

**Perceptions of Implementability:
A Policy Instrument Theory-Guided Case Study of a New Curriculum Design**

by
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Abstract

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Public education reform programs often rely on the revision or redesign of the curriculum as a key government intervention for improving instruction and levels of student curricular achievement and attainment. This educational program change strategy is founded on the causal story of policy instrument theory. A central assumption of policy instrument theory is that changes in the design of the mandated curriculum will cause automatic, concomitant changes in teachers' perceptions, decision making, and instructional behaviour that will result in improved instruction. However, implementation research has found that this assumed causal relationship does not always occur due to teachers' perceptions of the implementability of the new curriculum design. Research indicates that teachers within these studies tend to have durable perceptions or beliefs with which they judge and evaluate the curriculum during implementation and upon which they will decide to accept, adapt, modify, ignore, or search for alternatives to the new curriculum design. As a result, the assumptions and causal story of policy instrument theory have been extended to include: the goodness of the curriculum design; and teachers' perceptions of the implementability of the curriculum design.

This study investigates perceptions of the implementability of a new curriculum design through interviews with seven high school teachers and a policy document analysis using a

theoretical framework that includes both policy instrument theory and extended policy instrument theory. The findings from this study indicate that:

1. teachers' perceptions of a new curriculum design mediate implementation;
2. the individual attributes of the curriculum design mediate teachers' perceptions of its implementability;
3. mandated new curriculum documents should be supported by on-going professional learning opportunities;
4. extended policy instrument theory appears to provide the best explanation for the findings from the interview analysis while policy instrument theory appears to provide the best explanation for the findings from the document analysis and reports in the literature.

The results from this inquiry may lead to a better understanding and appreciation of the value of policy instrument theory and extended policy instrument theory for explaining the relationship between curriculum design, teachers' perceptions, and implementation within public education reform programs.

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Chapter One Introduction

Over the past decade the British Columbia Ministry of Education (BCMOE) has worked to reform kindergarten to grade 12 public education programs through the BC Education Plan (2011) in order to better meet the needs of learners. This reform initiative involved the redesign of the kindergarten to grade 12 curricula from a set of mandated, high detail, differentiated, specifications to a set of mandated, low detail, uniform specifications (Walt et al., 2017). Curriculum reform or redesign is seen as central to overall public education reform based on the theoretical causal story that a change in the design of the curriculum will result in a concomitant change and improvement in teachers' perceptions, decision making, and instructional behaviour that will improve levels of student curricular achievement and attainment (Fullan, 2016; Junginger, 2016; McDonnell & Elmore, 1987). According to Hannaway and Woodroffe (2003) the ultimate test of any policy instrument used in public education is "the extent to which it improves the effectiveness and efficiency of schooling" (p. 1). The assumption of a direct causal relationship between the redesign of the curriculum and a subsequent change in teachers' perceptions, decision making, and instructional behaviour is based on policy instrument theory (Bemelmans-Videc, 2010; Fullan, 2016; Howlett, 2011; Peters, 2006; Vedung, 2010).

Under policy instrument theory teachers are assumed to be passive decision makers (Tanner & Tanner, 1980) who automatically adopt and implement mandated rules with unquestioning fidelity. However, six decades of implementation research on rule policy instruments in general (McLaughlin, 1990) and curriculum as a rule policy instrument in particular (Century & Cassata, 2016) has challenged the assumption of automaticity in the causal story of policy instrument theory and the notion that teachers are passive decision makers. The findings of research focused on actual implementation have consistently found that teachers are

active decision makers (Elbaz, 1981; Fenstermacher, 1978; Tyack & Cuban, 1995) with pre-existing perceptions, beliefs, values, education, experience, and a tacit set of decision rules which they use to evaluate and judge the prescribed curriculum during classroom instruction (Clark & Peterson, 1984; Cohen & Ball, 1990; Woods & Jeffery, 2002). In other words, teachers' perceptions of a curriculum design have been found to be of central importance to curriculum implementation, as their perceptions of the prescribed curriculum determine the level of fidelity with which it is implemented (Cheung & Ng, 2000; Cotton, 2006).

As a result of studies such as these, policy instrument theory has been extended by researchers such as Thaler and Sunstein (2008), Century and Cassata (2016), and Sunstein (2017) to include two important conditions within the causal chain namely, goodness of the curriculum design and how teachers' perceptions of the goodness or implementability of the design mediate fidelity of implementation. Research that incorporates these two conditions in the causal chain has found that when teachers' perceptions of the intrinsic attributes of a curriculum redesign are positive the curriculum is implemented as intended by the policy maker. However, when teachers' perceptions of the curriculum design are negative, teachers have been found to search for "alternative" (Marsh, 2004, p. 65) rules in order to provide the best learning opportunities for students. According to Koichu et al. (2021) teachers' perceptions as to the goodness of the curriculum design is therefore of significant interest to curriculum and instruction research.

The case of the BC K-12 curriculum redesign has been selected for study as recent research has found that not all teachers report implementing the curriculum with fidelity due to their perceptions of it (Broom, 2016, 2020; Gacoin, 2017, 2018, 2019; Sanford & Hopper, 2019). A theory-guided qualitative case study provides an opportunity to determine the explanatory

power of policy instrument theory for an inquiry into the relationship between curriculum design, teachers' perceptions, and implementation. Research questions are centred on teachers' perceptions of the implementability or goodness of the redesigned curriculum and teachers' perceptions of how the intrinsic attributes of the curriculum redesign support or hinder implementability.

Statement of the Research Problem

Public education reform initiatives aimed at improving classroom instruction in order to increase levels of student curricular achievement and attainment often rely on the reform or redesign of the curriculum - a rule policy instrument, to be the key driver of change (Fullan, 2016; Levin, 2008). Leithwood (1986) explains that in order to improve education programs, the public education agency will "incrementally but systematically" (p. 106) alter the design of the curriculum and the "structures and processes which support it". This education reform or change strategy is founded on policy instrument theory. Under policy instrument theory the government seeks to solve education program problems through a policy instrument intervention – in this case a rule-based curriculum that is intended to change "the behaviour of individuals" (Savoie, 2015, p. 242). The government may choose to use a voluntary set of curriculum rules or a legally mandated and sanctioned set of curriculum rules as the instrument of change within a public education program. It is generally believed that a legally mandated and sanctioned curriculum rule policy instrument will be more effective than a voluntary curriculum in causing a preferred change or conversion of the perceptions, decisions and instructional behaviour of teachers (Fullan, 2007; 2016; Ostrom & Crawford, 2005).

The literature on public education reform illustrates that the causal story and assumptions of policy instrument theory underlying curriculum reform have been widely adopted. Well known educational change researchers such as Fullan (2001) advise that within educational change initiatives the purpose of curriculum redesign goes beyond the provision of information as redesign is meant to result in an “alteration of *beliefs*” (p. 39). He states that as teachers implement the mandated curriculum redesign their beliefs or perceptions will be “transformed, further developed, or otherwise altered” (p. 40). These assumptions are reiterated by Funnell and Rogers (2011) who explain the intent of curriculum redesign goes beyond the “simple transmission of information” (p. 352) as the provision of “information and changing knowledge, skills, and understanding is not enough: behavior change must follow” (p. 356). Furthermore, Bascia and Hargreaves (2000) argue policy makers operate on the assumption that the “set of skills, beliefs, and behaviours” (p. 4) of teachers “can and must be changed” in order to improve classroom instruction and the level of student curricular achievement and attainment. Indeed, Century and Cassata (2016) state teachers’ perceptions are “explicitly targeted as desired outcomes of innovation enactment and theorized to change as a result of innovation use” (p. 189). This assumption is held by advocates of both the cognitive and constructivist approaches to learning as both groups have sought to change teachers’ “practices by requirement and compulsion” (Bascia & Hargreaves, 2000, p. 5) using mandated curriculum rules to “insist that implementers conform to their reality” (Fink, 2001, p. 234). In other words, a new curriculum design is a deliberate and focused effort to influence and control teacher professional practice in the classroom by changing teachers’ perceptions, decision making and instructional behaviour.

However, the findings of curriculum implementation research based on extended policy instrument theory has consistently challenged this causal story. Research has shown that the

teacher is an active user and interpreter of the curriculum (Remillard, 2005) who may decide to accept, reject, ignore, modify, or seek alternatives to the redesigned curriculum rules based on their perceptions (Fives & Buehl, 2012; Schoenfeld, 2011) of its implementability (Hall & Hord, 2020). As Sikorski (1976) noted over four decades ago after the curriculum redesign process is finished it is “teachers who ultimately implement change” (p. 41) and the “success or failure of implementation” (p. 44) depends on whether or not “teachers’ beliefs harmonize with those of the curriculum’s developers” (p. 45). Implementation is a bottom-up process where teachers interact with the redesigned curriculum through interpretation, selective attention, error, invention and sensemaking (Penuel et al., 2014; Riker, 1980; Spillane et al., 2002; Weick, 1995). When teachers’ perceptions are not aligned with the curriculum the assumed causal relationship between curriculum and instruction not only breaks down, but the implementer ends up taking over the role of the curriculum designer replacing the prescribed rules with their own (Mullis et al., 2004). Teachers’ perceptions of the implementability of the curriculum determines whether or not, and how implementation actually occurs. This fact led Scriven (1966) to remark “one can hardly reform education with curricula that never reach the classroom” (p. 23).

In summary, the issue of teachers’ perceptions of the goodness of a curriculum design is a significant and important research problem when this policy instrument serves as the foundation for public education reform programs. According to policy instrument theory it is possible to improve or reform K-12 education programs and better meet the needs of students and improve outcomes through curriculum redesign which targets teachers’ perceptions, decisions, and instructional behaviour (Jacard & Jacob, 2010). However, research based on extended policy instrument theory has found that successful implementation depends on how well individual teachers’ perceptions align with the curriculum innovation (George et al., 2013; Honig, 2006;

Olson et al. 2020;). The preferred changes in teachers' "attitudes, beliefs, and understandings" (Fullan, 1985, p. 393) and instructional behaviour depends on whether teachers decide to accept, reject, ignore, modify, or seek alternatives to the redesigned curriculum rules based on their perceptions of its "implementability" (Honig, 2006, p. 2). Within education reform programs a curriculum design that does not result in the conversion of teachers' perceptions, decision making and instructional behaviour (Fenstermacher, 1978) to that preferred by the policy maker lacks full functionality as a policy instrument. Accordingly, there may be little reason to expect the curriculum design "to produce the desired outcomes" (Patton, 2002, p.161) of the education reform program. Under this theory of change even the best education reform program will fail to achieve its goals if the curriculum - as the key policy instrument intervention (Ruiz-Primo, 2005) is not implemented with fidelity by teachers. Under extended policy instrument theory curriculum designers are tasked not only with formulating what may objectively be judged a good curriculum design – they must also formulate a curriculum design which teachers perceive or subjectively evaluate and judge to be good if fidelity in implementation is to occur. If teachers' perceptions of the entire design, specific intrinsic attributes of the design, or the generalizability of the design for the subject area are negative or mixed then full implementation will not take place and the preferred changes in perceptions, decision making and instructional will not be achieved. Without full fidelity of implementation an education reform program cannot be considered as actually having occurred and it cannot be determined if the new curriculum design is the actual cause of any positive or negative change in student curriculum achievement and attainment.

Positionality Statement

As this is a qualitative case study it is important to reflect on, and discuss how, my professional background, personal experiences, and philosophical positions have guided the decisions I have made throughout the research design process and inevitably influenced the data collection, analysis, and findings. My interest in the topic under investigation was a result of my experience leading the design and implementation of a new K to 12 competence standards-based curriculum and assessment framework as part of a national education reform initiative. As part of the curriculum development process, I engaged in a comparative international survey of curricula designs from sixty-two educational jurisdictions. While this comparative study revealed remarkable consistency across the design characteristics of competence standards-based curricula the policy documents surveyed provided little information on the curriculum design theory, processes or procedures used. Consequently, I turned to the literature on policy for guidance and found a number of books on the policy development cycle which recommended a consultation and collaboration approach to the design process. I therefore set up a supervising design team and a number of advisory/writing committees composed of a large group of international teacher education specialists working with classroom teachers within the education reform program.

While the curriculum and assessment framework was officially adopted, and the design was on the whole well received, some of the teacher feedback from the in-service workshops was unexpected. Interestingly, some of the design features that the team had believed were clearly written, usable, feasible, and of value were not always perceived as such by the teachers themselves. While reflecting on this issue I recalled my own experiences implementing prescribed curricula designs in different grades and subject areas. I also reflected on my

experience as a school district curriculum consultant providing teachers with in-service programs to support curriculum implementation. I thought about the many times that I had struggled to make sense of what exactly the curriculum designer wanted to be taught, what the learning purposes of the assigned tasks were, and whether or not the content and the sequencing was appropriate for a particular group of students.

In contrasting my experiences as a curriculum implementer to my experiences as a curriculum designer I came to more fully realise that designers are as accountable to the teachers tasked with implementation as they are to political and administrative officials seeking education program improvement. All of these experiences have led me to realize how important the design of the curriculum is, how essential teachers' perceptions or views of the curriculum are, and how difficult it is to effect change during education reform initiatives when the views of the designer are not aligned with practitioners in terms of perceptions, values, dispositions, and theoretical understandings. This study reflects my efforts to more fully understand the role of curriculum in public education reform programs, how to better design curriculum, and how to better ensure that the curriculum design works for both the designer and the teacher tasked with implementation.

In terms of the methodology of this study, it is also important to reflect on and discuss my role as both researcher and participant. The decision to collect and analyze data from both participant interviews and policy documents has meant two sets of perceptions are presented in this inquiry – those of the participants interviewed and those of myself as the policy document analyst. As one of my advisors has emphasized to me, this fact necessarily expands my role within this study from one of researcher actively collecting, analyzing and presenting the data on perceptions collected from the interview participants to that of an active participant collecting, analyzing, and presenting my own perceptions of the curriculum design albeit while using a

theory-led thematic analytical technique. All of the participants, myself included, have been purposefully selected for their willingness to share their perceptions of the new curriculum design and the suitability of their characteristics for informing the research and enhancing understanding of the topic of inquiry. While a section describing the participants is found later on in this study it is my hope that this brief review of my experience in curriculum design and implementation provides sufficient background on my point of view.

