

Proceedings from the UPEI Multidisciplinary
Graduate Research Conference

August 11–13, 2016

“Different Ways of Knowing”

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University of Prince Edward Island, Charlottetown, PE, Canada

Edited by
Brittany A. E. Jakubiec

Preface

The second annual University of Prince Edward Island (UPEI) Multidisciplinary Graduate Research Conference (UMGRC) was hugely successful. The theme this year was “Different Ways of Knowing,” as we wanted to highlight the various ways that researchers go about gaining knowledge. We specifically wanted to highlight the point that various knowledges and truths exist, and there are myriad ways of discovering the world around us. Approximately 70 graduate students from across Canada showcased their work, via poster, presentation, and Skype. In total more than 400 students, faculty, and staff attended the conference workshops, keynote presentation, plenary presentation, and student presentations.

Our keynote address was delivered by Rebecca Thomas, Indigenous activist and Halifax Poet Laureate. Our plenary address was delivered by Julie Bull, Indigenous scholar and activist.

UMGRC 2016 Planning Committee:

Brittany A. E. Jakubiec, Valerie Campbell, Hannah Gehrels, Mary MacPhee, Logan MacIntyre, Dylan Michaud, Christian Agatemore, Kate Rundle, Frederic Chatigny,

The conference was supported by:

Dr. Robert Gilmour (UPEI), the Faculty of Education (UPEI), the Atlantic Veterinary College, the School of Sustainable Design Engineering, the School of Business, the Faculty of Science, and the Master of Nursing program. We also received two sponsorships from the Young Lives Research Lab (UPEI) and University Affairs.

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DEVELOPING AND EVALUATING E:LEARNING TRAINING MATERIALS FOR USE IN LONG-TERM CARE ENVIRONMENTS

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Abstract

In long-term care (LTC) settings ethical issues are evident in daily interactions, yet, few methods exist that offer a systematic approach to resolving these issues (Lillemoen & Pederson, 2012). As a result, I am developing e:learning ethics training materials that participants will utilize for three months. Following this, focus groups and interviews will be conducted to explore whether changes in participants' ethical reasoning can be identified following engagement with the training, the strengths and weaknesses of e:learning in ethics training, and staff perceptions regarding e:learning in relation to developing ethical practice. Interview and focus group data will be compared with data, previously collected, to identify enhancements in ethical awareness indicated by identifying ethical issues, using ethical concepts and principles and applying alternative frameworks. Thematic analysis will be used for data analysis. Lastly, the issue of knowledge translation will be addressed.

Keywords: ethics, e:learning, long-term care, nursing homes, knowledge translation

In long-term care (LTC) settings funding and professional training initiatives are generally limited (Lillemoen & Pederson, 2012); however, residents tend to have a range of multiple chronic diseases (Lillemoen & Pederson, 2012), reside at the facilities for extended time periods, and have increased mortality rates relative to other settings which creates an environment with numerous and diverse ethical issues (VonDras, Flittner, Malcore, & Pouliot, 2009). Empirical studies illustrate there is a need for ethical reflection and ethical support to address the ethical issues in LTC settings (Lillemoen & Pederson, 2012). Commonly reported ethical issues in LTC settings are the inability to provide appropriate treatments, proper, and adequate care for residents (Lillemoen & Pederson, 2012; Varcoe, Pauly, Storch, Newton, & Makaroff, 2012), conflicts between what is believed to be best for residents against the resident (Slettebø & Bunch, 2004) and/or other staff members and/or family members (Varcoe et al., 2012), and organizational constraints (Casterlé, Dierckx, Izumi, Godfrey, & Denhaerynck, 2008; Fleming, 2007). In daily practice nurses are constantly met with ethical decision-making (Casterlé et al., 2008), yet, the types of ethical issues they experience differ from issues that they might encounter in their daily lives, which emphasizes the importance delivering education that addresses issues specific to LTC environments (Edwards, 1996). Cline, Heesters, Secker, and Frolic (2012) found there is little evidence supporting whether the few programs that are currently available are achieving their pedagogical goals. Training that models ethical behaviour should be developed for LTC staff so they can develop best practices on the everyday ethical issues they encounter (VonDras et al., 2009). E:learning initiatives can be effective when they are designed to evoke emotional responses through careful development which mirrors the complexities that occur in practice which can help enhance the ethical reasoning participants must engage in to make decisions (Park, 2013).

