The Mix that Works for the SMARTBoard Integration in an American Elementary School: What We Can Learn from Them

Mas Nida MD KHAMBARI[a*], Dawnene HASSETT[b] & Su Luan WONG[c]
[a,c]*Universiti Putra Malaysia, Malaysia*
[b]*University of Wisconsin-Madison, USA*
*nidakhambari@gmail.com

Abstract: The function of school and the important role of community involvement on technology integration are areas that are given little attention in the fields of research in educational technology in Malaysia. This study, which explores the aforementioned areas specifically on the integration of the SMARTBoard Technology, attempts to shed an insight into how Malaysian schools can learn from an American elementary school that is well known for its successful integration of the SMARTBoard Technology. Framed by the Cultural Historical Activity Theory and the Theory of Diffusion of Innovations, this study centers on the mix that works for the success from the social, cultural, and historical lenses. Two technology embracer teachers were the participants in this study. The findings that emerged from this study revealed that the school's pledge is the key innovation that was necessary in the school for the success of the SMARTBoard Technology integration, which also came as another innovation. These innovations was made swift through the school's community practices, which are *community building*, *developing routines,* and *balancing act*–the mix that was necessary for the school to successfully diffuse innovations into its system and function efficiently as a community. Reciprocally, the innovations themselves have enforced such practices and made the practices all the stronger.

Keywords: Interactive whiteboard, SMARTBoard technology, Cultural Historical Activity Theory, Theory of Diffusion of Innovations, innovation, activity system

1. Introduction

Whenever technology is integrated in a classroom, there is a debate on defining the mode of instruction taken by the teacher on whether it should be teacher-centered or student-centered (Taylor, Harlow, & Forret, 2010; Kershner, Mercer, & Warwick et al., 2010; Northcote, Mildenhall, & Marshall et al., 2010; Şad & Özhan, 2012; Md. Khambari, Hassett, & Thomas et al., 2014). In this paper, we argue that technology should be regarded as a tool rather than as a substitution for effective teaching. Rather than trying to define one's mode of instruction with technology, this study offers an understanding of teachers' daily work and how they manage their classroom to attain specific goals while juggling with several obligations. Using the Cultural Historical Activity Theory (Engeström, 1999), this study is able to unravel the complexity of a school system and its classrooms in their most natural context. The Theory of Diffusion of Innovation (Rogers, 2003) is used to explain the processes of innovation diffusion in a social system as it unearths the conflicts and issues that arise among the communities of a social system when innovations are imposed onto them. Finally, both theories are combined to provide an analysis on the way the school community behaves in response to the way they are operating. These include addressing teachers' concerns, philosophy, and pedagogical beliefs that influenced their use of interactive whiteboards and other technological and non-technological tools.

2. Research Purpose, Questions, and Methods

This study centralizes on illuminating the concept of technology as a tool used (or may not be used) by teachers to mediate their actions to achieve their goals. Tools are "any device available to teachers for use in instructing students in a more efficient and stimulating manner than the sole use of the teacher's voice" (Cuban, 1986, p.4). This concept can be understood through the lens of the Cultural Historical Activity Theory. This study also offers an in-depth insight of teachers' nature of work by providing detailed climate, culture, and context of the teachers in their working environment. These are all made possible through the lens of the Theory of Diffusion of Innovation. These lenses shield the teachers from being blamed or deemed a failure just because their pedagogical beliefs may not be in congruence with the technology imposers' expectations. Since the interactive whiteboard technology has a lot of affordances and requires its users to be creative and imaginative, this study serves to remind us that there should be no right or wrong method in the way it is being used. Most importantly, the interactive whiteboard's frequency of use does not reflect teachers' efficiency nor can it define one's quality of teaching.