In terms of philosophical approach my professional experience has led me to adopt the philosophy of pragmatic realism and it is this approach that has guided the overall research design as it allows for the study of curriculum as written in official documents and as experienced by teachers during implementation. I value pragmatic realism (Davidson, 1974, 2000; Peirce & Fisch, 1982; Rorty, 1991) as a philosophical approach because it can be used to reconcile the contrasting and sometimes incompatible philosophical positions (Goles & Hirschheim, 2000) taken by those involved in curriculum policy design and implementation where individuals often hold a wide range of worldviews. As well, the literature on both pragmatism and realism supports the use of this philosophical approach for a study of this nature. Epistemologically pragmatism is recognized by both Creswell (2007) and Patton (2015) as appropriate for research aimed at investigating solutions to education policy problems especially when the research is concerned with how well and why a program “works” (p. 200) as it considers implementers’ perceptions, beliefs or professional views. While Maxwell (2004) explains that realism allows the researcher to avoid many of the problems and conflicts arising from “both positivism/empiricism and constructivism” (p. 243) and recommends it for qualitative, theory-guided case studies as it allows for “causal explanations” (p. 246) and the study of “mental events” (p. 247) such as perceptions, judgements and evaluation as “real

phenomena that can be causes of behaviour”. As well, a realist ontological approach which conceptualizes curriculum as an “objective reality” (Fullan, 2016, p. 28) that is lived by teacher-implementers aligns with a key observation made by Berger and Luckman (1966) in *The Social Construction of Reality* that “institutions, as historical and objective facticities, confront the individual as undeniable facts...institutions are *there*...persistent in their reality.... [and] have coercive power” (p. 78).

In summary, my professional background, personal experiences, and philosophical approach are reflected in my choice of research topic, research design, theoretical framework, interpretation of the literature, analysis, and discussion of the results. The lens through which I have approached this study has both advantages and disadvantages. While my extensive experience as both a curriculum designer and a curriculum implementer support my competence in the subject area, it also means that I have well-developed views and opinions about the research phenomenon. As a consequence, ongoing reflexivity has been required throughout the research process. By acknowledging the need for reflexivity and actively seeking out feedback on the effect of my positionality during the research process it is my hope that any biases in this study have been adequately mitigated, or alternatively, clearly communicated.

Research Questions

This study aims to investigate a new curriculum design through a policy instrument theoretical framework to gain further understanding of the relationships between curriculum design, teachers’ perceptions of the design, and implementation. The questions centre on teachers’ perceptions of the implementability or goodness of the redesigned curriculum, and their perceptions of how the intrinsic attributes of the curriculum redesign support or hinder implementability.

Question 1: What are teachers' perceptions of the implementability of the new curriculum design within their subject areas?

The purpose of this question is to gain understanding as to teachers' perceptions of the new curriculum design in terms of implementability and whether or not it has influenced, controlled, or caused conversion of teachers' perceptions, decision-making, and instructional behaviour.

Question 2: What are teachers' perceptions of the implementability of the intrinsic attributes of the new curriculum design within their subject areas?

The purpose of this question is to gain understanding of teachers' perceptions as to how the individual intrinsic attributes of the new curriculum design support or hinder implementability. The attributes of the curriculum design are drawn from the widely recognized characteristics of well-designed rule policy instruments in general and curriculum policy instruments in particular.

The research questions are supported in the literature by researchers such as Honig (2006) who states that when education reform is based on the redesign of the curriculum it is important to investigate "what is implementable and what works for whom, where, when and why?" (p. 2). A theory-guided case study investigating teachers' perceptions of a new curriculum allows for the collection of data that may explain the possible design reasons for any "variance" (Hill & Hupe, 2002, p. 11) between the intended curriculum and the implemented curriculum. As Patton (2002) notes it is important to investigate if a policy instrument is "being put into operation according to design" (p. 161) and if the design itself is perceived as feasible (Pintrich et al., 1993) by implementers.

These theoretically-guided research questions provide for an empirical account of teachers' perceptions of the new curriculum design during the implementation process. The questions are meant to develop knowledge about whether teachers' perceptions of the implementability of the new design have led them to decide to accept, reject, ignore, modify or seek alternatives to it (Fives & Buehl, 2012; Schoenfeld, 2011). More specifically, the questions aim to garner a better understanding of the intrinsic features or attributes of the curriculum design that help or hinder teachers' perceptions of its implementability.

Four BC Public Education Reform Programs: Curricula Redesign as a Key Intervention

Over the past century there have been four major K-12 public education reform programs in British Columbia with each initiative focussed on the general goal of better meeting the needs of students within an environment of changing social, political, and economic conditions (Hawthorne, 1990). A central feature of each public education reform movement has been a reliance on the province-wide revision or redesign of the K-12 curricula (Case, 1994) as a key intervention. Intermittent revision or redesign of curricula is a central part of an ongoing experiment (Cronbach, 1964; Husen, 1987; Peters, 2018) in public education program improvement (Funnell & Rogers, 2011). Curriculum redesign is founded on a key assumption of policy instrument theory (Barkley, 2011; Ruggie, 2014; Salamon, 2002) that there is a causal relationship between curriculum design, teacher instruction, and student outcomes (Pal, 2001). Iterative redesigns of the curriculum are based on the theoretical assumption that changes in the curriculum will result in concomitant changes in teacher instruction and student outcomes. In other words, the BC government has repeatedly sought to leverage curriculum as a key education program policy instrument or "technique d'intervention du gouvernement" (Foucault, 1994, p.

655) in order to attain the goal (Howlett, 2011) of better meeting the needs of learners and improving educational program outcomes.

The four major educational reform initiatives in BC involving province-wide K-12 curriculum redesigns are the Putnam-Weir Survey (1925); the Chant Commission (1960); the Sullivan Commission (1988) and Year 2000: A Curriculum and Assessment Framework for the Future (1989); and most recently the BC Education Plan (2011). A brief review of each of these public education reform initiatives details some of the changes occurring in society which provided the rationale for the education reform initiative and the reliance on curriculum redesign or revision as a key policy instrument intervention. Each of the reform initiatives may be seen as being motivated by the need for government to address public concerns over the widely recognized social, economic, and technological changes occurring in society and the perceived need to make the curricula of education programs more connected and responsive to these on-going changes.

Putnam-Weir Survey 1925

In BC, the first fundamental system wide education program reform (Sutherland, 1976) occurred after the Putnam and Weir Survey of 1925 which provided a “scientific” (Fleming & Conway, 1996, p. 296) or progressive – scientific foundation to curriculum reform. According to Broom (2007) the reform of the programmes of study or “curriculum guides” (p. 4) resulted from the recommendations made in the Putnam and Weir report which sought to improve education programs to better meet the varying needs and abilities of students. The recommendations for the curriculum redesign “blended progressivist and social efficiency ideas, echoing contemporary US educational trends” (Broom, 2016, p. 713). The BC Department of Education embraced the key ideas of the progressive movement’s “modernization” (Fleming & Conway, 1996, p. 295)

process including efficiency, standardized testing, a common core of mandatory courses, and curriculum formulation using rule-based task theory as advocated by Bobbitt (1913, 1918, 1920, 1924a, 1924b, 1926). The Sixty-Fifth Annual Report of the Public Schools of the Province of British Columbia 1935-1936 reported that the Department of Education conducted a “thorough revision of the curriculum” (BC Superintendent of Education, 1937, p. 25) and all education programs were founded on a current study of the literature on curriculum building and an examination of modern curricula produced elsewhere. As a result, the BC curriculum design fell in line with that of curriculum designs being developed across Canada and the US (Tomkins, 1984). The key innovation in the curriculum redesign and “first step in modern curriculum-making” (Bobbitt, 1926, p. 48) was the formalization of the objectives derived from scientific task analysis into a “printed form” as decision rules or objectives. Prior to the 1920s “teachers were expected to follow the course of study to the letter, not to write it” (Tanner & Tanner, 1980, p. 341). With the introduction of the task or activity analysis approach to the formulation of curriculum classroom teachers were now expected to analyze and determine the instructional objectives within education programs thereby leading to their active involvement in “system-wide curriculum reform” (Tanner & Tanner, 1980, p. 345). Tomkins (1984) reports that by the end of the 1920s there was “a remarkable degree of uniformity among provincial curricula” (p. 1) across Canada as this modern, scientific notion of curriculum as “a centralized, official course of study” (p. 1) to be written as objectives was consistently adopted.

Chant Report 1960

Major changes during the post WWII expansion of public education in BC included a shift towards a modern bureaucratic system (Bennett, 2014) with the school system consolidated from 650 school districts into 74 (Fleming & Conway, 1996). Increasingly professionalism was

reflected in higher levels of education amongst teachers with the majority of BC teachers holding at least one university degree by 1972 (Fleming, 2011). The increasing bureaucratization and professionalization of the public education system took place in an environment of technological, societal, and economic challenges that resulted in stakeholders questioning education based on the established principles of progressivism. According to Luke (1998) the call for reappraisal of education programs followed “academic assaults” (p. 192) on progressivism with newspapers featuring articles that were increasingly “sceptical” of the quality of education programs leading to a “climate of uncertainty and fear” and growing “political pressure for educational change” (p. 193). These widely identified problems led to the government appointing a Royal Commission to investigate the “various phases of the provincial education system with particular attention to programmes of study and pupil achievement” (Chant et al., 1960, p. 1).

The Report of the Royal Commission on Education (1960) or Chant Report investigated and analyzed these public concerns to determine the root causes and appropriate remedies (Fleming & Conway, 1996). A major critique arising from the commission was that some of the principles of progressivism had resulted in too sharp a move away from a discipline driven approach to curriculum design. In contrast, little fault was to be found as to the value of the “scientific” (Luke, 1988, p. 203) or rule-based approach to curriculum formulation and design. Large scale standardized testing to meet public demands for accountability was not only retained but increased as the Department of Education expanded the Research and Standards Branch (Fleming & Conway, 1996). As a result of the recommendations of the Chant Report the curriculum redesign included an “explicitly differentiated secondary curriculum” (Hawthorne, 1990, p. 148) and prescribed textbooks “for all levels of ability in each grade” (Dawson, 1971, p. 81). Broom (2016) reports that this redesign also incorporated the structure of the subject matter

approach to the curriculum design advocated by Bruner (1960) who recommended that the design of the curricula should emphasize the structure and fundamental ideas of the subject area to provide for “continuity of learning” (p. 18) to ensure the curriculum does not “suffer a relapse into a certain shapelessness” (p. 54).

A Legacy for Learners: Report of the Royal Commission on Education (1988)

The 1970s and 1980s were a period of concern over a “lack of educational quality” (Fleming, 2011, p. 63) with “parents and community leaders” demanding that government provide “substantial evidence about how well youngsters could read, write, and add”. A number of political constituencies were pressing the BC government for education reform in order to address increasing public concerns about the need for increased equity and inclusivity for all students. In a study of education policy-making during the period Whitely (2017) reports there was also wide-spread concern about the high rate of secondary school drop-outs while Hawthorne (1990) notes there was also a desire for improved accountability to address poor student performance. These concerns led to a fact-finding survey of the school system (BC MOE, 1981) and a provincial report – *Let’s Talk About Schools* (Provincial School Review Committee, 1985) which determined there was sufficient demand for yet another public inquiry into how the public education system could address these societal concerns.

In response to this public demand the BC government established a Royal Commission in 1987 to conduct a public inquiry into, and report on, the state of the K-12 public education system. This resulted in the publication of *A Legacy for Learners: The Report of the Royal Commission on Education* (1988) also referred to as the Sullivan Report. The report stressed that curriculum is a critical area of concern as it plays a central purpose and function in schools (Hawthorne, 1990). It also clearly laid out the assumptions and causal story to be applied to

curriculum within K-12 public education programs. The report stated there is a direct relationship between the intended curriculum “as it is defined in official publications, regulations, textbooks and supplementary materials, and curriculum guides” (Sullivan, 1988, p. 27); instruction as teacher interpretation and implementation of the curriculum; and outcomes as student curricular achievement and attainment. The commission envisioned that as a result of the restructuring or redesign of the curriculum there would be a concomitant change in the “attitudes of those who activate the curriculum” (p. 29). The goal of new curriculum design would be to support the new societal mandate for the school system by enabling “learners to develop their individual potential and to acquire the knowledge, skills, and attitudes needed to contribute to a healthy society and a prosperous and sustainable economy” (Brummet, 1989, p. 88).

The provincial government accepted the recommendations of the Royal Commission and the Ministry of Education acted to implement the recommendations over the following decade (Hawthorne, 1990) beginning with the curriculum reform initiative *Year 2000: A Curriculum and Assessment Framework for the Future* (Case, 1994). The adoption of a mandated common curriculum and assessment framework approach reflected an international turn to curriculum as a mandated, rule-based, policy instrument within education programs in education jurisdictions affiliated with the OECD (Robitaille et al., 1993; Smith & O’Day, 1991). In Canada, the United States, the United Kingdom and elsewhere education reform “was seen as requiring large-scale governmental action” (Fullan, 1999, p. 2) with “specified and mandated” curriculum and assessment being viewed as a structural solution to the problem of improving levels of curricular achievement and attainment. Marsh (2004) describes how the regulatory “curriculum framework” (p. 19) model adopted internationally during the 1990s was meant to “provide greater coherence across subjects and across the grade levels K-12” (p. 22) through prioritized,

sequenced content, and skills to be applied consistently across the school system. Mandated curriculum and assessment frameworks were to be a policy “instrument of compliance and used as a means of control by central education authorities” (Marsh, 2004, p. 22).

