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Early Childhood Education is the official journal of the Early Childhood Education Council (ECEC) of The Alberta Teachers' Association (ATA). The journal assists the ECEC to achieve its objective of improving practice in early childhood education by publishing articles that increase the professional knowledge and understanding of teachers, administrators and other educationists involved in early childhood education. The journal seeks to stimulate thinking, to explore new ideas and to offer various points of view. It serves to promote the convictions of the ECEC about early childhood education.

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On the cover: This picture was drawn by Eddie, one of the kindergarten students at the Calgary Jewish Academy (Ms Rachel Blanchard's class). Students engaged in a postcard project on Calgary and chose the most interesting places to see in Calgary. Eddie drew a beautiful picture of the Peace Bridge, which crosses the Bow River, in Calgary.

Early Childhood Education is indexed in CBCA Education.

Early Childhood Education is a medium of communicating recent research insights, in-depth pedagogical reflections, and current issues surrounding early childhood education. This journal is a tool to connect early childhood educators, researchers, curriculum makers and educational administrators for the discussion of enrichment of early childhood education. *Early Childhood Education* is deeply rooted in the local context of educational practices but also aims to communicate and discuss universal topics surrounding early childhood education with a broader audience beyond the specific local context. As editors of the journal, we are hoping to promote a meaningful dialogue between research and practice through this medium.

This issue includes four regular articles on diverse topics in early childhood education.

In the article, "Building Teacher Capacity for Trauma-Informed Practice in the Inclusive Elementary School Classroom," Cheryl Rosenbaum-Nordoft introduces research- and practice-informed pedagogical tools, including a functional behavioural analysis template, to address the needs of children experiencing maltreatment. Rosenbaum-Nordoft's article is rooted in her commitment to and passion for this topic, as a teacher who sees the impact of childhood trauma in the classroom.

Stephanie Hladik, Laleh Behjat and Anders Nygren address a timely topic in early years education: How can teachers foster computational thinking and engineering design process in their classroom? After an overview of what computational thinking means, Hladik, Behjat, and Nygren offer

concrete suggestions for cross-curricular activities in their article, "Cross-Curricular Activities to Foster Computational Thinking and Engineering Design."

"Authentic Writing in Children's Lives Outside School," written by Shelley Stagg Peterson and Ashley Grimes, highlights young children's creative ways of using written communications in home literacy practices. Based on their descriptions of home literacy practices, Peterson and Grimes suggest the importance of two-way communication avenues between parents and teachers to support young children's writing.

In "Helping Alberta School Leaders Understand Student Recruitment at the Elementary School Level," Olenka Bilash introduces the survey results on the parental decision-making process when selecting an elementary school. Bilash provides concrete recommendations for school leaders and administrators to enhance parent-school communication.

All of the articles appearing in *Early Childhood Education* are peer-reviewed by our dedicated reviewers. We appreciate their constructive feedback to maintain the quality of this journal.

We hope you will all enjoy the 2018 issue of *Early Childhood Education* 📖

Miwa Aoki Takeuchi and Cynthia Prasow

Miwa Aoki Takeuchi is an assistant professor and Cynthia Prasow is an instructor in the Werklund School of Education, University of Calgary, Calgary, Alberta.

Building Teacher Capacity for Trauma-Informed Practice in the Inclusive Elementary School Classroom

Cheryl Rosenbaum-Nordoft

Cheryl Rosenbaum-Nordoft, MEd, is an educator with the Calgary Board of Education. Her experience in special education, within Calgary and in the Middle East, inspired her to further her education to better understand mental health and children's behaviour. This, with her attention to evidence-based practice, led her research of trauma-informed pedagogical practice. She obtained her Master of Education from the University of Calgary with dual foci on mental health and early childhood. Her passion is to promote inclusive education through a positive behaviour lens; she plans to pursue further research in how to best support behaviour and mental health in the classroom.

Abstract

The aim of this study was to provide support to students with trauma backgrounds in inclusive elementary school classrooms by offering knowledge that informs the teaching practice and can provoke further discussion about supporting these students. This literature review looked at educational outcomes, including academic achievement, emotional well-being and behavioural functioning of elementary school students who have experienced complex trauma. As a result of trauma, children can end up living in a heightened state of arousal that triggers a response of fight, flight or freeze even when no threat is present. This factor, along with the possibility for difficulties forming relationships, affects overall classroom functioning for students who have experienced complex trauma. With high rates of trauma among students, educators need to understand the effects that complex trauma has on student functioning in order to successfully program for their success. Supports for students who have experienced trauma include understanding the functions of behaviours and fostering strong relationships between the teacher and student. This review concludes with suggestions for further research.

Imagine Sammy. Sammy is working on a cutting and gluing activity in his kindergarten classroom. A peer sitting beside him reaches over to grab another piece of paper. Sammy bites his peer and then runs out of the classroom screaming and swearing. This response appears extreme in nature but is also highly disruptive for the rest of the class. At this point, the teacher must respond, but must also interpret what just happened.

This literature review analyzes the research on the relationship between complex trauma and educational outcomes. Specifically, this paper focuses on students who have experienced simultaneous or sequential occurrence of child maltreatment—including, but not limited to, psychological maltreatment, neglect, physical abuse, sexual abuse and domestic violence—that is chronic, begins in early childhood and occurs within the primary caregiving system (National Child Traumatic Stress Network [NCTSN] nd). In Alberta, at least 25 per cent of students have experienced traumatic or adverse childhood experiences (Alberta Education 2016). Without a trauma-informed approach to supporting these students, they may be misdiagnosed with a range of disorders, including but not limited to ADHD, and consequently treated with medications and therapies that do not address the underlying aetiology (NCTSN nd; O'Neill, Guenette and Kitchenham 2010; Steele and Malchiodi 2012).

Purpose of the Inquiry

This review of the literature looks at students' educational outcomes, including academic achievement, emotional well-being, and behavioural functioning of students who are victims of complex trauma. While current literature offers programs or interventions that can be used by trained professionals (Pat-Horenczyk, 2005; Gelkopf and Berger, 2009; Thompson and Trice-Black, 2012),

the information collected in this study is intended to specifically support teachers in inclusive elementary school classrooms by offering knowledge that informs the teaching practice and can provoke further discussion about supporting these students.

Complex Trauma and Physical and Mental Health

How physical and mental health is affected by trauma is extensively discussed in the literature. Complex trauma can be linked to secondary mental health concerns such as depression, anxiety or self-harming behaviours (NCTSN nd; Romano et al 2015). It can also lead to a loss in self-regulation, cumulative impairments, cognitive and behaviour impairments, attachment disorders, and loss of self-concept (Cook et al 2005). Complex trauma can affect a child's developmental trajectory due to impairments in physiology, emotions, ability to learn and concentrate, impulse control, and relationships with others.

The Adverse Childhood Experience (ACE) study (Felitti et al 1998) filled the gap in the literature examining the relationship between adverse childhood experiences and adult health. Results from the 9,508 respondents "found a graded relationship between the number of categories of childhood exposure and each of the adult health risks behaviours and diseases that were studied" (Felitti et al 1998, 245). Authors found that as the number of adverse childhood experiences increased, so too did the exposure to high-risk behaviours. This study is significant in the research because it explored the connection between children's emotional experiences and their subsequent mental and physical health as adults.

Porche, Costello and Rosen-Reynoso (2016) used the National Survey of Children's Health 2011/2012 to examine the relationship between family adversity and academic outcomes and mental health diagnoses. Like the ACE study (Felitti et al 1998), Porche, Costello and Rosen-Reynoso (2016) concluded that children who experienced an increased number of adverse childhood experiences were more likely to be diagnosed with mental health concerns. Moreover, children who had higher mental health diagnoses were less engaged in school and more likely to be working on an individualized program plan (Porche, Costello and Rosen-Reynoso 2016). Dube et al (2001) found a graded relationship between adverse childhood experiences and attempted suicide. The significance of these studies lies in the associations that have been documented between early incidences with complex trauma and negative mental health and educational outcomes. Complex trauma is a powerful predictor

of risk and therefore is not something schools can ignore (Blodgett 2012; Dube et al 2001; Gilbert et al 2009; Porche, Costello and Rosen-Reynoso 2016; Repetti, Taylor and Seeman 2002). Educators who recognize the long-term implications of complex trauma on physical and mental health will be better able to understand the importance and significance of offering individualized accommodations and strategies to support behaviour and academic needs.

Neurobiological Change in Children Who Experience Complex Trauma

Under threatening and/or alarming circumstances, the body begins a series of connections to support survival. "The fear response is graded, calibrated by the brain's perceived level of threat" (Perry and Szalavitz 2006, 48). This response is governed by pathways in the brain that assess the situation for danger and prepare the body to fight, flight, or freeze (O'Neill et al., 2010; Perry and Szalavitz, 2006; Rossen and Hull 2013; Souers and Hall 2016). Under stressful circumstances, cortisol becomes activated, triggering the fight, flight or freeze response (O'Neill, Guenette and Kitchenham 2010; Perry and Szalavitz 2006; Rossen and Hull 2013; Souers and Hall 2016; Steele and Malchiodi 2012; Teicher et al 2006). The neural and hormonal systems work together instinctively to make sure the brain and body are prepared to react to the situation effectively. Responses become less logical and thoughtful and more reactive (Perry 2004). A chain reaction begins by reducing the activity in the frontal cortex, the part of the brain responsible for higher-order thought, logical thinking and problem solving (Perry 2004; Perry and Szalavitz 2006). As the perceived threat increases, so too does the primitive part of the brain, enabling the brain to focus on cues around it. Once a person's higher-order brain functions are suspended, the limbic system is aroused, and heart rate and blood pressure rise, which increases blood flow to the muscles, giving the body increased strength or speed for the fight, flight or freeze response. Additionally, sensations like pain and hunger are suppressed (Perry and Szalavitz 2006) and the senses, such as hearing or vision, are heightened. These responses are the brain's natural reaction to perceived or actual threats, because it is wired for survival (Steele and Malchiodi 2012).

The goal of healthy brain development is to produce an organism well suited to changing demands across all environments (Teicher, Tomoda and Andersen 2006). A person exposed to moderate, predictable stress develops a strong

stress-response capacity and foundations of resiliency (Perry 2004). Unfortunately, chronically elevated levels of stress hormones, such as when a child is in a persistently stressful environment, can significantly disrupt brain development. The alert system can become maladaptive if it keeps a child in a constant state of alert (Anda et al 2006; Jackowski et al 2009; O'Neill, Guenette and Kitchenham 2010; Perry and Szalavitz, 2006; Rossen and Hull, 2013 Souers and Hall, 2016; Teicher, Tomoda and Andersen 2006). What this means is that children who have experienced complex trauma can end up living in a constant state of heightened awareness to danger, even when no external threat is present (Perry 2004; Perry and Szalavitz 2006; Rossen and Hull 2013; Souers and Hall 2016). Ironically, the adaptive responses designed to help a child survive and cope in a chaotic and unpredictable environment can also put that same child at a disadvantage outside the threatening context (Perry and Szalavitz 2004).

As happened with Sammy, a fight, flight or freeze response can lead to a rapid reactivity to a perceived threat, including self-protective behaviours such as aggression, withdrawal or freezing (Rossen and Hull 2013). Like Sammy, a child could inappropriately react to nonverbal cues such as facial expressions, a tone of voice, rapid movements, criticism/correction or an odour. These triggers may lead to the chain response, including surges of arousal, selective attention to the source of potential danger and de-emphasis on nonessential functions, such as higher-order thought (Perry 2004; Perry and Szalavitz 2006; Rossen and Hull 2013; Souers and Hall 2016). "Children in a state of fear retrieve information from the world differently than children who feel calm" (Perry 2004, 3); therefore, the impact on educational functioning needs to be understood in order to achieve success for students who have experienced simultaneous or sequential occurrence of childhood maltreatment.

Complex Trauma and Functioning in the Classroom

The literature also discusses how complex trauma can affect a student's ability to function in the classroom. Blodgett (2012) investigated the effects of the same ACEs that Felitti et al (1998) explored, but reviewed them against educational outcomes of elementary school students 5 to 11 years old in the United States. Results showed that adverse childhood experiences had a negative impact on the child's school success. The more stressors a child experienced, the more likely the child was to show a deficiency in academic and emotional well-being in

the classroom, and poor health in general (Blodgett 2012; Romano et al 2015).