The aim of this project is to design, implement and evaluate ethics e:learning training materials by focusing on the question: “To what extent does e:learning enhance ethical reasoning among LTC staff?” Additionally, I will explore: “What changes in participants’ ethical reasoning can be identified following engagement with the e:learning materials?” “What are the strengths and weaknesses of e:learning in ethics training?” and “What are participants’ perceptions regarding e:learning in relation to developing ethical practice?” This study is funded by NBHRF, NBIF, Mitacs and SSHRC.

The pre-intervention stage involved the collection and analysis of preliminary research data from focus groups and interviews with thirty staff members working in several LTC facilities in New Brunswick as part of an earlier research study, “Making difficult decisions in long-term care”, hereafter referred to as stage one, completed in 2014. Additionally, a survey of New Brunswick nursing homes, undertaken as part of a School of Social Work student placement, identified the need and desire for ethics training material since many nursing homes lacked organizational policies and procedures to address ethical issues. Lastly, a review of the literature supports the need for continuing education on ethics training in health care.

The planned intervention is for participants to engage with training materials which are designed to help in making difficult ethical decisions through the enhancement of their ethical reasoning. Using Articulate Storyline, an interactive e:learning course development software package, I will develop ten modules covering topics relating to ethics in LTC. Drawing on data from stage one in order to ensure that the materials align and resonate with participants’ daily

practice each module revolves around a specific theme and introduces ethical issues in LTC which may be encountered by LTC staff. The aim of the training is to facilitate learning to which the participants can relate and then transfer into practice.

Evaluation will involve two approaches; first, analysis of focus group and interview data, and second, analyzing the tracked responses of the training materials. After using the training materials for three months participants, in groups of four to five, will participate in focus group discussions, lasting from one and a half to two hours, of vignettes based in real-life experiences drawn from stage one data. The vignettes are composite cases written with the purpose of generating ethical debate. Vignettes are valuable for detecting subtle nuances that insiders tend to know, but may not necessarily be aware of (Hughes & Huby, 2002). Focus groups are an appropriate method for data collection as they are conducted in an environment which captures the reasoning processes of participants who have the opportunity to talk to each other, build on, contradict, and work towards solutions based on their own experiences (Burnett, 2009). Focus groups will be recorded and participants' interactions observed. Individual interviews lasting approximately one hour will be conducted to obtain feedback regarding the strengths and weaknesses of the training.

Data analysis will involve identifying and reporting over-arching themes (Braun & Clarke, 2006), from the focus groups and interviews, to determine whether participants have an increased ethical awareness, the ability to identify ethical issues, whether ethical concepts and principles are used while discussing ethical issues and the justifications used in making these decisions. Comparisons of the data from my set of focus groups against those from stage one will be made to identify whether staff have enhanced their ethical reasoning as a result of engaging with the training materials, and to what degree, indicated by such things as their use of more nuanced terminology, the use of alternative ethical frameworks and differences in the justifications used for decision-making.

Further, participants' responses to short answer and multiple choice questions are tracked within the modules. For example, in modules one and ten, participants respond to a short answer questions regarding the types of ethical issues they encounter in their daily practice, responses - which will provide insight on whether their recognition of ethical issues has changed after having completed the training. Ungraded questions are located throughout the modules, encouraging participants to apply specific frameworks, engage in making ethical decisions, and consider how alternative circumstances can influence the process of decision-making. Also, participants will have the opportunity to provide feedback regarding the strengths and weaknesses of each module, immediately after completion.