Specifically, the objective of this study is to exemplify how technology embracer teachers integrate the interactive whiteboard on a day-to-day basis in their instructions through the documentation of their perspectives, pedagogical practices, and classroom management. The main research question that drives this study is: How do social, cultural, and historical practices impacts the activity around the interactive whiteboards? This question is answered using an instrumental case study, a versatile methodology in a way that it facilitates an in-depth understanding of a phenomenon within a real-life context, within which details of meaningful interactions and activities could be sought (Md. Khambari, 2015). Two school teachers at Vista Elementary who were identified as technology embracers by the school principal, are the participants of this study. They are Third Grade classroom teachers, Nicole Collins and Scott Millard. Data for this study are based on the interviews and observations with these teachers, fieldnotes of conversations with the school community, artifacts from around the school, and documents obtained legally from the school administrators.

3. Findings and Discussions

To best understand Vista Elementary as an activity system, we illustrate in vignettes of its historical, cultural, and social aspects to foreground the findings and discussions.

a. Background of Vista Elementary: the Historical, Cultural, and Social Aspects

The background of Vista Elementary can be understood from the historical, cultural, and social aspects. These aspects can be exclusive, complementary, and/or contradictory from one another; depending on the perspectives and situations of the school as an activity system.

i. The Historical Aspect

The community of Vista Elementary has a very strong foundation of supporting the use of technology in classrooms. It was built with a very distinct vision in mind, which is to embed technology in every classroom and every shared space in the building. When Vista first opened, every classroom was equipped with a telephone, a computer, a projector, and a white screen. The school gradually received more advanced gadgets such as DVD players, video projectors, integrated amplification systems, wireless infrared microphones, and wireless network accesses. This encouraged same grade level teachers to work together as a team to apply for grants so that they could get more gadgets and use them in their classrooms. Through these grants, the teachers then received interactive SMARTBoards, SMARTBoard Response Systems (iClickers), document cameras, Airliners, and iPads.

ii. The Cultural Aspect

The school principle, Olivia Kaufer, hired a strong team of teachers with a sound foundation of technology and teaching pedagogies that supports her vision. To ensure technology is utilized in

every classroom, she carried out a very selective teacher hiring process with the aim to hire teachers and staff who are solid in their pedagogy and have the desire to grow on technology. The culture of the school was built with the aim of fostering inclusiveness among its community. Among others, a Parent Room was included in the design, and similar grade classrooms were clustered together in the same hallway, which are now called "pods" in practice. In each pod, there is an area for a teachers' pantry, two cubby spaces, a resource room for students with special needs, and an area allocated for the installation of 20 desktop computers. On the walls of the hallways and staircases, there were several posters that tell the code of conducts or "good behaviors" in prints. The students' published journals and artwork, or their aspiration as a community of Vista, or their programs. By the main office, a huge wall size calendar displayed the events and day to day happenings at the school.

iii. The Social Aspect

On a typical day, teachers, students, and visiting parents gather at the cafeteria for an assembly. Unlike any other schools in the district, the morning recess time in Vista is replaced with breakfast and assembly time. Every morning, teachers, students and visiting parents gather in the cafeteria for a morning meeting they call "Jumpstart". Students line up according to their classroom, with their lines separated by small orange traffic cones. Classroom teachers stand at the end of the line, counting their students or giving them signals to be quiet. School marshals, who are also the students, with other teachers and parents, surround the large group on the cafeteria floor. As the principal, Olivia would address the assembly and give morning messages like her hopes and expectations, event reminders, or ongoing and upcoming events. Besides that, the school community recites the pledge of allegiance unanimously before the flag of the United States daily, with their right hands placed on their hearts. When it comes to the school pledge known as CARES, they face each other, saying the pledge to their friends: "As a citizen of Vista, I will be **C**ooperative, **A**ssertive, **R**esponsible, **E**mpathy, and have **S**elf-control."

b. The Innovations and Practices Stemming from the Historical, Cultural, and Social Aspects