Attachment

The literature reviewed for this study suggests that attachment and complex trauma are closely linked (Cook et al 2005; O'Neill, Guenette and Kitchenham 2010; Perry and Szalavitz 2006; Rossen and Hull 2013; Schwartz and Davis 2006; Souers and Hall 2016; Veltman and Browne 2001). Early caregiving relationships are a critical factor in the development of a child's ability to form boundaries, trust others, form healthy social relationships, attune to other people's emotional states and appreciate different perspectives (Cook et al 2005). Students who experience behavioural or learning problems showed poorer school outcomes and were less able to find success from a close relationship with a teacher, compared to peers without such concerns (Baker, 2006). Thus, these children may be at risk for multiple academic and behavioural challenges in elementary school classrooms (O'Neill, Guenette and Kitchenham 2010; Schwartz and Davis 2006).

The skills required to regulate emotions in the context of creating and maintaining relationships is a critical "prerequisite skill for school readiness and academic success" (Webster-Stratton and Reid 2004, 96). In addition, motivation and self-regulation are closely connected with academic success (Blair 2002). While the school's mission is to program for learning, students with significant attachment disorders are primarily concerned with safety, security and trust. Their hypervigilance and preoccupation with survival leaves them with deficits in organizational skills and relational functioning required for successful classroom functioning. In this case, forming healthy relationships will be foundational for their academic success, emotional well-being and behavioural functioning. Despite a school's mission to engage students in learning, successful interventions will require fostering both mental well-being and academic achievement (Romano et al 2015; Rossen and Hull 2013). Schools serve as an effective place for intervention for students who have experienced trauma (Veltman and Browne 2001; Paccione-Dyszlewski 2016; Pat-Horenczyk 2005; Rolfesnes and Idsoe 2011; Rossen and Hull 2013; Souers and Hall 2016), because they can be readily available and can "minimize stigma, increase the likelihood of program adherence, and provide peer support" (Berger, Gelkopf and Heinberg 2012, 453).

Educational Strategies

Trauma-Informed Lens

A trauma-informed approach to supporting students in the classroom expands the lens through which educators view educational success so that it includes both academic achievement and mental health (Paccione-Dyszlewski 2016; Perry and Szalavitz 2006; Rossen and Hull 2013; Romano et al 2015; Souers and Hall 2016). Alberta Education (2016) states that “a school-wide focus on trauma-informed practice creates a shared understanding and common language about how to create welcoming, caring, respectful and safe schools.” According to the Substance Abuse and Mental Health Services Administration (SAMHSA) (2014), a trauma-informed system will go one step further than understanding the impact of trauma; a trauma-informed practitioner recognizes the symptoms and then responds by using knowledge to actively support the victims. This approach recognizes that students with a history of complex trauma may have deficits in development that affect their overall learning and classroom functioning. By adopting this lens, schools are kept aware that these students may require targeted and intensive supports, in addition to universal school and classroom-wide strategies, in order to be successful.

Adopting a trauma-sensitive classroom is a process, rather than a program that needs to be implemented. Successfully adopting a trauma-sensitive environment would mean that the entire school community would be committed to the process (Alberta Education 2016). From the organizational level, a critical step in creating a trauma-sensitive environment is professional development training for all staff that builds an understanding of the impact of complex trauma (Brown, Baker and Wilcox 2012; Green et al 2015; SAMHSA 2014). One step in achieving understanding is educating all staff on the signs of trauma and the educational implications, which would then allow them to modify their program accordingly. For example, complex trauma may cause students to seem “bad,” unmotivated or hostile, which may then elicit punitive disciplinary responses. With a trauma-informed lens, teachers and school staff can change their thinking from “What is wrong with this student?” to “What is the function of that behaviour?” This shift in the questioning shifts the focus from the child to the behaviour. It offers the child the chance to build new skills and ways to cope with their individual triggers (Overstreet and Chafouleas 2016).

Relationships

Gharabaghi (2008) says, “Relationships are the interventions” (p 31). A trauma-informed educator will have an understanding of how students who have experienced complex trauma can often have an insecure attachment to their primary caregiver. They would further understand that this insecure attachment could lead to negative implications for their sense of self, of others and of themselves in relation to others (Romano et al., 2015). The early relationship between a child and an adult plays a critical role in the formation of social competencies that can translate into positive adjustment in the classroom (Hamre and Pianta 2001). A study by Shelden et al (2010) found that having a trusted adult in the school was associated with greater academic gains. The study also found that teachers who take the time to listen and communicate an attitude of acceptance, accessibility, warmth and knowledge supported the trust in the relationship. Perry (2009) noted that children with few positive child–adult relationships during or after trauma have a more challenging time building resiliency and often demonstrate greater symptoms of trauma over time. Hamre and Pianta (2001) found that from the teacher’s perspective, strong, positive relationships with students provided the motivation to spend extra time promoting the students’ success. On the other hand, a teacher–student relationship characterized by conflict can lead to teachers attempting to control behaviour and hinder efforts to promote success. Teachers who know their students well and who create relationships from the outset help contribute to a student’s healthy mindset and feeling of safety within the school.

Discussion

This literature review discussed the impact of complex trauma on elementary school students. The research discussed the neurological implications for victims of trauma. When exposed to a threat, the limbic system becomes aroused, which decreases activity in the prefrontal cortex. This shift allows the affected person to focus entirely on the perceived threat so they can survive. As the activity decreases in the prefrontal cortex, so too does the ability to make logical decisions, solve problems or foresee consequences (Perry and Szalavitz 2004). When people are under chronic stress, even when active threats are not present, they continue to live in a hyper-aroused state during which their survival instinct takes control (Anda et al 2006; Jackowski et al 2009; O’Neill, Guenette and Kitchenham 2010; Perry and Szalavitz 2006; Rossen and Hull 2013; Souers and Hall 2016; Teicher, Tomoda and Andersen 2006). This means that students in the classroom may become triggered by a scent, a look

or the tone of someone's voice, putting them back into a state of fight, flight or freeze. A teacher might see a child in a state of *fight* who becomes aggressive towards peers, self or objects. The student that runs out of the classroom may be in *flight*, and the student that appears to be unresponsive may be in *freeze*. These automatic responses can become disruptive to classroom environments or reduce the ability for a student to take in or process new information, or demonstrate learning.

To support students who are in hyper-vigilant states, educators should shift their lens to understand the function behind these behaviours. A tool that teachers can use to answer the question "What is the function of that behaviour?" is a functional behavioural analysis (FBA). FBA is used to identify the function of behaviours, which will allow educators to understand and respond to the child's actions (refer to Appendix A for an FBA template [NYC Department of Education nd] that offers possible antecedents and consequences). An FBA is a means to intentionally and effectively identify any relationship between events (Alberta Education 2008).

I have personally used this tool to collect data that tracked the date, time, antecedents, behaviour and consequences (the response to a behaviour or action) of students in hyper-vigilant states. This allowed me to uncover the trends and possible triggers for the behaviour and then use this data to implement intentional behaviour supports. This reflective practice enables me to tailor my responses or supports to a child's specific needs.

I further used an FBA to track the duration (length of time) and frequency (how often) of hyper-vigilant behaviours. For example, if an FBA was being collected for Sammy, who bit another student and ran out of the classroom, the teachers could reflect on his behaviour afterward by asking themselves what caused him to bite and then run. While this behaviour is clearly disruptive, the tool could help identify possible triggers and relationships between the events. Rather than seeing Sammy as disobedient, a trauma-informed teacher might recognize that Sammy entered a state of "fight" and then "flight" without having any chance to logically interpret the cues around him. Using this lens, the teacher could support Sammy by giving him time and space to calm down, and then facilitate an appropriate consequence.

Another example is a student who demonstrates defiance by frequently refusing to leave the classroom for lunch. With the use of an FBA tracking the time of these behaviours, a teacher might uncover the pattern of behaviour and come

to the conclusion that the student is triggered by loud noises in the hallway around lunchtime. Therefore, an appropriate support might include transitioning this student through the hallway for lunch before the rest of the students.

A third example is a student who always leaves the classroom with no warning. By using the FBA to track the time of the behaviour, it can again help identify that this "flight" response occurs most frequently during literacy activities. Further investigation could uncover that it is because this child has difficulties with sustained attention to tasks, such as literacy. The student might be more successful, and less likely to be triggered to leave the classroom, if the trauma-informed teacher could chunk his or her activities into smaller, more manageable tasks and use visuals to outline the tasks.

Once enough data has been collected so that triggers are identified, a behaviour support plan can be used to support a child's response and a teacher's reaction to certain behaviours. Appendix B is a behaviour support plan that I created, which allows teachers to visually and intentionally analyze a child's behaviour cycle using a trauma-informed lens. With support from the FBA to identify triggers and behavioural responses, this support plan is predicated on the understanding that there are levels of escalation before a behaviour reaches a peak. The purpose of this tool is to map out a child's response at a baseline behaviour, and then at increasing points from agitation and acceleration to the peak. At each stage, there is a place to identify if the response is *fight*, *flight* or *freeze*, and acknowledgment that each child's response will be unique. Not only does the FBA allow the teacher to observe and identify student's behaviours when triggered, but it also includes the associated action plan from the teacher. This is where the teacher implements a trauma-informed lens to identify the functioning of the behaviour with the goal of de-escalating the situation so that the child can return to their baseline.

Another unique feature of this plan is the space to include universal and personalized supports that keep a student at their baseline. Acknowledging these supports is critical, because once a student is escalated they may require additional supports to bring them back down to their baseline. In addition, the plan has a designated spot for all the involved stakeholders. These are all the people who support the child, including, but not limited to, teachers, support staff, administration, parents and the student themselves. Put simply, by taking steps to understand the triggers of a student's exhibiting hyper-vigilant behaviour, educators and other

stakeholders are better able to understand the student's specific difficulties and what needs are not being met, and to modify the environment to avoid these triggers and encourage success.

A large component of creating a safe classroom is the formation of a strong relationship between the teacher and the student. The literature indicates that students with unhealthy attachment patterns could have difficulties forming boundaries, trusting others and forming healthy relationships (Cook et al 2005). For these students, the early childhood classroom can be difficult because it often involves working or playing with others, learning alongside peers and having trust in the teachers and routines. The irony is that for students who come from trauma backgrounds, a trusting relationship with the teacher is critical for their success, but also challenging for them to form. The research indicates the importance of fostering the relationship as a crucial stepping stone to a student's success. The early childhood classroom is often the child's first encounter with the school community. Therefore, all the professionals within the building are new and foreign to the students. Making an intentional effort to ensure that each student feels safe and secure will be critical. It might mean minimizing the number of professionals working in the classroom or, if required, taking time and effort to create relationships with different professionals, such as the music or physical education teacher.

It was found that teachers can support the success of all students by adopting a trauma-informed practice (Perry and Szalavitz 2006; Rossen and Hull 2013; SAMHSA 2014; Souers and Hall 2016; Overstreet and Chafoules 2016). This means that educators understand the impact of trauma and the potential resulting behaviours, and use this understanding to shape their practice. By adopting the trauma-informed lens, educators shift their perspective to question the functions behind behaviours so that they can better understand the learning and emotional needs of their students. With a lens that focuses on the impact of trauma rather than the details of the story, educators have the power to support and engage each child, and help them develop the skills to be successful.

Conclusion

While attempting to find accessible strategies teachers can implement to ensure academic success and mental well-being for students with traumatic backgrounds, it was found that educators first need to understand how complex trauma affects the brain and development, and also the effects it has on student behaviour and learning. Once an

understanding was formed of how complex trauma affects a child's development, it was possible to uncover strategies that elementary school teachers in nonspecialized settings could rely on to support their students' academic success and emotional well-being.

