

Examining School Board Leaders' Use of Online Resources to Inform Decision-Making

Examen de l'usage des ressources en ligne par les dirigeants des conseils scolaires pour guider les prises de décisions

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Abstract

In the past five years, there has been considerable interest in the decision-making process of school board officials in the field of education. However, a paucity of research exists on how these leaders use online resources to inform decision-making. Through an online survey and face-to-face interviews, this study examined the use of online resources by school board trustees ($n = 164$) to support board-level decisions. Trustees used online articles (news, research articles, journals) twice as much as social media (Twitter, Facebook, blogs) or repository services (clipping services, Google Scholar). Almost 70% of trustees used three or more resources to inform their decision-making. Seventy-five to 85% of trustees rated online articles and repository services as being useful. Trustees actively checked the trustworthiness of online resources by evaluating sources, crosschecking data, and asking colleagues. Key barriers to using online resources included lack of time, finding reliable or relevant information, and negotiating conflicting results. Some trustees wanted access to a third-party repository of valid, reliable information.

Résumé

Au cours des cinq dernières années, le processus de prise de décisions des officiels des conseils scolaires a suscité un grand intérêt. Il existe cependant peu d'études sur la façon dont ces dirigeants utilisent les ressources en ligne pour guider leurs prises de décisions. Grâce à un sondage en ligne et à des entrevues menées en personne, la présente étude se penche sur l'usage que font les commissaires scolaires ($n=164$) des ressources en ligne pour appuyer les décisions du conseil. Les commissaires se servaient d'articles en ligne (actualités, articles de recherche, revues) deux fois plus que des réseaux sociaux (Twitter, Facebook, blogues) ou de services d'archivage (services de coupures de presse, Google Scholar). Près de 70 % des commissaires se servaient de trois ressources ou plus pour guider leurs décisions. De 75 % à 85 % des commissaires estimaient que les articles en ligne et les services d'archivage étaient utiles. Les

commissaires vérifiaient activement la fiabilité des ressources en ligne en évaluant les sources, en recoupant les données et en demandant l'avis de collègues. Les principaux obstacles à l'usage des ressources en ligne comprenaient le manque de temps, la difficulté à trouver des renseignements fiables ou pertinents, et l'évaluation de résultats contradictoires. Certains commissaires souhaitaient accéder à des archives externes rassemblant des renseignements fiables et valides.

Introduction

Publicly elected school board leaders are regularly entrusted to make decisions that collectively affect the education of millions of students and the dissemination of billions of tax dollars (Ministry of Education, 2013). With an increased focus on accountability and student outcomes (Davies, Nutley, & Smith, 2000), the information acquired and used by school board leaders becomes increasingly important. Optimal board decisions are based on sound data (Witherow, 2011). If these school board leaders do not have reliable, accurate, up-to-date information on which to base decisions, their choices and recommendations could be flawed and may not lead to optimal outcomes for students (Doyle, 2002).

Educators are increasingly turning to the Internet for knowledge, research, or evidence to support the decision-making process (Cooper, Edelstein, Levin, & Leung, 2010; Hemsley-Brown, 2005; Levin, 2012), however, limited research has been conducted on the use of online resources by school board leaders. Examining what information school board leaders are accessing, and how they ensure its trustworthiness, is crucial to ensuring that decisions made are sound and more likely to lead to positive student outcomes. The purpose of this study was to examine the use of online resources by school board leaders to inform their decision-making.

Literature Review

Defining Knowledge

Considerable debate exists in the decision-making community about how to define knowledge (Cooper, Levin, & Campbell, 2009; Davies et al., 2000; Edelstein, 2011; Galway, 2006; Hemsley-Brown, 2005; Levin, 2011a, 2011b; Nutley, Walter, & Davies, 2007). Researchers in the field of knowledge-mobilization use the term knowledge interchangeably with research and evidence (Cooper et al., 2009; Davies et al., 2000; Galway, 2006; Organisation for Economic Co-operation and Development [OECD], 2007). Some theorists (Hemsley-Brown, 2005) argue for a definition that focuses exclusively on formal research or evidence. However, a majority of authors (Cooper et al., 2009; Davies et al., 2000; Galway, 2006) support a broader definition that reflects the practical reality of decision-making. Despite the assumption that formal research “should” play a more prominent role in educational decisions, judgements and assessments are often supported by informal, personal, and social knowledge (Levin, 2011a). In keeping with the consensus of the literature, then, we used a broader definition of knowledge which included both formal (e.g., research reports and articles) and informal sources (e.g., online news and social media).

Acquisition of Knowledge for Decision-Making

Knowledge mobilization refers to the many ways that stronger connections can be developed to bridge the gaps between research, policy, and practice (Cooper et al., 2010; Edelstein, 2011; Levin, 2011a; Levin & Cooper, 2012; Nutley et al., 2007). Typically, knowledge mobilization has been viewed as “getting the right information into the hands of the right people at the right time so as to influence decision-making” (Dobbins, Rosenbaum, Plews, Law, & Fysh, 2007, p. 9). This viewpoint, though, assumes that the knowledge required is communicated and pushed to the end user (Cooper et al., 2009; Sá, Li, & Faubert, 2011; Dobbins et al., 2007; Levin, 2012). However, the acquisition of formal or informal knowledge to support decision-making by individuals also falls under the purview of knowledge mobilization.