Having analyzed the data using the lenses of the Cultural Historical Activity Theory and the Theory of Diffusion of Innovations, we have come up with identifiers that have made Vista Elementary the community it is today. Such identifiers are their practices of community building, developing routines, and balancing act. However, this discussion will begin with the innovations diffused at Vista Elementary.

i. *The Innovations*

In this study, the two most obvious innovations introduced to Vista were CARES and the SMARTBoard technology. CARES is an innovation in the sense that it was a new rule in the form of *ideas* (Rogers, 2003) that the principal and her foundation team had invented prior to the opening of the school. The people who came to the school perceived CARES as a new and different culture. They perceived CARES as an innovative idea that created a culture for learning. They also regarded the installation of the SMARTBoard as having a similar impact on the learning culture as CARES. The parents whose children were transferred to Vista from the neighboring schools were deeply affected by CARES and the changes in the rules and regulations. It was something new and different.

An unusual trend in Vista that is typically not common in schools that were not built with technological innovations in mind was that there were no *late majority* or *laggard* teachers. There may have been some teachers who were in that category during the diffusion of the SMARTBoard technology, but at the time of this study, the adoption of both CARES and SMARTBoards had already been completed. Hence, they are all now the adopters of the SMARTBoard technology and CARES. This phenomenon arises from the teacher hiring process that the principal had conducted prior to the school's opening. The very stringent teacher

selection process then had saved her time and effort from having those types of teachers who do not uphold Vista's mission. Figure 1 below shows a visual presentation of the types of innovation adopters in Vista Elementary.

When introducing and diffusing a new innovation, the *late majority* and *laggards* are the group of people that needs to be convinced somehow, or better yet, brought into the fold as members of a community. The newness of the Jumpstart program caused feelings of uncertainties among parents. In Vista's social system, these parents were identified as the *late majority* and *laggards*. Besides the newness aspect, their uncertainties and cautiousness of the Jumpstart and CARES may have been caused by a point of reference in the past or some unfavorable experiences (Rogers, 2003). Vista has initiated several programs to invite the parents in so that they could be more involved as a community and understands the innovations brought into the school. They carry out informational meetings as a *communication channel* to inform parents about their innovations. Olivia introduces the new practices that form the climate and culture of Vista and relates the rules to the common goals that Vista and parents share: to give the best education to their children. She also encourages parents by showing them ways of becoming part of Vista's community, starting with becoming more involved in their children's learning. In Vista, there is also a Parent Room, which we identify as a form of *communication channel*. It is a channel that serves as a place where parents can feel comfortable coming to the school. It indirectly draws parents to be around Vista and learn about its climate and culture through observations and participations in activities. Now that the parents have finally understand Vista's culture and see how the new rules could help achieve their shared goals, they have gradually accepted the new culture. Finally, the *social system* is put in place. This has made Vista all the stronger.

Another innovation that needs to be mentioned is the use of technology in Vista. The integration of desktop computers is not seen as a threat to the *late majority* and *laggards* as they have become ubiquitous in schools. In fact, it was welcomed by the community. The parents may have seen teachers from the previous schools use desktop computers. Moreover, most of these parents come from the middle class. Therefore, we may assume that owning a computer is not beyond their parents' affordability. As such, the children might already have a decent background of technology. The SMARTBoard technology arrives at the right *time* when the *social system* has mostly accepted and understood Vista's mission and vision. Besides, knowing that Vista is specifically built as a technology-based school to instill digital-literacy, the parents are more than willing to allow their children learn in a classroom that accommodates the most advanced technology in education. The SMARBoard technology is an innovative *tool* in the words of Cultural Historical Activity Theory and is categorized as *object* in the words of the Theory of Diffusions of Innovations.