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Appendix A

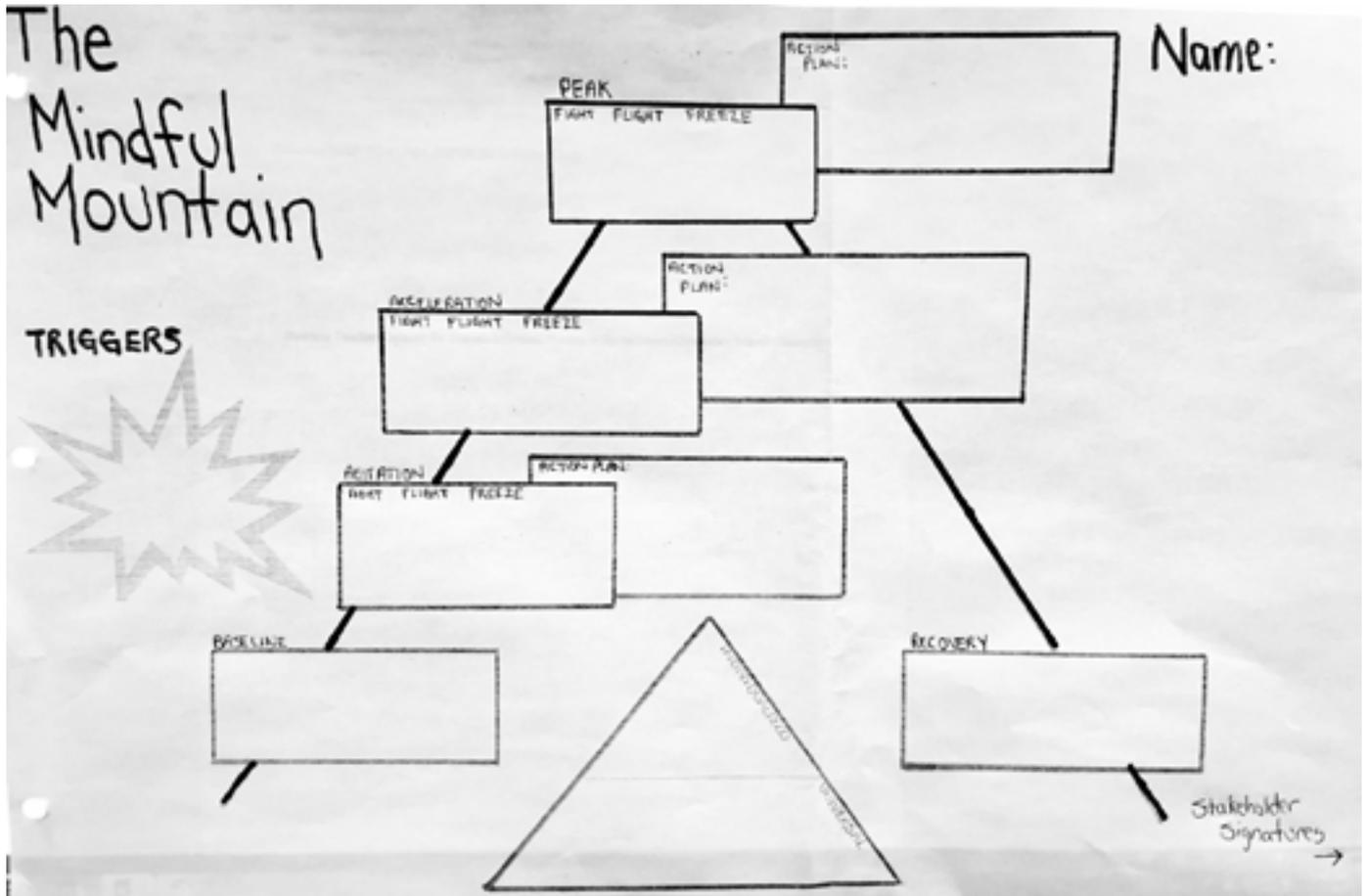
Functional Behavioural Analysis (NYC Department of Education, nd)

Student: _____ Observer: _____

Date Start & End Time of Behavior	Subject/Activity/Task Describe in detail	Antecedent What happened right before the behavior?	Behavior What did the student say and do?	Outcome/Consequence What happened right after the behavior (within 30 seconds)? How did adults and peers respond?
Total time:	<input type="checkbox"/> Large group instruction <input type="checkbox"/> Small group work <input type="checkbox"/> Independent work <input type="checkbox"/> Unstructured time <input type="checkbox"/> Other Specify:	<input type="checkbox"/> Instruction <input type="checkbox"/> Correction <input type="checkbox"/> Alone (no attention/no activities) <input type="checkbox"/> With Peers <input type="checkbox"/> Engaged in preferred activity <input type="checkbox"/> Preferred activity removed <input type="checkbox"/> Transition: Change in activity <input type="checkbox"/> Transition: Change in teacher <input type="checkbox"/> Transition: Change in room		<input type="checkbox"/> Adult Attention Provided <input type="checkbox"/> Adult Attention Avoided <input type="checkbox"/> Peer Attention Provided <input type="checkbox"/> Peer Attention Avoided <input type="checkbox"/> Got Preferred Activity/Item <input type="checkbox"/> Time out/Time away <input type="checkbox"/> Task/Activity Avoided
Total time:	<input type="checkbox"/> Large group instruction <input type="checkbox"/> Small group work <input type="checkbox"/> Independent work <input type="checkbox"/> Unstructured time <input type="checkbox"/> Other Specify:	<input type="checkbox"/> Instruction <input type="checkbox"/> Correction <input type="checkbox"/> Alone (no attention/no activities) <input type="checkbox"/> With Peers <input type="checkbox"/> Engaged in preferred activity <input type="checkbox"/> Preferred activity removed <input type="checkbox"/> Transition: Change in activity <input type="checkbox"/> Transition: Change in teacher <input type="checkbox"/> Transition: Change in room		Adult Attention Provided <input type="checkbox"/> Adult Attention Avoided <input type="checkbox"/> Peer Attention Provided <input type="checkbox"/> Peer Attention Avoided <input type="checkbox"/> Got Preferred Activity/Item <input type="checkbox"/> Time out/Time away <input type="checkbox"/> Task/Activity Avoided
Total time:	<input type="checkbox"/> Large group instruction <input type="checkbox"/> Small group work <input type="checkbox"/> Independent work <input type="checkbox"/> Unstructured time <input type="checkbox"/> Other Specify:	<input type="checkbox"/> Instruction <input type="checkbox"/> Correction <input type="checkbox"/> Alone (no attention/no activities) <input type="checkbox"/> With Peers <input type="checkbox"/> Engaged in preferred activity <input type="checkbox"/> Preferred activity removed <input type="checkbox"/> Transition: Change in activity <input type="checkbox"/> Transition: Change in teacher <input type="checkbox"/> Transition: Change in room		Adult Attention Provided <input type="checkbox"/> Adult Attention Avoided <input type="checkbox"/> Peer Attention Provided <input type="checkbox"/> Peer Attention Avoided <input type="checkbox"/> Got Preferred Activity/Item <input type="checkbox"/> Time out/Time away <input type="checkbox"/> Task/Activity Avoided
Date	Subject/Activity/Task	Antecedent	Behavior	Outcome/Consequence
Total time:				

Appendix B

Trauma-Informed Behaviour Support Plan



Cross-Curricular Activities to Foster Computational Thinking and Engineering Design

Stephanie Hladik, Laleh Behjat and Anders Nygren

Stephanie Hladik, MSc, EIT, is a PhD student in educational research (learning sciences) at the University of Calgary, Calgary, Alberta, Canada. Her experience in electrical engineering, combined with a passion for science, technology, engineering and mathematics (STEM) outreach, has led her to design new activities to get learners of all ages excited about computational thinking and programming. She is particularly interested in how computational thinking can be taught across both formal and informal learning spaces.

Laleh Behjat is a professor at the University of Calgary. Her research focuses on developing mathematical techniques and software tools for automating the design of digital circuits. She is passionate about increasing the status of women in science, technology, engineering and mathematics (STEM). Her team has been collaborating with researchers in arts and education on developing ways to teach innovation and creativity in postsecondary education. Her team, Schulich Engineering Outreach Team, was also the recipient of the ASTech Leadership Excellence in Science and Technology Public Awareness Award in 2017, and she has been a faculty advisor for developing Google's technical development website.

Anders Nygren holds an MSc (electrical engineering) from the Royal Institute of Technology, Stockholm, Sweden; an MSEE from the University of Houston, Texas; and a PhD from Rice University, Houston, Texas. Prior to joining the Schulich School of Engineering in 2004, he completed postdoctoral training in physiology and biophysics at the University of Calgary. He has taught courses in biomedical engineering and in the common core engineering program at the Schulich School of Engineering.

Abstract

Computational thinking and coding are becoming popular topics in Grades K–12, especially at the elementary level. However, students may believe that coding is boring or not creative, and elementary teachers struggle to find the time to fit another subject into a year already packed with mandatory curricular topics. The link between computational thinking and engineering design can provide space for the design of creative, cross-curricular activities in which students can learn computational thinking concepts alongside other subjects such as art, music and English language arts. These activities may challenge negative perceptions of computational thinking, and help elementary students and teachers see that coding does not have to be boring or difficult; it can be creative and help them design new things. It can also help them gain critical thinking and problem-solving skills that will help them in the future.

It seems as though every month or so there is a new educational toy for teaching coding. From Lego construction kits with motors and lights to mini robots that use colours to determine what to do, and even a caterpillar that executes a program based on its body segments, these new products provide new educational opportunities for learners of all ages. Robotics is already becoming very popular in K–12 classrooms, where students build robots that use sensors and motors to complete design challenges and meet other curricular goals. In later years, students can take coding electives to make balls bounce across screens or design video games. Computational thinking involves the technical skills and thought processes for coding robots or other programs, and is linked to critical thinking and problem-solving skills that are useful throughout a students' education.

Computational thinking was first defined in 2006 by Jeanette Wing as “involving solving problems, designing systems, and understanding human

behavior, by drawing on the concepts fundamental to computer science” (Wing 2006, 33). Even though research into the inclusion of coding and computational thinking in elementary classrooms has been growing, elementary teachers face barriers, including a lack of confidence in teaching the subject, no time to fit it into an already busy school year, and poor perceptions of computational thinking from teachers, students, and parents (Sherin, DiSessa and Hammer 1993; Wong, Ching and Huen 2015). However, the established link between design thinking and computational thinking (Sengupta et al 2013; Weintrop et al 2016) can help provide an opportunity to create new activities that teach computational thinking concepts alongside mandatory curricular topics in open-ended and creative ways.

In this article, we present three activities specifically designed to bring computational thinking and coding into elementary classrooms. First, we provide some background information about computational thinking, perceptions of computational thinking and engineering design. Next, the three designed activities are discussed in detail, highlighting their links to both computational thinking and engineering design. Finally, we briefly summarize feedback from four K–3 teachers who implemented these activities in their classrooms (Hladik 2017). We conclude with why we believe teaching computational thinking in early years is important, and how it can help students to succeed in the future while having a ton of fun.

Background

Computational Thinking

Computational thinking can be thought of as a type of thinking used during coding. Brennan and Resnick (2012) believed that computational thinking can be broken down into concepts, practices and perspectives. Computational thinking concepts are structures that programmers use in their code, and include sequences, loops, parallelism, events, conditionals, operators and data (Brennan and Resnick 2012). Programmers also use particular practices, such as being incremental and iterative, reusing and remixing prior code, and modularizing (Brennan and Resnick 2012). Finally, the computational thinking perspectives describe how programmers relate to the technological world: expressing themselves, connecting with others and questioning (Brennan and Resnick 2012). It is important to note that Sengupta et al (2013) argued that these concepts are only evident in contextualized representations of code, and other

researchers have agreed that careful attention must be paid to the contextualization of computational thinking in curricular activities (Sengupta et al 2015, 2013; Weintrop et al 2016; Wilkerson-Jerde, Wagh and Wilensky 2015).

There are perceived benefits of teaching computational thinking in the K–12 school system, such as those articulated by the Computer Science Teacher Association of linking to other fields, engaging all students and teaching problem solving (Wright, Rich and Leatham 2012). However, negative perceptions of computational thinking can become barriers to its inclusion in elementary schools. For example, one study discovered that teachers and parents may feel that coding has a lack of application to their students’ lives, especially in students who are not interested in STEM subjects (Wong, Ching and Huen 2015; Yardi and Bruckman 2007). Researchers have found that students think computing is “boring or tedious,” “antisocial,” “lacking creativity” and “only for smart students” (Dimond and Guzdial 2008; Yardi and Bruckman 2007). These problematic perceptions of computing are at odds with perceptions of students in the field (Yardi and Bruckman 2007), and, as studies have linked attitudes to motivation and achievement in science (Schibeci and Riley II 1986), negative perceptions of computing may lead to fewer students studying computing at the postsecondary level. As well, it may cause a lack of elementary teacher engagement, even if the subject were to become a mandatory curricular topic in the K–12 system. These perceptions may be challenged through the integration of computational thinking with engineering design.