The widespread turn to mandated curriculum and assessment frameworks also aligned with the concurrent international movement for improved accountability through comparative curriculum design, measurement, and evaluation that sought to hold teachers, schools, and ministries accountable for the curricular achievement and attainment of their students (Hannaway & Woodroffe, 2003). The International Association for the Evaluation of Educational Achievement (IEA 1976) had developed a seriated definition of curriculum as: the intended curriculum; the implemented curriculum; and the achieved curriculum. This seriated definition was based on the causal story for curriculum within public education programs that assumes there is a direct relationship between the official written curriculum, the implemented curriculum, and student curricular outcomes. When this causal is operationalized for international comparative large-scale assessments such as Trends in International Maths and Science Study (TIMSS), Programme for International Student Assessment (PISA), and the National Assessment of Educational Progress (NAEP) (Kind, 2013) the curriculum is used to formulate test specifications and variance in results may be used for accountability purposes. International, national, regional, and local assessments aligned with the mandated curricular learning standards or specifications within the curriculum frameworks provide a “critical *feedback* loop – to determine whether the desired changes in curriculum frameworks and the implementation...had been successful (Yin & Davis, 2006, p. 17). The key advantage of the causal story and assumptions of the curriculum and assessment framework approach is that it

provides “a model for assessing learning outcomes independent of learning processes” (Young, 2013, p. 54).

It may be seen that BC in concert with other education jurisdictions began to explicitly use curriculum and assessments as mandatory “policy instruments...to directly impact both content and instruction in schools...under the rubric of a policy and governance strategy called “systemic reform” (American Association for the Advancement of Science, 1998, p. 44). The BC Ministry of Education declared the “curriculum and assessment framework...will reflect the new mandate statement and policy directions. This blueprint will guide the development of all provincial curriculum and student assessment” (BC MOE, 1990s, p. 16). In its role as a mandated rule-based policy instrument the curriculum and assessment framework would support the goal of improving student achievement by explicitly linking “curriculum with instructional practices and both of these with student outcomes” (Robitaille, 2002, p. 257).

BC Education Plan 2011

The current curricula redesign program - BC Education Plan (2011) is unique in the decision to engage in the province-wide revision of the curricula was not driven by widespread public or political demand, or media or academic identification of any pressing educational program problems needing to be addressed, or findings of a Royal Commission. While the preceding curriculum design was critiqued by some as “too detailed and too tight, with many, many prescribed learning outcomes in each curricular area” (Sanford & Hopper, 2019, p. 9) and concern was expressed about “recurring low graduation rates for particular populations” (p. 6) it was reported that officials in the BC Ministry of Education considered it as a highly effective design when measured by comparative international assessments and that it was neither broken nor in need of fixing (Walt et al., 2017).

In this case, the curricula redesign initiative was driven by Ministry of Education officials who envisioned a redesign of the curriculum to “better meet the needs of all learners” (BC MOE, 2012, p. 3). According to Walt et al. (2017) the new curricula design was based on a “conceptually focussed” (p. 117) Know-Do-Understand curriculum model drawn from the work of Erickson and Lanning (2014), McTighe and Wiggins (2005, 2013) and Hansen (2011). The vision of the new design was for a more flexible system with a key focus on “personalized learning...while maintaining B.C.’s high standards on foundational skills like reading, writing and numeracy” (BC MOE, 2015, p. 1) where “learners move through the continuum of human development (p. 6) with a “required body of knowledge in various subjects and disciplines”. The BC Education Plan was further unique in that it was the “first time that the curriculum was revised for all grade-levels and all subjects at the same time” (Gacoin, 2018, p. 2) with a curriculum development process which involved teachers who were encouraged to actively speak to and “gather feedback from colleagues before the curriculum was finalized”.

The new curriculum design was implemented in three phases: Grades K-9 during 2016-2017, Grade 10 during 2018, and Grades 11-12 during 2019. In 2017 the BC Teacher’s Federation conducted a survey of 2,344 teachers with 43% of respondents having taught grades 10-12 in the following subject areas: English (32%), Social Studies (30%), Science (24%) and Math (22%) who reported their perceptions of the curriculum redesign as: 15% fully supportive, 35% supportive, 26% somewhat supportive, 13% neutral, and 11% not at all supportive (Gacoin, 2017). A BCTF survey conducted two years later found that there continued to be uneven implementation of the curriculum in classrooms across the province with 42% of surveyed teachers stating they always implemented the curriculum while 31% stated they implemented the curriculum most of the time (Gacoin, 2019). Within the same survey support for the curriculum

design ranged from 18% who were somewhat supportive to 16% who were neutral and 5% who were not at all supportive. The new curriculum design was seen as meeting the needs of learners by 49% of teachers at the primary level and 37% of teachers at the secondary level. Research by Sanford and Hopper (2019) included comments from education officials who stated that teachers “are still struggling with how to implement it” (p. 84). They further noted that even though the BCTF had consistently pressed the government for the traditional curriculum renewal funding to support implementation it was never forthcoming.

In conclusion, this brief historical review shows that the case of the current official written curriculum of the BC K-12 public education system is well-suited to a theory-guided inquiry of perceptions of the implementability of a new curriculum design using both teacher implementer interviews and policy document analysis. This case may be seen as a clear example of how the causal story of policy instrument theory has been implicitly adopted to justify curricula redesign or revision as a key policy instrument intervention within a public education reform program. As well, previous research on implementation of this new curriculum design has indicated significant variance in teachers’ perceptions of the design and uneven levels of implementation (Broom, 2020; Gacoin, 2017, 2019; Sanford & Hopper, 2019). These findings align with the research literature on implementation which has challenged the causal chain and assumptions of policy instrument theory that does not include the preconditions of extended policy instrument theory namely, teachers’ perceptions and subjective evaluation or judgement of the goodness of the design. As noted previously, under policy instrument theory when teachers’ perceptions of the implementability of a curriculum redesign are mixed than the preferred changes in teachers’ perceptions, decision making and classroom instructional behaviour may not occur, the curriculum may not be implemented as intended, and the policy

instrument design may be judged to be less than successful. As Koichu et al. (2021) note the question of teachers' perceptions as to the implementability of a curriculum design is of paramount concern in curriculum research. This brief description of the historical context of the case supports the new curriculum design as an appropriate unit of analysis for a theory-guided, qualitative case study on perceptions of its implementability.

Purpose and Significance of the Study

The purpose of this case study is to investigate teachers' perceptions of the redesigned BC K-12 curriculum they are tasked with implementing in secondary level classrooms. The study has three main aims: first, to introduce policy instrument theory and extended policy instrument theory as a theoretical framework for investigating the relationship between curriculum redesign, teachers' perceptions, and implementation; second, the study seeks to recognize the centrality of teachers' perceptions in both the curriculum design and implementation processes; and third, the study seeks to introduce a set of key attributes for a future curriculum implementability appraisal framework.

The significance of this study is the contribution it makes to a greater understanding of the key role of curriculum redesign as a policy instrument intervention within educational program reform. By presenting the two iterations of policy instrument theory the study explicates how curriculum redesign has previously been believed to function and how as a result of implementation research the causal story and assumptions have been extended to include goodness of design and implementers' perceptions to more accurately reflect how it actually functions. As a result, the results will be of interest to those investigating both educational program reform and curriculum redesign as it provides a more up to date causal story and set of assumptions for studies of the relationship between curriculum policy, classroom practice and

educational program outcomes. Finally, the study also links research on curriculum design and implementation to the new area of implementability research which is focused on the systematic investigation of the characteristics of policy instrument interventions that enhance or hinder implementation in ordinary practice.

In regards to the field of curriculum and instruction the findings will contribute to research in the field by providing an additional theoretical framework for investigating the relationship between curriculum policy and classroom practice. While there are many studies on teachers' perceptions of the curriculum they mainly focus on the issue of fidelity or compliance during implementation. In contrast, the findings from this study highlight the importance of both the technical design of the curriculum and teachers' subjective evaluations or judgements of the design. Lastly, this study provides a set of key attributes for an implementability appraisal framework that may be applied to curriculum design. The findings from the study may be used to facilitate the improvement of future curriculum designs by identifying the intrinsic attributes of a well-designed curriculum and how teachers perceive these elements as helping or hindering implementability.

Chapter Two Literature Review

The literature review presents an historical summary and synthesis of four stages of research on the relationship between curriculum design, teachers' perceptions, implementation, and the evolving causal story, assumptions, and conditions of policy instrument theory. The review is organized into four sections that emphasize progressive developments in the mutually evolving relationship between policy instrument theory and studies on teachers' perceptions of the curriculum and implementation.

The first section introduces how policy instrument theory was constructively borrowed to develop rule-based curriculum and how the assumption of voluntary compliance or automatic rule following led to an absence of studies on teachers' perceptions and implementation. The second section reviews how implementation studies revealed teachers' perceptions of the curriculum mediated implementation and questioned the assumption of voluntary compliance. During this stage of research teachers' perceptions were problematized as the cause of "*failed implementation*" (Fullan, 2007, p. 5) and led to the decision to increase the coerciveness of the curriculum from a voluntary to a mandated policy instrument. The third section presents how the now problematized issue of teachers' perceptions and fidelity of implementation would be solved through mandated or regulated curriculum. Implementation studies had shown that mandated curriculum policy instruments were more effective than voluntary curriculum policy instruments in influencing or controlling the perceptions, decision making, and behaviour of teachers. In other words, it was assumed that the implementation of mandated curriculum would influence, control, or cause conversion of teachers' perceptions as "belief follows practice" (McLaughlin, 1990, p. 13). The fourth section presents studies from the past two decades that challenged the assumption that mandated curriculum should and can influence, control, or cause the conversion

of teachers' perceptions during implementation. It also reviews new theoretical developments in the causal story, assumptions, and conditions of policy instrument theory. These new developments have resulted in extended rule policy instrument theory which recognizes the importance of well-designed curriculum, the inherent uncertainty in curriculum rule making, and the value of teachers' perceptions of the curriculum.

The overall intent of the literature review is to synthesize the research in order to offer a new perspective on how studies and articles on curriculum design and teachers' perceptions have been closely intertwined with the evolving assumptions and causal story of policy instrument theory. Cooper (1988) supports this approach stating a literature review may be used to identify the theory applied in studies on the topic of interest as well as to trace how the assumptions or causal story of the theory are reflected in representative studies or articles. Furthermore, he explains a review may also be used to establish how insufficiencies in a theory discovered in earlier stages of the research literature may result in theory extensions that are applied to subsequent research. Furthermore, the review seeks to show how the literature supports and would be advanced through a policy instrument theory-guided case study on teachers' perceptions as to the implementability of a curriculum redesign. A historical or chronological format is used to organize the material and to emphasize progressive developments in the mutual evolving relationship between rule policy instrument theory and studies on curriculum design and teachers' perceptions.

Voluntary Curriculum Implementation - Absence of Studies on Teachers' Perceptions

The first stage of research occurred during the progressive era when Bobbitt (1913, 1918, 1920, 1924a, 1924b) constructively borrowed task theory and policy instrument theory from the field of classical organizational behaviour (Callahan, 1964; Edson, 1978; Ireh, 2016; Kliebard,

2004) to invent rule-based “curriculum making” (Ravitch, 1985, p. 49) over a century ago. Voluntary curriculum rules were formulated using task theory (Taylor, 1911) which involved developing rules based on the pre-existing individual tacit knowledge of teachers, subject area associations, and administrators. Under policy instrument theory these rules were then transformed into formal collective, written, organizational rules or curriculum and presented to teachers as voluntary standards or objectives with the goal of improving public education programs. It was assumed that teachers would voluntarily and automatically “obey” (Fenstermacher, 1978, p. 175) the rules as it was believed that this representative, normative, expert driven design process (Rogers, 2003) would be accepted as credible and legitimate. Implementation of the voluntary curriculum rules was “regarded as unproblematic” (Howlett et al., 2009, p. 163) based on the assumption that once a policy instrument was designed those tasked with implementation “would simply carry it out”. However, a general absence of studies on teachers’ perceptions of the new curriculum implementation means that this assumption has not been tested.

Implementation Studies - Problematizing Teachers’ Perceptions

The second stage of research consisted of implementation studies (Cohen et al., 2007) which investigated the efficacy or the ability of the voluntary curriculum rules to produce the desired student curricular outcomes within educational programs. It was believed that voluntary curriculum rules or objectives in concert with the abilities of students would result in satisfactory levels of student curricular achievement and attainment (Popham, 1975). Within this research paradigm teacher instructional behaviour, decision making, and perceptions were not considered to be of consequence (Smith & Ragan, 1996). Indeed, measurement specialists working with norm referenced assessments “had an uncommonly low opinion of the efficacy of instruction” (p.

127). The low opinion of the role of teachers and instruction changed with the introduction of large-scale standardized assessments (Behar, 1994; Lin, 2006) which brought into question the effectiveness of curriculum as a voluntary policy instrument (Christensen et al., 2007).

Implementation research found that curriculum “did not always produce the intended results” (Levin, 2008, p. 9) and that teacher instructional behaviour significantly and positively impacted student outcomes. Testing the relationship between curriculum, instruction, and student outcomes showed instruction matters and led to increasing “respect for the potency of properly conceived instruction” (Popham, 1975, p. 128) as a means of ensuring all students achieve success in education programs.

A number of studies are representative of this stage of research. The major statistical study, Equality of Educational Opportunity (Coleman, 1966) looked at inputs – teachers and resources - and “the results they produce” (p. iv) to determine “how much the students learn as measured by their performance on standardized achievement tests” and found variations in “teachers’ characteristics accounted for a higher proportion of variation in student achievement than did all other aspects of the school combined” (p. 316). The five-year Rand Change Agent Study (McLaughlin, 1976) found that education program reform is more successful when curriculum is implemented and results in a “significant change in participant attitudes, skills, and behavior” (p. 169). These results led to the finding of an “implementation problem” (McLaughlin, 1987, p. 171) as during curriculum implementation teachers “did not always do as told” (p. 172). In a case study on science education Stake and Easley (1978) found that “teacher autonomy with regard to what is taught and how it is taught...should not be discounted by anyone concerned with status and/or improvement” (p. 13-3) as teachers were seen to consistently “develop and follow their own guidelines” regardless of what has been provided by

the curriculum designer. Additionally, Clark and Peterson (1984) found that actual teacher behaviour is substantially influenced or determined by “a personally held system of beliefs, values, and principles” (p.110). Based on this finding they argued that teachers’ perceptions must be addressed within the theoretical causal chain of curriculum reform. The assumption of a direct causal relationship with voluntary curriculum affecting “teachers’ classroom behavior, affecting students’ classroom behavior, which ultimately affects student achievement” (p. 9) does not play out as expected leading them to caution curriculum designers that “teachers’ belief systems can be ignored only at the innovators peril” (p. 123). In summary, the previously “unexamined assumption” (McLaughlin, 1990, p. 11) of policy instrument theory that there is an automatic “one to one” relationship between the dissemination of voluntary curriculum rules and fidelity of teacher implementation was not supported in the research findings.

