

# New Teacher Perceptions of Inclusive Practices: An Examination of Contemporary Teacher Education Programs

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*This article details a sequential explanatory mixed-method study into the perceptions of 44 new teachers regarding inclusive practices from their teacher education program, as well as their relative intent to utilize them in their practice. The purpose of this study was to determine the self-perceived capacity of the next generation of teachers leaving a Canadian teacher education program from a mid-sized university in Southern Ontario. As new teachers are the product of contemporary teacher education programs, their lingering needs and perceptions are potential avenues for intervention in continuing the refinement of teacher education. First, a complete audit of relevant teacher education was performed, followed by participants completing a mixed-methods survey. Then, these survey findings informed critical-case interviews. Analyses yielded two groups of themes: confidence from teacher education, and the lingering needs of new teachers. These data suggest that teacher education programs are not entirely effective at producing new teachers who are confident in their abilities to be inclusive practitioners in the classroom. Further, the perceptions of new teachers illustrate avenues for intervention in making teacher education programs more effective.*

*Cet article présente en détail une étude exploratoire à méthodologie mixte portant sur les perceptions de 44 nouveaux enseignants quant aux pratiques inclusives de leur programme de formation et leurs intentions de les intégrer à leur pratique. L'objectif de cette étude était de déterminer l'auto-évaluation qu'établit la prochaine génération d'enseignants de leur capacité au terme de leur programme de formation dans une université de taille moyenne dans le Sud de l'Ontario. Les nouveaux enseignants étant le produit des programmes de formation contemporains, leurs perceptions et leurs besoins persistants représentent des pistes d'intervention possibles pour l'amélioration continue de la formation des enseignants. Une vérification complète des programmes de formation en question a d'abord été effectuée. Les participants ont ensuite complété un sondage à méthodologie mixte. Par la suite, les résultats du sondage ont servi dans les entrevues portant sur les cas importants. Les analyses ont fait ressortir deux grands thèmes : la confiance des enseignants relative à leur programme de formation et les besoins persistants des nouveaux enseignants. Ces données laissent supposer que les programmes étudiés ne sont pas entièrement efficaces dans la formation d'enseignants quant à leur confiance d'intégrer des pratiques inclusives dans leurs salles de classe. Les perceptions des nouveaux enseignants offrent des pistes d'intervention visant l'amélioration des programmes de formation.*

This is a study of new teachers' perceptions regarding inclusive practice in the intermediate and senior divisions (e.g., ensuring that learning is accessible in multiple modes of expression, and providing student-centred learning) and how these strategies impact their teaching practice. Inclusivity has a wide range of definitions (Ainscow, Booth, & Dyson, 2006; Brackenreed, 2011; Florian & Black-Hawkins, 2011). In this study, I define inclusivity as learning that is designed to be accessible to all types of learners at the point of instruction in order to ensure that they are included in a safe, engaging atmosphere that provides a rich learning environment (Florian & Black-Hawkins, 2011).

Teacher candidates are students in a teacher education program who have not yet met the requirements for being certified in their home province. They, along with recently graduated teacher candidates, form the group I refer to as "new teachers." These budding education practitioners are the next generation of teachers. They were taught by the last generation of teachers with the methods of the past and present, and will teach the next generation of students with the methods of the future. The practices of new teachers will become a substantial overall component of the practice of teachers through generational turnover (Townsend & Bates, 2007). Therefore, capturing a snapshot of the ideologies entering the educative workforce would be of great value to the field at large in establishing what contemporary practice is and, more importantly, what it will be.

There are numerous frameworks for being inclusive, and even the definition of inclusivity is a matter of some debate (Ainscow, Booth, & Dyson, 2006). For example, one particularly common framework introduced in the courses audited in this study was Universal Design for Learning (UDL) (CAST, 2011). This framework was central in the teacher education coursework pertaining to inclusive education as it was the most prominently delivered to new teachers as a composite of other supporting pedagogies, including: design thinking, Bloom's taxonomy, metacognition, 21st-century learning, and others. Further, inclusive practices are also a contemporary topic of research by inclusion and special education scholars (Dunn & Pérez, 2012; Edyburn, 2010; Evans & Williams, 2010; Meo, 2008). The term "inclusive" is used broadly in educational settings, and means different things in differing circumstances. Inclusivity can mean having all types of students in one classroom. It can also represent students with a range of abilities being included in the same classroom, or a class where all students are invited to learn (Purkey & Novak, 1996). Inclusivity can also encompass scenarios where all learner types are considered in the design of instruction, and the views of all students are accommodated in the current learning (Florian, Young, & Rouse, 2010). While the definitions differ, the unifying goal does not. Inclusive education is idealized as the establishment of a safe space. One such view is that inclusive education is an ideal goal, inclusive pedagogies are strategies for getting there, and inclusive practice is the application of inclusive pedagogies in order to provide a safe, non-excluding learning atmosphere for as many students as possible (Florian & Black-Hawkins, 2011).

As crucial as inclusion is to the betterment of education, it is still a topic of contention among many teachers (Ainscow & Miles, 2008; de Boer, Pijl, & Minnaert, 2011; Forlin, Douglas, & Hattie, 1996; Sharma, Forlin, & Loreman, 2008); however, the type of contention reported varies from source to source. Forlin, Douglas, and Hattie (1996) report that some senior teachers are reluctant to accept students with differing needs. This takes the form of lack of interest in full classroom integration for students with exceptionalities. Forlin et al. (1996) argue that inclusion of differing levels of ability begins with teacher acceptance of those with exceptionalities in their own classrooms. This historical trend has continued, as much more

recently Ainscow and Miles (2008) reported that the trend of marginalizing students based on ability has endured and that some educators simply do not practice inclusively, despite having attended workshops and professional development. These teachers do not practice what they preach. They do not believe in inclusivity or being student-centred (Ainscow & Miles, 2008). Similarly, Sharma, Forlin, and Loreman (2008) reported that some do not embrace inclusivity because of concerns about finding the time to implement ideas they already have. These experienced teachers are aware that inclusive practice is good for their students, but nonetheless do not believe that they should implement the frameworks of the professional development they attend (Sharma et al., 2008).

A central part of teachers developing their inclusive practice is recognizing that they already know much of what they need; once this is done, inclusive practitioners create positive, safe, learning spaces (Florian, Young, & Rouse, 2010). In a similar vein, de Boer, Pijl, and Minnaert (2011) state that support and experience will increase the potential inclusivity of a given teacher candidate. Many new teachers do not feel confident in their ability to be inclusive, despite being highly enthusiastic about the prospect, and feel that they were not adequately prepared in their teacher education (de Boer et al., 2011). Similarly, Forlin and Chambers (2011), in a study of 228 respondents, reported that 93% of participants felt ill-prepared for inclusive practice based on their teacher education program (p. 20). They ascribed responsibility to a lack of opportunities for practical application and a lack of resources once in their practice.