Compared to other sectors such as health care, there is limited empirical research on knowledge mobilization in the field of education and more specifically, on how school board officials obtain knowledge for decision-making (Cooper et al., 2009; Levin, 2008; Witherow, 2011). In the health care sector, two comprehensive reviews reported infrequent use of evidence-based decision-making (Mitton, Adair, McKenzie, Patten, & Perry, 2007; Pentland et al., 2011). The relatively limited education-based literature has focused on how research-based knowledge is directed toward end users (Cooper et al., 2009; Sá, Li, & Faubert, 2011; Dobbins et al., 2007; Levin 2012). Very few studies have examined the knowledge acquisition process from the perspective of the end user (Davies et al., 2000; Levin, 2008; Levin, 2010). Many authors have identified a need for more empirical research into understanding where educators and policymakers search for information and how the knowledge they find online is used (Cooper et al., 2010; Davies et al., 2000; Edelstein, 2011; Hemsley-Brown, 2005; Levin 2010).

Role of the Internet

Online resources can have a significant influence on the acquisition of knowledge for decision-making (Cooper et al., 2010; Levin & Cooper, 2012). Research no longer resides exclusively in university libraries – online databases and web-based research summaries are readily available to a much wider audience (Edelstein, 2011; Levin & Cooper, 2012). Increased access to online resources precipitates more open debates and discussion on important policy issues (Davies et al., 2000). To date, researchers have not examined the use of online resources by school board leaders to inform their decision-making.

General Challenges to Acquiring Knowledge

While formal examination of online resources used by school board trustees has not been conducted, some theorists have speculated on potential barriers that might prevent school board leaders from using online resources to inform their decision-making. These include inaccessibility of research (Cooper et al., 2010; Sheppard, Galway, Brown, & Wiens, 2013), valuing personal experience over research-based evidence (Dobbins et al., 2007; Levin, 2010; Levin, Cooper, Arjomand, & Thompson, 2010), inconsistent, conflicting, and unreliable evidence (Hemsley-Brown, 2005; Levin, 2010), navigating and digesting the volume of research available (Cooper et al., 2010; Doyle, 2002; Hemsley-Brown, 2005), limited research skills (Dobbins et al., 2007; Doyle, 2002; Landry, Nguyen, Kawebe, & Shah, 2012; Levin, 2008; Levin et al., 2010; Witherow, 2011), limited technical skills (Landry et al., 2012), excessive time

required to search for, and assess, information (Campbell & Fulford, 2009; Davies et al., 2000; Dobbins et al., 2007; Hemsley-Brown, 2005; Witherow, 2011), cynicism and distrust of research (Davies et al., 2000; Fusarelli, 2008), and the absence of institutional supports (Davies et al., 2000; Dobbins et al., 2007; Levin, 2008). This extensive list of barriers could derail efforts by school board leaders to use online resources effectively. To date, the impact of these barriers on the use of online resources by school board leaders has not been examined.

Purpose of the Study

This study investigated the use of online resources by school board trustees to inform decision-making. Specifically, the study explored the type of online resources used, the perceived usefulness of these resources, why trustees use online resources, how trustees ensured the trustworthiness of online resources, barriers that inhibit the use of online resources, and suggestions for future use.

Method

Participants

The participants in this study consisted of 164 elected school board trustees sampled from a total population of 330 English-language public school trustees across Ontario, Canada for a response rate of 55%. This region services almost three million students from both rural and urban communities. Respondents came from a cross-section of small (36%, $n = 56$), medium (38%, $n = 60$), and large (26%, $n = 41$) boards. Fifty-two percent of the sample were female ($n = 85$), and 48% were male ($n = 79$). Age groups, based on Tapscott's (2008) categorization, ranged from the Net Generation (1977 – present, 4%, $n = 7$), Generation X (1965 – 1976, 11%, $n = 18$), Baby Boomers (1946 – 1964, 67%, $n = 109$) and those trustees born before 1946 (18%, $n = 30$). There was a broad cross-section of experience in the role of trustees represented in the sample: less than two terms of office (38%, $n = 62$), two to four terms (29%, $n = 48$), four to seven terms (21%, $n = 35$), more than seven terms (12%, $n = 19$). Level of education included high school (5%, $n = 8$), some college or university experience (19%, $n = 31$), college graduates (18%, $n = 30$), university graduates (32%, $n = 53$), and graduate degrees (26%, $n = 42$). School boards in this study partially or fully reimbursed trustees for laptops (93%, $n = 148$), home Internet (68%, $n = 109$), smartphones (60%, $n = 98$), and tablets (25%, $n = 39$).

Procedure

Invitations were sent to 330 English-language public school trustees via their board email to participate in a 10 to 15 minute, anonymous, online survey inquiring about their use of digital information to inform their decision-making (Appendix A). To avoid bias, we did not contact 12 trustees from the board where one of the researchers was a trustee.

After completing the survey, we asked trustees if they would be willing to participate in a follow-up 20-30 minute interview (Appendix B) to gain more insight into how they used digital information to inform their decision-making. We selected 10 out of the 20 trustees who were willing to take part in an interview based on a balanced cross-section of gender, geographical location, and size of school board. Each interview was audio-recorded and transcribed word-for-word.

Data Collections Tools

We administered a six-part survey consisting of both multiple choice and open-ended questions to the trustees. Part 1 posed five questions about school board trustees' individual characteristics (gender, age, experience as a trustee, education, computer comfort level: Appendix A, Questions 1 to 5). Part 2 focused on institutional characteristics (size of the school board, technology access: Appendix A, Questions 6 and 7).