A major consequence of the perceived “implementation gap” (Hill & Hupe, 2014, p. 165) was the shift in research to study how it might be possible to change, influence or control teachers’ perceptions and solve the problem of “*failed implementation*” (Fullan, 2007, p. 5). According to Doyle and Ponder (1977a) since the research clearly showed that teachers play “a key role in the fate of any implementation program” (p. 74) it would be necessary to address the “common and continuing problem in implementation” namely, the “discrepancy between what a curriculum proposal means to its designers and what it means to teachers who are being asked to use it”. An example of this line of inquiry was the implementation survey by Cole and Herlihy (1971) which sought to examine the effectiveness of professional development for “re-educating in-service teachers to new perceptions, skills, and competencies” (p. 16) to ensure fidelity of implementation. However, the findings were inconclusive as it was unclear as to whether the

curriculum produces changes in teacher perceptions and behaviour or if teachers with a specific set of perceptions and personality characteristics “are attracted to the curriculum” (p. 115).

Instead, the solution to the now problematized issue of teachers’ perceptions, decision making, and instructional behaviour came from a few influential studies on the effectiveness of mandates or regulation for ensuring policy implementation. One of the most important studies was by Weatherly and Lipsky (1977) which found that the rules providing “behavioral guidance” (p. 172) should be dictated or mandated by government to ensure street-level bureaucrats such as teachers would make decisions and choose behaviours in line with the policy maker instead of according to their personal judgments. By mandating curriculum rules the government would be able to steer teachers in the right direction and correct a perceived failure in behaviour by both correcting implementation errors and improving decision making. This position was supported by McLaughlin (1990) who stated research had shown that “belief follows practice” (p. 13) and “belief or commitment can follow mandated or ‘coerced’ involvement at both the individual and system level” therefore through a mandated curriculum teachers would be “required to change routines or take up new practices”. Fullan (1985) reiterated the need to mandate curriculum based on the belief that “changes in attitudes, beliefs, and understandings tend to follow rather than precede changes in behavior” (p. 393). Further support for this approach was seen in a major study by the International Commission on Mathematical Instruction (ICMI, 1986) which investigated how math teachers’ perceptions or “firm ideas” (p. 94) of the curriculum works as a constraint on student achievement outcomes. The study claimed that “significant changes in school mathematics will only be achieved if there are marked changes in the perceptions and attitudes of these teachers” (p. 94). As “primary agents for change” (p. 97) teachers must change their attitudes and perceptions to align with the curriculum.

While there was general consensus (Curry & Temple, 1992; Robitaille et al., 1993; Smith & O'Day, 1991; Yin & Davis, 2006) on the need to shift from voluntary to mandatory curriculum rules to address the implementation problem Fenstermacher (1978) cautioned that a move to regulation would fundamentally transform curriculum and instruction research into policy instrument effectiveness research. Research focused on mandated rules telling teachers what to do and inquiring into whether or not they have made the correct decisions would not only ignore “teachers’ beliefs” (p. 175) but further trample “upon them” based on the assumption that it is possible to regulate perceptions, decisions, and instructional behaviour. In other words, while the first stage of research did not take teachers’ perceptions into consideration and the second stage of research discovered the significance of teachers’ perceptions during implementation the third stage of research would problematize teachers’ perceptions and attempt a regulatory solution. The “subjectively reasonable beliefs that teachers already hold” (p. 169) would not yet be assumed to be of value within the causal story of policy instrument theory.

Mandated Curriculum - Conversion of Teachers’ Perceptions

The 1990s saw the wide-spread adoption of mandated curriculum rules in the form of curriculum and assessment frameworks. According to Murphy (1989) mandated curriculum meant that for “the first time in memory, curriculum was being specified *and* used to shape classroom instruction. Widespread implementation of programs designed to align curriculum objectives, instructional materials and strategies, and assessment tools helped to lend a sense of surety... curricular and instructional validity became meaningful terms for practitioners” (p. 214). The mandated curriculum and assessment frameworks were operationalized as “a document (usually developed at the state level) that suggests the best thinking about the knowledge, skills, and processes students should know and understand about a particular discipline, and that

provides a structure within which to organize the other important curricular components of the instructional system” (Curry & Temple, 1992, p. 27). Mandated curriculum rules were to provide a “major reorientation in *content and pedagogy*...of the teaching and learning process” (Smith & O’Day, 1991, p. 234) by changing “what happens at the most basic level of education... the classroom” (p. 235) through state regulation that sets the “conditions for change”. These regulatory frameworks would set out the “themes, topics, and objectives” that describe the “knowledge, skills, and attitudes expected of students” (p. 248). Furthermore, mandated curriculum frameworks would provide explicit content, guidance, and direction for teacher professional development, in-service, pre-service, textbooks, and assessments. In terms of educational equity, it was believed that mandatory curriculum rules would ensure equity in terms of curriculum, instruction, and accountability by ensuring the quality of both content and instruction “available to rich and poor, minority and majority” (p. 259). Through this solution the unidirectional causal story and assumptions of policy instrument remained intact. As Elmore (1996) explained since it is clearly instruction that is the problem “getting more students to learn at higher levels has to entail some change in both the ways students are taught and in the proportion of teachers who are teaching in ways that cause students to master higher levels of skills and knowledge” (p. 6). As a consequence of maintaining this causal story the next stage of research would validate Fenstermacher’s (1978) concerns as the focus of research moved towards the effectiveness of curriculum in influencing or controlling teachers’ perceptions, decision making, and instructional behaviour.

The third stage of research consists of effectiveness, efficiency, and fidelity studies based on the theoretical assumption that teachers’ perceptions, decision making, and instructional behaviour should and can be subject to influence, control, and conversion (Berman &

McLaughlin, 1976; O'Donnell, 2008; Smith & O'Day, 1991; Tanner & Tanner, 1980).

According to Ball and Cohen (1999) mandated curriculum rules in the form of highly specified and concrete common reference standards would solve the problem of student outcomes by doing away with “the individualistic, polite, and standardless culture of teaching” (p. 19) that allows for “differences in assumptions, experience, and reasoning” during instruction.

Emphasizing the change function of curriculum regulation Bascia and Hargreaves (2000) argued that the “set of skills, beliefs, and behaviours” (p. 4) of teachers not only can be changed through regulation – they “must be changed” in order to improve education program outcomes. Within these fidelity studies mandated curriculum rules or regulations as per policy instrument theory were understood as an instrument for changing “the behaviour of individuals” (Savoie, 2015, p. 242) as needed to improve student curricular achievement and attainment (Fullan, 2007, 2016; Ostrom & Crawford, 2005; Ruiz-Primo, 2005). As O'Donnell (2008) explained these inquiries consider implementation as “synonymous with adherence” (p. 39) to the curriculum rules leading researchers to conduct rigorous, scientifically based studies of the relationship between fidelity of implementation and student outcomes. This viewpoint was reiterated by Clements (2007) who argued valid educational research requires teachers who are committed to “fidelity” (p. 49) during curriculum implementation - they must be willing to “enact it consonant with the developers' vision”. Likewise, Ruiz-Primo (2005) stated implementation requires adherence to the rules or the “extent to which specified program components are delivered as the program prescribes” (p. 3) and furthermore, variance in the level of student curricular achievement and attainment is best explained by the level of teacher fidelity to the curriculum rules. This stage of research, where teachers' perceptions were identified as a potential impediment to fidelity of implementation produced findings that supported ongoing regulation. For example, studies by

Tyack and Cuban (1995) substantiated the effectiveness of curriculum regulation for ensuring implementation as they found that curriculum tends to be fully implemented in the classroom when it is “*required by law and easily monitored*” (p. 57). As a result, Skott (2015) reports studies continue to be carried out that focus on how to change teachers’ beliefs “so as to be in line with current reform initiatives” (p. 17).

Mandated Curriculum & Extended Policy Instrument Theory - Valuing Teachers’

Perceptions

Over the past two decades, a fourth stage of research in the form of “implementability” (Engell et al. 2021, p. 2) studies has incorporated new theoretical developments in the causal story and assumptions of policy instrument theory. Theorists studying judgment and decision making such as Kahneman (2013), Sunstein (1996, 2013, 2017), Thaler and Sunstein (2008), and Thaler et al. (2013) have extended rule policy instrument theory by recognizing three important needs or conditions: 1) the need to continue to offer collectively written, well designed default rules – goodness of design; 2) the need to be aware of the well documented and significant problems inherent in public education program rule making; and 3) the need to increase the implementers’ own powers of agency through a rule design that allows for choice between default rules and tacit rules when making a judgement as to the best instructional behaviour, decisions, and perceptions. In the public policy literature extended policy instrument theory is referred to as “behaviourally informed regulation” (Sunstein, 2017, p. 5) or behavioural insights (Tasic, 2011) while within the curriculum and instruction literature it is referred to as the “pro-adaptation perspective” (Century & Cassata, 2016, p. 199).

In terms of the first need, Sunstein (2017) explains that default or collectively written explicit rules do no harm to “people’s agency or autonomy” (p. 84) as default rules provide a

simple way for implementers to “get where they want to go” when they are limited in time or resources. In other words, default rules are the institutionally defined curriculum specifications or rules found in the official curriculum documents that carry normative authority as they are assumed to be written by expert curriculum designers and representative subject area teachers. When curriculum designers fail to provide collectively formulated well designed default rules reflecting the efforts of trusted colleagues from an epistemic community, they fail to take into consideration the amount of information, time, and energy that is required for individually searching for, judging alternatives, and choosing the best decision within the constraints of actual classroom instruction. This issue has been recognized by researchers such as Russell (2020) who found that elementary teachers are so under-prepared in mathematics that they require a set of default rules for decision making “based on the best thinking in the field” (p. 1) as it is not possible for “most teachers to write a complete, coherent, mathematically sound curriculum”. In other words, when teachers are faced with “complicated or difficult” (Thaler & Sunstein, 2008, p. 87) instructional decisions for which they have not yet developed professional capacity they may prefer the option of a default rule.

In terms of the second need, it is well recognized in the literature that there are significant problems inherent in public education program curriculum rule making. Both curriculum (Apple, 2013; Fullan, 2016; Leithwood, 1986; Pinar, 2011; Pinar et al., 2000) and public policy scholars (Foucault, 1994; Hill & Hupe, 2014; Howlett, 2019; Lipsky, 2010; Schneider & Ingram, 1990a, 1990b) have widely noted that there is “no such thing as a ‘neutral’ design” (Thaler & Sunstein, 2008, p. 3) as biases, values, ideologies, and worldviews are always present. Additionally, public education agency officials do not always follow the administrative law procedures or professional principles of public administration during the rule making process. For example,

Ellig (2016) explains that according to both administrative law and public administration professional practice public education agencies are required to identify and verify with evidence that a “significant problem exists, the root cause of the problem, alternative solutions that address the root cause, [and] the effectiveness of each alternative in solving the problem” (p. 3) before redesigning or reforming mandated curriculum rules. This does not always happen as seen in Ellig’s study of 130 prescriptive regulations which found that rule makers often fly blind by developing rules without a “coherent theory identifying the nature of the problem and outlining its cause” (p. 21) resulting in rules that may not really solve a significant problem or may cause unanticipated problems within a program. Likewise, Slovic (2000) found instances where emotions and a perceived goodness of intent were the main motivators for policy makers to engage in the redesign of regulatory policy instruments. Given these findings, it is understandable that Howlett et al. (2015) stress it is important to recognize and accept the fact that at times rule policy instruments have been made in a “highly contingent and irrational fashion” (p. 292).

The potential for problematic rule-making in public programs is exacerbated by the fact that public agency officials face a “pervasive *knowledge problem*” (Sunstein, 2017, p. 81) and therefore depend on the ideas, biases, intuitions, dogmas, anecdotes, and views of powerful interest groups or policy entrepreneurs when developing rules. As a consequence of studies investigating this knowledge problem researchers have identified four common errors committed by well-intentioned policy rule-makers: 1) the availability heuristic – where rule makers rely on a recent, memorable event (Tversky & Kahneman, 1974) or a high profile policy entrepreneur to choose a “anecdote driven” (Jolls et al., 1998, p. 1543) model for rule making; 2) myopia – where the rule maker focuses on one aspect or objective of the regulation while overlooking or

excluding other important issues (Rizzo & Whitman, 2008; Tasic, 2011); 3) confirmation bias – where the rule maker interprets the literature to support pre-existing beliefs or hypotheses while ignoring conflicting beliefs, theories, and evidence (Cooper & Kovacic, 2012); and 4) overconfidence bias – where the rule makers’ confidence in their ability to comprehend problems, make judgements, and understand all of the consequences of the regulations (Tasic, 2009, 2011) leads them to act without taking into consideration any alternative views.

In terms of the third need, according to Thaler and Sunstein (2008) mandated rules should make it as easy as possible for implementers to consider the alternative choices before they make a judgement as to the best decision and action. As curriculum policy makers cannot always define what the best rule is with certainty (Galley et al., 2013) then teachers should be given access to official explicit, well-designed default rules as well as be allowed to choose a tacit rule given the classroom situation. Sunstein (2017) explains a choice preserving rule design with both explicit rules and tacit rules provides guidance while allowing teachers to go their own way within the general guidelines or principles thus increasing power of agency and potentially augmenting both content knowledge as well as the capacity for decision making while positively contributing to desired program outcomes. An active choosing design promotes autonomous professional judgement as it gives the decisionmaker two options: a collectively filtered explicit written default rule and an alternative option arrived at by the individual based on their tacit rules derived from education and experience.