The issue of knowledge translation is addressed using the action cycle which is a method used to implement knowledge (Straus, Tetroe, & Graham, 2013). The action cycle includes seven phases, the first, identifying the knowledge-to-action gaps (Straus et al., 2013), which is formed by the pre-intervention. The second, adapting knowledge to local context (Straus et al., 2013), is addressed by implementing standalone online ethics training materials which are accessible over a large geographical distance suiting facilities in rural New Brunswick. The third, assessing barriers/facilitators to knowledge use (Straus et al., 2013), is addressed by identifying barriers such as, high illiteracy rates in New Brunswick and overcoming them through adding

audio narration to the modules. A facilitator to knowledge use is the opportunity for learners to generate their responses numerous times which will help them to retrieve the information at a later date (Dirksen, 2012; Hakel & Halpern, 2005). The fourth, selecting, tailoring, implementing interventions (Straus et al., 2013), involved ensuring participants can use the materials for short time intervals at their convenience, twenty four hours a day, seven days a week to accommodate their schedules. I do not address the fifth, monitoring knowledge use (Straus et al., 2013), since I am not monitoring whether knowledge transfer occurred in day to day practice during the pilot period. However, for phase six, evaluating outcomes (Straus et al., 2013), I will conduct focus groups to evaluate the outcome of the training and identify whether changes in participants' ethical reasoning occurred after using the training. Lastly, due to time constraints the seventh phase, sustaining knowledge use (Straus et al., 2013) is not addressed, but I recommend participants have quarterly reviews to assess whether these practices are sustained.

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MULTI-WALLED CARBON NANOTUBES, GRAPHENE AND CARBON NANOHORNS BASED SUPERCAPACITORS FOR EFFECTIVE ENERGY STORAGE IN ENVIRONMENT FRIENDLY SUPPORTING ELECTROLYTES: EFFECT OF CARBON STRUCTURE ON STABILITY AND CAPACITANCE.

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Abstract

The necessity for developing new environment friendly supercapacitors based on carbon allotropes is a trigger for many studies towards designing of materials with tailored properties. Multi-Walled Carbon Nanotubes (MWCNT), Graphene and Carbon Nanohorns (CNH) make major contribution to the recent developments. In this study we represent novel materials based on rigid covalent derivatization of carbon allotropes with Kevlar-type linker and attached conductive polymer poly(pyrrole) (PPy). Synergic product of Carbon allotropes linked with PPy through amide bond exhibits excellent conductive properties in comparison with counterparts synthesized in our group before and yields products of similar morphology. Type of morphology plays crucial role for material stability and agglomeration of nanostructures shows synergic effects towards higher capacitance. Material characterization by XPS, CV, DPV, EIS, FTIR, TGA, DSC and Raman spectroscopy have shown excellent properties for employed materials towards their use as supercapacitors (~350 F/g) in environmental friendly media (potassium chloride solution).

Keywords: Nanotechnology, electrochemistry, supercapacitors, clean energy, multi-walled carbon nanotubes, graphene, carbon nanohorns, poly(pyrrole)

The striking need for clean energy sources alternatives leads current research to areas where new materials can have tailored properties arising from careful design based on fundamental concepts. This study represents preparation and investigation of environment friendly supercapacitors based on covalent attachment via different linkers varying in their stabilities between conductive polymer part- poly (pyrrole) (PPy) and various carbon allotropes like Multiwalled Carbon Nanotubes (MWCNT), Graphene and Single Walled Carbon Nanohorns (SWCNH). The unique pseudocapacitance of PPy is linked with electrochemical double layer capacitance (ECDL) arising from the presence of respective carbon allotrope in the structure. Various linkers were chosen to connect both counterparts. The most investigated example presented here is based on aryl amide structure inspired by superior stability of Kevlar. Synergic product of Carbon allotropes linked with PPy through amide bond exhibits excellent conductive properties in comparison with counterparts synthesized in our group before and yields products of similar morphology. The effect of morphology plays crucial role for material stability and agglomeration of nanostructures shows synergic effects towards higher capacitance. Material characterization by XPS, CV, DPV, EIS, FTIR, TGA, DSC and Raman spectroscopy have shown excellent properties for employed materials towards their use as supercapacitors (~350 F/g) in non-toxic media (potassium chloride solution).