Part 3 included eight Likert scale questions asking trustees how often they used a range of online resources for decision-making (Appendix A – Question 8a to 8h). The internal reliability for the eight-item *Use of Online Resources for Decision-Making Scale* was 0.76. We conducted a principal components analysis to determine if there were distinct categories of online resources. The Kaiser-Meyer-Olkin measure of sampling adequacy (0.773) and Bartlett's test of sphericity ($p < .001$) indicated that the sample size was acceptable. The analysis, based on a varimax rotation (using Kaiser normalization), produced three distinct use constructs that did not overlap: online articles (journal, research articles, online news), social media (Twitter, Facebook, blogs), and repository services (clipping services, Google Scholar).

Part 4 asked trustees a series of eight Likert scale questions on how useful online resources were in the decision-making process (Appendix A – Question 9a to 9h). The internal reliability for the eight-item *Usefulness of Online Resources Scale* was 0.83. We conducted a principal components analysis to determine if there were distinct categories of online resources. The Kaiser-Meyer-Olkin measure of sampling adequacy (0.759) and Bartlett's test of sphericity ($p < .001$) indicated that the sample size was acceptable. The analysis based on a varimax rotation (using Kaiser normalization) produced three distinct usefulness constructs: online research-based content (journal, research articles, online news), social media (Twitter, Facebook, blogs), and repository services (clipping services, Google Scholar).

Part 5 consisted of seven Likert scale questions examining barriers to using online resources (quality of information, skill level, and lack of time – Appendix A – Question 10a to 10g). The sixth and final part of the survey consisted of three open-ended questions focusing on when school board trustees used online resources, how online resources were assessed for trustworthiness, and supports that school board trustees would like to help them with the decision-making process (Appendix A – Questions 11 to 13). We sorted and categorized open-ended survey questions into themes. The interviews consisted of five items that probed for detailed use of online resources, barriers, and effective practices of school board trustees (see Appendix B).

Because this study explored a new area in education and the use of online resources by school board leaders to inform decision-making, we did not analyze open-ended questions and interviews using a pre-determined set of categories. Instead, we categorized comments using an inductive approach outlined by Miles and Huberman (1994). Specifically, we assessed raw comments to derive themes and sub-themes (Thomas, 2006). This method is consistent with Strauss and Corbin's (1998) approach where the researcher allows the themes or categories to emerge from the data.

Key Research Questions

The following research questions were examined in this study:

1. What online resources do school board trustees use for the purpose of decision-making (Appendix A – Q8, Appendix B – Q1)?
2. What is the perceived usefulness of online resources in the decision-making process (Appendix A – Q9)?
3. Under what circumstance do school board trustees use online resources (Appendix A – Question 11, Appendix B – Q3)?
4. How do trustees ensure the trustworthiness of online resources (Appendix A – Q12)?
5. What barriers prevent trustees from using online resources (Appendix A – Q10, Appendix B – Q2)?
6. What supports do trustees need to access online information (Appendix A – Q13, Appendix B – Q4 and Q5)?

Results

Use of Online Resources

Survey data. In terms of online research-based resources, almost two-thirds of trustees consulted online news content frequently to inform their decision-making. By comparison, only one-third of the trustees used online research articles or journals frequently. Social media (Twitter, Facebook, and blogs) and repository services (clipping services and Google Scholar) were used never or rarely by most trustees (Table 1).

Table 1

Use of Online Resources to Inform Decision-Making (n = 164)

Item	Never / Rarely	Sometimes	Frequently
RES – Online News	17%	23%	60%
RES – Online Research Articles	29%	38%	33%
RES – Online Journal	35%	34%	32%
SM – Twitter	67%	16%	17%
SM – Blogs	70%	18%	12%
SM – Facebook	72%	15%	13%
REP – Clipping services	75%	8%	17%
REP – Google Scholar	87%	8%	5%

It is also worthwhile to examine whether trustees are making use of a broad range of online resources. Almost 70% of trustees ($n = 112$) used three or more resources to inform their decision-making. Over half of the trustees (54%, $n = 88$) consulted all three content-based

resources sometimes or frequently (online news, research articles, and journals) when making decisions. Only 11% ($n = 17$) of trustees used all three social media resources sometimes or frequently. Repository services (clipping services and Google Scholar) were used least often with 8% of trustees ($n = 13$) using both resources sometimes or frequently.

Interview data. When asked in the interviews about accessing online sources when looking for more information to inform decision-making, responses mirrored the type of resources assessed in the online survey. Additionally, many trustees mentioned using a centralized School Board Association website frequently. One participant remarked, “We have such limited resources we don’t want to reinvent any wheels. We want to be able to learn from what others have done.”

Perceived Usefulness of Online Resources

Survey data. Trustees were asked to rate the usefulness of online resources on a five-point Likert scale. Online resources identified as useful or very useful by two-thirds of trustees included online news sources, research articles, and educational journals. Social media resources and clipping services were perceived as useful or very useful by approximately one-quarter of the trustees. Google Scholar and clipping services were viewed as the least useful resources for informing decision-making (Table 2).

It is worthwhile comparing perceptions of usefulness with actual use. With respect to online articles (news, research articles, journals), 80 to 85% of trustees who used these resources found them useful. Repository services (clipping services and Google Scholar) were perceived as useful by three-quarters of the trustees who used them. The percent of trustees who reported social media resources as being useful after they used them was less than online articles and repository services and ranged from 60 to 65%.