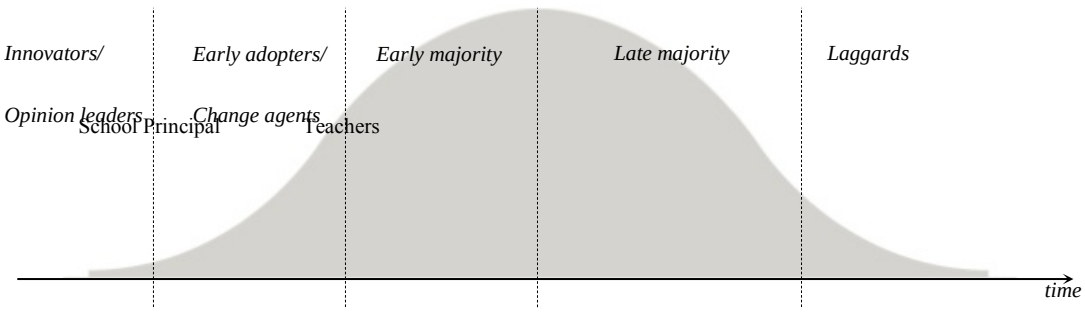

Figure 1. Type of adopters at Vista Elementary based on innovativeness (adapted from Rogers, 2003, p. 281).

An important point we want to emphasize in this study is that Vista Elementary and Scott and Nicole's classrooms are unique cases. Vista is a school built from the bottom-top, with a specific purpose and goal in mind. As such, the school may encounter less complex issues compared to the existing schools that try to introduce a new culture because the pre-existing social, cultural

and historical practices have already been set in the school. In Vista's case, the culture is developed from the outset. Such a strategy has caused less resistance from the community. This analysis is unique to Vista Elementary, and may differ from other studies carried out by other scholars. In short, although Vista has the CARES philosophy and the SMARTBoards as the new innovation of *ideas* and *object*, without practices, these innovations will come to waste. In the next section, we discuss the themes that emerged after we analyzed the practices and pedagogy that make these innovations come to life. They are *community building*, *developing routines*, and *balancing act*.

i. Community Building

Vista's present community is shaped from solving issues and conflicts that they have encountered together through their journey. Well before the opening of Vista, Olivia had carried out a very stringent and selective teacher hiring process that looked for educators who have the experience and desire to grow with technology, and were child-centered in their approach in teaching and discipline, whom she depended upon a lot for transmitting the curriculum and non-curriculum agenda. Teachers play a very important role in bridging the gap between the school and the community. Together with the teachers, Olivia formulated the school culture that they wanted Vista to become in the future. The culture which is "the shared values, norms, symbols, language, object, and way of life that is passed on from one generation to the next," (Hammond & Cheney, 2009, n.p.) represents the approved norm and behavior that is accepted by the community of Vista.

In this study, Vista's efforts in shouldering the responsibility of bridging the gap between the school and the parents were evident. Such efforts include educating the parents by informing them of the school's culture and practices. They also invited parents to be in the school to volunteer, participate, or just observe their events. This strategy helped the parents to familiarize themselves with the educational system and how Vista operates (Grant & Ray, 2013). Gradually, Vista was able to transform the parents from outsiders to insiders and make them realize of the common goals they share. Several studies have emphasized the importance for the school leaders to bring parents into the school community and have advocated school-parent partnership models (Turnbull & Turnbull, 2001; Hornby, 2011; Auerbach, 2012; Hands, 2012). Afterall, parents are assumed as the stakeholders as they "invest" in their children to seek education from the school. By being responsive to their needs, schools and students' achievement can be improved. Some interesting strategies that we could learn from the case of Vista are through the *communication channels* they provided for the parents such as putting up a downloadable handbook for parents on their online website, carrying out informational meeting with parents, providing a designated space for parents in the school building, and opening up opportunities for them to be involved in the school. These instances reflect Vista's effort in fostering their relationship with the parents that has accelerated the rate of innovation's adoption (Rogers, 2003). As a result of their mutual understanding, their relationship grew stronger as a community as they continue to help each other. Hands (2012) notes such an effort as a school's way to "garner additional resources, social support, and educational experiences to supplement students' in-school learning opportunities" (p. 173). She also mentions that such partnership could promote students' achievement.