Conceive-Design-Implement-Operate

There are many different versions of the engineering design process. These activities use the *conceive–design–implement–operate* (CDIO) design process as articulated by the worldwide CDIO Initiative, which is a framework for postsecondary engineering education (Crawley et al 2007). Generally, the CDIO design process follows these steps: *conceiving* what the problem is and what the requirements are, *designing* a solution, *implementing* the solution and, once it is fully complete, *operating* it through to the end of its life. The CDIO design process is outlined in detail in the online *CDIO Syllabus* (CDIO 2011). This detailed design process can be tailored to be relevant for K–12 learning, and also to specific subjects such as computational thinking and coding, as will be made clear in the activity descriptions later in this article.

Even though the *CDIO Syllabus* was developed for use in postsecondary engineering programs, it

has also been successfully used at the K–12 level. CDIO-based projects have been developed at the elementary level, such as an egg-drop challenge that provided opportunities for 11-year-old students in Sweden to gain design–build–test skills (Traff et al 2007). Activities to meet learning outcomes about electricity for Grade 5 students were also developed through the CDIO design process (Marasco 2013). Finally, the CDIO approach has been used in teacher education to balance engineering fundamentals, pedagogy and teaching practice for postsecondary students in a BSc in science and technology education program (Verner 2015).

Computational Thinking Activities

Programming Puzzles

Materials: paper, pencil, coloured paper squares, small animal figurine

Time: 30 minutes

Programming Puzzles is an activity that requires no electronic devices. It introduces students to the computational thinking concepts of sequences and conditionals, and also highlights the computational thinking practice of being incremental and iterative. In the activity, students are split into pairs, and each pair is given a set of small coloured squares (white, green, red and blue) and a small animal figurine. Students will arrange the coloured squares in a maze pattern that starts on green and ends on red, with white and blue squares connecting them. Their figurine represents a “robot,” and students need to



Figure 1: Example maze layout for Programming Puzzles

write the “code” in order to help their robot animal move from the beginning to the end of the maze (concept: sequences). They are limited by a set of commands: forward, backward, right, left and special. The special command must be used every time the animal steps on a blue square (concept: conditionals): it should make its animal sound—for example, a lion would roar. Once the pair has their maze and instructions complete, they should scramble their maze. Next, another pair of students must use only the written instructions (code) to recreate the original maze. In Figure 1, an example maze layout is shown. The code for this maze would read *forward, right, roar, right, forward, forward, roar, left, left*.

In this activity, students begin to understand the importance of developing correct instructions through testing and modelling, and of communicating those instructions clearly through words or pictures. Programming Puzzles can have cross-curricular connections to mathematics concepts (such as pattern creation) and, if done in a life-sized manner in which students are the “robots,” has ties to physical education and movement. Even though it is simple, this activity uses each of the conceive–design–implement–operate steps from the engineering design framework: students *conceive* what their maze will look like, considering restrictions on movement and commands. They *design* their maze by creatively considering different layouts, and model the activity using their animal figurine. Next, they *implement* their code using arrows or words, breaking it down into parts and testing as they go to ensure it is correct. Finally, they *operate* their code by seeing if other students can successfully follow their instructions and thinking about how their maze can be changed or improved.

Teach a Robot to Dance

Materials: Internet connection, paper, pencil, dance move cards (optional)

Time: 30–45 minutes

Teach a Robot to Dance builds upon the computational concepts from Programming Puzzles, and also does not require any digital technology other than an Internet link to watch a video. In this activity, students are introduced to the idea that choreographed dancing can be thought of as an embodied computational thinking activity: dance moves happen in a certain order (concept: sequences) and can repeat (concept: loops). As well, certain events may trigger the start of a dance (concept: events) or change the dance steps, such as doing something different on the third time through (concept: conditionals). To help students think about these concepts, they can work through a small

example of a well-known dance (such as the Macarena or the chicken dance) to determine what the instructions would be for the dance, and where any loops, conditionals and events are. Students are encouraged to be very specific with their instructions: “put hand out” does not give clear instructions to the dancer, while “put right hand out at shoulder height, palm up” does.

Next, students form small groups and create instructions for their own dance to a song. They can either write their own instructions or use pre-made dance move cards (as depicted in Figure 2) if they are younger students. They will have time to work through and practise their dance, using computational thinking practices, including breaking the song down into sections and lines, testing as they go, or reusing dance moves from a well-known fan video. Finally, they will switch dances with another group, and attempt to successfully perform that group’s dance in a dance party format. Students need to *conceive* what factors may affect their dance, such as the song choice, length of time, or physical limitations of the room or dancers. They will *design* their dance by brainstorming what different moves might be, ensuring that they are using appropriate wording to avoid ambiguous or confusing dance commands. When they *implement* their dance, they can break it down into sections and build it up line by line, ensuring that it flows nicely and is in time. Finally, they can *operate* their dance by thinking about how their instructions could be improved, and considering topics such as digital safety and citizenship if they were to post a video of their dance online.



Figure 2: Simple dance move cards

Scratch Stories

Materials: paper, pencil, laptops (if using Scratch) or tablets (if using Scratch Jr)

Time: 90 minutes

The activity Scratch Stories marks the shift from activities that do not use digital technology to those that incorporate writing programs on a computer.

Scratch Stories uses the block-based Scratch programming language, a free program developed by the MIT Media Lab. Scratch has been used extensively to introduce young students to programming and computational thinking (Brennan and Resnick 2012; Kafai, Fields and Burke 2010; Sáez-López, Román-González and Vázquez-Cano 2016; Vaca Cárdenas et al 2015). Before beginning the activity, students should be given an introduction to the Scratch programming language, either through direct instruction or video tutorials. These tutorials can cover the basics of the Scratch environment, movement, using loops, using conditional statements and timing. Scratch Stories is a cross-curricular activity that combines programming with English requirements of storytelling. Students should use Scratch to create a story that has a beginning, middle and end. Teachers can incorporate other goals, such as a certain number of characters or relation to a topic they have been covering in class. To create their Scratch Stories, students can use the different Scratch commands to program their characters to take different actions. For example, there are blocks that make a character move across the screen, display a speech bubble above its head or change its appearance. Students can choose multiple characters (called *sprites*) and also select a background for their story. Figure 3 shows some example code that will make a cat character slowly take steps across the screen until it reaches the middle of the stage and then say, “Let’s dance!” Each character needs its own code to control its actions in the story.

Depending which Scratch blocks they choose to use, students can incorporate all of the computational thinking concepts as discussed by Brennan and Resnick (2012). They will also use computational thinking practices of modularization, testing and debugging, and incrementally writing their stories. To make this activity more accessible to prereader students, the app Scratch Jr can be used in place of the full Scratch language. It includes many of the same blocks as the full Scratch interface, with meanings conveyed through images rather than words.

Scratch Stories makes full use of the C–D–I–O steps. Students conceive what their story will be about, who their characters are and what those characters have to do. They can create their own goals for the story, such as it being a certain length or incorporating a certain theme. Next, they *design* their story by breaking it down into scenes and considering what each character needs to do in each scene. They can model the story from the point of view of those characters. In the *implement*



Figure 3: Sample Scratch code causing a cat to walk to a stage and say, “Let’s dance!”

phase, they will write the code for each action, scene change or costume change. Testing and debugging will be necessary to ensure each character acts at the correct time—for example, talking one at a time during a conversation. Finally, students *operate* their story and the stories of others, figuring out how to make it work (click on the flag? click on the sprite?) and thinking of ways it can be improved. As Scratch projects can be posted online, students can also learn about digital citizenship and safety in this step as well.

to facilitate the activities in their classrooms, but did not receive any direct instruction from the authors. In total, 70 students from four classrooms (two Grade 1, one Grade 2 and one Grade 3) participated in the activities. Three of the teachers had done a small amount of coding in their classes by using games on the iPads. One class had never done any coding before at all. None of the teachers had extensive programming experience beyond some games and apps.

When asked what was the most useful thing they learned from the activities, two teachers discussed the helpful scaffolding in the activities that made the Scratch Stories activity a success. One teacher commented that “[she] could teach students to program in simple and fun ways,” and another said that “[it] was great to leave thinking [she] could continue on with the base of knowledge the kids now have,” making it clear that she intended to build off the outreach activities. Three of the teachers were also interested in attending a professional development workshop to learn more about computational thinking and coding.



Figure 4: Output of a Scratch Story about aliens

Teacher Feedback

In order to assess the quality of these designed activities, they were brought to elementary classrooms (Hladik 2017). The activities were led primarily by one of the authors, and teachers helped

Conclusions

Why is it important for students in early years to learn computational thinking skills? It’s not just preparing them to become the next millionaire app designer. Instead, we believe that computational thinking provides a way for these students to move beyond consuming technology (watching videos, playing games and so on) and instead to find a way to create things and connect what happens on screens to their experiences in the world. Students

can design programs to show off a hobby or program a robot to help with a chore. Early engagement with computational thinking and coding can change the perceptions that coding is difficult, boring and only meant for “smart people,” which can help them gain confidence in exploring these topics as they grow older. It can also help them hone skills in critical thinking, problem decomposition and design, which can have a positive impact throughout their K–12 education. Early education teachers who bring computational thinking and coding activities into their classrooms provide another way for students to engage with curricular material, while also encouraging educational play. Finally, watching students have a “robot dance party” is a ton of fun, especially when everyone is asking you to try their dance and making up their own unique dance moves. If these students can use their code to teach us to dance, there’s no limit to what they will accomplish in the future. 🤖

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Authentic Writing in Children's Lives Outside School

Shelley Stagg Peterson and Ashley Grimes

A former primary teacher in rural Alberta schools, Shelley Stagg Peterson is now a professor in the Department of Curriculum, Teaching and Learning at OISE/University of Toronto, where she teaches and conducts research on oral language and writing. She is the principal investigator of a partnership project entitled Northern Oral language and Writing Through Play (NOW Play) that examines ways to support young children's oral language and writing in play contexts at home and at school.

Ashley Grimes is a mother of three children aged six, seven and eight. She became involved in the NOW Play project as a research assistant in 2015, when she was living in northern Alberta. Ashley currently resides in central Alberta, where she is studying full time for her Bachelor of Commerce degree. She works part-time as an office manager at a financial office and part-time at a daycare centre as a childcare worker.

Abstract

In this paper, a mother of three young children and a university professor and former primary teacher make a case for teachers to initiate conversations with parents about their children's writing practices at home. We define writing as marks and scribbles, as well as drawings, letters, words and sentences, that are intended to make meaning and communicate with others. We discuss ways in which Ashley's children, aged four to seven years old at the time this article was written, use writing to express desires, encourage others to do something, and develop relationships with family members. We provide examples of the children's self-initiated writing to communicate needs and desires, express emotions and develop relationships with others in the wider world. Our paper draws from research showing that young children's everyday interactions with family and community members provide a strong foundation for children's language, literacy and overall

learning. We provide suggestions for teachers who wish to initiate or deepen partnerships with parents and caregivers to support young children's writing.

In her study of eighteen families' literacy diaries documenting the texts read and written by pre-school children over a four-week period, Marsh (2003) found that although families imported literacy practices from school, little information reached the school about the everyday literacy practices going on in homes. She proposed that there should be two-way traffic of information and take-up of literacy practices between home and school. This is the underlying theme of our paper, which we hope will be a starting point for conversations about ways for teachers to learn more about the literacy practices in their students' lives, and ways to build on those practices in classrooms.

We are a mother of three children, aged four through seven years old, in central Alberta and an Alberta primary teacher turned university professor who have been meeting two to three times each year for three years to talk about ways to support young children's writing. Ashley, who is working part-time while completing a distance undergraduate economics program, has documented many ways that her children, four-year-old Chloe, five-year-old Kaden, and seven-year-old Alexis, communicate symbolically, using scribbles, drawings and letters.

Ashley volunteered to take part in a research study examining ways in which northern rural parents and K-1 teachers in four provinces can support children's oral language and writing. Shelley, the professor, was able to contact Ashley through the Families First organization (operated through Alberta Health Services) in the northern Alberta community in which the project is situated. Shelley is very grateful to Ashley, as she is one of two parents who volunteered to participate and has

stayed in touch after moving to rural central Alberta during the second year.