Table 2

Perceived Usefulness of Online Resources by Trustees ($n = 162$)

Item	Not at all / Somewhat Useful	Useful	Very / Extremely Useful
RES – Online News	28%	29%	43%
RES – Online Research Articles	36%	28%	36%
RES – Online Journal	41%	30%	29%
SM – Twitter	75%	14%	11%
SM – Blogs	77%	15%	8%
SM – Facebook	82%	11%	7%
REP – Clipping services	78%	9%	14%
REP – Google Scholar	88%	7%	4%

Reasons for Seeking Information from Online Resources

Survey data. Trustees were asked when they believed it was most helpful to look for online information to inform decision-making. Four strong themes emerged from the 177 comments trustees made about why they looked online to inform their decision-making. The most common reason for searching online was the need for more information. Sample comments include:

- “[I go online] when the board reports aren’t fulsome enough.”
- “Sometimes information is withheld hoping you do not discover it [so you need to go online].”
- “When I need to gather more independent knowledge, to assist me in my decision-making.”

The second most common reason for looking online for information was the desire for comparison with other school boards. Sample comments include:

- “When it’s a decision of great significance for students, controversial, introducing change for stakeholders, I find it important to consider research, experiences of other districts, information on implementation issues, [and] information on potential outcomes.”
- “To ensure we are offering programs that students need and similar to those of surrounding boards.”
- “Review of other board bylaws, regulations - to compare how we either conform or do things differently.”

The third most common reason for going online was acquiring information on a specific issue. Representative comments include:

- “[I go online] when writing a report or making a decision or trying to find out the news on a specific item or referring to current stories or issues.”
- “I only use online research as a reference to weigh conflicting sides of an issue.”

The fourth most frequent reason cited for seeking online resources was for general research purposes. Typical comments are as follows:

- “Having online access opens a door to new research opportunities.”
- “[I go online for] researching the latest relevant academic articles.”

Seven percent ($n = 13$) noted that they did not go online to inform their decision-making.

Table 3

Reasons Trustees Go Online for Information (n = 177)

Reason	<i>n</i>	%
Need for more information	54	31%
Comparing to other school boards	35	20%
Need information for specific issue	21	12%
General research purposes	17	10%
Does not go online for information	13	7%
To educate myself	9	5%
To look at public opinion/polls	8	5%
For background information	8	5%
To clarify or verify	8	5%
For new ideas	4	2%

Interview data. The trustees that we interviewed echoed the responses of open-ended survey questions about reasons for seeking online information. Some expressed that they felt that the onus was on them to “take the initiative and go online and look” for information to inform their decision-making. One participant noted, “It’s almost like being an investigative reporter.” A further theme emerged in the interviews around using research to support choices. One trustee commented, “Sometimes you’re looking for confirmation, sometimes you’re looking for something different to think about.”

Trustworthiness of Online Resources

We asked trustees “How do you ensure the information that you receive from online sources is trustworthy?” Almost half (47%, *n* = 85) stated that they considered the source of information (e.g., if it came from a source they felt they could trust or multiple sources) to judge the trustworthiness of the media. Sample comments were as follows:

- “I weigh the information received by who or where it comes from. e.g., OPSBA, other District School Boards, news letters from Shibley Righton LLP, and Parents for Education, I trust.”
- “[I am] very leery of claims of a qualitative survey and those from staff of Boards reporting only ‘good news’.”
- “[I look for] consistency across trusted sources.”

Nineteen percent (*n* = 34) of comments focused on comparing, cross-checking and verifying. Typical comments included:

- “Cross-referencing is really the best one can do.”
- “I try to find polar perspectives and critiques.”

- “I am careful to cross-check information from any source.”

Some trustees (12%, $n = 22$) asked other trustees and educators about whether information found online was trustworthy. Representative comments included:

- “I regularly speak to our Director of Education for his view on the information.”
- “I usually go to our board communications department to verify.”

Eleven percent of the trustees ($n = 19$) indicated that they viewed online resources with skepticism. Sample comments were:

- “There is no way to ensure all info is trustworthy as each demonstrates their own bias.”
- “I’m always somewhat skeptical, and rarely use blogs and Twitter for more than gauging public or group opinion on a certain issue.”

Six percent of the trustees ($n = 10$) stated that they relied on their knowledge and experience.

- “Hopefully knowing about what I am researching lets me have an understanding of right and wrong material.”
- “I don’t rely solely on refereed sources. I believe that my experience and background give me a good nose for the reliability of a source.”

Finally, 6% ($n = 10$) indicated that they did not use online information. Sample comments included:

- “I seldom use these sources as I often don’t find them trustworthy.”
- “I would not trust any online sources as you describe.”

Interview data. Consistent with the survey responses, interviewed trustees were adamant about the need to verify any information obtained online. Typical comments were:

- “Check your sources. Don’t believe everything you read. It is the Internet; it may not be true.”
- “Find out what might be the most trusted websites.”
- “Be careful who the source is, if they have a particular self-interest.”
- “Weigh the information you get. Ask questions.”

Barriers to Using Online Resources

Survey data. Participants were asked to rate a list of barriers they experienced in accessing online information to inform their decision-making. On average, trustees rated *lack of time, finding reliable sources, trying to negotiate conflicting research, finding relevant information, technical skill* and *remuneration* as “slight barriers” (Table 4). *Overall research skill* and *access to technology*, on average, were not rated as barriers.

Total barrier score, calculated by combining slight barrier to very significant barrier responses, was highest for *lack of time* (73%, $n = 118$). Other prominent barriers included *problems finding reliable sources* (63%, $n = 101$), *problems finding relevant information* (57%, $n = 91$) and *trying to negotiate conflicting research* (55%, $n = 87$). Less significant barriers included *technical skills* required to access digital information (44%, $n = 70$), *remuneration* (34%, $n = 55$), and *research skills* (26%, $n = 41$). *Access to technology* (19%, $n = 29$) was least likely item to be rated as a barrier by trustees.