The school leaders must not necessarily be the one who takes the steps to bridge the gap with the parents. For their relationship to flourish, parents also need to learn to be more supportive to these efforts. Parents need to realize that they share the same goal with the school in terms of their children's knowledge seeking experience. Additionally, these findings imply that it is important for the parents to acknowledge the school's capacity in achieving their goals. When discussing school-community relationships, Grant and Ray (2013) suggest that parents are more supportive and respectful toward the teachers when they volunteer in schools. Olivia mentions that parents are becoming more aware of the educational issues and starting to understand the educational process. Through their participation in school activities, parents have realized their capacity and ability to contribute to their children's learning. Without parents' esteemed support, the goals might still be possible, but are harder to achieve. From the findings of this study, we

have learned that supportive and active parents have driven Vista's development from a new school to a renowned school in its district. As suggested by Hornby (2010), the key in building and sustaining a good relationship between school leaders and parents lies in specific attitudes such as showing genuineness, respect, and empathy. Vista's effort of building a close-knit community is strengthened by the practice of *developing routines* among their citizens.

ii. Developing routines

The findings of this particular section reveal that routines in the two Third Grade teachers' classrooms are developed remarkably early in the school year. These routines are based on the CARES pledge. Developing routines seems to be the way that Scott and Nicole manage their classroom by engaging their students in repeated activities, giving verbal reinforcements, and coordinating schedules with their colleagues. They spent a substantial amount of time in the beginning of the school year to let their students know and learn of their expectations. Their management methods are in congruence with scholars who have emphasized the importance of articulating clear expectations, teaching procedures and rules, practicing routines and following them, could enhance positive behaviors among children (McKevitt & Braaksma, 2008; Wong & Wong, 2009; Prior, 2013).

In both the classrooms that we observed, practicing everyday routines resulted in consistency in their every day conducts. Such consistency helps Scott and Nicole and their students to be mentally and physically prepared as it creates a predictable environment (Spagnola & Fiese, 2007; Wong & Wong, 2009; Marzano, 2011; Prior, 2013), and students are better able to work independently with minimal reminders by the teachers. By having consistent routines, the teachers have noted that the authority in the classroom instruction has shifted – teachers' role became more facilitative instead of the traditional didactic, while students are more in-charge of their own learning. Undeniably, socialization has almost always occured in the every day classroom events. In fact, Hammond and Cheney (2009) imply that humans are subject to socialization throughout their lives. In the case of the two Third Grade classrooms, the routines and positive behavior that resulted from them being part of an overt socialization process (Biesta, 2010) practiced by Vista Elementary beyond the mandated curriculum. These routines not only furnished the students with the 21st Century skills, they have also lightened the administrative work that teachers have to do in their classrooms.

iii. Balancing act

As teachers, Scott and Nicole are tied to juggling several tasks and obligations as they carry out their duties. However, they have found a mechanism to strike a balance between their struggles, teaching philosophy, and pedagogy. The mechanisms are sharing responsibilities and enhancing collaboration colleages to reduce workload, selecting suitable tools to accommodate the varied needs of their students, and using a myriad of teaching modes to balance the classroom authority and enhance its dynamics. All these practices have forced them to think creatively and allow them to come up with a practical solution – by balancing the use of technological and non-technological tools in their teaching. Their wide set of tools, either physical or otherwise, represent a fresh perspective of looking at tools for teaching. It revokes the idea that technology must be the main tool and used all the time in teaching when it is placed in teachers' hands.

Although the literature that discussed about how the overuse and underuse of technology has triggered the debate between teacher-centered and student-centered instruction (Beauchamp, 2004; Miller, Glover, & Averis, 2005; Kelley, Underwood, & Potter et al., 2007; Kershner et al., 2010; Northcote et al., 2010), perhaps Scott and Nicole's mechanisms in balancing the use of technological and non-technological tools in their teaching approach could settle the issue once and for all. Realizing the affordances of other non-technological form of tools and resorting to using them when they are required in their teaching has helped Scott and Nicole find "what works" in their teaching.

iv. The Mix that Works for Vista Elementary

The following diagram shows the connections between the aforementioned practices and the two innovations in Vista Elementary.