Other proposed barriers to developing inclusive practitioners are: a lack of support from the administration of schools where they teach (Brackenreed, 2011), opposition from within the teaching profession itself (Ainscow & Miles, 2008; Florian et al., 2010; Sharma et al., 2008), as well as a tempering response of many established teachers for reproducing the status quo (Lambe & Bones, 2006). Though there are many proposed potential mechanisms for the uptake of inclusive practice, none precisely identifies the exact nature of the barriers to developing inclusive practice among new teachers.

In summary, while inclusion is accepted by a majority of teachers as being a central pillar of effective teaching practice, there is opposition to the proliferation of inclusive pedagogies as the norm among some teachers. While the strategies for inclusive practice exist, and are taught in teacher education programs, the question remains: Are these practices filtering into the teaching practice of new teachers?

## **Method**

### **Research Design**

A mixed-method research methodology (Creswell & Clark, 2007; Mertens, 2014) was utilized during this study to explore new teacher perceptions of inclusive practice. This study specifically sought to describe the alignment of new teacher pedagogical views with those of inclusive practice. As a first step, I audited the relevant course materials. The topics and themes elucidated served as the baseline for comparison with the results of the analysis in the study. This analysis focused on consolidating and crystalizing the perceptions of new teachers through a set of data instruments: a questionnaire and a semi-structured bank of interview questions. The data gathered included the results of the course material audit in the intermediate-senior teacher education, the quantitative and qualitative data from the questionnaire, and data gathered from the interviews. After the study received research ethics approval, participants

were enrolled by the instructors of various teacher education courses acting as gatekeepers, who would forward the study email invitation to their eligible students.

## **Participants**

This study adopted a cluster sampling technique (Kemper, Stringfield, & Teddlie, 2003), as gatekeepers would forward the letter of invitation onto their eligible students who had completed all their inclusive education coursework. It specifically explored the perceptions of new teachers who had recently graduated or were about to graduate from an Ontario faculty of education in order to gain a more precise focus on the emerging philosophies of teacher practice in the province. It was also limited to teacher candidates and new teachers from one university in southern Ontario. Participants were intermediate/senior teacher candidates who were in the teacher education program or graduated from the program and had not yet commenced professional practice. There was a range of teachable subjects (see Table 1) represented in the 44 new teachers (32% male; 68% female) who participated in the survey questionnaire. The participants were predominantly in the concurrent education program, a teacher education program as their initial university admission (85%). The remaining participants (15%) were pursuing their teacher education in a consecutive program, which they had applied for after their completion of an undergraduate degree.

## **Procedure and Analysis**

As the data set gathered from the course material audit, questionnaire, and interview featured both qualitative and quantitative data, the forms of analysis varied from source to source. I coded the data from the audit by hand into themes to be compared with the separately gathered themes from the questionnaire and interview, which were also coded by hand. The responses to the questionnaire's closed-ended questions were analyzed to illustrate themes, patterns, and

Table 1

*Frequency of Survey Participant Teachable Subjects*

Teachable subject	Frequency
English	15
Mathematics	10
Dramatic Arts	5
Visual Arts	6
French	10
Geography	7
History	14
Biology	6
Physics	2
Chemistry	6
General Science	2
Social Studies	2
Physical Education	2

trends to inform the open-ended questions of the semi-structured interview. Participants who completed the questionnaire were eligible for follow-up, in-person interviews in order to ask specific questions and obtain open-ended answers to the research questions. I selected six participants for their unique points of view from those who had made themselves available via a question on the survey on a critical-case basis (Berg & Lune, 2011) in order to obtain detailed answers from a variety of perspectives (See Table 2). After the interview, participants were sent transcripts for member-checking and review (Guba & Lincoln, 1994). Following data validation and triangulation, the results of the audit and data instruments were combined and thematically analyzed (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2008).

## Results

An audit of the resources of the four courses directly relevant to inclusivity in the classroom prescribed in the teacher education program revealed an excellent coverage of many instructional strategies, educational frameworks, and inclusive pedagogies, including: metacognition (Afflerbach, 2006), Bloom's revised taxonomy (Anderson, Krathwohl, & Bloom, 2001), design thinking (Brown, 2008; Stolterman, 2008), multimodality (Kress, 2009), and

Table 2

### *Interview Participant Demographics*

Participant	Gender	Age	Teachable subjects	Teacher education
David	Male	28	Geography, Mathematics	Consecutive
Lyanna	Female	24	Physics, Mathematics	Concurrent
Don	Male	24	Dramatic Arts, History	Concurrent
Hussein	Male	25	History, Geography	Concurrent
Marigold	Female	24	Dramatic Arts, English	Concurrent
Olga	Female	24	Biology, Chemistry	Consecutive

Table 3

### *Course Audit Summary of Class Assessment Courses (for both Concurrent and Consecutive Programs)*

Course expectations relate to building skills in:

Bloom's taxonomy:

- balanced instruction
- applying expectations to student learning
- lessons should appeal to all learning domains

Design thinking:

- shaping your practice to fit the class in front of you
- adapting assessment to be educative for students
- flexibility within frameworks of curricula and instruction
- higher-order cognition
- experiencing the process of meaning-making

Metacognition:

- strategic thinking
- planning ahead
- backwards design
- executive function

Multimodality:

- authentic assessments
- multiple acceptable forms of expression

21<sup>st</sup>-century learning:

- flexibility to appeal to multiple intelligences
- adaptive instruction to cater to all learners
- new literacies
- differentiation

21<sup>st</sup>-century learning (Cope & Kalantzis, 2000). On paper, the questionnaire and interview cover all the frameworks that the courses would explore including all the pedagogical practices that underpin Universal Design for Learning. Thus, I compared participant views on the efficacy of teacher education in helping them feel prepared with the stated goals of those courses.