With the addition of these conditions extended policy instrument theory has provided a new line of inquiry for research on the relationship between curriculum design and teachers perceptions. As Sunstein (2013) argues there is a great need for “retrospective analysis” (p. 8) to understand the human consequences of mandated rules or regulations to determine what is

working, what is not working, and to discover unintended side effects. Moreover, Haney et al. (1996) stress in their study of teacher perceptions and competency-based curriculum reform there is a need to avoid the failures of previous reform efforts which neglected to take into consideration the influential nature of teacher perceptions on changes in classroom practice. Cheung and Ng (2000) argue that it is time for researchers to focus on examining teachers' perceptions about alternative curriculum designs as their study of 810 science teachers found that if a "teacher does not believe that a particular curriculum design is valuable, he or she will not implement it voluntarily" (p. 357) indeed, teachers may alter it to make it more "congruent with his or her own belief system" (p. 358). Furthermore, in a review of curricular innovation in science education Bryan (2012) reports extensive studies have clearly documented "the critical relationship between teachers' beliefs and instructional decisions and demonstrate that *teachers' beliefs mediate the curriculum implementation process*" (p. 483). He stresses curriculum reform initiatives will be compromised when incompatible teachers' beliefs are not addressed.

Implementability studies (Brouwers et al., 2015; Gagliardi et al., 2012; Shiffman et al., 2005) based on extended policy instrument theory provide a means for curriculum policymakers to "recognize the limitations of mandates, by which we mean regulations or rules, intended to shape behavior, as a policy instrument" (Hannaway & Woodroffe, 2003, p.4). As well, these studies may be directed towards investigating "*the degree of ease with which an intervention or innovation can be implemented successfully in a given context*" (Engell et al. 2021, p. 2) by analyzing the "set of characteristics of guidelines that enhance (or are obstacles to) implementation" (Engell et al., p. 2).

In conclusion, the literature shows that the proposed theory-guided case study on teachers' perceptions as to the implement ability of the redesigned K-12 curriculum is part of a

new trend in research based on the latest iteration of rule-based policy instrument theory. The findings from this study will contribute to advancing knowledge in the fields of curriculum and instruction as well as further establishing policy instrument theory as an appropriate theoretical framework for future studies.

Chapter Three Theoretical Framework

The theoretical framework “sets the stage” (McGaghie et al., 2001, p. 923) for the inquiry as it provides the grounds for the research questions, research design, literature review, methodology, data collection, and analysis. According to Yin (2014) the selection of an identified theory may serve as a starting point for a case study as it serves as the “blueprint” (p. 38) for each phase of the inquiry including identification of the reasons for the research problem, the causal story or chain as well as the key variables, constructs and actors, and the assumed relationships between them. Scholars note that the study of curriculum and instruction within public education programs “can only be conducted on the basis of some theoretical framework” (Johnson, 1967, p. 135) as the theoretical basis of the program has to be clearly laid out and incorporated into any study (Wholey, 1987). Chen (1990) notes that a theory-guided approach supports inquiries into the relationship between curriculum design and teacher implementation as the causal story makes the underlying assumptions of the intended education program reform process explicit. Other education researchers stress the importance of selecting a well-established theory for inquiries involving explanations within education programs and organizations. Cairney (2013) explains that theories with general assumptions about causal relationships have explanatory power. Kerlinger (1986), Hoy and Adams (2016), and Asher (1984) recommend that education research should begin with a “careful theoretical elaboration of the problem” (p. 4) including the selection of a theory that can provide a set of interrelated concepts, definitions, and assumptions of causal relationships to explain behaviour in educational organizations in order to produce findings that “are more interpretable” (p. 11) due to the theoretically derived relationships. According to Remillard (2005) studies focusing on problems surrounding implementation within education programs must include a theory with a causal story which

assumes a relationship between the curriculum and the teacher that also provides explanations for behaviour.

Accordingly, in this qualitative case study, the theoretical framework is derived from policy instrument theory and extended policy instrument theory which: provide the foundation for the overall research design; inform the research questions; structure the literature review; guide the data collection, analysis, interpretation of the findings; and provide a context for the conclusions of this inquiry into perceptions of the implementability of a new curriculum design. The theoretical framework is organized into eight sections that provide a structured look at how developments in the causal story, assumptions, and conditions of policy instrument theory that led to extended policy instrument theory may provide insights into, or explanations of, the relationships between curriculum design, teachers' perceptions, and implementation. The first section explains the reasons policy instrument theory was selected for this study. The second section presents a brief review of how curriculum has been consistently defined as rules and conceptualized as a rule policy instrument over the past century. The third section presents the causal story and elements of policy instrument theory. The fourth section describes how as a result of research on implementation policy instrument theory was extended to include two new conditions: goodness of design which includes commonly recognized attributes of well-designed rule policy instruments; and teachers' perceptions of the goodness of design. The fifth section presents the bifurcated causal story of extended policy instrument theory and details how it contrasts with the unidirectional causal story of policy instrument theory.

Policy Instrument Theory

Policy instrument theory has been selected for this study as it includes the definitions, key concepts, causal story, and assumptions of the relationships between curriculum design and

teachers' perceptions of the implementability of the design. Policy instrument theory allows curriculum to be studied as an "institutionalized text" (Pinar et al., 2000, p. 661) and provides a means for understanding curriculum as it functions bureaucratically. While policy instrument theory was originally developed in the field of classical organizational behaviour and applied to public administration and policy studies its appropriateness for education research is supported in the literature with McLendon (2003) stating "scholars of K-12 education have derived and adapted from political science a variety of theoretical frameworks to help explain state policymaking in their own arena of activity" (p. 59). Furthermore, Howlett et al. (2015) report policy instrument theory has been successfully applied to a wide range of policy areas investigating causal relationships through empirical observation including education, health, women's studies, international relations, public administration, and political science.

Curriculum has been Defined and Studied as a Rule Policy Instrument

There are a number of types of policy instruments that may be used within public programs to facilitate the attainment of program goals by causing preferred changes in the perceptions, decision-making, and behaviour of a targeted population. Prince (2005) classifies the policy instruments used to facilitate change in public programs into seven main categories: voluntary action; information and exhortation; direct public expenditures; tax expenditures; direct delivery and provision of services; taxation; and rules or regulations. Under this system of classification curriculum may be most accurately defined, conceptualized, and theorized as a rule policy instrument. The classification of curriculum as a rule policy instrument is supported by studies from the past six decades where educational researchers have explicitly defined and studied curriculum as rules. In the 1960s Maccia (1965) described curriculum as consisting of rules and instruction as "rule governed behavior" (p. 96) while Bruner (1966) advised that

curriculum “sets forth rules concerning the most effective way of achieving knowledge or skill” (p. 40) and Johnson (1967) asserted that “curriculum, as rules, govern the *teacher’s* behavior” (p. 129). During the 1970s Chipley (1972) explained that schools develop “externally oriented rule-governed behaviour” (p. 182) of teachers through the rules which are formally stated in “curriculum guides” (p. 183) while Brown (1976) wrote curriculum consists of “decision rules” (p. 12). The 1990s saw Elmore and Sykes (1992) define curriculum as the rules and regulations that pertain to what should be taught in schools while Popkewitz (1997) simply stated the “curriculum inscribes rules and standards” (p. 145). Over the last two decades curriculum has continued to be defined as a form of “regulation via choice rules” (Ostrom & Crawford, 2005, p. 209) as the policy maker prescribes the choices or decisions that the teacher is required or permitted to make. According to Ingersoll (2005) schools use rules that are “designed to direct and control the work of teachers” (p. 107) and Greif (2006) states curriculum functions as a set of “rules” (p. 15) that support collective action to attain both organizational and societal goals by enabling, guiding, and motivating teachers to engage in specific behavior. More recently, Meyer and Rowan (2008) have defined curriculum as “institutionalized rules” (p. 219) that formalize a positive relationship between the goals of the school and the goals of society. Contemporary researchers such as Lundgren (2015) states that curriculum consists of “rules” (p. 6) as it is “the instrument for state governance and control in the school system”. Chen (2015) describes the role of teachers as providing instruction “in accordance with existing instructional rules and administrative guidelines” (p. 4). Lastly, Erickson and Lanning (2014) explain that within the concept-based model of curriculum design learning standards are, in principle, to be considered as a set of rules.

Further support for studying curriculum using a rule policy instrument theoretical framework is seen in the work of a number of educational researchers who have defined and theorized curriculum using the elements and causal story of rule policy instrument within their studies, articles, and books. These studies include: Bascia et al. (2014) in their study on teachers, curriculum, and innovation in policy formulation; Century and Cassata (2016) during their research on curriculum implementation; Connelly and Connelly (2013) in a study on curriculum policy guidelines; Dill and Beerkens (2010) in an analysis of innovation in education policy instruments; Fullan (1999) in a book on using curriculum as an instrument of change within public education reform; Luke et al. (2013) in their book on the importance of the technical design of the curriculum; Schmidt et al. (2005) in their examination of the importance of coherence in curriculum design; Smith and O'Day (1991) in their seminal article on the role of curriculum in systemic school reform; and Westbury (2008) in an article on the governmental purpose of curricula.

In summary, of the different categories of policy instruments noted by Prince (2005) curriculum may be best classified as a rule policy instrument. A brief historical review shows that previous studies in education have defined and studied curriculum as a rule policy instrument. Given the above, these sources support the decision to define curriculum as a rule policy instrument and to choose policy instrument theory as the theoretical framework.

Causal Story of Policy Instrument Theory

As Wilson (1989) explains, in general, public agencies using rules to improve public program outcomes are based on the causal story of policy instrument theory that assumes “behavior results from rules...so we can change that behavior by changing the rules” (p.11). In the case of public education programs, the causal story of policy instrument theory assumes that

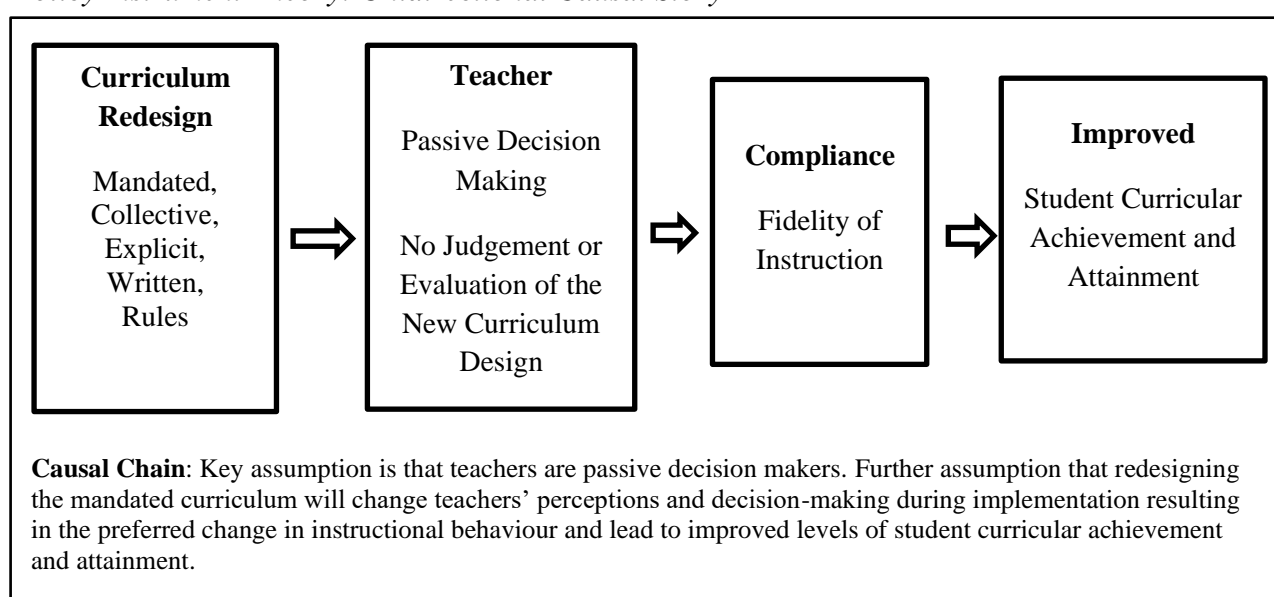
voluntary or mandated rules can be successfully used as a government intervention to change, influence, or control the perceptions, decision making, and behaviours of targeted individuals – in this case teachers, in order to achieve the societal goals for the program as set out under education law and legislation (Bemelmans-Videc, 2010; Fullan, 2007, 2016; Howlett, 2019; Howlett et. al. 2009; Kerwin & Furlong, 2019). As Black (2002) notes within this theory the key purpose of a rule policy instrument is to “*alter the behaviour of others according to defined standards or purposes with the intention of producing a broadly identified outcome or outcomes, which may involve mechanisms of standard-setting, information-gathering and behaviour modification*” (p. 20). The key assumption of the theory is that there is a direct causal relationship between the curriculum as a set of rules and teacher instructional behaviour so that any variance in the curriculum design will result in concomitant variance in teachers’ perceptions, decision making, and instructional behaviour during implementation (Archer, 2005; Biggs & Helm, 2015; Cohen, Fuhrman & Mosher, 2007; Elmore, 1996; Leithwood, 1986; Ornstein & Hunkins, 2018; Popham, 1975; Robitaille, 2002; Smith & O’Day, 1991).

In other words, public education reform initiatives relying on the redesign or revision of the curriculum assume that a new curriculum design will modify the behaviour of a target group (De Lovinfosse, 2008) – in this case classroom teachers who are also assumed to be passive decision makers. As Fisher (2012) notes education reform initiatives relying on curriculum revision to improve student curricular achievement and attainment are “largely unidirectional” (p. 299) in that the focus is on changing the curriculum in order to change teachers’ perceptions, decision making, and instructional behaviour in order to improve student curricular achievement and attainment outcomes. Figure 1 presents a schematic diagram of the elements, assumptions, and causal chain of the unidirectional causal story of policy instrument theory. Figure 1 shows

that under policy instrument theory when curriculum, as a set of collectively written, explicit, formal decision rules is mandated for implementation within classrooms it is assumed that teachers will automatically change their perceptions, decision making, and instructional behaviour to align with the new design (Fenstermacher, 1978; Fullan & Pomfret, 1977; McDonnell & Elmore, 1987; Peters, 2018).