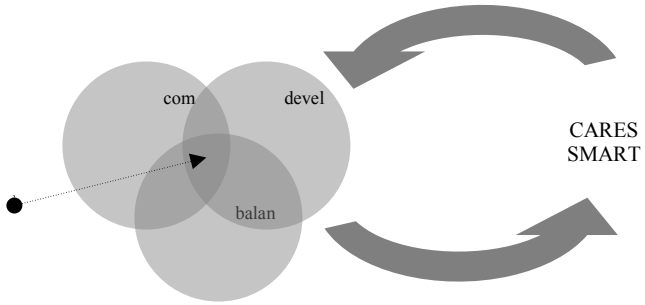

Diagram 1. The reciprocal relationship between the practices and the innovations.

This diagram shows the three practices as overlapping with each other. This is because they are interrelated and mostly complement each other. The heaviest overlapping area from the three practices represents Vista today as a community of practice. The right side of the diagram shows the two prominent innovations chosen to be analyzed in this study, which are CARES and the SMARTBoard technology. Their diffusion in Vista has triggered the community to adopt and adapt with them by engaging in *community building, developing routines,* and *balancing act.* Such practices may differ if that Vista was diffused with different innovations other than CARES and the SMARTBoard. From this study, we have identified a reciprocal relationship between innovations and practices. A close examination of the data reveals that they complement each other's existence. CARES and SMARTBoard have driven the practices and pedagogy, and the practices and pedagogy have brought these innovations to life.

4. Concluding Remarks

The findings seemed to paint a perfect picture of a perfect school which many of the Malaysian teacher longed for. Of course, it was easy for us to get impressed by the way Vista Elementary is managed especially when it is driven by a strong set of rules and equipped with the most advanced technology. But Rogers (2003) asserts that pro-innovation bias is one of the shortcomings of diffusion research whereby a researcher believes that an innovation is ideal and should be adopted by all members of a social system, and should not be re-invented or rejected. We took a step back to examine and re-examine them to detect any pro-innovation bias that might influence the analysis and writings of discussion. At every turn of this study, we found that Olivia, Scott, and Nicole often justified their school or classroom practices and activities in terms of preparing the students for the course of their school and future career. Through this, we found that the data of this study tells a story of a particular mix of qualification, socialization, and subjectification–the three functions of school suggested by Biesta (2010). He proposes that these three dimensions are what make education, and they do not necessarily have to be equal in propotion. As such, a different desirable and justifiable combination can be found at each school.

Within the notion of qualification, socialization, and subjectification, we have found that Vista has a particular mix of these dimensions that was necessary for their community. Biesta emphasizes that it is more about finding a combination or "mix" of these dimensions that is desirable and justifiable to a particular institution. Vista's particular mix was made of their core practices, which are *community building, developing routines,* and *balancing act*. Although these dimensions often lend themselves to each other, their equal presence is not necessarily required in schools. Similarly in Vista, their core practices are always interrelated and overlapped in most areas, hence complemented each other in many ways. The mix found in Vista Elementary explains how the school has become a close-knit and successful community through the combination of these practices. Through Biesta's notion of qualification, socialization, and

subjectification, we learned that what we have seen was not Vista as a perfect school, but Vista as a school that has found its perfect mix and combination of these dimensions.