The survey instruments gathered both quantitative and qualitative data, which are reported below. New teachers reported two broad categories of themes related to the confidence of teacher education as well as reported needs of new teachers. Participants consistently criticized

Table 4

*Course Audit Summary of Instructional Strategies Courses (for both Concurrent and Consecutive Programs)*

Course expectations relate to building skills in:

Bloom's taxonomy:

- balanced instruction
- lessons should appeal to all learning domains

Design thinking:

- shaping your practice to fit your class
- adapting assessment for students
- providing opportunities for expression
- challenge driven by choice
- flexibility within frameworks of instruction
- conducive to engagement
- higher-order cognition
- experiencing the process of meaning-making

Metacognition:

- strategic thinking
- planning ahead
- backwards design
- executive function

Multimodality:

- authentic assessments
- multiple acceptable forms of expression
- graphical depictions of information
- richness of perspectives
- heavy investment in multimedia depictions
- exposure to outside the norm modalities of expression

21<sup>st</sup>-century learning:

- critical thinking
- heavy investment in multimedia depictions
- gleaning information from narratives
- differentiation
- flexibility to appeal to multiple intelligences
- adaptive instruction to a variety of learners
- access to information in a variety of forms
- students are mosaics of intelligences
- collaborative work
- alternative modalities of expression
- new literacies

Table 5

*Course Audit Summary of Classroom Dynamics Courses (for both Concurrent and Consecutive Programs)*

Course expectations relate to building skills in:

Bloom's taxonomy:

- balanced instruction
- applying expectations to student learning
- lessons should appeal to all learning domains

Design thinking:

- shaping your practice to fit your class
- adapting assessment to be educative
- providing opportunities for expression
- challenge driven by choice
- flexibility within frameworks of curricula and instruction
- conducive to engagement
- Higher-order cognition
- Experiencing the process of meaning-making

Metacognition:

- strategic thinking
- planning ahead
- backwards design
- executive function

21<sup>st</sup>-century learning:

- flexibility to appeal to multiple intelligences
- adaptive instruction to cater to a variety of learners
- access to variety of information forms
- understanding that students are mosaics of intelligences
- collaborative work exposes students to other intelligences

Table 6

*Course Audit Summary of Special Education Courses (for both Concurrent and Consecutive Programs)*

Course expectations relate to building skills in:

Bloom's taxonomy:

- balanced instruction
- applying expectations to student learning
- appeal to all learning domains

Design thinking:

- shaping your practice to fit your class
- providing opportunities for expression
- flexibility within frameworks of curricula and instruction
- conducive to engagement and personal investment
- authentic assessments

Multimodality:

- multiple acceptable forms of expression
- graphical depictions of information
- investment in multimedia depictions
- exposure to outside the norm modalities of expression

Metacognition:

- strategic thinking
- planning ahead
- backwards design
- decision-making and executive function

21<sup>st</sup>-century learning:

- affinity for technology
- differentiation
- flexibility to appeal to multiple intelligences
- adaptive instruction to cater to a variety of learners
- access to information in a variety of forms
- students are mosaics of intelligences
- collaborative work exposes students to other intelligences

the format and structure of their courses, in contrast with nigh unanimous praise for the practical components of teacher education programs. Detailed exploration of the themes follows.

### **Confidence as a Result of Teacher Education**

Participants were asked to state their degree of agreement with several statements of preparedness based on teacher education, drawn from the syllabi of the audited courses. There was a disparate array of responses and the questions were somewhat positive with some notable, later exceptions. As shown by Figure 1, the statement "I feel ready to teach the range of students of Ontario" was met with a slight majority of participants reporting agreement. A narrow majority, 55% of participants, reported agreement (37% agreement, 17% strong agreement), while 20% reported neither agreement nor disagreement, and 25% reported disagreement (21% disagreed, 4% strongly disagreed). The 20% who reported neither agreement nor disagreement represent a sample who is uncertain positively or negatively of their readiness. The similar statement "I feel ready to optimize individual student learning" was met with a strong majority, 79% of participants expressing agreement (58% agreement, 21% strong agreement), with 4% reporting neither agreement nor disagreement, and 17% reporting disagreement.

When asked if they agreed with the statement, "I feel ready to utilize student past learning," a moderate majority of participants expressed agreement (46% agreement, 13% strong agreement), 29% reported neither agreement nor disagreement, and 12% reported disagreement (4% disagreement, 8% strong disagreement). When participants were asked whether they agreed with the statement, "I feel ready to encourage collaboration," a majority expressed agreement (46% agreement, 17% strong agreement), 13% reported neither agreement nor disagreement, and 25% reported disagreement. When asked whether they agreed with the

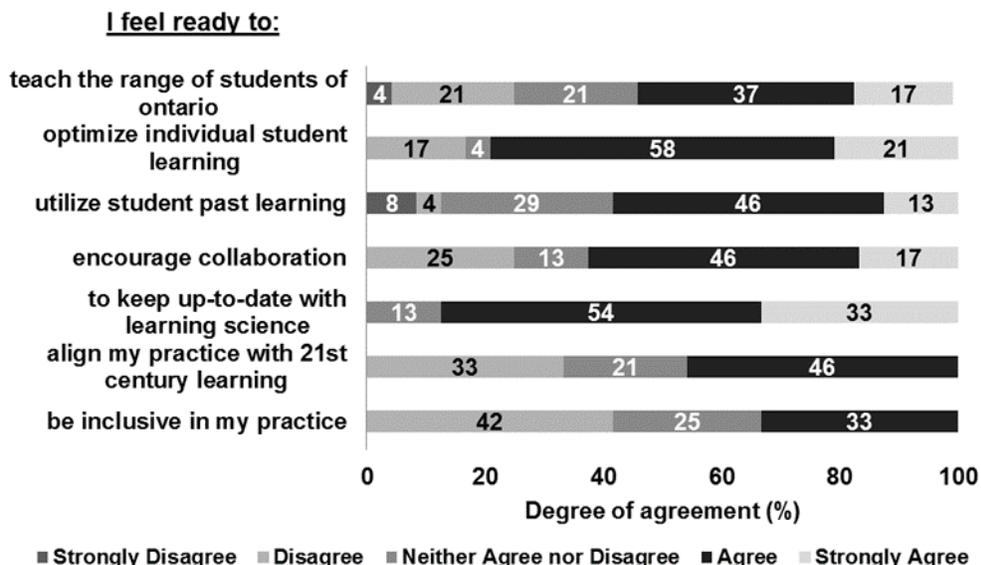


Figure 1. Participant assessments of their teacher education preparedness.

statement, “I feel ready to keep up-to-date with learning science advancements,” a vast majority of participants expressed agreement (54% agreement, 33% strong agreement), while 13% reported neither agreement nor disagreement. There was no disagreement with this question in the prompted context of inclusion.

A similar question of agreement with an array of inclusion-related statements resulted in participants disagreeing with the statement “I feel ready to align my practice with 21<sup>st</sup> century learning.” A minority, 46% of participants, expressed agreement. Participant confidence may have been due to every audited course making heavy investments in developing and exploring content relevant to 21<sup>st</sup>-century learning such as making use of media, computer-aided instruction, and collaboration, though several indicated that this was not a new-age skill. The association of some of the strategies to being included as modern skills was contested by some of the participants, as they felt that they had always been important, rather than being vogue topics of the day. Lastly, when asked whether they agreed with the statement, “I feel ready to be inclusive in my practice,” a minority, 33% of participants, expressed agreement, 25% reported neither agreement nor disagreement, and 42% reported disagreement.