Deliberate design of material on atomic level opens a broad spectrum of properties that may be chemically tuned. In order to create an effective supercapacitor electrode with a fast energy uptake and release along with stress durability during, the use and high specific capacitance are needed and can be achieved by chemical and morphological modifications [1, 2]. In current research trends a green chemical approach towards synthesis and material manufacturing is emphasized and therefore the most sought clean energy alternative materials should deal with energy conversion or storage in non-toxic and safe fashion [3]. In the field of supercapacitors many research groups seek for the effective replacement of very efficient but also toxic heavy metals by carbonaceous materials that can operate in mild media [3]. Among very promising materials, Single-Walled/Multi-Walled Carbon Nanotubes, Graphene or Single Walled Carbon Nanohorns can be listed and they may become indispensable part of new electrodes able to reach or even overcome properties of their metallic peers [4]. Carbon supercapacitors are known to store energy in fast and reversible ion ad- desorption and heterocycle based conductive polymers are capable of delivering pseudo-capacitance through counter-ion doping [5]. In order to surmount the main drawback of carbonaceous materials, which is their low energy density needed for consideration-worthy specific capacitance, a chemical modification based on the conductive polymer (pseudo-capacitance part) with the carbonaceous material (ECDL part) is proposed. The composite created this way is expected to have very active surface, where EDLC and redox active centers will provide high specific capacitance outperforming their individual elements [6]. The synergy can be enhanced when a sufficient mechanical support of overall structure will be provided, e.g. via a strong covalent bond improving the stability, the ion diffusion restricting necessary ion uptake in the pseudo-capacitor that causes considerable volume changes in the polymer [7]. The large surface area provided by the carbon allotrope renders the distribution of the polymer particles, leading to the increase of available active centers. We have recently demonstrated the phenomena of a reverse donor-acceptor system in the carbon allotrope covalently bounded to the conductive polymer. The latter can be employed as an electron acceptor and first as electron donor – this combination creates more electrochemically stable system [8].

Carbon based (MWCNT, Graphene or SWNH) electrode was electrochemically and chemically functionalized, starting from the radical grafting of sp^2 active centers by the reduction of in-situ generated the aryl diazonium salts in deoxygenated aqueous solution. The resulting product was analyzed by the X-ray Photoelectron Spectroscopy (XPS), Fourier Transform Infrared Spectroscopy (FTIR), and Electronic Impedance Spectroscopy (EIS), along with a complete electrochemical studies. In next synthesis step, the p-phenyldiamine was attached via Schotten-Baumann reaction to the carboxylic group of the carbon allotrope, that was first grafted with the aryl bearing carboxylic group (necessary for this reaction) [9]. This created a stable Kevlar-like linker and allowed the attachment of the pyrrole via an oxidative radical polymerization. This method yielded the composite structures with a thin poly(pyrrole) coating on carbon, which in case of the MWCNT lead to exceptionally high specific capacitance of ~350 F/g. Nevertheless this procedure was very challenging in term of the suppressing the pyrrole homopolymerization. In order to overcome this drawback, so-called living polymerization techniques were applied to assure the uniform film distribution on the carbonaceous surface, along with an exclusion of the homopolymerization product. Two methods were applied in order to improve the quality of the reaction product. First was the electrochemically aided atom transfer radical polymerization (e-ATRP) and second was the reversible addition fragmentation chain transfer polymerization (RAFT). The respective carbon allotrope served as the polymerization initiators for the 2-(1H-pyrrol-1-yl)ethyl methacrylate and a 1-(4-vinylphenyl)-1H-pyrrole, followed by electro-polymerization of the attached pyrrole mote in a slightly acidic media. The obtained products were examined in term of the long-term stability and electrochemical properties. Supercapacitors based on the combined carbon-polymer system operate based on the redox reactions triggered by anodic/cathodic currents (pseudocapacitance) alongside with the columbic ion uptake on the carbonaceous surface. Relatively mild electrolytes serve as ion source. In these studies, aqueous solutions of lithium, sodium and potassium chlorides and bromides were applied since their ion mobilities are the fastest among common electrolytes. This is critical in achieving the highest specific capacitance and stability. Overall, the MWCNT based systems provided the highest specific capacitances in potassium chloride solution and the weakest properties were observed for the graphene based composites. The best method yielding the ultra-thin polymer film coating was e-ATRP living polymerization, as validated by the Transmission Electron Microscopy (TEM). MWCNT-based structures were the most rigid and accessible for ions, as validated by the Cyclic Voltammetry (CV), Differential Pulse Voltammetry (DPV), Chronopotentiometry (CP), EIS, and Chronocoulometry (CC). The analysis of diffusion coefficient together with the ionic mobility calculation demonstrated that the MWCNT-based nanocomposites showed the most promising effects, owing to the effective diffusion length of the attached polymer. Surprisingly, graphene-based structures were prone to the degradation upon electrochemical testing, due to the electrochemical oxygen reduction on the catalytic sp^2 centers and edges of the graphene.