It is important to note that there is least one important caution that should be heeded. This study is limited to Vista Elementary in general and its two Third Grade classrooms in specific. Therefore, this particular combination of *community building, developing routines,* and *balancing act,* is unique to this particular case study. We suggest future researchers to look for different "mixes" that can be found in different schools. It would be interesting to find different combinations and mixes in different activity systems and learn whether these combinations are suitable to them. However, we would forewarn that if this type of study were to be replicated by other researchers or school leaders, they must be aware that the mix they will find in other schools may or may not be the same as the findings of this study. Furthermore, the specific mix that works for Vista cannot be replicated in another situation with the assumption that it will work as well as it has for Vista. This is because Vista is a unique case in the sense that they have CARES and the SMARTBoard technology, whose innovations have driven their core practices. Other parallel studies may have different innovations, social, cultural, and historical influences imposed on them. Hence, different combinations can be derived out of Biesta's dimensions of qualification, socialization, and subjectification.

The use of Cultural Historical Activity Theory and the Theory of Diffusion of Innovations, could help paint a picture of how the Malaysian schools are conducted. If schools were to enforce new technologies, we suggest that this framework to be used as the background for such initiatives. Having a thorough plan that counts many areas of an activity system could promote a happy school community, professional practices, and efficient use of technologies and innovations. This study has shown that there could be several possible antecedents that could have triggered their practices. In the case of Vista, their practices are driven by the diffusion of CARES and SMARTBoard as new innovations. Their practices also mirrored their acceptance and attitude toward the innovations. If CARES rules were not the same from what they are and the SMARTBoard were not integrated in the classroom, the teachers might have a different perspective towards technology. The close-knit community built through CARES in Vista has balanced out the questions of a classroom's mode of instruction. We find it important for us to once again acknowledge technologies as tools in mediating the relationship between teachers and students, and as catalysts in lessons (Miller et al., 2005).

References

Apple, M. W. & King, N. R. (1977). What do schools teach? *Curriculum & Inquiry, 6*(4), pp. 341-358.

Auerbach, S. (2012). *School leadership for authentic family and community partnerships: research perspectives for transforming practice.* New York, NY: Routledge.

Beauchamp, G. (2004). Teacher use of the interactive whiteboard in primary schools: towards an effective transition framework. *Technology, Pedagogy and Education, 13*(3), pp. 327-348. doi:10.1080/14759390400200186.

Biesta, G. J. J. (2010). *Good education in an age of measurement: ethics, politics, democracy.* Boulder, Colorado: Paradigm Publishers.

Catalano, R. F., Haggerty, K. P., Oesterle, S., Fleming, C. B. & Hawkins, J. D. (2004). The importance of bonding to school for healthy development: findings from the social development research group. *Journal of School Health, 74*(7), pp. 252-261.

Cuban, L. (1986). *Teachers and machines: The classroom use of technology since 1920.* New York: Teachers College Press.

Engeström, Y. & Miettinen, R. (1999). Introduction. In Y. Engeström, R. Miettinen & R. Punamäki (Eds.). *Perspectives on activity theory.* Cambridge University Press, UK.

Grant, K. B. & Ray, J. A. (2013). *Home, school, and community collaboration: culturally responsive family engagement.* Thousand Oaks, CA: SAGE Publications, Inc.

Hammond, R. J. & Cheney, P. (2009). *Intro to sociology.* Retrieved from http://freebooks.uvu.edu/SOC1010/index.php/about.html

Hands, C. M. (2012). Supporting teacher leadership for partnerships: a case study of the school-community partnership process. In S. Auerbach (Ed.), *School leadership for authentic family and community partnerships: research perspectives for transforming practice* (pp. 173-192). New York, NY: Routledge.

Hess, R. D. & Easton, D. (1962). The role of elementary school in political socialization. *The School Review, 70*(3), pp. 257-265.

Hornby, G. (2011). *Parental involvement in childhood education: building effective school-family partnerships.* New York, NY: Springer.