We asked trustees to comment about barriers not listed in the Likert scale items. Responses included not valuing digital resources, fear of using social media, and websites that require payment for information.

Interview data. In the interviews, trustees identified barriers to accessing online information that were similar to those noted in the survey. Almost every interviewee indicated that time was an issue. One trustee summed it up when she said, “It’s time-consuming to go through everybody’s websites, and we’re busy people.” Other trustees noted that finding relevant resources was a significant barrier. Typical comments were:

- “Some websites are not very searchable. You can’t find the information.”
- “While I’d like to look online, I often can’t find the information.”
- “The problem now is the noise that’s out there.”

Finally, fear or lack of knowledge was noted as a barrier by some trustees. Sample comments included:

- “Fear [of technology] is a definite barrier.”
- “Sometimes it’s even knowing the right questions to ask. Sometimes I feel I don’t even know enough to ask the right questions.”

Table 4

Barriers to Using Online Resources to Inform Decision-Making (n =160)

Item	Not a Barrier	Slight Barrier/ Barrier	Significant Barrier
Time	27%	50%	24%
Finding Reliable Information	37%	57%	8%
Negotiating Conflicting Research	45%	49%	6%
Finding Relevant Info	43%	52%	5%
Technical Skill	56%	34%	9%
Remuneration	66%	19%	16%
Research Skill	74%	25%	2%
Access to Technology	82%	13%	5%

Supports for Accessing Online Resources

Survey data. Trustees were asked “What supports would help you access reliable online information to use in your decision-making?” Almost one-third of the responses identified a need for a third-party repository of reliable information or recommended sources (31%, $n = 48$).

Sample comments included:

- “[I would like] a central location or website that catalogues all educational subjects on the Internet.”
- “Perhaps an educational forum that recommends articles.”
- “If there as an online agency, such as OPSB (Ontario Public School Boards' Association), which vetted some of these for me, that would be helpful.”
- “[I would like] links shared by our professional library directed at Trustees.”

Over one-quarter of the trustees claimed that the supports were already available, or they were they were unsure about what they needed (28%, $n = 42$). Representative comments included:

- “I have all the supports I need, especially a wide circle of informed constituents.”
- “I'm not sure I would use anything more than I already do. I'm just too busy.”
- “I guess I am not sure what supports I do not have available to me.”

Ten percent of the trustees ($n = 15$) identified technological support as a need. Sample comments included:

- “More reliable Internet connection.”
- “A portable yet powerful device (laptop); cloud computing to access articles found at home office later at board table.”
- “Provision of access to education journals past pay walls.”

Just under 10% of trustees ($n = 12$) noted that they would like more training.

- “Training is required as comfort level not high.”
- “Training on how to access credible information or sites.”
- “Having some training on how to assess information for valid analysis would be helpful for all trustees on our board.”

Finally, a few trustees (8%, $n = 7$) wanted more remuneration for the time they spend. Typical comments were:

- “More time and, as time is money, more money to justify the expenditure of time.”
- “More time and a commitment from gov't to better remuneration. The position demands a lot but pays part-time honoraria.”

Interview data. Trustees who were interviewed confirmed several supports that were identified in the survey results. They noted a need for independent, trusted, third-party resources. Sample comments included:

- “[I need] a source to go to independent of the board.”
- “[I need] one very easily accessed listing of everybody’s websites: school boards, associations, ministry, whatever, all in one place.”
- “[I would like] to have all the information in one place, so it’s easy to get at.”

Trustees also requested more technology support and training. Sample comments were:

- “Everyone needs to know the process to access information.”
- “[We] need equipment, smartphones, money for technology and training. You can’t assume everyone has technology knowledge.”
- “[Boards need to] make available something that trustees can take away and use, whether it’s a tablet, a netbook, a laptop, whatever it is that they feel comfortable with.”

Discussion

The purpose of this study was to investigate school board trustees’ use of online resources to inform their decision-making. While there has been much interest in the field of knowledge mobilization in recent years (Campbell & Fulford, 2009; Cooper et al., 2009; Levin, 2010, 2012), empirical research looking specifically at elected school board leaders’ use of online resources to acquire information for decision-making is lacking. Specifically, this study addressed six questions:

1. What online resources do school board trustees use?
2. How useful are online resources in the decision-making process?
3. When do school board trustees use online resources?
4. How do trustees ensure the trustworthiness of online resources?
5. What barriers do trustees experience when they use online resources?
6. What supports do trustees need to access online information?

We will discuss each of these questions in turn.

Use of Online Resources by Trustees

To date, there has been no substantive research conducted on the use of online resources by school board trustees to inform decision-making. School board trustees obtain information for making decisions from three main resource categories: online articles, social media, and repository services.

Between 70 to 90% of the trustees consulted online articles in the form of news, research papers, and journals. However, trustees consulted online news twice as often as formal research-based resources. While the Internet has made formal research readily available to the public (Edelstein, 2011), trustees still prefer online news. This finding is somewhat consistent with the preference of personal experience and public news over research-based evidence (Dobbins et al., 2007; Levin, 2010; Levin et al., 2010; Maynard, 2007). Nonetheless, almost 70% of trustees consulted research-based resources at least some of the time, indicating a commitment to supporting decisions with formal evidence.