Ashley believes that parents and other family members have a role in supporting their children's writing and that it is not exclusively the school's responsibility. It is important for parents and other family members to show interest in their children's scribbles, drawings and writing, and to create meaningful opportunities for children's written communication, such as writing letters to Santa Claus, with personal responses returned to the children from a North Pole address. She also involves her children, wherever possible, in authentic writing experiences that are part of her life. Ashley invites her children to contribute suggestions when she uses apps or paper and pen to create a grocery list. The children accompanied Ashley when she created an ad to sell a stroller on BuySellTrade.ca, a classified ad website. They observed her writing the text, taking a picture of the stroller and attaching it to the print ad. These types of texts send a clear message to children that written and visual images are valuable for achieving real-life purposes. Indeed, Ashley received a number of text messages with offers on the stroller during the morning we met in Ashley's kitchen to write this paper.

Our paper draws on an extensive body of research carried out across decades showing that young children's everyday interactions with family and community members provide a strong foundation for children's language, literacy and overall learning (Compton-Lilly 2009; Mui and Anderson 2008; Purcell-Gates 1996; Taylor and Dorsey-Gaines 1988). A review of this literature led Cairney (2003) to conclude that "there is a rich diversity of literacy practices within families that should be acknowledged and tapped" by classroom teachers (p 91). Yet as Lightfoot (2004) found, in the hurly-burly of everyday classroom teaching, teachers may overlook the important role of parents and other family members, and may view them "as both resources that can be tapped and obstacles to be overcome" (p 12). Furthermore, parents and other family members and caregivers may not be aware of the significant role that they play (Greene and Long 2011).

We offer a more encouraging picture of the role of parents in children's home literacy practices, discussing authentic writing that Ashley's children created at home for a range of purposes and audiences. We draw on previous researchers' cataloguing of home literacy practices to group Alexis's, Chloe's and Kaden's writing according to the intended social purpose and audience. Cairney and Ruge (1998), for example, use the purpose and

intended audience (eg, writing letters or notes to relatives or friends to establish or maintain relationships; writing shopping lists or list of chores to display information; writing songs and stories or drawing and labelling pictures for pleasure and/or self-expression; and writing the alphabet for skills development) to categorize literacy practices. Others, such as McNaughton (1995), who catalogued literacy practices of Maori, Samoan and Pakeha families, focused on the people involved in literacy practices (eg, joint activities in which a family member guided a young child to carry out a writing activity; personal activities initiated and carried out independently by the child; and ambient activities that are carried out by the people in the child's life). We have combined these features to categorize child-initiated writing practices in Ashley's home.

After presenting research that informs our understandings about young children's writing, we discuss Ashley's children's writing, and conclude with suggestions for ways in which teachers might find out more about their students' home literacy practices and make connections between children's home and school writing.

Views on Young Children's Writing

We see children's symbolic communication, on the page, screen, sidewalk and other platforms for expressing themselves symbolically, as representations of their growing understandings about the world and their relationships with the people and objects within their social and natural environments and their hypotheses about print (Rowe 2009). We define *writing* as children's dots, scribbles, lines, circles and other shapes, as well as drawings, letters, words and sentences, that are intended to communicate with others. When children make marks on a page or other platform with intention, we say that they are writing (Lancaster 2007). In the process of representing ideas symbolically and carrying out social intentions through those symbols, children are constructing and testing out their understandings and hypotheses about print (Clay 1975; Mackenzie, Scull and Bowles 2015; Puranik and Lonigan 2011). Teachers who provide opportunities for children to "play" with writing show that they value children's writing "as a form of communication equal to other vital forms of communication" (Pahl 1999, 70). Like Kress (1997), we believe that when children come to school, they "come as thoroughly experienced makers of meaning, as experienced

makers of signs in any medium that is to hand” (p 8). Children learn not only the conventions of the written symbols, but also about the significance and usefulness of print symbols, the ways in which ideas are organized in particular contexts to achieve particular purposes with chosen audiences, what ideas are salient in particular contexts and so forth (Anning 2003). These cultural understandings, learned in everyday interactions with people and with environmental and other forms of print, are reproduced and transformed in children’s writing (Rowe 2009).

Three Children’s Home Writing Practices

In this section, we describe some of the writing that Ashley’s children have been creating, grouping the writing by the intended audience and then describing various purposes for the writing.

Child-Initiated Writing to Adult Family Members and Friends

Ashley’s children use writing to communicate with the people in their life whom they know will understand written communication. Most often, these people are Ashley and her husband, but the intended audience for their self-initiated writing has also been extended family members and friends. In the examples below, writing is a tool for the three children to make their needs and desires known (often in playful ways) so that others will help them satisfy the needs or desires.

Writing to Express Desires and Encourage Others to Do Something

From the scribbles of messages written at the age of five to the messages using a combination of invented and conventional spelling of today, seven-year old Alexis writes messages after she and her siblings are put to bed. She can always find paper and writing materials in her bedroom, where much of her writing is composed. Alexis may fold the message, which often says something about desires, such as wanting to stay up later than her younger siblings, into a paper airplane and then fly it into the living room, or she may slide the message under the bathroom door when a parent is inside.

Alexis also provides information to her parents about the grocery items she feels they should buy at the grocery store through writing her own grocery lists. These lists, written using invented spelling, contain food items not usually found on the family shopping list. Sometimes items from her list end up in the grocery cart, but Ashley says that if she were to buy everything on Alexis’s list, there would be a

lot of sugar in the house! Alexis’s four-year old sister, Chloe, writes stories for a similar purpose—hinting that she would like her mother to interrupt her university course work to do something with Chloe. Her stories are typically about a girl named Chloe with the best-ever mom. In one story, fictional Chloe’s mother bought Chloe ice cream after they went to the park. Real-life Chloe scribbles her story, looking up at her mother as she writes to ensure that her mother is listening and getting the implied message (see Figure 1).



Figure 1: Chloe’s story writing

Writing to Create Identities

Five-year old Kaden is starting to draw pictures of his family and the things they do together, such as going swimming (see Figure 2). He writes words that he knows (eg, *mom*, *dad*, *Love Kaden*) and explains who is in the picture and what they are doing when his parents ask about the pictures. Kaden also draws letters, making the sounds of the letters as he writes, on the chore chart. He is practising letters he has learned at school and always shows his parents what he has written. Kaden’s drawings and his writing provide a starting point for conversations with adults that highlight what he can do and what is important to him—another way of enriching relationships with the

significant people in his life and his identity as a member of the family and a communicator using the powerful tool of writing.



Figure 2: Kaden's writing and drawing about his family

Whereas Kaden's initial use of symbols to engage family members involved pictures, letters and words, Chloe's first use involved scribbles to record stories that she narrated aloud to her family. The meaning was communicated in the scribbles and in the way she wrote them. Ashley remembers that Chloe's scribbles were fast and vigorous when she was narrating lots of action (eg, "We were walking down the street and a big dinosaur chased us") and the scribbles were slow and gentle while she narrated parts of the story with less action, such as "Then we got away and went to bed." From the age of three years old, Chloe has confidently used writing for meaningful purposes and has felt a strong sense of being a writer.

Maintaining a relationship with her grandmother in northern Alberta is also a purpose for Alexis's self-initiated writing. Since her Grade 1 teacher introduced letter writing, Alexis has been writing to and receiving postcards from her grandmother. Additionally, Alexis sometimes teases her mother by crossing out and adding her own messages to her teacher in the agenda used for communication between the home and

teacher. In Figure 3, Alexis crossed out the message that Ashley had written to Alexis's teacher (that she would be going to daycare) and wrote: "Mom will be." Ashley added in the "ha ha!" to show her appreciation of Alexis's sense of humour.

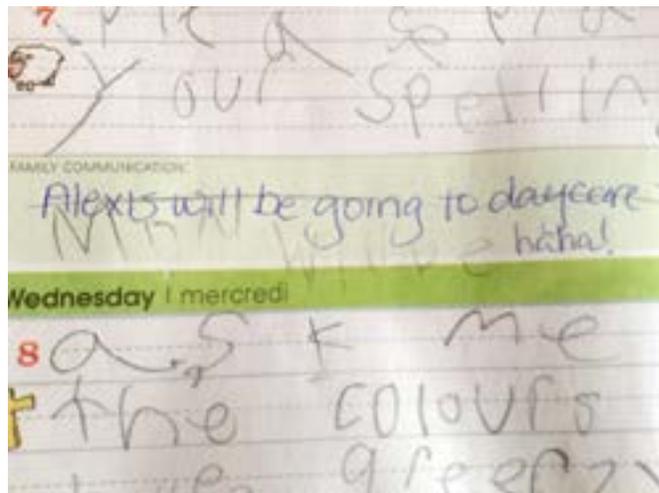


Figure 3: Alexis's use of writing to tease her mother

Alexis uses writing to develop her relationships with friends at her daycare, as well. She asks Ashley how to spell words to write letters with invitations such as, "Can you please paint a picture with me?" to give to her friends.

In these stories that Ashley has shared about her children, we see that Alexis, Kaden and Chloe are finding a number of authentic purposes for communicating through writing/drawing/scribbling within their circle of family and friends. Their audience is usually someone (such as the adults in their lives) who they know will be able to interpret their writing.

Child-Initiated Writing to Communicate with the Wider World for a Range of Purposes

Alexis and Chloe also use writing to communicate with unknown and imagined audiences beyond their immediate relationship circle. Although this writing is often intended to serve similar purposes as the writing to those close by, the expanded audience seems to open up possibilities for a wider range of purposes for the writing.

Chloe learned that communicating with the wider world can help achieve intentions, such as getting a desired gift for Christmas. Chloe's letter to Santa requesting a goldfish for Christmas prompted a written response on Christmas Day. She found a fishbowl under the Christmas tree and a gift coupon that said, "Good for one free fish from Santa." Ashley had paid the pet-store clerk when she

bought the fishbowl, so that when Chloe gave the clerk the coupon, the clerk said, “Here are all the fish Santa sent in for the kids.” Print had played a significant role in Chloe’s becoming the owner of a pet goldfish, a role that was reinforced by the pet-store clerk.

This past Christmas, Alexis decided to make a Christmas card for Santa when he came to their hometown and met with children in his sleigh on the main street. She wrote, “I love you Santa. See you on Christmas Eve. I’ll leave you lots of cookies.” Santa showed his appreciation and said he would bring the card home for Mrs Claus to read, as well. This is only the beginning of Alexis’s written communication with others beyond her immediate social circle. Having experienced the power of print to create relationships with others, Alexis is now seeking addresses of her favourite Disney characters to write fan mail to them. Her reach as a writer is extending far beyond the bounds of her home life.

Alexis used writing to take action when she felt moved to do so. One instance followed the viewing of a YouTube video about cats and dogs doing funny things. She was enjoying the video until it was interrupted by an advertisement for an animal rescue agency showing emaciated and abused puppies. This pop-up video showed up in spite of the parental control being turned on. Alexis asked questions about how animals could be treated so horribly and expressed her concerns. Ashley pointed out that the dogs were rescued and looked in good health at the end of the video, but the images continued to disturb Alexis. She wrote the note in Figure 4 a few days later, leaving it on her bed for Ashley to find. Alexis realized that she had addressed it to animals that wouldn’t be able to read it, saying to Ashley: “It’s too bad dogs can’t read.”

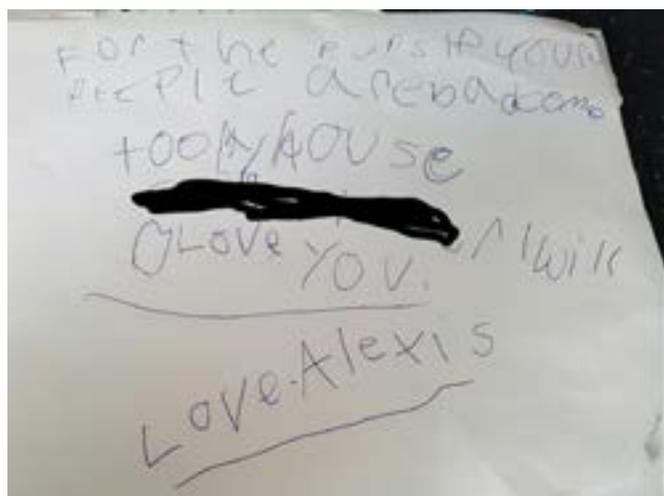


Figure 4: Alexis’s note to puppies

The note reads, *For the pups. If your people are bad, come to my house (address is blacked out). I will love you. Love, Alexis.* In spite of not being able to communicate directly with the puppies in the advertisement, Alexis wanted to do something that was meaningful to her. Writing had been of great use to Alexis in developing and enriching relationships, and in helping her satisfy desires and needs. Now, she had found a way to harness the power of writing to help others.