Figure 1

Policy Instrument Theory: Unidirectional Causal Story



Howlett (2019) explains that other classes of policy instruments such as: teacher hiring practices - direct delivery and provision of services (Prince, 2005); teacher education programs - information and exhortation; or teacher professional standards – regulation, could replace curriculum rules as the key policy instrument intervention for education program reform. However, these alternative policy instrument could only be used if it were possible to ensure individual teachers were capable or even desirable of dedicating the time and resources necessary for the research, analysis, evaluation, and dissemination of curriculum rules that would lead to the collective and coordinated instruction required within public education programs.

Policy Instrument Theory Extended to Include Two New Conditions

As a result of implementation research on voluntary curriculum rules carried out in the 1960s – 1980s and further implementation research on mandated curriculum rules carried out since the 1990s insufficiencies in the causal story and assumptions of policy instrument theory have been identified (Berman & McLaughlin, 1976; Clark & Peterson, 1984; Clements, 2007; Cohen & Ball, 1990; Honig, 2006; McLaughlin, 1990; Nespor, 1985; Van Meter & Van Horn, 1975) and subsequent extensions to the theory have been made.

Policy instrument theory has been extended to include two new key conditions within the causal story namely, 1) goodness of design; and 2) teachers' perceptions of the goodness of the design. This iteration of policy instrument theory draws from research findings on judgement and decision making (Thaler & Sunstein, 2008) as well as studies on the actual behaviour of implementers targeted by mandated rules (Fives & Buehl, 2012). Within the literature on policy studies and curriculum this iteration of policy instrument theory is referred to as “behaviourally informed regulation” (Sunstein, 2017, p. 5), behavioural insights (Tasic, 2011) and the “pro-adaptation perspective” (Century & Cassata, 2016, p. 199). Within this study policy instrument theory which includes these two new key conditions 1) goodness of design; and 2) teachers' perceptions of the goodness of the design will be referred to as extended policy instrument theory.

Goodness of Design – Recognized Attributes of Well-Designed Rules

The first new condition within the causal chain of extended policy instrument theory is goodness of design. Policy instrument and curriculum design researchers have increasingly stressed the importance of the goodness (Linder & Peters, 1989) or defensibility (Robinson et al., 1985) of the design of rules. According to Whitehurst (2009) studies using the National

Assessment of Educational Progress (NAEP) show that well-designed curriculum rules will have statistically significant large effects on student achievement outcomes compared to poorly designed curriculum rules. Canadian curriculum developers such as Robinson et al. (1985) have also recognized the importance of goodness of design. An extensive review of studies carried out on rule policy instrument design shows that the importance of the condition – goodness of design, is widely recognized and well researched (Hood, 1986; Howlett, 2018; Howlett & Ramesh, 1995; Kingdon, 2011; Landry & Varone, 2005; Majone, 1976, 1989; Nagel, 1990). The individual elements, attributes or characteristics of rule policy instruments have been noted as contributing to the perceived strength or weakness of the overall rule design (Baldwin et al., 2012).

What does a well-designed rule policy instrument look like? According to Salamon (2002) the commonly recognized attributes used for the evaluation as rule policy instruments may also serve as the criteria for determining the attributes of a well-designed rule policy instrument. The past five decades of research on rule policy instruments in a variety of public program settings has identified a widely recognized set of design and evaluation attributes, elements, or characteristics that are considered as contributing to the goodness of design of rules in general and curriculum rules in particular. A brief review of the research shows the range of criteria which have been identified as contributing to a well-designed rule policy instrument. Van Meter and Van Horn (1975) report three attributes of well-designed rule policy instruments - goal consensus, clarity, and coherence. Baldwin (1995) found that a rule design should be evaluated in terms of legislative mandate, accountability, fairness/due process, expertise, specificity, efficiency, accessibility and intelligibility, and scope or inclusiveness. From a legal perspective Priest (1998) suggests mandated rules should be designed and evaluated based on the

public interest criteria of efficiency, effectiveness, openness, fairness, and accountability. According to Salamon (2002) rule policy instruments should be evaluated for: legitimacy, efficiency, political support, administrative feasibility, equity, effectiveness, and targeting. May (2002) notes the attributes of well-designed rule policy instrument should include: agreement that they are necessary, appropriateness to the situation, predictable expectations, possibility of consistent implementation with reasonable exemptions, and implementer understanding. In terms of mandated rule policy instruments Webb (2005) stresses the need for the design to reflect “values such as accountability, transparency, credibility and legitimacy, cost effectiveness and efficiency, and fairness” (p. 276). Majone (1989) also notes that when rules cannot be determined by scientific research-based evidence and the choices are based on non-scientific grounds such as professional judgement, previous practice, or normative agreement then procedural fairness becomes an important attribute of the design. In the field of public administration widely used design and evaluation criteria include effectiveness, efficiency, legality, responsiveness, technical standards, equity, and political acceptance (Johnson, 2009). For Baldwin et al. (2012) the design and assessment criteria of mandated rules must include efficiency, accountability, and fairness. Dunn (2018) notes that rule design must be assessed for: effectiveness – it “should promote the achievement of a valued outcome” (p. 196), efficiency – in terms of the “the amount of effort required” for implementation; adequacy – the extent to which the effectiveness meets a benchmark; responsiveness – the extent to which the design “satisfies the needs, preferences, or values of particular groups”; and equity or the “the distribution of effects and effort among different groups in society” (p. 200).

A brief review of research on curriculum design over the past decades highlights some of the overlapping and additional attributes that have been identified as characteristic of well-

designed rule policy instruments. Kliebard (2002), Tomlinson et al. (2009) and Stotsky (2012) note that a key attribute of a well-designed set of curriculum rules is a continuum of growth in the form of a taxonomic hierarchy of learning standards where the developmental sequencing of concepts, topics, and texts are “progressively more challenging... moving students from concrete, experience-based, and emotion-laden thinking to more abstract and rational thinking, with an increasing fund of information and ideas in their heads to think with” (p. xiii). From a cognitive science perspective Bransford et al., (2000) state that research indicates curriculum rules should be designed as a set of hierarchical learning standards to facilitate the continuing development of student competences within the subject area. According to Robinson et al. (1985) a key attribute of a curriculum design should be a continuum of growth with “specific instructional objectives delineated in growth schemes” (p. 247) to ensure students are given the opportunity to experience continuing success throughout the educational program. Furthermore, Toepfer (1982), Tanner and Tanner (1980) and Leithwood (1986) report that an explicit continuum of growth is a fundamental attribute or characteristic of a well-designed curriculum because “it is important to have an explicit procedure for describing growth in student learning” (p. 59) through a set of rules that offer “many levels of performance. A multi-level description of growth provides direction for the design of teaching strategies.... helps in setting realistic and challenging expectations for individual students of differing abilities and helps teachers in different grades and subjects to coordinate their work” (p. 59).

According to Luke et al. (2008) well-designed curriculum rules support the attribute of equity through “informed prescription” (p. 1) where the learning standards map “out essential knowledges, competences, skills, processes and experiences... [and provide] appropriate testing systems for diagnostic and developmental purposes and system accountability”. As Ayers et al.

(2009) note the design of the curriculum must provide for equity by ensuring students have “equal access to the most challenging and nourishing educational experiences” (p. xiv) to ensure historical injustices in terms of student curricular achievement and attainment are being addressed. While Supovitz and Spillane (2015) recommend that the design of the curriculum rules should include academic expectations and thereby serve or function as “*a statement of commitment to equity*” (p. xiii).

Thaler and Sunstein (2008) identify choice as an important attribute of rule policy instruments that reflects the level of professional autonomy assigned to the implementer. According to Gronlund and Brookhart (2009) the attribute choice or professional autonomy is intrinsic to mandated curriculum as these rule policy documents prescribe the “intended outcomes of instruction in performance terms without restricting the means of achieving them” (p. 7). Reynaud (2002) notes that as “*no rule can strictly govern behaviour*” (p. 124) during implementation prescribed rules are “always in need of interpretation” or professional judgement based on implementers’ understanding of the “explicit knowledge contained in other rules, tacit knowledge acquired through personal experience...[and] information derived from the context” (p. 127).

Westerman (1991) identifies guidance as a key attribute as he found that while expert teachers do not write out lesson plans, they use the “curriculum guidelines as a foundation for building lessons” (p. 296) and novice teachers use the curriculum “in a more literal way” to guide the writing of lesson plans. Luke et al. (2008) and Luhmann (2018) also note the importance of the attribute guidance for curriculum design. Kirschner et al. (2006) state that in subject areas such as math and science the “past half-century of empirical evidence...has

provided overwhelming and unambiguous evidence” (p. 76) that well-designed curriculum rules should provide clear, structured guidance in order to support implementation and learning.

Coordination has been identified as a key attribute of a well-designed curriculum as a key function of curriculum is to enable and support cooperation amongst teachers and administrators allowing them to coordinate and sequence their actions to realize the goals of the public school (Ostrom & Crawford, 2005). Conley (2014) explains that well-designed rules improve communication and coordination by allowing “educators to share a common language about what they want students to learn” (p. 2). While Walker (2014) states the design of the curriculum should provide a “coordinating structure...to help bring a degree of order and predictability into a far-flung education system that would otherwise be...bewildering for everyone involved” (p. 8).

Robinson et al. (1985) identify six criteria of a defensible curriculum design: it should seek to attain the goals of the education program; the objectives should be comprehensive; it should be non-redundant; the objectives should be arranged hierarchically; it “should be practically feasible – that is, within the teacher’s competency” (p. 119); it should be stated at a level of specificity that allows for growth schemes; and it should enable articulation between the courses that precede and follow. Lastly, Doyle and Ponder (1977b) suggest that key attributes of a well-designed curriculum include practicality, instrumentality, and congruence.

Table 1 presents a summary of the suggested attributes of well-designed rule policy instruments derived from the literature on rule policy instruments and curriculum development. A set of definitions or descriptions and the sources are presented for each of the attributes. These brief definitions or descriptions are meant to capture the essence of the attributes when applied to the design and evaluation of curriculum rule policy instruments.

Table 1*Attributes of Well-Designed Curricula Rule Policy Instruments*

Attribute	Definition	Sources
Accountability	The means for measuring, evaluating, monitoring and documenting student curricular achievement and attainment.	Baldwin, 1995; Bascia et al., 2014; Bell & Stevenson, 2006; Cohen & Ball, 1990; Cohen et al., 2007; McLaughlin, 1990; May, 2007; Savoie, 2015.
Choice	The level of professional autonomy assigned to the teachers in regard to the implementation of curriculum documents.	Gronlund & Brookhart, 2009; Reynaud, 2002; Salamon, 2002; Thaler & Sunstein, 2008; Thaler et al., 2014.
Clarity	The curriculum is written in such a way that the teacher can read and understand it without the need to rely on others, to explain to them what to do and how to do it.	Clements, 2007; Kerwin & Furlong, 2011, 2019; Marsh, 2004; Roseman et al., 2008; Spillane et al., 2002; Van Meter & Van Horn, 1975.
Cognitive Burden	The ease or difficulty of understanding or making sense of the curriculum.	Bransford et al., 2000; Flick, 2009; Munscher et al. 2016; Shaw & Oppenheimer, 2008.
Coherence	The curriculum is aligned with other policy instruments such as resources and textbooks.	Biggs, 2003; Curry & Temple, 1992; Elmore, 1987; Macnab, 2000; Smith & O'Day, 1991.
Continuum of Growth	The explicit, written progression of learning standards through grades K to 12.	Leithwood, 1986; Robinson et al., 1985; Schiro, 1978; Scott, 2016; Stotsky, 2012; Toepfer, 1982.
Coordination	The curriculum rules enable and support cooperation and coordination between classrooms and grade levels.	Conley, 2014; Douglas, 1986; Meyer et al., 1988; Ostrom & Crawford, 2005; Walker, 2014.
Effectiveness	The curriculum leads to "improved achievement of those outcomes considered valuable by those with a stake in the school."	Leithwood, 1986; Wise, 1979.
Efficiency	The amount of effort and resources required for teachers to implement the curriculum and for students to achieve the learning standards.	Baldwin et al., 2012; Betts & Loveless, 2005; Dunn, 2012; Halperin & Heath, 2012
Equity	The curriculum content provides all students, regardless of student background, equal access to the most challenging learning standard, and promotes opportunities to pursue educational excellence.	Atwater et al., 2014; Ayers et al., 2009; BC MOE, 2016; Gagne et al., 1992; Luke et al., 2013; Murphy, 1989; Salamon, 2002; Schmidt & McKnight, 2015.
Feasibility	The curriculum meets the expectations of teacher and is considered reasonable with the possibility of consistent implementation given the resources available.	Harter, 1979; Hopmann 1999; Luke et al., 2008; May, 2002; Wallner, 2009; Wolman, 1981.
Guidance	The curriculum is intended to provide direct guidance to practitioners.	Kirschner et al., 2006; Luhmann, 2018; Luke et al., 2008; Reigeluth, 1999; Westerman, 1991.
Legitimacy	Implementers perceive the rules as credible and in correspondence with their own views.	Ball, 1992; Bemelmans-Videc, 1998; Prosser, 2010; Sunstein, 2017; Van der Doelen, 1998.
Procedural Fairness	The design has been validated through the democratic participation of teachers, consensus-based negotiations, review, and evaluation.	Baldwin, 1995; Kerwin & Furlong, 2011; Majone, 1989; Priest, 1998; Warren, 2011; Webb, 2005.
Responsiveness	The design satisfies the needs, preferences, and values of particular groups.	Dunn, 2018; Johnson, 2009.
Societal Mandate	The design enables and supports the attainment of the legislated goals of the education program.	Baldwin, 1995; Robinson et al., 1985; Van Meter & Van Horn, 1975.
Specificity	The specifications are sufficiently distinct to provide for a hierarchy of learning standards and articulation between grades.	Baldwin, 1995; Robinson et al., 1985.