By comparison, only one-third of the trustees used social media and clipping services. Trustees may perceive traditional and familiar online research-based content as being more accessible than these newer services. In addition, social media and clipping services are relatively new and may not fall within the perceived scope of reliable, useful information. Training targeted at familiarizing trustees with social media and clipping services might be beneficial given that almost 60 to 75% of the trustees who used these resources thought they were useful. Future research should include qualitative questions asking trustees why they use certain online resources more than others do.

It is interesting to note that even though 72% of trustees reported that they did not use clipping services to inform their decision-making, all trustees were provided with a daily clipping service called *Media Reports* for three months prior to conducting the survey. Low use may reflect that trustees were not aware of this service, that they were not using this service in a substantive way, or that they were confused about the term “clipping service”. More research is needed to determine whether there is limited use of clipping services or just an issue with the terminology employed in the survey.

Only 13% of trustees used Google Scholar to inform their decision-making. Google Scholar is an extensive database of research articles and reports that are freely available to the public. Since 70% of trustees were willing to search for research articles, it is conceivable that the majority of the trustees were not aware of what this resource offered. It is also possible that some of the resources found in Google Scholar (e.g., links to formal research articles) were perceived as not being readily available to trustees who typically do not have access to academic databases. Therefore, they may have chosen not to use this resource. Given that almost three-quarters of the trustees who used Google Scholar found it to be a useful resource, future research on why Google Scholar is not being used could be beneficial.

It is important to note the broader definition of knowledge adopted in this study and supported by a number of authors (Cooper et al., 2009; Davies et al., 2000; Galway, 2006; OECD, 2007) worked well when examining the use of online resources for making decisions. A wide range of tools was used, and if knowledge were narrowly defined as formal research or evidence (Hemsley-Brown, 2005), the use of many online resources would have been missed.

Finally, the interview data revealed an important resource not formally listed in the survey: a centralized, province-wide website for housing a wide range of key information. Trustees in this study noted that this kind of “one-stop” resource would be extremely helpful given the demands on their time and the volume of information to search for and digest. However, there might be a danger in relying exclusively on one repository given the range of evidence available on the Internet, the difficulty of updating such a site, and the challenge of posting balanced, unbiased, information. Future research needs to explore the use of centralized websites in more detail.

Perceived Usefulness of Online Resources

Previous research is limited on the perceived and relative usefulness of online resources used to support decision-making. Not surprisingly, perceptions of usefulness mirrored actual use. Between 60 to 70% of trustees rated the most frequently used category of online resources,

research content (journals, research articles, news), to be useful. On the other hand, 20 to 25% of trustees rated the second most used category of online resources, social media and clipping services, as being useful. Finally, only 10 to 25% of trustees rated the least used category, repository services, as useful. One could reasonably speculate that trustees used resources they believe are helpful. However, trustees might not use some online resources because they are unfamiliar with them. Based on the research of Tapscott (2008), the vast majority of the trustees are not from the “Net Generation”, and therefore it is possible that their awareness of conventional resources such as Twitter or Google Scholar is limited. This potential lack of awareness is noteworthy, because three-quarters of the trustees who actually used repository services (clipping services and Google Scholar) perceived them as useful. Trustees, who do not use repository services, might use them more if they were educated about the potential value that this type of information could offer to the decision-making process. More detailed data are needed to explain why specific online resources are perceived as useful by school board trustees and how information actually informs the decision-making process.

Reasons for Seeking Information from Online Resources

Previous research has not looked at the reasons trustees seek information online. In this study, trustees searched online for four main reasons. First, they looked online when they felt they did not have adequate knowledge to make a decision, like when board reports did not provide enough information. Second, they went online to understand how other school boards were handling similar issues. Third, they looked online to improve their knowledge on a specific problem, such as staffing, school closures, health, and safety issues. Last, they indicated that they sometimes went online for general research purposes, wanting to stay up-to-date on the latest knowledge in education. Although school board staff provides trustees with information to help inform decision-making, the majority of the trustees (93%) felt they needed to go online to get additional information. Trustees from this study were particularly committed to gathering knowledge from the Internet to inform their decision-making. This finding aligns with previous research claiming that the Internet plays a prominent role in the acquisition of knowledge for decision-making (Cooper et al., 2009; Edelman, 2011). This finding also demonstrates that online media is a vital source of information for trustees.

Trustworthiness of Online Resources

Previous literature has not examined how decision makers ensure the trustworthiness of online resources. A small number of trustees indicated that they treated online information with skepticism or did not use online information at all. Previous researchers have identified this type of cynicism and distrust as an obstacle to knowledge uptake (Davies et al., 2000; Fusarelli, 2008). However, for most trustees in the study, skepticism was not a significant barrier. Two-thirds of the comments made by trustees in the survey indicated that they examined, assessed, and verified multiple sources of online information for decision-making. Strategies employed to ensure trustworthiness were noticeably vague and lacked specific details. More in-depth research, perhaps in the form of observational or focus group data, is needed to flesh out the strategies trustee’s use to assess the quality of information they collect. Understanding these strategies could help reduce skepticism and empower trustees with the necessary skills to properly assess online sources before using them to inform decision-making.

Barriers to Using Online Resources

Many barriers have been discussed in the literature with respect to knowledge mobilization (Fusarelli, 2008; Levin et al., 2010; Witherow, 2011), but no specific research has been conducted for school board leaders' and the relative weighting of challenges experienced while using online resources to inform decision-making.