In summary, the major differences in the electrochemical performance of the combined materials synthesized in this work are related to the carbon morphology. The highest specific capacitance, electrochemical and thermal stability (based on TGA analysis) were found for the MWCNT-based structures, followed by the Single-Waled Carbon Nanohorns and the weakest for the Graphene nanocomposites. The fast degradation of graphene-based electrode is associated with its high catalytic activity towards electrochemical oxygen reduction, leading to the overall

structure instability. Regarding the effect of carbon morphology, for the graphene flakes that are considerable smaller as compared to the multi-walled nanotubes, this plays crucial role in the interaction with the polymer. The detachment of organic moieties from the ultra-fine graphene is considered as a major issue, leading to the electrochemical and thermal instabilities. In order to further improve this system, the poly(pyrrole) thickness should be less than 1 nm (preferentially polymer nanoparticles, not nanofilm). Based on the computational analysis, recommended electrolyte should have the biggest cationic (K^+) and smallest anionic (Cl^-) hydrodynamic radius. This facilitates a good mobility for the redox pseudo-capacitance and ECDL ion accumulation processes.

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ENGLISH PROFICIENCY AS A PRECURSOR OF SUCCESSFUL CLASSROOM PEER INTERACTION AND ESL STUDENTS' ACADEMIC EXPERIENCES

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Abstract

Before commencing their studies at English-speaking universities, English as a Second Language (ESL) students are expected to pass internationally recognised language proficiency exams. But are these exams really sufficient and accurate in measuring an ESL student's language skills, particularly for conversational interaction with peers in the higher education context? The two major concerns that will guide this study are (a) the academic challenges faced by students from an ESL background in relation to conversational interaction, which include linguistic, educational and socio-cultural challenges and (b) the impact of conversational language proficiency on their overall academic experience. Current literature in Applied Linguistics suggests that ESL students' ability to succeed in contexts of higher education, including in conversational peer interactions inside the classroom, may be directly dependant on their level of proficiency in English. This research is important and timely as the number of ESL students studying at English-speaking universities is increasing rapidly each year; however, more academic support is still needed in order to effectively assist these students in their academic challenges. This research will be particularly useful for educators and policy makers as more universities advocate for the internationalisation and globalisation of their campuses.

Keywords: ESL students' academic experiences, peer conversation, ESL, language proficiency

Introduction

The number of international students studying on English-speaking campuses in Canada is increasing each year (Canadian Bureau for International Education, 2014). Although many of these students have passed an internationally recognised English proficiency exam in order to be accepted into an academic program or have taken formal language lessons in their home countries, they may still lack the necessary academic language proficiency that would allow them to perform successfully in their academic studies. Academic language proficiency includes oral proficiency which can be developed through socialisation and interactions, but opportunities to develop this proficiency are not always equally available. Learners of English who study abroad in English-speaking environments can enhance their second-language acquisition and oral proficiency by exposure to everyday socialisation contexts, unlike those who experience only formal classroom language instruction in the home country. These everyday socialisation contexts include: interaction in service encounters, homestays, and contact with professors and within student peer groups.

Research has predominantly examined the role of classroom instruction, in the traditional language classroom in the home country and in language classes outside of the home country. As for outside the classroom, studies originating from study-abroad research have focused specifically on second language acquisition through conversational interactions of international students with their homestay family members and, when inside the classroom, in interactions with instructors. In contrast, there is less research exploring how peer conversational interaction in the classroom contributes to second language development, despite the potential for this environment to support the development of complex academic language.