These seventeen attributes are a set of characteristics that have been suggested for, or used for, both the evaluation and design of curricula rule policy instruments. This list forms the initial set of intrinsic attributes of curriculum design that will be used as potential theory-led themes during the theory-guided thematic analysis of both the participant interviews and the documents.

Teachers' Perceptions of Goodness of Design

The second new condition within the causal chain of extended policy instrument theory is teachers' perceptions of the goodness of the design. Within the theoretical literature perception is conceptualized as a multi-faceted construct that has definitional overlaps with other concepts such as belief, attitude, value, judgement, and evaluation (Pajares, 1992). These terms may be used interchangeably as regardless of whether perception is viewed as an understanding, belief, value, judgement, or evaluation it involves the process of cognition and a subsequent decision on how to act or behave in regard to a rule. Additionally, perceptions are conceptualized as unique to the individual teacher having been formed and influenced through personal, educational, professional, and community experiences (Allport, 1935; Cheung & Ng, 2000; Graham et al., 2002; Hofer, 2001; Koballa, 1988; Little, 1990; Pajares, 1992; Riker, 1980).

This conceptualization is supported by research that has shown every teacher has a "*personal epistemology*" (Hofer, 2001, p. 353) of independent beliefs about knowledge and knowing that influences how they "resolve competing knowledge claims, evaluate new information, and make fundamental decisions" (Hofer, p. 353). Moreover, as teachers' perceptions are both subjective and evaluative it is assumed that they will seek to understand and comprehend the rules for information and direction before they make a decision or take action (Brogaard, 2018; Hjalmarson, 2008; Reid, 2011; Remillard & Bryans, 2004; Schellenberg,

2018). This theoretical condition assumes teachers will actively judge and evaluate mandated curriculum rules and either accept, reject, ignore, modify, or seek alternatives to the rules (Fives & Buehl, 2012; Schoenfeld, 2011) depending on their perceptions. The condition of teachers' perceptions of the curriculum has been noted by Pajares (1992) as the "single most important construct in educational research" (p. 329) as perceptions or beliefs "are the best indicators of the decisions individuals make" (p. 307). The unique and individual nature of teachers' perceptions means that while curriculum may be collectively written as a set of formal rules – it is individually perceived, evaluated, and implemented which means the great majority of teachers must positively evaluate the design for widespread implementation to occur and for the intervention to be fully functional.

Causal Story of Extended Policy Instrument Theory

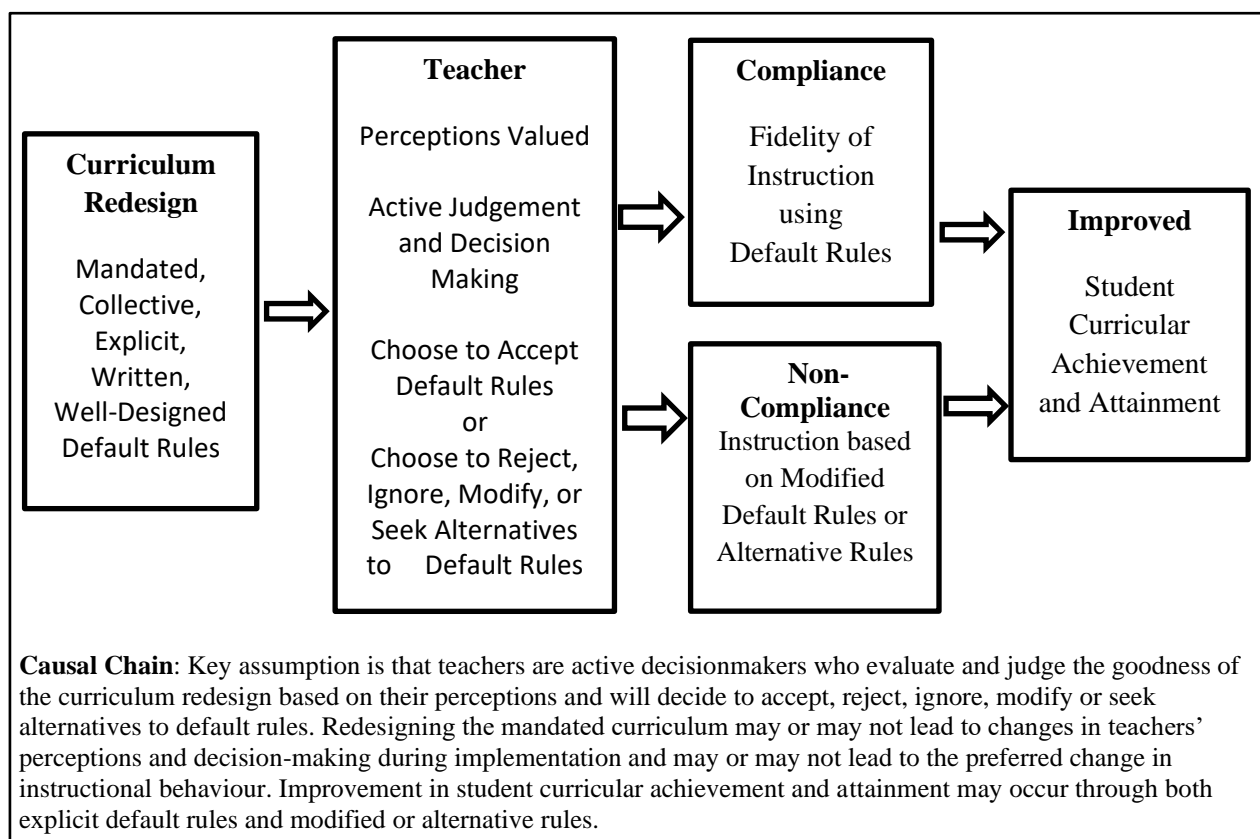
Under these two new conditions – goodness of design and teachers' perceptions of the goodness design, the causal story and assumptions of extended policy instrument theory differ significantly from the causal story and assumptions of the first iteration of policy instrument theory. As explained previously, under policy instrument theory it was assumed that: 1) the design of the rules doesn't matter - "behavior results from rules...so we can change that behavior by changing the rules" (Wilson, 1989, p.11); 2) teachers are passive decision makers (Tanner & Tanner, 1980); 3) mandated rules will be automatically and unquestioningly implemented with fidelity by all teachers (Fenstermacher, 1978); 3) the implementation process will cause teachers to change their perceptions, decision making, and instructional behaviour to that of the curriculum design (Fullan & Pomfret, 1977; Howlett, 2019; McDonnell & Elmore, 1987; Shapiro & Tomain, 2003); and 4) a more coercive policy instrument will be a fully functional

intervention that will be implemented as intended within a public education reform program (Smith & O'Day, 1991).

In contrast to policy instrument theory the causal story of extended policy instrument theory includes the two new conditions and compliance is only one means of improving levels of student curricular achievement and attainment. Non-compliance and the decision to reject, ignore, modify, or seek alternatives to the default rules based are also viable choices. Figure 2 presents a schematic diagram of extended policy instrument theory showing how the previously unidirectional causal story becomes bifurcated with the inclusion of the two new conditions.

Figure 2

Extended Policy Instrument Theory – Bifurcated Causal Story



As can be in Figure 2, in contrast to policy instrument theory the causal story of extended policy instrument theory assumes that: 1) the goodness of the design is critical to implementation

(Linder & Peters, 1989); 2) teachers are active decision makers who will judge and evaluate the goodness of the rule design (Thaler et al., 2013; Sunstein, 2017); 3) as a result of their perceptions of the design teachers may either accept, reject, ignore, modify, or seek alternatives to the rules (Fives & Buehl, 2012; Schoenfeld, 2011); and 4) the coerciveness of a rule policy instrument does not guarantee that it will be fully functional as an intervention within a public education reform program (Hannaway & Woodroffe, 2003; Weatherly & Lipsky, 1977).

In summary, as curriculum has been consistently and widely recognized as a rule policy instrument this theory has been chosen for the theoretical framework of this study. The two iterations of policy instrument theory provide the reasons for the research problem as well as the means for studying it as they include a set of causal stories, assumptions, and conditions for investigating and explaining the relationships between the constructs and the actors. The first iteration of policy instrument theory identifies teachers' perceptions, decision making, and instructional behaviour as a problem that must be solved (Ruiz-Primo, 2005) through curriculum regulation in order to improve the levels of student curricular achievement and attainment. Under this theory teacher instructional behaviour, decision making, and perceptions should and can be subject to influence, control, and conversion (Berman & McLaughlin, 1976; O'Donnell, 2008; Smith & O'Day, 1991; Tanner & Tanner, 1980). It is assumed that "the "alteration of *beliefs*" (Fullan, 2001, p. 39) will occur when teachers' perceptions are "transformed, further developed, or otherwise altered during implementation" (p. 40). However, as noted in the literature review, research on the actual behaviour of implementers targeted by mandated rules has led theorists and researchers (Kahneman, 2013; Luke, Woods & Weir, 2013; Sunstein, 1996, 2013, 2017; Thaler & Sunstein, 2008; Thaler et. al 2013) to acknowledge the need to accommodate and take into consideration implementers perceptions of the curriculum rules during both the design and

implementation processes by incorporating two new conditions into the causal story: 1) goodness of design, and 2) teachers' perceptions of the goodness of the design. With the inclusion of these two new conditions extended policy instrument theory provides additional suggestions as to the reasons for the research problem as well as an extended causal story for investigating and explaining the relationships between the constructs and the actors.

While research conducted under policy instrument research may be understood as implementation research, research conducted under extended policy instrument theory may be understood as “implementability” (Engell et al. 2021, p. 2) research that uses a “pro-adaptation perspective” (Century & Cassata, 2016, p. 199). According to Century and Cassata (2016) implementability studies pursue a “systematic inquiry into the innovations enacted in controlled settings or in ordinary practice, the factors that influence innovation enactment, and the relationships between innovations, influential factors, and outcomes” (p. 170). This theory-guided qualitative case study may then be seen as an implementability inquiry as it investigates the curriculum design through the lenses of the teacher implementer and policy documents with the goal of better understanding how the attributes of the rule design facilitate or inhibit teachers' perceptions, judgements, or evaluations of its implementability. As Engell et al. (2021) note implementability studies investigate the “*degree of ease with which an intervention or innovation can be implemented successfully in a given context*” (p. 2). Furthermore, implementability studies are used to investigate: the “set of characteristics of guidelines that enhance (or are obstacles to) implementation” (Engell et al., p. 2); and the attributes of the practical guidelines that promote or limit their implementation (Gagliardi et al., 2012; Brouwers et al., 2015).

In other words, this theoretical framework enables the study to inquire into what actually happens during teacher implementation of a new curriculum design as reported through the

lenses of teachers' perceptions and a policy document analysis with the goal of better understanding how the attributes of the rule design facilitate or inhibit teachers' perceptions, judgements, or evaluations of its implementability (Brouwers et al. 2015; Century & Cassata, 2016; Engell et al., 2021; Gagliardi et al. 2009; Gagliardi et al., 2012; Hall & Hord, 2020; Honig, 2006; Olson et al. 2020; Shiffman et al. 2005). Based on a policy instrument theoretical framework the research questions are aimed at investigating teachers' perceptions of the implementability of the new curriculum redesign and the intrinsic attributes of the design that help or hinder implementation. If teachers' perceptions of the goodness of design are positive, then implementation should occur as intended which would indicate a well-designed curriculum rule policy instrument. However, if teachers' perceptions of the implementability of the new curriculum design are mixed or negative than the intended instructional behaviour may not occur as expected, the curriculum may not be implemented as intended (Bemelmans-Videc et al., 2010; Pressman & Wildavsky, 1984; Wolman, 1981), and this may indicate problems in terms of the goodness of the design.

Chapter Four Methodology

This chapter presents the methodological choices made during the research design process for this study. To recap, the study inquires into the relationship between curriculum design, teachers' perceptions, and implementation using a policy instrument theoretical framework. The research questions are centred on teachers' perceptions of the implementability of the new curriculum design and teachers' perceptions of how the intrinsic attributes of the new curriculum design support or hinder implementability. As noted in the positionality statement this inquiry relies on the philosophical stance of pragmatic realism to guide the methodological choices of the research design.