Two-Way Communication about Children’s Writing

As we sit around Ashley’s kitchen table talking and writing about the three children’s writing, we are excited about the many creative ways in which Alexis, Kaden and Chloe make meaning with print, scribbles and drawings in their lives outside the classroom. We also find it remarkable that the children have such high expectations for their use of written communication. They show fundamental understandings about text that are identified in the literature (Anning 2003; Rowe 2009)—that it helps them to make meaning and to carry out social purposes. The three children create symbolic texts, confident that the texts will help them to do something that matters to them in their immediate social world and, as is the case with school-aged Alexis, with the wider world.

As Marsh (2003) proposed, if it were possible to open up two-way communication avenues between parents and teachers, there could be a more seamless partnership between home and school to support children’s writing. Based on our experience as parent and teacher, we believe that the two-way communication will likely have to start with invitations from teachers, as parents and other family members or caregivers might not feel comfortable starting these conversations. Parent-teacher conferences are a great place for teachers to ask parents questions about the writing/scribbling/drawing that children do at home. Teachers might also send an invitation in the classroom newsletter, asking parents/caregivers and children to select children’s home writing to bring to school to celebrate with the rest of the class in author’s circle. Teachers may provide suggestions for contexts and types of writing that children might do at home, as well. Shelley has learned from a Grade 1 teacher participating in the research project in northern Alberta that children and parents enjoy pasting or stapling children’s home writing in a scrapbook that the teacher gives to children at the beginning of the school year. She asks parents to

bring the scrapbooks to parent–teacher conferences so they can talk about the child’s writing at home and at school.

We believe that these stories about children’s home writing would add rich detail to the picture of each child that teachers create through daily classroom observations. In addition to learning about how children communicate through drawings, scribbles and writing (Clay 1975; Mackenzie, Scull and Bowles 2015), teachers learn about their students’ interests, their views of themselves as writers and their understandings about what they can do with print and other modes of communication. The children’s writing shows teachers how they are applying what they are learning in school in a real-world context, and also may provide ideas for writing forms and writing purposes that could be taken up in classroom writing. Invitations to parents to show and talk about their children’s writing at home are the starting point. Children’s learning in primary classrooms can be enriched when their teachers recognize and build on the writing that children initiate in their out-of-school lives.

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Helping Alberta School Leaders Understand Student Recruitment at the Elementary School Level

Olenka Bilash

Olenka Bilash, PhD, is a professor in the Faculty of Education, University of Alberta, and has worked with teachers, parents, school leaders and communities around the world for four decades. Her research interests include oracy and literacy development, teacher professional development, identity formation and transformation, action research, systems theory, and global citizenship awareness education.

Abstract

In 2015, a survey was designed and distributed in Edmonton, Alberta, Canada, to learn about parental decision-making processes when selecting an elementary school for their preschool aged children. This paper addresses three research questions: (1) How do parents seek information about programs? (2) Which school-related factors are most important? and (3) When given a choice of academic program elements, which are most important to parents? The survey results indicated that (1) parents investigate and compare multiple data sources when selecting an elementary school; (2) academic standards, school reputation and diversity of programs appear to be more important than some pragmatic factors such as busing, after-school options and school advertisements; and (3) parents are seeking strong academic programs with a focus on second languages, moral education and academic support.

Introduction

In comparison with their predecessors, 21st-century parents appear to use different ways of searching for schools and programs and have distinct expectations for a quality educational program (Bossetti 2004; Zeelandelaar Shaw and Northern 2013). Their growing hands-on involvement in their children's education (Tubin and Klein 2007; Williamson 2012; Carpenter and Krutka 2014)

require educators to adapt their practices of home-school communication accordingly. The great variety of choices in educational programs further turns schools into marketing bodies that seek enrolment to sustain their unique identities. According to a survey conducted by the Fordham Institute in the United States, over 2,000 parents revealed that there is no longer one school for all; schools must cater to many different beliefs and needs of parents. (Zeelandelaar Shaw and Northern 2013). In addition, two Alberta Education policy initiatives, *Setting the Direction for Special Education* (2009) and *Inspiring Education* (2010), and a new *Education Act* (2012), though not yet implemented, are further changing the educational landscape in Alberta and in some ways redefining the roles of teachers, principals, superintendents and trustees.

Among the changing roles, advertising and recruiting students have become an increasing part of some school leaders' job responsibilities (Oplatka 2007). Parent groups are also heavily involved in fund-raising and school advocacy (Support Our Students [SOS] 2016). Thus, more granular factors that parents consider when selecting a school for their preschool children would be valuable information for both of these groups and constitute the significance of the study reported in this paper.

In 2014, a survey was designed and distributed in Edmonton, Canada to learn about parental decision-making processes when selecting an elementary school for their preschool aged children. The 16 multiple-choice questions were designed to include factors available in the limited literature about this topic and then to gather parental opinions about the educational environment they sought for their preschool child, factors they considered when selecting a school, the importance of a school's teaching reputation and academic standards, the relative importance of a variety of promotional strategies used by schools, some of their recent

search strategies and demographic information from the parent participants.

The paper reports findings by addressing three research questions: (1) How do parents seek information about programs? (2) Which school-related factors are most important to them? and (3) When given a choice of academic program elements, which are most important to parents? The paper is organized around responses to these questions and integrates related literature with the data collected from the survey (n=120). It concludes with recommendations for school leaders.

Methodology

The survey was administered to parents with preschool-aged children in Edmonton and the surrounding areas. Survey respondents lived in Edmonton, St Albert, Sherwood Park, Spruce Grove and Stony Plain, and reported that they had varying levels of educational attainment: junior high school (1.69 per cent), high school (10.1 per cent), technical school (16.95 per cent), university (54.24 per cent) and graduate studies (27.12 per cent).

The online survey was developed by the author to explore options that parents examine when researching potential schools. Once developed, it was approved by the Research Ethics Office at the University of Alberta. Ranked and open-ended responses to questions allowed for comparison and

triangulation. Parental volunteers were recruited through posters distributed throughout the city at daycares or preschool classes (6.95 per cent), Facebook pages or other social media sites (24.66 per cent), newsletters (4.11 per cent), and friends and relatives (67.12 per cent). Data were collected and sorted through SurveyMonkey. The survey link was available to possible participants over a six-week period. Participants took 10 to 17 minutes to complete the survey.

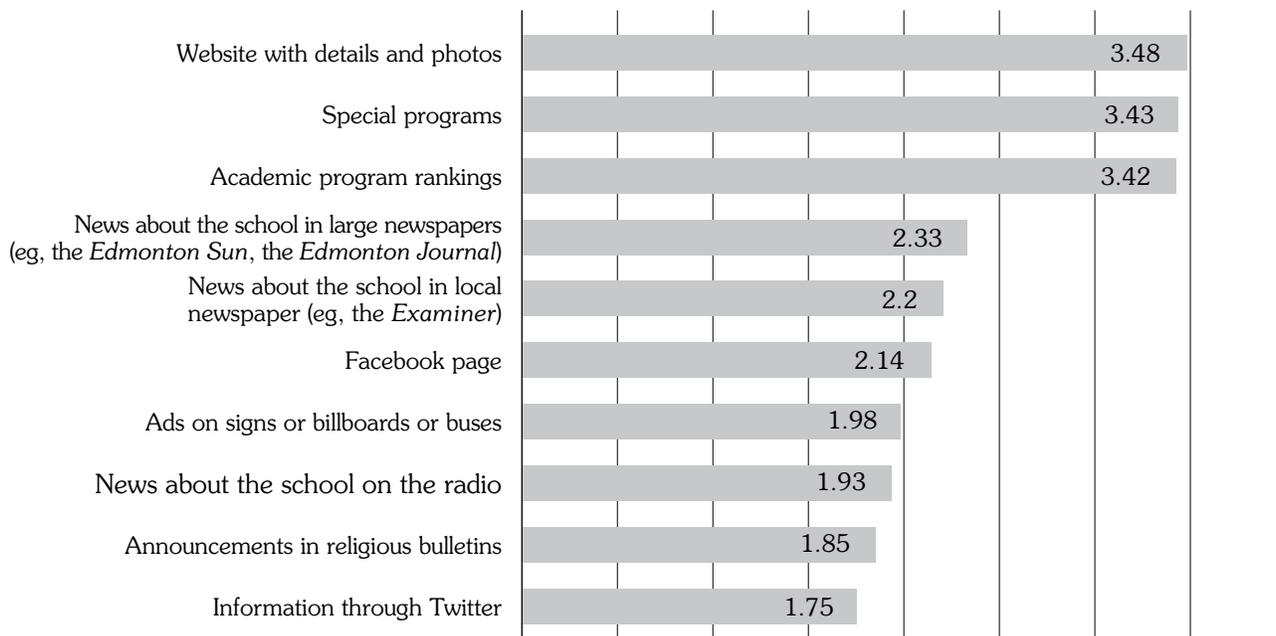
Research Questions

1. What are some ways that parents seek information about potential schools?

The purpose of this question was to determine where parents research information about schools. Respondents reported that they used a multitude of sources, including web based (school websites, academic ranking sites, Facebook and Twitter), face to face (open houses) and traditional sources (newspapers, local bulletins, radio and billboards).

An up-to-date website that is loaded with program information and photos of “learning in action.” When asked about how they gather information about potential schools, most parents report that one of their first access points was the school’s website. As Tubin and Klein (2007) report, up-to-date websites can inform

Figure 1: In selecting a school, how important are the following ways that the school advertises itself? (1 is low and 5 is high.)



parents of the school's goals, mission and vision; upcoming events; descriptions of innovative programming; classroom pages and class assignments; extracurricular activities; and school contact information. Factors that influence a school website's utility for parents include design (Schleig 2012) and searchability (Schroeder 2007). Among nine factors related to obtaining information about schools, parents considered the school's website to be first with a weighted average of 3.48/5 (see Figure 1.) The study also reported that 75 per cent of participating parents had visited school websites in the previous year.

A school Facebook page. A school Facebook page costs little in terms of time to monitor and post, and, as long as the school staff has the webmaster skills, offers the school an opportunity for parents to see what happens within its walls on a daily basis. With a simple camera, schools can post photos of students at work, videos of school performances, field trips and notices. Today's parents want to be active participants in their children's academic lives, as Williamson (2012) explains: "Parents and employees often come from a different generation, one that wants to work differently and to be involved in the educational process. Social media is a way to engage them in the life of your school" (p 1).

Twitter. Although parents or educators do not traditionally think of Twitter as a potential school recruitment tool, this view may be changing. In Carpenter and Krutka's (2014) study, the researchers noted that Twitter has three main uses in school settings: professional development for teachers, communication with parents and families, and reporting classroom activities so that students and parents remain in close contact with teachers. While the researchers reported that the majority of teachers use Twitter for professional development so that they can maintain communities of professional practice, others use it to showcase their students at work throughout the school day, keep parents informed about school events and upcoming deadlines, and stay informed about learning issues through Twitter discussions. Morgan (2014) explained that Twitter is a particularly useful tool for low-income families who do not have Internet at home and rely on the use of their cellphone for information exchange. Morgan's article also highlights a multitude of literacy and digital literacy activities in which children can engage and parents can observe.

An open house. According to Oplatka (2007), parents and students report that while school open houses were not necessarily the sole deciding factor in choosing a school, they do play an important role

in assisting an emotive choice between multiple options (Oplatka 2007). GreatSchools staff (2016) claim that open houses are an excellent chance for parents of potential students to ask questions about the school's programs and policies, observe the school's culture and friendliness, learn about school-home communication, and notice the maintenance of school facilities. In the current study, 64 per cent of parents reported attending at least one open house in the previous year. As one study parent explained, "Being exposed to schools that have unique programs and seeing the benefits have influenced us and our decision."