**Perceived readiness.** Despite the range of criticism, all participants reported a fair state of perceived readiness, though most do not credit the readiness to the classes within their teacher education program. In terms of readiness the vast majority of interviewed participants stated a “fair” or better perception of their inclusive readiness. In particular, David stated, “I’m very confident in my abilities to be inclusive.” Similarly, Olga said, “I’d be pretty confident.”

In her interview, Marigold responded that she felt “pretty darn confident” in her readiness for inclusive practice. In response to a follow-up question asking why she felt prepared, Marigold responded: “Firstly, I’m aware of what inclusive pedagogies looks [sic] like in practice. That’s really the first thing because a lot of teachers just aren’t aware.” Marigold was a teacher candidate from the concurrent path, which meant that she had repeatedly encountered many of the concepts highlighted in the questionnaire and interview prior to teacher education.

In contrast, Lyanna expressed a degree of skepticism about her abilities: “Honestly, meh.” She explained that she felt that “meh,” a term indicating indifference, was “the best description

of my current preparedness thanks to teacher's college." She immediately clarified that, "I feel fairly confident, but I'm worried about managing my time, while still being inclusive in my teaching." This highlights a concern not with inclusivity itself but with inclusivity within the constraints of good classroom time management. Don expressed a similar sentiment: "It is most certainly not my number one concern. Not by any stretch. I think that the inclusiveness in reaching your students comes with the other pieces; if you can just get through all the other hurdles."

Though all participants expressed a fair or better perception of their readiness, very few attributed any significant credit to teacher education for their readiness. When asked, "To what degree do you credit teacher education for your readiness?" Don's response was "In my confidence? None." Don was not alone in his blunt assessment of the teacher education experience. In response to the same question, Olga equally succinctly commented: "To be frank, not that much." Lyanna, who was in the process of completing teacher education, commented that she felt that she owed "minimal credit to teachers college." She qualified this by stating that a more accurate statement was, "I have learned more about being a good teacher, from two weeks of Residence Don training than I have from my previous four-and-a-half years in the faculty of education." All of those interviewed made similar comments.

All participants, however, credit the practicum aspect of teacher education in isolation. David explained, "Teachers college is a lot of ideas that I would've had, but they put in the theory [into] words." He further stated that, "Sure, I don't know exactly what UDL is, I haven't seen that particular package before; it doesn't mean that I don't have those ideas." David, here, addressed the fact that many of the ideas of teacher education were ideas that teacher candidates may in fact already have had. It is telling that UDL as a framework is emphasized in the syllabus documents and textbooks of the audited courses as composites of other supporting pedagogies such as design thinking, 21<sup>st</sup>-century learning, and Bloom's taxonomy, among others. He stated that the most valuable part of teacher education was "my practicum, which is technically part of teachers college."

Lyanna corroborates this perception as being one shared by some other teacher education program attendees: "The most we are going to learn is on block one when we're in front of the class." Don explains why some may hold this view: "Genuine confidence only comes with applying those theories to a specific experience. Oh, I actually managed to do it. Great. Now I feel confident. As far as the exposure to the ideas, elements [of teacher education] were certainly helpful." Therefore, though criticism of teacher education is rampant, participants unanimously found the practicum of teacher education to be of great value to developing their inclusive practice. This demonstrates that the intended learning of the courses was not entirely effectively imparted to teacher candidates as illustrated by their criticism.

### **The Needs of New Teachers**

The second half of the survey and interview featured questions that prompted participants to assess their preparedness for a variety of challenges to inclusion. These challenges included utilizing knowledge students had acquired in past courses and aligning their own teaching practice with 21<sup>st</sup>-century learning. The questions also identified the tools that would help them most develop their ability to be inclusive practitioners in order to create a safe, equitable space that would meet the learning needs of students.

Participants often articulated what types of supports would have been helpful for them to

become more inclusive in their practice in the course of answering other questions as well as an unambiguous question asking them to rank a set of proposed resources. Most of these resources were in the form of alterations in the design of teacher education. Some of the participants articulated a need for a more practical focus in teacher education, while others advocated for a better modeling of student-centred teaching in the program.

Towards the end of the survey, participants were asked to rank some potential supports on their ability to help promote inclusive practice for them personally. They were asked: “What supports would you find most helpful in implementing inclusive practices in your classroom? As illustrated by Figure 2, the most popular supports were additional involvement of special education specialists, a proposition that had unanimous approval (24% good, 38% very good, and 38% excellent), and the creation of specific professional development on inclusive practices, which was also unanimously viewed positively (38% good, 33% very good, and 29% excellent). In a close second was an additional practicum, which had 92% approval (21% good, 25% very good, and 46% excellent). The next most popular potential support (with 63% approval) was extending teacher education (38% good, 17% very good, and 8% excellent). The least popular option was rewriting curricular documents at 58% (33% good, 17% very good, 8% excellent). Therefore, in order of preference participants in this study would prefer to see:

1. Additional involvement of special education specialists.
2. Creation of specific professional development on inclusive practices.
3. Additional practicum in teacher education programs.
4. Extending teacher education in general.
5. Rewriting curricular documents to feature inclusivity more prominently.

In the interview, Lyanna spoke about an experience she had in training modules external to teacher education: “We did activities on active listening, walking into a situation and having to physically deal with it, rather than just talking about it.” She explained how the experience was different from the preparation for practicum in teacher education: “We had to get up and act out what we would say, how we would react, which is so much more beneficial than just having a

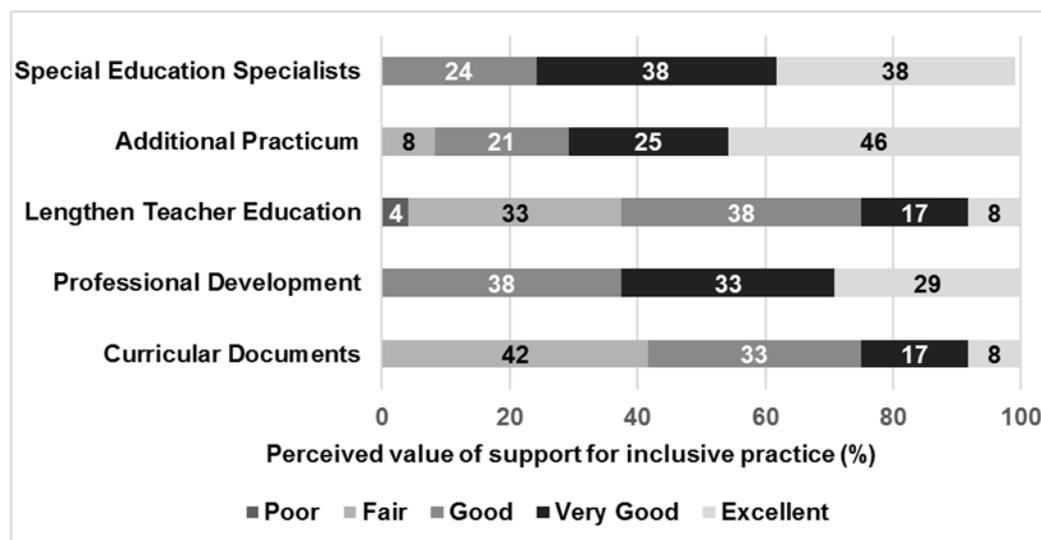


Figure 2. Participant perception of the helpfulness of potential inclusivity supports.

discussion about it.” Lyanna summarized her point: “You can understand all the theory that you want, but applying it is an entirely different set of skills.” The details of the experience highlight a point that was made by others; that is, teacher education was not perceived to provide practical development.