International Students in Canada

- 83%: Increase in international student population in Canada from 2008 to 2014
- 336,000: International students in Canada at all levels of study in 2014
- 95%: Of international students recommend Canada as a study destination
- 56%: Of 3,000 post-secondary international students surveyed in 2014 reported having no Canadian students as friends

The number of foreign students in Canada continues to grow rapidly. In 2013, there were 293,500 international students in Canada, up 50% in the last five years. The benefits of increased numbers of international students are clear: apart from contributing billions of dollars to the Canadian economy, international students bring a diverse set of experiences to the Canadian campus and community, an integral part of internationalization (Canadian Bureau for International Education, 2016).

Research Questions and Methodology

The two major concerns that will guide and inform this study are: (a) the academic challenges faced by students from an ESL background in relation to conversational interaction, which include linguistic, educational and socio-cultural challenges and (b) the impact of

conversational language proficiency on their overall academic experience. In my study, I will accompany ESL students throughout one academic year. Data will be collected through classroom observations, surveys and interviews.

Literature Review

A number of studies have explored the demands made by the academic context on international students' language proficiency, from the perspective of the student. These studies have shed light into some of the challenges faced by ESL students in relation to conversational peer interaction in higher education contexts. Some of the conclusions were: (a) the inability to effectively communicate orally led students to experience feelings of anxiety, shame and inferiority, (b) East-Asian students employed silence as a coping mechanism out of fear of speaking in class, and (c) students associated themselves with their co-nationals due to the inability to effectively speak English (Brown, 2008). Additionally, (a) students' academic experiences affected by lack of academic English literacy, especially in classroom activities and identity formation, (b) lack of content knowledge and of language proficiency shaped students' identity of less knowledgeable classroom members, and (c) improved language competence allowed students to be more assertive and to acquire more subject-specific knowledge (Hung and Hyun, 2010).

According to **Morita, 2004**:

- Students faced major challenges negotiating identity, power and competence to participate in class due to lack of language proficiency;
- Due to a lack of proficiency in English, students' identities were often perceived as of less competent;
- Some students negotiated better competence and identity by presenting themselves explicitly as ESL students with needs for accommodation. Students' passiveness in the classroom motivated by language anxiety along with several other factors which varied according to the classroom context;
- Silence as a response to the inability to follow fast-paced discussions and to jump into discussions.

According to **Lee, 2009**:

- Students' level of proficiency in English inadequate for oral participation despite passing internationally recognized language tests.

According to **Li, 2004**:

- Students' lack of proficiency in academic language affected their successful adaptation and participation in class.

Anticipated Findings

Language proficiency has an impact on identity and how ESL students are perceived by others and by themselves as competent members of the classroom community. Because intellectual competence can be and often is constructed around language, being proficient in (academic) English may be the key factor in allowing these students to diverge the course of

their academic experiences. For instance, language can be the powerful instrument which ESL students need in order to demonstrate their real intellectual competence and knowledge in the classroom community. Similarly to the findings from the studies reviewed above, I expect to find that language proficiency may be the dominant factor which interferes with ESL students' successful adjustment into the higher education context, and more specifically, with their active participation in the academic classroom.

Relevance of Study

This research is important and timely as the number of ESL students studying at English-speaking universities is increasing rapidly each year; however, more academic support is still needed in order to effectively assist these students in their academic challenges. This research will be particularly useful for educators and policy makers as more universities advocate for the internationalisation and globalisation of their campuses.

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THE PHILOSOPHIES OF HIGH SCHOOL ADMINISTRATORS AND JOHN DEWEY: DO THEY BOTH SUPPORT INCLUSION?

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Abstract

Recently, the implementation of inclusion has increased, yet there are unique challenges at the secondary level that frequently impede successful inclusion (Mastropieri & Scruggs, 2001). However, administrative support is not only necessary for inclusion (Bolger, 2008; Chadd & Drage, 2006), but also required to successfully overcome these challenges (Harpell & Andrews, 2010). Unlike traditional education, John Dewey offers an alternative philosophy—progressive education—that promotes experiences that develop physical, intellectual, and moral growth. In order to develop a school's philosophy, administrators must become aware of their own philosophical beliefs (Jones, 2004) because inclusive teaching principles are underpinned by attitudes and knowledge (Humphrey & Symes, 2013). This mixed methods study will examine the impact an administrator's philosophical beliefs have on the successful implementation of inclusion within high schools in Newfoundland and Labrador, and investigate whether possessing a Deweyan perspective on education has a positive impact on promoting and supporting inclusion.