Academic rankings. Parents highly value the academics offered by the school, and the development of their child's critical thinking (weighted ranking of 4.54/5 in Appendix A); however, they ranked academic rankings such as those provided by the Fraser Institute only 17th out of 20 factors, with a weighted average of 3.03/5 (see Figure 2). As one respondent stated, "Academic profile needs to be carefully considered, as reporting of results can be misleading." Another study participant was quite specific about what s/he was seeking in the academics offered by a school:

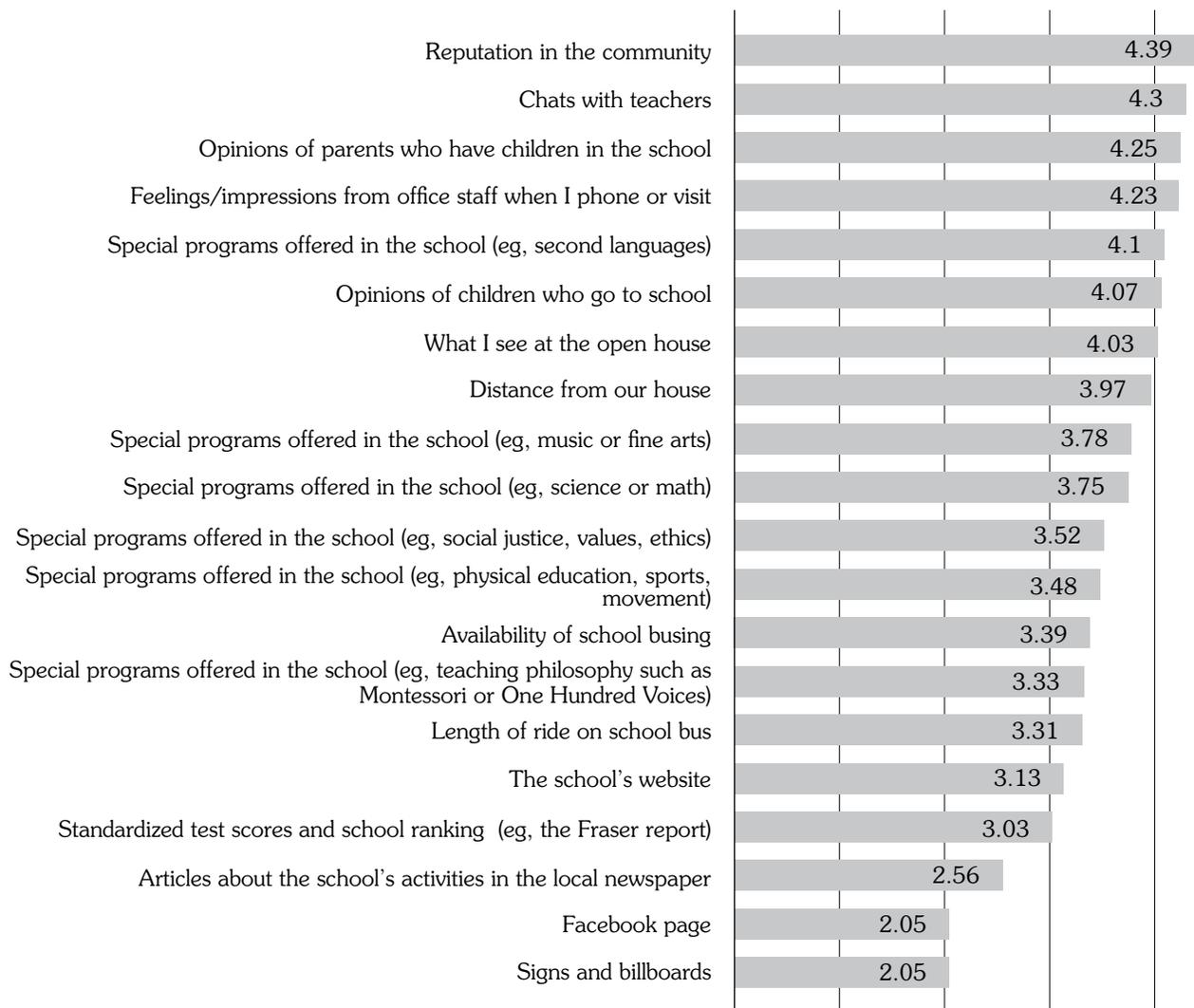
With an academic program, I am looking for rigour such as inquiry and project-based learning. Many teachers are "delivering": a published teacher resource is not an academic program.

Traditional media: newspapers, local bulletins, radio, and signs and billboards. As Figure 2 reveals, local press, Facebook, and signs and billboards were considered to be of minimal importance to parents in making a decision as to which school their child should attend. Yet for parents who have little or limited access to technology, such as parents who were English language learners, print media forms and face-to-face information sessions were preferred (Hoffman, Podikunju-Hussain and Ridout 2015).

Comment on Answers to Research Question One

Over the course of this survey, it was found that parents seek multiple sources of information when selecting a school for their preschool-aged children. Findings suggest that parents use both web-based sources and traditional media when selecting possible elementary schools. They rely on websites (weighted average 3.48), academic program rankings (3.03), Facebook (2.14) and Twitter (1.85). Traditional media sources are also important to parents who seek information from citywide newspapers (2.33), community newspapers (2.20),

Figure 2: How important are the following in making a decision about which school is best for my child? (1 is low and 5 is high.)



radio (1.93), faith-based bulletins (1.85) and billboards (1.75). It appears that parents do not give equal weight to all of these sources or use them individually, but triangulate them to verify impressions from various sources and also to envision the overall character of the school.

2. Which factors are most important when selecting a school?

When selecting a school parents look at multiple factors including academic (high academic factors, teaching reputation, program diversity), facility-related factors (distance and busing options, safety and security, day care and after-school options, and open-door policy) and advertisements. Parents were

asked to rank the importance of these factors on a scale of 1–10. See Appendix B.

Academic factors. In this study, parents reported that academic factors were the most important to them. Academic standards (8.81/10), teaching reputation (8.42/10) and program diversity (8.35/10) received the three highest scores.

In selecting a school, some parents noted that, in the academic mix, homework seemed to be an overrated extreme in some of the schools visited. One participant privileged the role of family development over homework:

Do not get me started on homework ... ugh. It is not a skill. When I am done work for the day, I'm done—maybe check e-mail or Google something,

but nothing is assigned to me to practise in rote to become a better employee. Please let homework be authentic. Please do not use homework as assessment. Please allow my family time to grow as a family—hug, cuddle, cook, laugh, read, play, decipher etc. My child doesn't need Nelson or Pearson after 3 PM."

Facility-related factors. Parent participants reported that they choose schools based on distance to schools and busing options (7.5/10), as well as safety and security (6.56/10). Several parents reported that they highly valued the neighbourhood school and chose housing accordingly: "I moved to a house where my children would be able to walk. How is this not even a basic option anymore?"

Less important factors were open-door policies (4.62/10), and daycare or afterschool programs offered in the same facility (4.34/10). However, for some parents the latter was critical in their decision: "My husband and I both work full time, so out-of-school care located in the school is a big deciding factor."

Advertisements. Respondents ranked school advertisements as the least important factor in their decision making when selecting a school for their preschooler (4.05/10). Several parents commented that they did not support education becoming a business. This respondent's response is representative: "I don't like schools advertising. It turns them into businesses." Another noted that while advertisements were seen, they were not necessarily highly influential:

I have definitely noticed most of the above advertising since I am starting to look at which program would best suit my children; however, it does not mean I was in favour of or was swayed by said advertisement/options/gig.

Comment on Answers to Research Question Two

Although parent-respondents reported in question one that they examined multiple recruitment sources when selecting a school, they reported that advertisement was the least important factor when making a final decision. Academic factors appeared to be most important to participants. School distance and school safety were relatively important; facility-related factors seemed less critical to parent-respondents, and school open-door policies and after-school care did not seem to influence choices of the majority of the participants.

3. When considering programming types, what types of programs are parents looking for?

Parents are free to choose from many different elementary education programs available in Edmonton and the surrounding area. These programming options include academics, language learning, moral/religious education, academic support, cultural options, technology, fine arts and sports.

Language learning. Language learning was considered an integral part of an academic program, especially in immersion and bilingual settings. Reasons for which parents chose language education are multifaceted and complex and appear to be linked to four factors. Many parents reported that language programs linked them and their children to heritage/ parental language ability:

It is the heritage of both parents; the language is being lost in our generation. Incorporation of cultural events and religious celebrations are important.

Punjabi because we want our children to learn more about our culture and language.

We chose Ukrainian because it is our family background. It is important for our children to understand the language but, more important, to be immersed in religious and cultural activities.

French was chosen due to its widespread availability. Italian was desired due to family background, but no Italian program exists (to my knowledge) within the local school board.

I went to French immersion and I feel that having a second language is important, no matter what it is. However, I want to be able to support my child in the learning of a new language and because I only speak English and French, I would hesitate to put her in any other program if I don't feel I have the competency to assist at home.

Would like to expose my child to a second language formally in the early years of his education so that he can gain fluency. We have not decided on French or German as his second language. Are considering French so that he can take advantage of opportunities here in Canada. Are also considering German so that he can communicate in the language of his origin.

Other parents see language programs as offering academic challenge to their children.

Language learning is a basic skill. My child needs an academic challenge.

Third, for some parents, language programs opened doors to the global world for their children:

Language learning is a basic skill these days. Multilingualism suggests an openness to the world at large.

The Spanish bilingual program, because of the Spanish language being so widely used in the whole world.

Finally, some parent proponents of French immersion programs believed that they were symbolic of Canadian-ness and offered prospective career capital:

We live in Canada. Our children should know French.

Official language. Government job in the future.

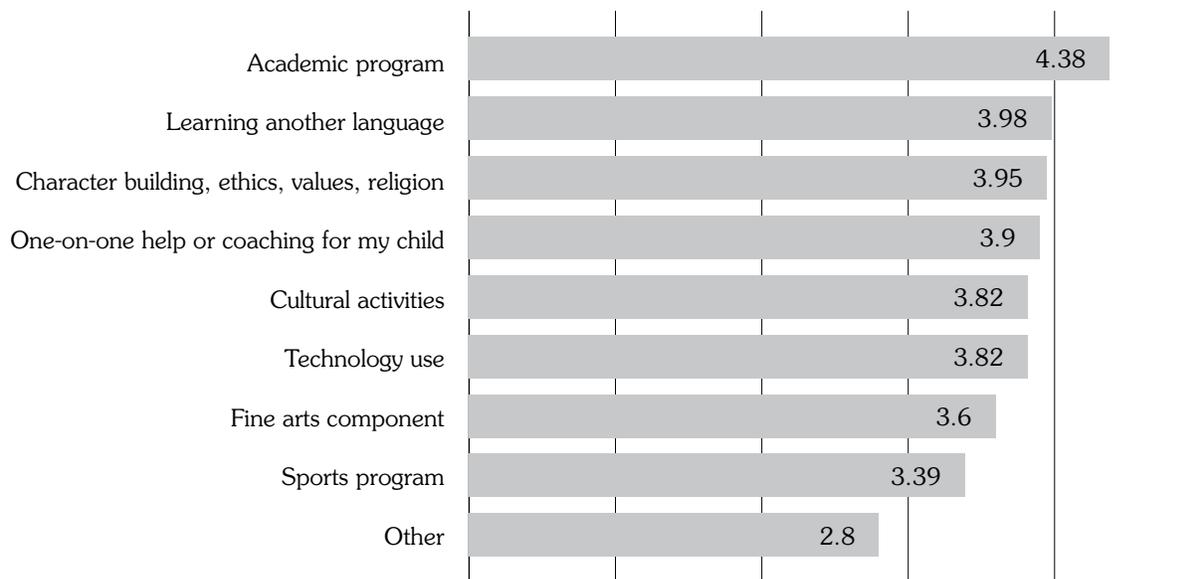
These multiple and varied responses also align with the findings in a study conducted by Parkes (2008) in the southwest United States, in which parents listed multiple reasons why they chose an immersion program for their children.

In the current study, language learning was highly valued by parents, both by those seeking immersion programs and by those wanting second language classes to be taught as a standalone subject. Parents not choosing immersion programs still expressed interest in the quality of French as a second language programs and desired standalone classes for their children.