Olga articulated this idea in a different way. She argued that perhaps the challenge was not with the amount of practicum but with the limited amount of praxis in teacher education. When asked about what she wished would receive more focus, she said: “Maybe not more practicum, but more practical application of things in the classroom.” She elaborated that, instead, it would be more helpful if, “when you’re teaching a concept to the new teacher candidates, you actually go through what that looks like in practice rather than just spitting out theoretical constructs. I think that would be more helpful.” Hussein also articulated this point in response to what he wished received more emphasis in teacher education: “I do also believe an emphasis in teacher education classes should be more time spent working on and actually practicing teaching strategies, even before we go to practicum.”

Hussein’s idea of earlier and more extensive chances to practice inclusive strategies was shared by other participants, and he further explained his thinking: “Practicum is invaluable, but remember these are real-life situations with real students. If we’re going in there relatively blind, but even when it’s at one line, it’s still a classroom of students for a month.” This highlights that although a practicum is valuable, it is also a high-pressure situation as student learning of one class, in the beginning is in the hands of someone who has likely never been in charge of a classroom before. Even though in teacher education the first practicum experience is typically one class that eventually works up to a full-load of course by the end of the third and final teacher education practicum block, the teacher candidate still begins with the responsibility for the education of an entire class.

Don also thoroughly explored the topic of how teacher education could better prepare teacher candidates for inclusive practice. He began with this line of thinking: “A lot of the time when asking people this, their immediate response is give us more practicum.” There is a perceived need for more practical focus in teacher education; however, he changed gears slightly and stated later: “I think a bigger problem is the gap between willingness to discuss theory and practice at the same time.” Don discussed a perceived, artificial separation between teacher education theory and the practical applications that would make a difference in improving the inclusive practice: “The conversation is talking about theory, we’re not going to talk about practice in this conversation. Practice comes later, we’re not to talk about that here, don’t ask about it. I don’t think that’s helpful.” He describes a hypothetical situation where an instructor is discussing theory, but not providing an opportunity for practice of that new learning: “I think it’s essential to learn theory. It’s essential to have the time to practice it, but if you’re not bridging that anywhere, there’s no openness to consider what would you do, and what would that specifically look like?”

The lack of bridging, as Don describes it, places teacher candidates at a disadvantage when they enter the classroom: “By the time they get to that point where they actually have to do it, they are terrified because all they know is the theory. They’ve never been asked to consider the application.” He explains that because there is little opportunity to practice the theory that teacher candidates have just learned, candidates have unnecessary extra pressure when they try and implement it in their practice. His proposed solution is to implement more early opportunities to practice: “So, I would advocate more bridging, more early bridging, let’s start considering it now. You might not actually get the chance to practice it today, let’s look at that.”

His argument is that earlier practice of the theory prior to practicum will result in better-prepared candidates in their practicum.

**Separation between theory and practice.** Participants also critiqued the theoretical learning within teacher education, in addition to the perceived need for additional practicum focus. Some prevalent ideas included the identification of inclusive practices, a need for a unified inclusive practice class, and the perceived superficial opportunities for professional development. In response to a follow-up question about if he finds resources like the UDL Guidelines useful, Don stated: “I think it’s useful for teachers, especially those that aren’t comfortable letting go, the ones who don’t know that it’s safe to let go of the control, students won’t just light the room on fire.” Don also spoke about the role of teacher education as setting a benchmark for teaching practice: “We have to define things so that we can group them and talk about them as teachers. Otherwise what the heck are you talking about, if everyone calls it a different thing?” Don clarified that: “Inclusive practice, like everything else on his list, speaks more to teaching well, keeping your students in mind, and trying to reach your students in different ways.” Similar advocacy of student-centred learning is mirrored by Marigold who argues that inclusive teachers “[put] their intellectual laziness to rest and [design] student-centered lessons.” She clarified that new teachers should be “finding time to go above and beyond the activities that they were taught with, the traditional conventional pedagogy that fosters unidirectional flow of information.”

The idea of superficial classroom design alluded to by Marigold was directly addressed by Don in his response to what could use more focus in teacher education. Don described how much of the inclusive practice learning completed in teacher education was very superficial. He clarified his meaning with, “Gardner is a fun fellow. I think he’s misinterpreted. I think he’s being turned into a bumper sticker.” Don then stated his view of superficial inclusivity brought about by the rise of buzzwords: “Just because if you say that you’re teaching with multiple intelligences, doesn’t mean you actually are.”

Olga’s view of teacher education was similar: “They go into different teaching strategies, which can be applied to making the class more inclusive, but they don’t demonstrate them, they just say these are different teaching strategies, go ahead and use them, if you want.” Olga also commented: “I don’t think I learned in teacher education how to be truly inclusive. They don’t even go into the practical application of it.” Hussein in his interview also commented that he does not feel that he has made good use of inclusive practices: “I know we looked it up. It’s always been mentioned in passing without being expanded upon in my own teacher education program.” The theme of additional time spent on pedagogical knowledge development was commonly a topic of participant responses; it was usually mentioned as a recap of what they desired to see in teacher education.

In the interview, participants expressed varying levels of negativity regarding their experience in teacher education. In particular, new teachers reported a perceived superficial training and development in the discussed inclusive skills. Don, in response to a question of preparedness from teacher education, responded that he does not believe that conveying specific frameworks as the apex of inclusivity is a very effective way to win hearts and minds: “I don’t think that bringing UDL in as this ‘Hey teachers. Come to this in-service session to show you how to do UDL and we’re going to teach you more effective ways of being inclusive.’” He explained his perception: “I think many teachers, especially some of my peers react negatively to these buzzwords being thrown around.” He feels that there is a level of frustration with the divergent and bewildering array of buzzwords being toted around as “best practices.” Don

further clarifies: “The words are empty of context, but speak very much to what teachers want to do. They just don’t know how to do it in some cases. They do it without realizing it.”