Lack of time, identified by many theorists as a potential problem for knowledge acquisition (Campbell & Fulford, 2009; Davies et al., 2000; Dobbins et al., 2007; Hemsley-Brown, 2005; Witherow, 2011), was viewed as a slight to significant barrier by almost three-quarters of the trustees in this study. It is time-consuming for busy trustees to wade through the myriad of online resources. The time barrier is consistent with the request by a number of trustees to provide a centralized, vetted set of resources.

Previous authors also noted that negotiating the plethora of information available on the web (Cooper et al., 2010; Doyle, 2002; Hemsley-Brown, 2005) and assessing inconsistent, conflicting and unreliable evidence (Hemsley-Brown, 2005; Levin, 2010) could be a significant problem. In this study, 55 to 65% of trustees rated finding reliable, relevant information and negotiating conflicting resources to be a slight to significant barrier. While this barrier was perceived as less prevalent than the time barrier, the two obstacles are probably related. Finding useful and reliable online information most certainly takes time.

Landry et al., (2012) identified technical skill as a possible barrier to using online resources. In this study, technical skill was rated as a slight to significant barrier by almost 45% of trustees. This finding is curious because the technological skills required to open a browser and use a search engine are relatively basic. However, awareness of, and the ability to use, social media, clipping services, and Google Scholar may limit online searches by some trustees. More research is needed to identify what specific technological challenges trustees are having and how these challenges affect the use of online resources to inform decision-making.

Previous research has identified limited research skills as a significant barrier to using online resources to inform decision-making (Dobbins et al., 2007; Doyle, 2002; Landry et al., 2012; Levin, 2008; Levin et al., 2010; Witherow, 2011). In this study, only one-quarter of trustees rated research skills as a slight to significant barrier. This finding is somewhat inconsistent with 55 to 65% of the trustees rating specific research skills (e.g., finding relevant, reliable information, negotiating conflicting resources) as challenging. More clarity is needed on what trustees view as research skills.

Finally, several theorists (Davies et al., 2000; Dobbins et al., 2007; Levin, 2008) saw institutional support as a conceivable obstacle to acquiring knowledge. In this study, remuneration and access to technology were the least likely items to be rated as barriers by trustees. This finding is not surprising given that almost every trustee was provided with a laptop, nearly 70% of the trustees were reimbursed for home Internet, 60% received a smartphone with Internet access, and 25% were provided with tablets.

Supports Trustees Need to Access Online Information

The most common support requested by nearly a third of the trustees in this study was the need for a third-party distributor of trusted, reliable information. Even though some trustees specifically identified the school board association's website as a source they used, other trustees asked for a centralized database. It is not clear how trustees are using the centralized school board website and what information may be missing to make it more useful.

The importance of third-party distributors of information as a key support for knowledge acquisition has been investigated by a number of authors (Cooper et al., 2010; Davies et al., 2000; Dobbins et al., 2007; Edelman, 2011; Galway, 2006; Levin, 2012; Levin et al., 2010; Sheppard et al., 2013; Witherow, 2011). Although the nature and functions of third-party facilitators have not been thoroughly studied and are not well understood (Levin, 2008), it is acknowledged in the literature that they play a vital role, because they have the credibility with their stakeholder group. The ability of these types of organizations to sift through large volumes of information, synthesize and summarize it in a meaningful and relevant way, addresses many of the barriers trustees noted in the survey such as problems finding relevant information, reliable sources, lack of time, and research skills. Further research specifically focused on how third-party distributors can facilitate knowledge acquisition is critical to support trustees in their online use of information to inform their decision-making.

Ten percent of trustees noted that they needed more technological support than they received. While most trustees were provided with a laptop, a smartphone, and home Internet access, these supports were not available to all trustees and, therefore, could limit access to online data and informed decision-making. Note that the number of trustees indicating a need for more technological supports might be under-reported due to our delivering the survey in an online format. Trustees without these technological supports may have had more difficulty accessing the survey.

Summary

The purpose of this study was to examine elected school board leaders' use of online resources to inform their decision-making. Trustees consulted online articles (news, research articles, and journals) most when making decisions, but they preferred online news to research-based evidence. Social media and repository services were used about half as much as online articles to inform decision-making. Almost 70% of trustees used three or more online resources. Not surprisingly, perceived usefulness of resources matched the frequency of actual use. Seventy-five percent of the small number of trustees who used repository services found them to be useful, making these resources a potential target for future training. Trustees claimed that they searched online resources because they needed more information or to check what other school boards were deciding regarding similar issues. Trustees actively attempted to assess the trustworthiness of online resources by checking sources, cross-checking data, and consulting with colleagues. Key barriers to finding online resources included lack of time, finding reliable or relevant resources, and negotiating conflicting research. One key support that many trustees requested was a centralized, comprehensive, reliable one-stop website to obtain information required to support decision-making.

Limitations

There are a number of limitations in this study to guide future research. These include the delivery format of the survey, the broad scope of the study, a need for more resource choices, clearer wording, limited accessibility to research articles, memory limitations of participants, the absence of a research literacy measure, and the influence of social desirability.