Keywords: administrators, pragmatism, inclusion, philosophical beliefs, mixed methods

Special education was established to educate students with disabilities in an effective manner, but evolved into a service system entrenched within a clinical model of disability, segregated with its own regulations, practices, staff, and assumptions about students with disabilities (Connor & Ferri, 2007). Even today, “general and special education exist as parallel systems” (Lalvani, 2013), with this bifurcated system of teacher education further perpetuating the notion that there are two different types of learners who require distinct types of instruction (Linton, 1998). When attempting to define inclusion on a philosophical level, some consider the practice as an option along a continuum of educational placements, some as an emerging educational paradigm, while others interpret inclusion to be a fundamental civil rights matter (Winzer, 2000). Recently, Newfoundland and Labrador has commenced the transition towards a more inclusive teaching and learning environment, as evidenced by the presence of both traditional and progressive educational values and perspectives. However, in order to ensure that this transition does not stagnate or become static, is it not only relevant, but essential, to incorporate Dewey’s philosophical tenets during all stages of this process, including high school administrators.

Administrators and Inclusion

Administrators are central figures in establishing the expectations and tone of a school’s approach to equity, curriculum, and inclusion (Bays, 2004; Boscardin, 2004; Crockett, 2004; DiPaola & Walther-Thomas, 2003; Harpell & Andrews, 2010; Praisner, 2003; Price, 2012; Ross & Berger, 2009; Valeo, 2008; Wong & Nicotera, 2007). Additionally, the personal values of administrators regarding special education and students with disabilities have a significant impact on their ability to provide effective leadership to special education (Jacobs, Tonnsen, & Baker, 2004; Loreman, 2001; Price, 2012; Stanovich & Jordan, 1998; Van Horn, Burrello, & DeClue, 1992). As inclusion is becoming more prevalent, administrators “must guide the school and its faculty and staff towards developing a school philosophy based on the democratic, egalitarian principles of inclusion and provide strong leadership to ensure that decisions are made consistent with the school’s philosophy” (Scheffel, Kallam, & Hoernicke, 1996, p. 4).

However, when administrators do not have a clear understanding of how to support inclusion, they may “unintentionally thwart teacher efforts to provide quality support to students with disabilities” (DiPaola & Walther-Thomas, 2003, p. 11). Sharma, Forlin, and Loreman (2008) cautioned that while there has been a considerable increase in the number of students with disabilities in the general classrooms, this should not mean that general educators are fully embracing the concept of inclusion. When teachers are unsure of the purpose of inclusion, they tend to develop and maintain a negative perception of inclusion and students with disabilities (Smith & Leonard, 2005). While researchers have demonstrated that administrators are essential in establishing a school climate (Carlson & Billingsley, 2001), few studies have “focused on the perspectives of school administrators in inclusive settings” (Irvine, Lupart, Loreman, & McGhie-Richmond, 2010, p. 72).

Pragmatism

The theoretical framework for this study is based on the pragmatist philosophical approach. According to this perspective, ‘truth’ is a “tentative assertion based on human experience” (Guttek, 2009, p. 74), and it challenged “traditional philosophical assumptions that a completed and perfect universe could be approached” (p. 75). Instead, pragmatists view the world as constantly changing and evolving, and believe that people live by “successfully interacting with their environment and with each other in flexible relationships” (p. 75). While there are many forms of pragmatism, many consider it a worldview arising out of “actions, situations, and consequences rather than antecedent conditions” (Creswell, 2014, p. 10).

Investigations into the philosophical basis of special education have been rare (Aspen, 1982). Dumbleton (1990) suggested that we need to “look beyond” (p. 17) current descriptions of education, and how John Dewey’s “theory of education, with its emphasis on the process of making sense of experience, makes education an activity available to everybody” (p. 17). Dewey’s philosophy has been described as a “profound critique of the hegemony of modern science in contemporary life” (Biesta, 2009, p. 35), and can be considered an “attempt to develop a more encompassing and more humane conception of rationality” (p. 35). In order to address the “debates in the social sciences between the ‘quants’ and ‘quals’ (Ralston, 2011, p. 358), Ralston believed this dualism could be “informed by a Dewey voice of conciliation” (p. 358).