Similarly, David states his view of how teacher education prepared him to be inclusive: “It sounds exactly like how I would describe teacher’s college. It’s theoretical. It is essentially putting into words the ideas that were there already.” Specifically, David discusses his training from teacher education focussing on the UDL training from his inclusion-related courses. It is important to note that he reports his alignment with inclusive pedagogies by stating that he had similar ideas before the courses introduced the formal concept; however, this also means that he learned little from the process. Marigold, speaking to the same question, commented: “It is interesting for me to see other teachers who went through teacher education programs that are not inclusive in their teaching, and I wonder ‘Well, you must have learned about inclusive teaching, so why are you teaching like that?’” Marigold introduces the idea that her peers were trained, but consciously decide not to make use of their learning. This line of thinking is representative of similar frustration with new teachers’ peers and their lack of implementation of inclusive practices in their teaching, despite a substantive background.

Another source of criticism was participant views of their peers’ readiness for inclusive practice. A consistent negative perception across all the interviews was inherent. When asked a follow-up question as to why she felt that a few of her peers would struggle with inclusive practice, Marigold said: “Maybe, it’s because they’re lazy, or they’re just plain resistant to these ideas and clinging to what they know.” Marigold further explained that she felt that “teacher education does not make you care about being inclusive, it doesn’t make you care about UDL, it’s a lot of busywork, and you can get through teachers college doing a lot of teacher-centred things.” She felt that her peers were encouraged to be inclusive, but did not necessarily integrate their learning into their practice when they were not being assessed.

Marigold also commented that for some teacher candidates, “teacher education is a kind of a game,” and that “the only time in teacher education you actually have to try, is when you are being observed and that is when people who taught in a completely teacher centered way, for one day, teach a student-centred lesson.” Lyanna closed her interview with an adjacent sentiment: “I don’t see this as a realistic occurrence in classrooms as they currently are.” There was some reported resistance to the strategies as they were viewed as time-consuming in a teaching climate, with teachers who consider themselves tasked to capacity.

## **Discussion**

The course audit revealed the knowledge that was covered in various courses of the teacher education programs. The quantitative sections of the questionnaire enabled a snapshot of the perceptions, knowledge, comfort, and usage entering the teaching profession as well as an initial needs assessment in order to better prepare teacher candidates for the rigours of the inclusive classroom. Analysis of themes of the questionnaire shaped the direction of the questions in the interview leading to targeted questions that explored the elucidated themes. The following is a direct comparison of the identified topics of discussion of the courses of teacher education compared to the stated perceptions of new teachers on a survey questionnaire. Following up on the results of this comparison, the identified themes of the qualitative sections of the questionnaire and the interviews will be explored to illustrate the deeper perceptions of new teachers and their implications for the field of education.

## **Confidence as a result of Teacher Education**

Participants were unanimously in favour of being inclusive practitioners and connected being a good teacher with being inclusive in teaching. Their definitions of inclusion were adjacent, but differences were present. Defining inclusion is difficult as illustrated by Florian et al. (2010); upwards of five separate definitions are widely utilized, ranging from students with a range of abilities being included in the classroom, to the views of all students being accommodated in the current learning (Florian et al., 2010). Participant definitions of how they are inclusive were just as wide ranging, although interviewees unanimously agreed to a definition of valuing all of the past learning of students and ensuing that all types of learners had a place to learn equitably. The spirit of inclusion was well received, however, the methods of inclusion as well as their perceived preparedness of themselves and their peers were varying among participants.

**Participant cynicism and skepticism.** Participants expressed a common undertone of cynicism and skepticism in their discussion regarding their experience of teacher education, the preparedness of their peers, and a general malaise with the use of buzzwords. Participants expressed their frustration that, although they wanted to develop as inclusive practitioners in teacher education, they were often stymied by circumstances including the teaching style of their instructors and the design of the program. Other research has revealed similar frustrations with a fundamental clash of opinion and access to developmental needs of teacher education (Ainscow & Miles, 2008; de Boer et al., 2011; Sharma et al., 2008).

Participants in this study consistently stated that they felt that teacher education has not prepared them as well as it could have, similar to the findings of de Boer et al. (2011), which suggests that deficiencies of teacher education lead to gaps in the knowledge of the new teachers that are trained. One such deficiency, suggested by Forlin and Chambers (2011), is that in a study of 228 participants, 93% of those surveyed reported that they felt ill-prepared for inclusive practice based on their certification programs. The specific deficiency identified is the gap between theory and practice which manifested in a reported juxtaposition between the learning of newly certified teachers represented and the stated learning outcomes of the courses that they completed (Forlin & Chambers, 2011).

One view was that teacher education was overwhelmingly theoretical and had only put into formalized terminology exactly what new teachers knew to be needed in their practice; new teachers already had the ideas that were taught in teacher education. Their major takeaway message was the formal language, rather than a practical knowledge, of the concepts and their application. This corresponds to a similar idea from Florian and Black-Hawkins (2011), who stated that an array of changes is necessary to help teachers address the issue of inclusion in their daily practice, particularly increasing practical experience.

This practical experience, however, is found predominantly in retired and/or seasoned teachers who comprise a significant portion of the instructors in teacher education. As teachers largely teach how they were taught (Ainscow & Miles, 2008), these retired teachers impart their own “tried and true” methods of teaching, which may or may not be aligned with the best practices of the contemporary literature. Florian and Black-Hawkins (2011) state their view that a shift in thinking is needed from an approach that is transmission-model based that worked for many learners to a flexible approach, or set of approaches, that provide rich learning experiences for all learners. These models are not ingrained in many seasoned teachers because the push for classroom inclusion is a recent idea. If teacher education programs are to develop the practical skills necessary to cultivate the skills of new teachers to apply inclusive practices in

their classrooms, these programs could benefit from the most inclusive of active practitioners to model the inclusive practices for new teachers in the program, as counterparts to retired teachers, who were raised within the transmission and banking models of education.

### **The Needs of New Teachers**

New teachers were grateful for the opportunity and were happy to be teaching in classrooms, an opportunity seldom found outside of teacher education practicum. However, participants consistently critiqued how they were being taught to be inclusive and student-centred in largely inaccessible, teacher-centred method of instruction such as lecturing, which lack opportunities for practical learning. A consistent theme of the courses audited was the importance of being student-centred in teaching practice, as, in this way, students are the focal point of the instruction and therefore the centre of the classroom. The syllabi of the required courses referred to topics like accessible lesson content, avoiding transmission model instruction, giving authentic assessments, and ensuring that lessons were multimodal in order to appeal to a range of learning styles. In juxtaposition with this stated goal of the courses, new teachers reported whole-class lectures, easily evaluated assignments that did not require deep thinking, and single-mode lessons that they often felt went “right over their heads.” New teachers in this study have illustrated their perception that they do not have many opportunities to develop their skills hands-on; rather, they were repeatedly told that they must be inclusive in order to be good teachers, in an entirely exclusive teaching style not consistent with its own stated learning goals.