First, due to the survey being only available online, there may be an overrepresentation of participants who have an ability or bias towards using digital media. Second, this study was a first attempt to assess the use of online resources by school board leaders to inform decision-making. The focus was relatively broad and a more detailed, in-depth analysis is needed to understand the actual quality of information accessed, and how this information is critically evaluated and used to make decisions. Third, alternative online resources might need to be considered, such as third-party databases and video podcasts. Fourth, even though the resources selected for the study were researched and pilot tested, it would be worthwhile establishing how participants interpreted resource labels. For example, there may have been confusion with respect to online scholarly journals, research articles, and Google Scholar. These three resources clearly overlap and may need to be refined in future studies. Fifth, limited accessibility to more research-based, academic articles may have restricted the frequency of particular resources used by trustees. Sixth, some trustees may have completed their surveys at a time that did not coincide with their recent use of online resources to make decisions. They may have been relying on their memory of online resources used which could compromise the accuracy of the data collected. Seventh, research literacy of trustees was not assessed in this study and could have been a factor that influenced their use of various online resources. Finally, the use of surveys and self-report data, as Levin and Cooper (2012) suggested, may be subject to social desirability bias. School board leaders may want to be perceived as individuals who carefully examine evidence from a wide variety of sources before making decisions. Also, the pressure from the public to respond in different ways may influence the extent to which trustees rely on online resources and evidence. One possible way to address this bias is to gather data on actual behaviours and practices based on real issues and examples experienced.

Future Research

As this was an online measure, future research that uses a combination of digital and non-digital measures may help to encapsulate the responses of trustees who are not comfortable with technology. Investigating the acquisition of knowledge for decision-making on digital versus paper-based knowledge may also shine some light on why some trustees are not accessing online information.

More qualitative data are needed to examine further why trustees use certain online resources more than others do, and what other resources they use that were not provided as choices in the survey. Qualitative research, perhaps gathered through focus groups or interviews, should explore other barriers that trustees experience, not mentioned in the multiple-choice portion of this survey, and the magnitude of these barriers on decision-making.

Given that third-party repositories were noted by a number of trustees, it is important to investigate this resource in more depth. Possible areas of focus could include the way trustees are

making use of the Ontario Public School Boards' Association (OPSBA) website, how this resource could be developed to provide the knowledge that trustees are seeking, and the extent to which trustees find the information provided by OPSBA to be reliable and relevant. Research is also needed to determine why the clipping service provided by OPSBA was not reported in a more substantial way.

Research is also required on understanding how factors such as characteristics of the research (e.g., reliability, volume, relevance), characteristics of the individual (e.g., gender, education, trustee experience, computer comfort level), and features of the institution (e.g., size of board, rural vs. urban, technological culture) influence the use of online resources to support the decision-making process.

Finally, a small, in-depth case study on the actual process of using online resources would be invaluable to understanding the dynamics of integrating digital evidence into the decision-making process.

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Appendix A - Online Trustee Survey

Part 1 – Individual Characteristics

1. What is your gender? (Male, Female)
2. Which category includes the year you were born?
 - a. Pre-1946
 - b. 1946 – 1964
 - c. 1965 – present
3. How much experience do you have as a trustee?
 - a. Less than 2 terms
 - b. Between 2 - 4 terms
 - c. Between 4 - 7 terms
 - d. 7 terms or more
4. How would you describe your level of education?
 - a. High school or less
 - b. Some college or university
 - c. College graduate
 - d. University graduate
 - e. Graduate degree
5. How would you rate your comfort with computers?
 - a. Not very comfortable
 - b. Somewhat comfortable
 - c. Comfortable
 - d. Very comfortable

Part 2 – Institutional Characteristics

6. Which categories best describe your board? Choose one from each.
 - a. Size: Small – enrolment less than 22,000 pupils;
 Medium – enrolment between 22,000 – 63,999 pupils;
 Large – enrolment exceeds 64,000 pupils.
 - b. Type: Rural, Mix, Urban
7. Does your board provide or reimburse you for (No, Partially, Yes)
 - a. Computer/Laptop
 - b. Tablet/iPad
 - c. Smartphone with Internet access (i.e., iPhone, Blackberry)
 - d. Home Internet access

Part 3 – Use of Online Resources

8. I use the following digital media to inform my decision-making as a trustee:

	Never or Rarely	Sometimes	Frequently
a. Twitter			
b. Facebook			
c. Blogs			
d. Online news sources			
e. Online educational journals			
f. Research articles			
g. Google Scholar			
h. Google Alerts/Clipping services			

Part 4 – Usefulness of Online Resources

9. I would describe the impact of these sources on my decision-making as:

	Not At All Useful	Somewhat Useful	Useful	Very Useful	Extremely Useful
a. Twitter					
b. Facebook					
c. Blogs					
d. Online news sources					
e. Online educational journals					
f. Research articles					
g. Google Scholar					
h. Google Alerts/Clipping services					

Part 5 – Barriers to Using Online Resources

10. How significant would you rate these barriers?

	Not a Barrier	Slight Barrier	Barrier	Significant Barrier	Very Significant Barrier
a. Finding relevant information					
b. Finding reliable information					
c. Conflicting research					
d. Remuneration					
e. Technology skills					
f. Research skills					
g. Lack of time					

Part 6 – Open Ended Questions

11. In what circumstances do you find it most helpful to look for online information to help inform your decision-making? Why?
12. How do you ensure the information you receive from online sources (media outlets, blogs, Twitter, email, etc.) is trustworthy?
13. What supports would help you to access reliable online information to use in your decision-making?

Appendix B – Interview Questions

1. Can you think of a situation when you wanted to get more information on an issue that was coming to the board for discussion and describe for me the various ways you went about accessing more information (e.g., what sources did you use)?
2. Can you describe a time when you felt you didn't have enough information to make an informed decision? Why do you feel you weren't able to get all the information you needed? Specifically, what were the barriers to accessing relevant information that you encountered?
3. Why do you feel it is important for trustees to access information on their own regarding important board decisions?
4. What advice would you give to new trustees regarding accessing online information to help inform their decision-making?
5. What supports do you feel would help you access information more easily?

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