Kelley, P., Underwood, G., Potter, F., Hunter, J. & Beveridge, S. (2007). Viewpoints: Interactive whiteboards: Phenomenon or fad? *Learning, Media and Technology, 32*(3), pp. 333-347. doi: 10.1080/17439880701511164

Kershner, R., Mercer, N., Warwick, P. & Staarman, J. K. (2010). Can the interactive whiteboard support collaborative communication and thinking in classroom science activities? *Computer-Supported Collaborative Learning, 5*(4), pp. 359-383. doi: 10.1007/s11412-010-9096-2

Kershner, R., Mercer, N., Warwick, P. & Staarman, J. K. (2010). Can the interactive whiteboard support collaborative communication and thinking in classroom science activities? *Computer-Supported Collaborative Learning, 5*(4), pp. 359-383. doi: 10.1007/s11412-010-9096-2

Marzano, R. J. (2011). Classroom management: Whose job is it? *Educational Leadership*, *69*(2), pp. 85-86.

McKevitt, B. C., & Braaksma, A. D. (2008). Best practices in developing a positive behavior support system at the school level. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology* (5th ed.), (pp. 735–747). Bethesda, MD: National Association of School Psychologists.

Md. Khambari, M. N. (2015). The Role of Social, Cultural, and Historical Practices on Teachers' Use of Interactive Whiteboard: A Qualitative Case Study. In *SAGE Research Methods Cases.* London, United Kingdom: SAGE Publications, Ltd. doi: http://dx.doi.org/10.4135/978144627305014553774

Md. Khambari, M. N., Hassett, D. D., Thomas, M. K. & Wong, S. L. (2014). Interactive Whiteboards in Classrooms: Debates, Issues, and Impeding Factors. In Liu, C.-C. et al. (Eds.) (2014). Proceedings of the 22nd International Conference on Computers in Education. Japan: Asia-Pacific Society for Computers in Education.

Miller, D., Glover, D. & Averis, D. (2005). Presentation and pedagogy: the effective use of interactive whiteboards in mathematics lesson. In D. Hewitt & A. Noyes (Eds.), *Proceedings of the 6th British Congress of Mathematics Education, 25*(1), pp. 105-112. London: British Society for Research into Learning Mathematics.

Northcote, M., Mildenhall, P., Marshall, L. & Swan, P. (2010). Interactive whiteboards: Interactive or just whiteboards? *Australasian Journal of Educational Technology, 26*(Special issue, 4), pp. 494-510.

Palonsky, S. B. (1987). Political socialization in elementary school. *The elementary school journal, 87*(5), pp. 492-505.

Prior, J. (2014). Focus on elementary: love, engagement, support, and consistency: a recipe for classroom management. *Childhood Education, 90*(1), pp. 68-70, doi: 10.1080/00094056.2014.872518

Rogers, E. M. (2003). *Diffusions of Innovation*. (5th ed.). New York: Free Press.

Şad, S. N. & Özhan, U. (2012). Honeymoon with IWBs: A qualitative insight in primary students' views on instruction with interactive whiteboard. *Computers & Education, 59*(4), pp. 1184–1191. doi:10.1016/j.compedu.2012.05.010

Spagnola, M. & Fiese, B. H. (2007). Family routines and rituals: a context for development in the lives of young children. *Infants & Young Children, 20*(4), pp. 284-299.

Taylor, M., Harlow, A. & Forret, M. (2010) Using a computer programming environment and an interactive whiteboard to investigate some mathematical thinking. In R. A. Tarmizi & A. F. Mohd. Ayub (Eds.) *Procedia: Social and Behavioral Sciences of the International Conference on Mathematics Education Research 2010 (ICMER 2010), Special Issue* (8), pp. 561-570. doi:10.1016/j.sbspro.2010.12.078

Turnbull, A. & Turnbull, R. (2001). *Families, professionals, and exceptionality: collaborating for empowerment* (4th ed.). Upper Saddle River, New Jersey: Prentice-Hall, Inc.

Wong, H. K., & Wong, R. T. (2009). *The first days of school: how to be an effective teacher.* Mountain View, CA: Harry K. Wong Publications.

Zhao, G. (2012). Levinas and the mission of education. *Educational Theory, 62*(6), pp. 659-675.