Democracy is more than a type of government; it is a mode of associating and interacting with others within a communicated experience. Dewey likened progressive education to democracy because of its reliance upon and incorporation of humane teaching and learning methods, and suggested that the “ultimate reason for hospitality to progressive education” is the “fact that discrimination is made between the inherent values of different experiences” (Dewey, 1981, p. 18). As the student “passes from one situation to another, his world, his environment, expands, or contracts” (Dewey, 1981, p. 25). Since experiences can be educative and non-educative, Dewey believed that it is the responsibility of educators to determine the students’ needs and capacities, and to provide experiences that are “flexible enough to permit free play for individuality of experience and yet firm enough to give direction towards continuous development of power” (Dewey, 1981, p. 36), while instilling fruitful and meaningful interactions. Dewey cautioned that if these aspects of democracy seem remote, then the philosophical principles of progressive education have been inadequately understood and inconsistently implemented. However, if educators can perceive education as a “freeing of individual capacity in a progressive growth directed to social aims” (Dewey, 1980, p.105), then progressive education has been understood and is being consistently applied within the educational system.

Methodology

Mixed methods research should “use a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution” (Johnson & Onwuegbuzie, 2004, p. 16). Other researchers such as Maxcy (2003) and Watson (1990) also believed that by incorporating pragmatism, communication between researchers from different paradigms could be improved, and how pragmatism can help successfully guide researchers in

using mixed methods (Hoshmand, 2003). For mixed methods researchers, “pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis” (Creswell, 2014, p. 11).

Including pragmatism into research methodologies is “productive because it offers an immediate and useful middle position philosophically and methodologically,” and it provides a “practical and outcome-oriented method of inquiry that is based on action and leads...to further action and the elimination of doubt” (Johnson & Onwuegbuzie, 2004, p. 17). Pragmatism also offers “a method for selecting methodological mixes that can help researchers better answer many of their research questions” (Johnson & Onwuegbuzie, 2004, p. 17), and can “help to build bridges between conflicting philosophies” (p. 17). The literature clearly demonstrates how pragmatism and mixed methods is a logical and prudent combination, as evidenced by the frequent reference to pragmatism in the writings of mixed methods advocates (Creswell, 2009, 2014; Maxcy, 2003; Morgan, 2007, 2014; Patton, 1985, 1988, 2015; Rossman & Rallis, 2011; Tashakkori & Teddlie, 2003).

Selecting a mixed methods and pragmatic approach to answer *What is the impact of an administrator’s beliefs on high in school inclusion in Newfoundland and Labrador?* will have several of the advantages that are highlighted in the literature. For this study, both the mixed methods and pragmatism paradigms emerged from the research question, the recommended starting point (Ercikan & Roth, 2006). Because of the pervasive polarization of qualitative and quantitative research, the research tends to be confusing and limited, often only providing “incomplete answers...and potentially inappropriate inferences based on findings” (Ercikan & Roth, 2006, p. 14). By using mixed methods, this study can minimize the frequent ‘either/or’ dualisms found in quantitative and qualitative studies, and in doing so, can contribute new insights into high school administrators and their impact on inclusion.

Forging “continuity between pedagogical theory and practice is an ever-present concern for both theoreticians and practitioners, and especially for pragmatists” (Ralston, 2011, p. 351). Clearly, pragmatism is still relevant today, and can provide inspiration not for those “who seek the improvement of education along technical lines, but definitely for those who seek to explore the significance of education in light of the urgent questions of our time” (Biesta, 2008, p. 710). With the lack of secondary level literature, and in particular research specific to high school administrators, determining the impact of an administrator’s beliefs on inclusion in Newfoundland and Labrador’s high schools clearly meets this assertion. By building on these inherent strengths of mixed methods and pragmatism, the possible limitations associated with either quantitative or qualitative approach can be minimized.

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