a change. She also mentioned her previous experience as both an athletic and an instructional coach. She borrowed strategies that she used in those roles, including helping teachers see the impact of their work in such a large system and stressing that they can make lasting changes to that system in their own contexts. Once she listened and understood teachers' mindsets she could "meet teachers where they are" to collaborate and work toward the larger goals that they identified together.

#### Seeking Personalized Professional Development

All the data specialists involved in this study mentioned being very intentional about how they pursued their professional development path. They tended to seek out more specific learning opportunities that were relevant to their focus and everyday work, rather than the general field of education data collection and analysis. One of the data specialists was keen on learning new data systems and keeping up with them in order to understand what systems would work well for the various school and district level systems with which she worked. In this way, she could continue to provide context-specific feedback to her stakeholders to get them the system that would help them improve in meaningful ways.

Some of the data specialists mentioned using social media networks such as Twitter and learning from others in that area, especially those who inspired them. Other social media and technology resources helped them to keep up-to-date and connected about improvements in the field, including but not limited to Google Docs, Google Groups, blogs, and Facebook. Despite their propensity to use technology, some of the data specialists were inclined to learn more in a face-to-face format because they felt that some of the online venues really didn't go beyond surface knowledge, and they believed that face-to-face formats provided opportunities for a greater depth of interaction where sharing and learning truly happened.

Two of the participants mentioned attending the School Improvement Conference, hosted by the Michigan Department of Education, as well as other conferences or individual sessions related to data use within Michigan, to understand new trends in data collection and analysis in-state. For future trainings, one of the data specialists mentioned her interest in more blended models where learning might start in face-to-face meetings and then continue online, eventually reconvening in face-to-face formats off and on as needed. Study participants noted that in professional learning opportunities, most of the conversations involved questions like "What are you doing that is working? What are you doing that's not working? What can I bring back to my context?" Just as in their work with administrators and teachers around data, there is still a clear focus on making sure the work is relevant and applicable in their own settings.

# **Summary and Implications**

This research series was designed to understand the experiences of educators who do not have traditional classroom teaching positions in an effort to understand how educational roles have evolved. As these education professionals are working in an evolving and changing landscape, they must also work through the process of implementing change within their own settings. This study sought specifically to examine the approaches used by data specialists. The study revealed four distinct themes that represent the thinking and work of data specialists:

- Helping Schools and Educators Understand Data
- Focusing on Change, Achieving Buy-In, and Meeting Student Needs
- Building Supportive and Trusting Relationships
- Seeking Personalized Professional Development

The perspectives and observations of these data specialists contribute to understanding how those who advocate for change achieve their goals, especially when their strategies are supported by data collection and analysis. The strategies that they implement, as demonstrated in the themes explored throughout this study, may be useful to study in other areas of work that also focus on change.

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