**Separation between theory and practice.** Participants were also critical of their ability to be inclusive in their teaching. Some participants discussed how their peers would only be inclusive when their advisor was observing them in practice. For that one day, they would ensure that their lesson was sufficiently accessible to their students as to meet the criteria for their evaluation. It was suggested that this was an example of intellectual laziness or resistance to a foreign concept that some were uncomfortable with and were instead clinging to what they knew. Some participants reported their peers teaching precisely how they were taught, as it was the only way they knew. Brackenreed (2011) suggests that inclusive practitioners will face stiff opposition from within the profession, from others who either do not agree with inclusion or simply are unwilling to change how they teach to benefit their students. It was suggested that having an opportunity to practice some inclusivity in a safe setting might encourage more teachers to use inclusive practices in their teaching.

Another topic of interest was how participants expressed their skepticism of educational buzzwords. Participants commented on how they were being trained to namedrop some high-profile buzzwords in order to boost the profile of their teaching strategies. Such hot-topics included multiple intelligences, authentic assessment, and, most commonly, 21<sup>st</sup>-century learning. Participants reacted to the 21<sup>st</sup>-century questions positively, but often commented in the associated open-ended or elaborating questions how they resented the educational community with the superficial exploration rather than thick integration of these principles. One such comment stood out as the participant commented that Howard Gardner’s work on multiple intelligences is becoming a gimmick, minimizing its importance as a source of inclusion. In participants’ own terms, inclusion is a goal, not a catchphrase. Lambe and Bones (2006) state that the contradictions in teacher attitudes result in different applications of inclusive practice. Some for instance may do so superficially, in order to conform with their peers and school societal pressures, without doing so as an integral part of their practice (Ainscow & Miles,

2008). These superficial applications are the cause of the new teacher frustrations within the context of the inclusive movement. The desire for inclusive practitioners to move forward with progress and accommodation within the classroom is tempered by older practitioners with a thinly veiled contempt for change (Lambe & Bones, 2006).

Participants critiqued how these buzzwords were portrayed in their teacher education classes and how they seemed out of touch with modern society, similarly to the “old wine, new bottle” syndrome described by Lankshear and Knobel (2003). In one instance, 21<sup>st</sup>-century learning was presented as using a VCR in a class dedicated to 21<sup>st</sup>-century technology use, one component of successfully utilizing assistive technology in the course of developing inclusive practice. Such portrayals, in the statements of new teachers, did not recruit the interest of new teachers. Instead of explaining the importance, old is often sold as new, with the addition of a minor, inconsequential “new age” component that does not impact the connecting teaching practice. Participants reported how many inclusive practices are being reduced to headings on a page and titles on slides rather than something that they are being taught to utilize effectively. This is characteristic of the deficiency in type of supports for the development of inclusivity in the teacher education of many new teachers, as described by Austin (2010). Effective teacher preparation should provide and require lessons of teacher educators to feature practical, intensive components that impel the proliferation of the most well-accepted models of inclusive teaching in educational literature (Austin, 2010). Hence, the teacher education programs with practical components would produce pre-service teachers who are trained in the best research-based practices as new teachers cannot be effectively trained in inclusive education in a single workshop, or class that only delivers the headlines, instead of richer, deeper, and intensively practical learning opportunities.

### **Conclusions and Implications**

The results of this study have numerous connections to the practices of current teacher education, the existing literature, and as a source of ideas for future research. Firstly, this study identified the current perceptions of a sample of new teachers from one teacher education program, and how they connect to their capacities for inclusive practice. I examined how new teacher philosophies demonstrated alignment with inclusive pedagogies. I also identified what these new teachers need to develop to have inclusive practice. The following are the connections between the study’s findings and the field of education at large.

#### **Implications for practice**

While the sample size was fairly modest, the perceived juxtaposition between the practices of teacher education and the goals of the audited courses need to be addressed. The concerns of this sample of new teachers are a useful indication of commonly held thoughts among the next generation of Canadian teachers. The first juxtaposition is the separation of theory and praxis in the courses themselves, while the relevant content is fresh in the minds of students. If a teacher education class has just discussed Bloom’s taxonomy, it is an ideal opportunity to try and use it in a micro-teaching, and have other students critique that potential usage. David commented: “When you’re teaching a concept to the new teacher candidates, you actually go through what that looks like in practice rather than just spitting out theoretical constructs. I think that would be more helpful.” In this way students would have the opportunity to apply their knowledge and

create something, in the same way that they are trained to do so in their classes. Students that see this use first-hand may in fact use it often, becoming more inclusive practitioners.

The predominant described experience of new teachers in this study features an artificial separation between the learning and a chance to implement it. The participants suggested that the quick succession of concepts described superficially in teacher education was (or could be) linked to the consistent alienation with buzzwords that participants describe feeling. New teachers, as surveyed, demonstrate resistance to the superficial statement and use of buzzwords, and vigorously disapprove of the way that some of their peers carry on teaching precisely as they were taught. This implies that new teachers recognize that inclusivity is central to effective practice and that their own drive to be inclusive allows them to see the lack of it in others.

Quite simply, teacher education could benefit greatly from providing opportunities for new teachers to practice the concepts new to them in order to become more comfortable with their use. One such setting suggested by a participant in their member check was a rotary, safe-space simulation model, where participants would experience several different educational situations and have the opportunity to apply their learning in different contexts, thus fusing theory and practice. This might take the form of a course on inclusive practices in education with its own integrated practical component. Such a course might elect to focus on a selection of inclusive practices and illustrate how they might be effective in developing a positive, safe, and accessible learning space. This course would prepare students by demonstrating how inclusive practices might connect with one another and enhance student learning by providing an accessible atmosphere where all students might learn.

For instance, the course might include how to design a multimodal lesson, where students are allowed to bring in their past learning to a task where students are given the opportunity to design a solution to a meaningful, real-world problem using their past and current learning. In the scenario of teaching a biology class, this might take the form of tasking students with an environmental survey to evaluate the health of a local ecosystem using the terms and concepts of the ecosystems unit that they are learning. This use of framed-narrative, case study, and the fusing of theory and practice, a term called *praxis*, would be an ideal way of making inclusive practice relevant, engaging, and most importantly transformative. Participants of this study commented on how they wanted a course that allowed them to explore inclusivity. This course would invite them to apply their learning to real situations they might encounter, rather than bombarding them with ideas and exploring few of them in detail, as repeatedly reported in the questionnaire and interview. In this way, a teacher education program might address the identified needs of new teachers in a practical, hands-on way that provides an opportunity to develop as inclusive practitioners to the benefit of their future students.

### **Implications of limitations and further research**

The results and discussion of this study illustrate the perceptions of new teachers; however, it also identifies opportunities for studies and research into questions that remain unanswered. These are largely to do with the limitations of the study, predominantly the modest sample size. A larger sample size might have had the power to do deeper statistical analyses to identify differences between demographic groups, and within teachable subjects, to identify patterns for consideration. A larger investigation would be able to include the courses of more than one university, or perhaps all of the potential routes for all teaching certification for age ranges from primary to senior, instead of only intermediate and senior.