Moral education. Given that Alberta has long had two publicly funded school systems—public and Catholic—and has made space for charter schools (eg, Christian, Islamic and Jewish), it is not surprising that parents ranked character building, ethics, values and religion as an important factor in their school selection (weighted average of 3.95); see Figure 3. Parental comments suggest that many parents see schooling as a reflection and integration of heritage and culture as well. For example, one respondent wrote, “Family culture and religion” fit into schooling, and another stated that “School should incorporate cultural events and religious celebrations.”

One-on-one support. Over the past four decades, education has increased its investment and school organization to support individualized instruction. From the rise of reading resource room pullout programs, to their expansion into mathematical and other literacies, to increased time allotment to the core subjects and on to the learning coach model recommended throughout the province, schools steadily try to assist learners in developing strong basics during the primary years of schooling. Thus, it is not surprising that parents ranked one-on-one support high among variables that influence their choice of school (weighted average of 3.95; see Figure 3).

Figure 3: Please indicate how important the following details are about special programs in the school (1 means the point is low in importance and 5 means it is high in importance):



Cultural activities. In 1999, Irwin conducted a study that compared urban and rural attitudes towards multicultural education in Alberta. Her study found that most teachers in both locations felt that multicultural education should not be mandated as part of the Alberta curriculum. At this time, teachers may not have understood the role that multicultural education plays in eliminating prejudice or in promoting peace and cultural understanding (Banks 2009).

In the current study, parents reported that multicultural activities were something that they looked for as a priority when choosing a school. Parents ranked a multicultural program as important as a technology program, with both scoring 3.83/5. Since the study that we conducted examined parental attitudes and not teacher attitudes, it is difficult to say whether the difference is a result of a difference in desires by parents and teachers, changing Canadian demographics and social realities, growing interest in multiculturalism, or simply the passage of time.

Technology. These digital-savvy parents expect technology to be integrated into the school curriculum and are sometimes interested in “seeing how computers are used.” As Figure 3 suggests, parents considered a technology program an important component of an elementary school for their child, scoring it 3.83/5.

Fine arts. Fine arts programs, which include music, drama, drawing, painting and other forms of artistic expression, are known to have a multitude of benefits for students. These benefits are often promoted with the belief that the arts “make you smarter” (Vitale 2011).

Learning in, about, and through the arts helps students lead fulfilled lives. Students who lack arts experience in their schooling will emerge undernourished by the end of their education. By contrast, those students whose schooling includes the arts will benefit through their lives in a multitude of ways, by the intrinsic benefits that the arts bring to the quality of their lives. (Upitis 2011, 9).

Although parents sought programs that developed their child’s creativity (weighted average of 4.37/5), fine arts programs received a relatively lower priority in responses to this survey. Some parents felt that their fine arts interest would emerge over time and be addressed then. For example, one parent stated that

We decided to have our child attend a local school, then see where the child excels, and have said child enroll in school that caters to that talent. For example, if our child wants to be in performing arts, then we try and enroll him in school that focuses on performing arts (Vic Comp).

Among the eight types of programs studied, fine arts programs registered in the seventh position with a combined weighted score of 3.60/5. Upitis et al (2001) found that parents who were interested in arts programs for their children tended to be the parents who were also interested in arts programs for themselves. These were also the same parents who chose to pay for private music lessons for their children.

Physical education and sports. Of all of the potential program types, parents who responded to this study seemed least interested in sports. When asked to rank the importance of physical education and sports, on average parents gave it a weighted rank of only 3.39/5. This level of interest may mirror a study conducted by Clark (2008), who reported that childhood participation in sports was heavily influenced by parental participation; 75 per cent of the children engaged in sporting activities had a parent actively involved in sports. Clark also found that interest in formalized sports programs is waning for both boys and girls between ages 5 and 14. The sports programs in Alberta may also vary from school to school (Mandigo et al 2004).

Overall. Figure 4 presents the percentage of parents who explored various factors relating to schools over the year prior to the study (and likely the year prior to registering their child in a school).

Comment on Answers to Research Question Three

Parents have many choices when selecting the kinds of elementary programs that they would like for their children. For parents, the most important is an overall strong academic program. Certain specific academic aspects were clearly important to parents, such as foreign language instruction, academic support and moral education. Multicultural exposure and technology use were seen to be of equal importance to parents, while fine arts and sports were relatively less important to parents when selecting an elementary school. Our findings appear to reflect the academic literature, which posits that musically, artistically or athletically inclined parents see this form of education as relatively more important than parents without these personal interests.

Conclusion, Further Study and Recommendations

This research on factors that parents consider when selecting a school for their preschool-aged children is timely and relevant to Alberta school leaders and administrators for many reasons. First, school leaders may allocate school resources for both

Figure 4: Percentage of parents who explored the following over the previous year (Check all that apply)
n=120

51–75%		26–50%		15–25%	
The website of a school	74.58	Availability of school busing	37.29	Teaching philosophy such as Montessori or Reggio’s One Hundred Voices	23.73
Opinions of parents who have children in the school	72.88	Standardized test scores and school ranking	35.59	Physical education and sports program	20.34
Chats with teachers in a specific school	66.10	Chats with teachers about reputation of a school	30.51	Social justice projects	15.25
Attend an open house	64.41	Articles about a school’s activities in the local newspaper	30.51	Facebook page for a school or program	15.25
Reputation in the community	61.02	Length of ride on school bus	30.51	Signs and billboards	13.56
Distance from our home to specific schools	57.63	Science and math program	28.81		
Special programs offered in a school (eg, second languages)	55.93	Music and fine arts program	27.12		
Opinions of children who go to the school	50.85				

parent–school communication and the promotion of the school programs. Second, the kind of elementary school that parents in the Edmonton area are seeking requires funding for diverse programs and resources, and for the recruitment of students to sustain the programs. According to our survey, when researching potential elementary schools, parents value strong and diverse academic programs that place emphasis on second languages, moral education and academic support. They look to technology to learn about the school’s activities and to students and parents to discern its reputation.

Recommendations

- 1. School website.** In this study, parents reported that websites were the most important informational tools when selecting a school for their children. With the rapid rate of change in the architecture of websites, administrators and school decision makers would be wise to invest in the design and searchability of the school’s website and keep it up to date.
- 2. Keep all information sources about the school up to date.** Survey results indicated that parents investigate and compare multiple data sources when selecting an elementary school. Incoming parents are interested in both a well-balanced educational program for their children (languages, STEM, fine arts, physical education) as well as in the everyday life of the school. To assess this, they consult children who attend the school as much as their parents. Thus, schools cannot afford to tarnish their reputation in any way.
- 3. Programming.** Given that parents place a high value on program diversification, schools could benefit from attention to language, multicultural and Canadian heritage programming.
- 4. Staff friendliness and school atmosphere.** Caring, capable and creative staff can help set the stage for a strong first impression for a parent and a long-term positive reputation for the school. All staff members need to be aware of how their interactions with children and parents are critical in creating a welcoming atmosphere in the school.

5. **Relate to your demographics.** While it might seem like a given that parents and communities are aware of what local schools are available, some newcomers to the community might not know what their options are. Thus, even though advertising the school on local radio or on signs and billboards was ranked in the lower third in Figure 1, it might be the most affordable and informative way to let the local community know about what is taking place at the school and also contribute to the school's reputation, which 61 per cent of participating parents reported inquiring about in the previous year. Accordingly, school and parent leaders should know the demographics of the parents in their constituency and respond to their means and sources of seeking information.

Delimitations

Delimitations are choices that are within the researcher's control; the results in this study are limited by four factors. First, the researcher could not control or monitor who received the survey. For example, survey links were dropped off or mailed to all daycares in the greater Edmonton area, including St Albert, Sherwood Park, Spruce Grove and Leduc; private homecare settings were not included. Further, there was no way to monitor whether the links were distributed to parents. Second, with only 120 of possibly thousands of new parents participating, the results represent a small percentage of eligible new parents. Further, with over 50 percent of respondents having at least one university degree, the study does not reflect the views of a cross-section of the population. Third, the survey link was scheduled to close on a specified date; inquiries received after that date would not have been registered, and there is no way of knowing who or how many of such attempts were made. Finally, recruitment may not be as great a concern in other parts of the province, rural or urban.

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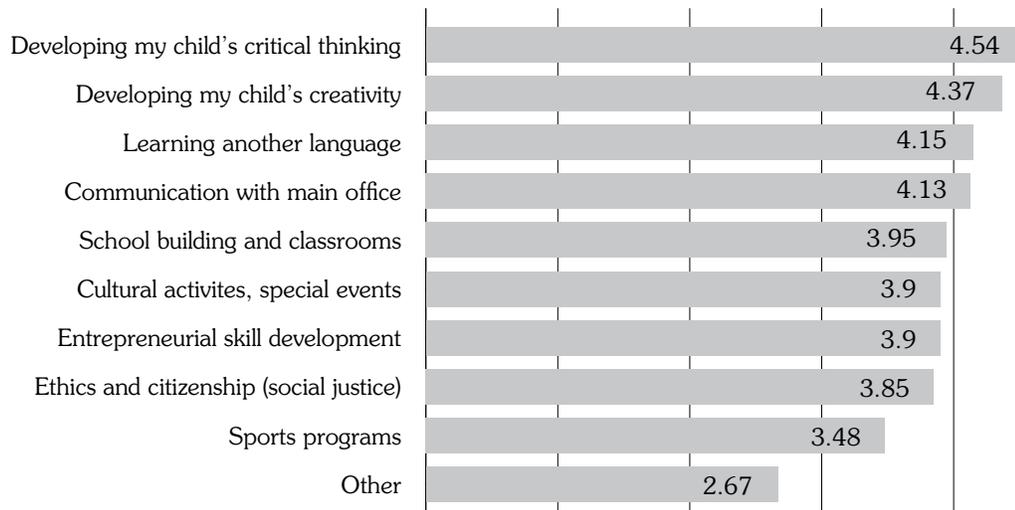
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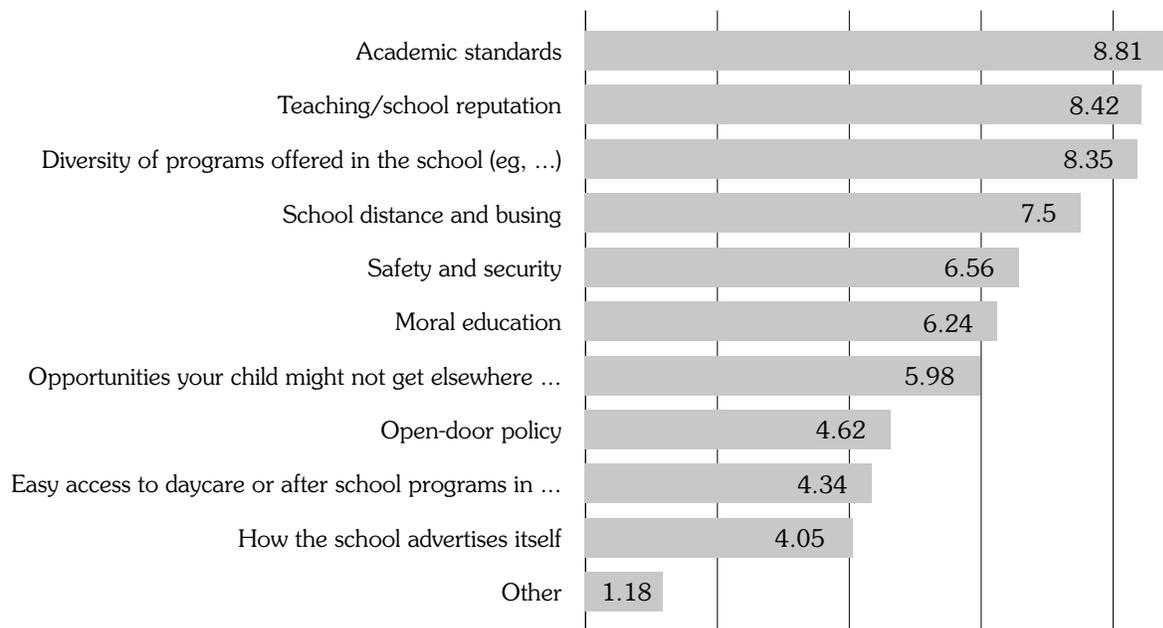
Appendix A

In choosing a school, how important are the following factors? (1 is low and 5 is high)



Appendix B

Parents' ranking of the importance of factors in choosing a school, on a scale of 1–10.



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