Additional research into the use of buzzwords would be a natural next step, as participants identified their frustrations with their continued use and the proliferation of self-identified superficial inclusive practice. This study could take the form of asking teachers to identify terms that are problematic, or catchphrases that they find empty of meaning, and why. It would be of great use to the field should these perceptions and topical strategies be explored. Similarly, it would be a significant contribution to quantify the exact efficacy of teacher education using a pre-test/post-test design of new teachers before and after teacher education in order to determine the change in attitudes, perceptions, and knowledge that would take place in teacher education. Such an experimental design would also serve as a suitable basis for evaluating the efficacy of this study's recommendations and findings for improving the inclusive development of teacher education.

As identified by the support-type ranking question on the questionnaire, there are demonstrable preferences of new teachers for the types of supports that they might find helpful. An investigation of these support types might reveal more detail about what types of resources should be priorities for development for the next generation of teachers.

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### **References**

- Afflerbach, P. (2006). Metacognition and learning: Conceptual and methodological considerations. *Metacognition and Learning*, 1(1), 3–14. doi:10.1007/s11409-006-6893-0
- Ainscow, M., Booth, T., & Dyson, A. (2006). Inclusion and the standards agenda: Negotiating policy pressures in England. *International Journal of Inclusive Education*, 10(4-5), 295–308. doi:10.1080/13603110500430633
- Ainscow, M., & Miles, S. (2008). Making education for all inclusive: Where next? *Prospects*, 38(1), 15–34. doi:10.1007/s11125-008-9055-0
- Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York, NY: Allyn & Bacon.
- Austin, V. L. (2010). Inclusive practices in Tennessee: An investigation of co-teaching in middle Tennessee schools. *Journal for Inclusive Education*, 2(6). Retrieved from <http://corescholar.libraries.wright.edu/ejie/vol2/iss6/5/>
- Berg, B. L., & Lune, H. (2011). *Qualitative research methods for the social sciences* (8th ed.). Boston, MA: Pearson.
- Brackenreed, D. (2011). Inclusive education: Identifying teachers' strategies for coping with perceived stressors in inclusive classrooms. *Canadian Journal of Educational Administration and Policy*, 18(3). Retrieved from [https://www.umanitoba.ca/publications/cjeap/pdf\\_files/brackenreed-en.pdf](https://www.umanitoba.ca/publications/cjeap/pdf_files/brackenreed-en.pdf)
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. doi:10.1191/1478088706qp0630a
- Brown, T. (2008). Design thinking. *Harvard Business Review*, 86(6), 84. doi:10.7448/IAS.17.3.19356
- CAST. (2011). Universal Design for Learning guidelines-Version 2.0. Retrieved from <http://www.cast.org/library/UDLguidelines/>

- Cope, B., & Kalantzis, M. (2000). *Multiliteracies: Literacy learning and the design of social futures*. New York, NY: Routledge. doi:10.2307/358703
- Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- de Boer, A., Pijl, S. J., & Minnaert, A. (2011). Regular primary schoolteachers' attitudes towards inclusive education: A review of the literature. *International Journal of Inclusive Education*, 15(3), 331–353. doi:10.1080/08856251003658694
- Dunn, A., & Pérez, L. F. (2012). Universal Design for Learning (UDL) in action: The smart inclusion toolkit. *TEACHING Exceptional Children*, 45(2), 41.
- Edyburn, D. L. (2010). Would you recognize Universal Design for Learning if you saw it? Ten propositions for new directions for the second decade of UDL. *Learning Disability Quarterly*, 33(1), 33–41.
- Evans, C., & Williams, J. (2010). Modeling, guided instruction, and application of UDL in a rural special education teacher preparation program. *Rural Special Education Quarterly*, 29(4), 41–48.
- Fereday, J., & Muir-Cochrane, E. (2008). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80–92. doi:10.7870/cjcmh-2014-027
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813–828. doi:10.1080/01411926.2010.501096
- Florian, L., Young, K., & Rouse, M. (2010). Preparing teachers for inclusive and diverse educational environments: Studying curricular reform in an initial teacher education course. *International Journal of Inclusive Education*, 14(7), 709–722. doi:10.1080/13603111003778536
- Forlin, C., & Chambers, D. (2011). Teacher preparation for inclusive education: Increasing knowledge but raising concerns. *Asia-Pacific Journal of Teacher Education*, 39(1), 17–32. doi:10.1080/1359866X.2010.540850
- Forlin, C., Douglas, G., & Hattie, J. (1996). Inclusive practices: How accepting are teachers? *International Journal of Disability, Development and Education*, 43(2), 119–133. doi:10.1080/0156655960430203
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (Vol. 2, pp. 163–194). Thousand Oaks, CA: Sage.
- Kemper, E. A., Stringfield, S., & Teddlie, C. (2003). Mixed methods sampling strategies in social science research. In A. Tashakkor & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 273–296). Thousand Oaks, CA: Sage.
- Kress, G. (2009). Multimodality: A social semiotic approach to contemporary communication. *Multimodality A semiotic approach to contemporary communication*. New York, NY: Routledge.
- Lambe, J., & Bones, R. (2006). Student teachers' perceptions about inclusive classroom teaching in Northern Ireland prior to teaching practice experience. *European Journal of Special Needs Education*, 21(2), 167–186. doi:10.1080/08856250600600828
- Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge in the classroom*. Berkshire, United Kingdom: McGraw-Hill International.
- Meo, G. (2008). Curriculum planning for all learners: Applying Universal Design for Learning (UDL) to a high school reading comprehension program. *Preventing School Failure: Alternative Education for Children and Youth*, 52(2), 21–30. doi:10.3200/PSFL.52.2.21-30
- Mertens, D. M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Thousand Oaks, CA: Sage.
- Purkey, W. W., & Novak, J. M. (1996). *Inviting school success: A self-concept approach to teaching, learning, and democratic practice*. Toronto, ON: Wadsworth Publishing.
- Sharma, U., Forlin, C., & Loreman, T. (2008). Impact of training on pre-service teachers' attitudes and concerns about inclusive education and sentiments about persons with disabilities. *Disability & Society*, 23, 773–785. doi:10.1080/09687590802469271
- Stolterman, E. (2008). The nature of design practice and implications for interaction design research.

*International Journal of Design*, 2, 55–65. doi:10.1016/j.phymed.2007.09.005

Townsend, T., & Bates, R. (2007). Teacher education in a new millennium: Pressures and possibilities. In T. Townsend & R. Bates (Eds.), *Handbook of Teacher Education* (pp. 3-24). Boca Raton, FL: Springer.

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