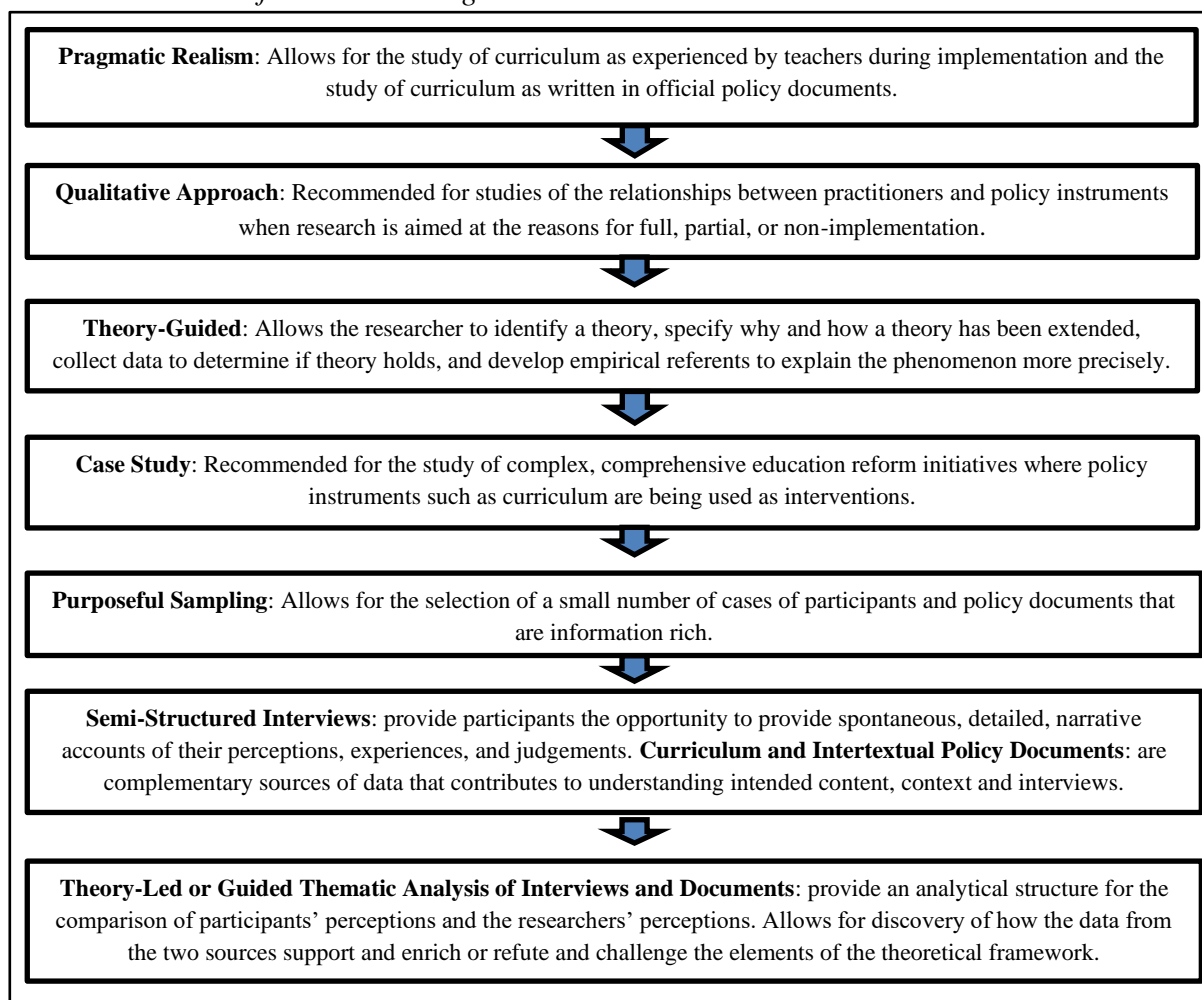
The chapter is organized into 12 sections which provide detailed explanations of each aspect of the research design. The first section provides four brief rationales for the selection of a qualitative, theory-guided case study approach to the research design. The second section reviews the reasons for a purposeful sampling method and follows with two sections that provide descriptions of both the participants and the documents. The fifth section reviews data collection methods and is followed by a section on semi-structured, open-ended interviews for the primary data source and a section on the use of policy documents for the secondary data source. The next two short sections discuss triangulation and how the required ethical guidelines were addressed. The tenth section explains the decision to use a theory-led or theory-guided thematic method for data analysis. The eleventh section provides a comprehensive review of the rationale for, and the steps used, in the theory-led thematic analysis technique applied to the interview data. While the twelfth section describes the theory-led thematic analysis technique used for the curriculum and intertextual policy documents.

Qualitative Theory-Guided Case Study

A qualitative, theory-guided case study research design was chosen for this study. An overview of the steps in the research design decision making process used in this study is presented for reference in Figure 3 – a schematic outline of research design choices.

Figure 3

Schematic Outline of Research Design Choices



Four brief rationales present the supporting reasons for the decision to use a qualitative, theory-guided, case study research design for this inquiry. First, a qualitative method has been recognized by Patton (2002) as particularly useful for studies of the relationships between people and policy during implementation especially when research is aimed at the level of

implementation and the reasons for full, partial, or non-implementation. A qualitative approach supports studies on elements of programs as it allows for the capture of unintended effects as well as variance that arises during implementation. As Creswell (2007) notes this approach allows for the exploration and understanding of ongoing social problems occurring within different contexts by inquiring into the meaning people give to their experiences (Creswell, 2009). Moreover, Denzin and Lincoln (2011) advise that qualitative research is suitable for studying phenomena in a real world setting through empirical materials such as personal experiences and interviews as it allows the researcher to isolate target populations, show the effects of certain programs or policy instruments on such groups, and identify the constraints that operate within policy reform settings. In relation to the research questions Ravitch and Riggan (2017) advise that a qualitative method is appropriate for the study of teachers' perceptions.

Second, a theory-guided approach is recommended by Yin (2014) as an existing theory provides an excellent starting point for a study as it provides for: a unit of analysis, assumptions, a causal story, a causal chain, and well-defined and conceptualized relationships. Levy (2008) explains that case studies are "theory-guided" (p. 3) when: theory is used to design, investigate, and analyze empirical research questions; theory based causal stories, analytical assumptions and biases are made explicit; the conceptual framework "focuses attention on some theoretically specified aspects of reality" (p. 4); and analysis of the data is "guided by an explicit theoretical framework". In other words, a fully developed research design for a theory-guided case study necessarily "embodies a 'theory' of what is being studied" (Yin, 2009, p. 36). Gerring (2007) and Scholz and Tietje (2002) recommend a theory-guided approach for education studies as it allows for recognition of theories from other disciplines, an explanation of causality and the causal mechanisms of instruments, and it directs collection of qualitative data and analysis.

According to Chen (2015) in contrast to an atheoretical, method-driven approach a theory-guided design allows for the systematic investigation of how curriculum operates in the real world in terms of how and why it works or doesn't work as intended in different contexts. Ridder (2017) further explains that a theory-guided study enables the researcher to identify and outline the theory, identify gaps in the theory, specify why and how the theory has been extended, collect data to determine if the theory holds, and development empirical measurement criteria which may "explain the phenomenon more precisely" (p. 299). The final major benefit of a theory-guided approach is that it provides a means for making the assumptions about the curriculum designer and the practitioner explicit in terms of "what they are trying to do and why" (Weiss, 1995, p. 71). Without an explicit theory the study would be focused on a narrative based on "different tacit theories" with divergent assumptions and causal stories that would not allow for either theory-guided data collection or analysis. A theory-guided approach, may ignore some important aspects that the theory does not consider, it however allows for direct or indirect comparisons of empirical findings that may be used to identify and explain differences and similarities to determine causes, effects, and causal mechanisms (George & Bennett, 2005) and may also be used to assess the relevance and the usefulness of the theory being used.

Third, a case study approach is recommended for use by Yin and Davis (2006) for complex, comprehensive K-12 education reform initiatives where there are "collective, coordinated, and usually concurrent" (p. 76) policy instruments being used as interventions "aimed at changing whole systems" of public education programs. Case study is particularly appropriate for curriculum studies as it may be used to "*describe* an intervention and the real-world context in which it occurred" (Yin, 2014, p. 19) in order to provide an explanation for "presumed causal links" and illuminate the situations in which the intervention took place.

According to Schwandt (2015) case studies “are preferred when the inquirer seeks answers to how or why questions, when the inquirer has little control over events being studied, [and] when the object of study is a contemporary phenomenon in a real-life context” (pp. 26-27). In terms of theory Eisenhardt (1989) explains case study is particularly useful for knowledge development in newer areas of research especially when “existing theory seems inadequate” (p. 548). Finally, case study provides a “strong grounding in reality” (Cotton, 2006, p. 71) and the opportunity to “generate a rich, detailed account” from participants in the study.

Fourth, in addition to the supporting arguments given by the methodologists noted above the research literature also offers support for a qualitative, theory-guided case study approach. While different research designs have been successfully used to study this topic such as quantitative studies using surveys (Cole & Herlihy, 1971; McLaughlin, 1976) the value of qualitative theory-guided case study has been seen in studies such as the Coleman Report (Coleman, 1966) where this approach provided for a richer, more detailed investigation. Weatherly and Lipsky (1977) selected a qualitative theory-guided case study approach for a key study on teacher implementation within an educational reform program. More recent decisions to use a qualitative approach are seen in an interview study by Cai and Wang (2010) that investigates how teachers “draw upon their cultural beliefs as a normative framework of values and goals” (p. 266) during curriculum implementation. Case study has been successfully used in studies of teachers’ perceptions of innovations during implementation by Penuel et al. (2014) as well as by Farrell (2005) in inquiry into teachers’ beliefs and classroom practice. Additionally, qualitative theory-guided case studies have been used for the “retrospective analysis” (Sunstein, 2013, p. 8) of mandated rules or regulations such as the research carried out by Haney et al. (1996) and Cheung and Ng (2000) on teachers’ perceptions and curriculum reform. Furthermore,

implementability studies using a qualitative case study approach are necessarily implicitly or explicitly theory-guided as they proceed from the assumption that the design of the curriculum or any other rule policy instrument involves a causal relationship as the purpose of these inquiries is to investigate how the design mediates “the degree of ease with which an intervention or innovation can be implemented successfully in a given context” (Engell et al., 2021, p. 2).

Sampling

When a theory-guided case study is used to investigate a political phenomenon such as a policy instrument it is considered appropriate to conduct the sampling purposefully (Babbie, 2010; Seawright & Gerring, 2008;). Purposive sampling aims to select a small number of cases that are “information-rich (Patton, 2015, p. 264) that capture the issues at the centre of the investigation while also being conducive to the inferential process. Merriam (1998) explains there are two levels of sampling in case study research: first, the selection of the case or cases to be studied; and second the selection of the people to be interviewed. This study follows the suggestions of Salamon (1981) that research on implementation should locate the policy instrument as the unit of analysis and the implementer or teacher and policy documents as the units of observation. These suggestions are supported by Babbie (2010) who states when a social artifact is the unit of analysis it may be observed indirectly through units of observation - such as when a researcher observes a teacher by asking them about their “attitudes” (p. 99). In a review of the research literature on the “messy” construct of teachers’ beliefs Fives and Buehl (2012) argue that researchers assessing teachers’ perceptions of the curriculum may use interview responses as the unit of observation when the construct has been clearly characterized and defined.

Miles et al., (2014) and Eisenhardt and Graebner (2007) explain that “polar types” (p. 27) may be purposefully selected to allow the researcher to more easily investigate cases with potentially high levels of contrasting data. Purposeful samples of polar types such as subject areas may capture potential differences or a continuum in teachers’ perceptions of the curriculum redesign. The literature suggests that teachers’ perceptions may differ between subject areas due to the differences in epistemic communities and knowledge representation found within the disciplines (Aulls, 2002; Bousbia & Belamri, 2014; Kirschner, Sweller & Clark, 2006; Spiro et al., 2007; Spiro & DeSchryver, 2009; Tobin & McRobbie, 1996). As Rowan et al. (1993) state “different disciplines contain different assumptions about the nature of teaching as work...the nature of task knowledge differs across academic disciplines...task knowledge in mathematics and science teaching is more codified and routine in form than in English and Social Studies teaching” (p. 483). Accordingly, this study purposely samples curricula documents from both the humanities and math/sciences and interview participants are teachers of these subject areas. These purposively sampled polar types represent contrasting epistemic communities and subject area disciplines.

Participants Description

The participants for this study were comprised of seven certified professional BC public high school teachers with experience implementing the new K to 12 curriculum design in the areas of humanities, math, and science. All of the participants had some level of experience with more than one curriculum design in their careers while two teachers had experience implementing new curriculum designs in other provinces. The participants had 7 to over 25 years of teaching experience within multiple educational jurisdictions and over a wide range of subject areas including: English, English Language Arts, Social Studies, Psychology, Philosophy,

History, Literature, Creative Writing, Gender Studies, Mathematics, Calculus, Junior Sciences, Biology, Drafting and Design, Robotics, Design and Innovation, Physical Education, Consumer Education, Home Economics, Foods, Criminology, Careers, Life Skills, and Electronics. The participants voluntarily participated in this research study. They gave their informed consent and none of the participants received any sort of compensation or benefit for their participation. Each participant was assigned pseudonyms to protect their anonymity. According to Bachor (2002) the “*face value credibility*” (p. 20) or believability of a case study does not require inclusion of the complete transcripts from interviews, but it does require a section that provides a description of the characteristics of the participants that shows the type and quality of experience each participant brings to the case. Accordingly, a brief description of the background of each of the anonymized participants follows.

Reese had over 18 years of experience at junior and senior high schools in multiple provinces teaching Social Studies, Drafting and Design, Design and Innovation, and Robotics. As well, Reese had experience developing locally approved curriculum. Jan had over 24 years of teaching experience in the subject areas of Mathematics, Calculus, and Physical Education. In addition, Jan had authored four math workbooks aligned with the previous BC curriculum design. Terry had seven years of experience teaching most of the courses in English Language Arts for grades 9 to 12. Dawson had over 26 years of experience teaching in both public and private schools at the middle to high school levels in multiple provinces. Dawson had taught Math, Chemistry, all the junior sciences, Biology, English, Home Economics and Consumer Education. Casey had over nine years of experience teaching in public high schools in the areas of English, Foods, Criminology, Psychology, Careers and Life Skills. Stevie had over seven years of experience teaching all levels of high school Math, Physics, Junior Sciences and

Electronics. Additionally, Stevie has developed curriculum for locally developed courses. Erin had over 24 years of experience teaching high school courses in Literature, History, Philosophy, Gender Studies, Social Justice, and Creative Writing including at schools with large numbers of at-risk students. In terms of curriculum development Erin had designed locally developed curriculum and had been involved in transitioning locally developed courses into provincial curriculum.

Documents Description

According to both Patton (2002) and Bowen (2009) document analysis involves “data *selection*, instead of data *collection*” (p. 31) based on the relevance, meaning, and contribution of the document to the research problem and the issues being explored. These documents have been selected due to their “importance, relevance and reliability for the project at hand” (Miller & Alvarado, 2005, p. 352). These official curriculum policy documents were selected as they were directly referenced during the interviews. The set of intertextual documents were selected as they had direct or indirect legal, background, informational or explanatory linkages to the participant referenced official curriculum policy documents. As noted by Murphy (1980) these direct and indirect or intertextual documents reflect the official sets of curricula “rules, regulations or guidelines” (p. 123) as well as the laws which provide their “legal basis” and their original legislative intent. As a key purpose of the document analysis is to provide context and to clarify, elucidate, expand, corroborate, refute or challenge the findings from the interviews only those curriculum policy documents consistently referred to within the interviews were selected.

The curriculum documents selected for this study are the mandated educational program guides as per the Educational Program Guide Order (Ministerial Order 304/20) authorized under the School Act, section 168 (2)(a)(c)(e) that are published by the Ministry of Education for

grades 10 to 12. The guide lists all of the curriculum documents specified as educational program guides for kindergarten to grade 12. The BC Ministry of Education publishes 126 curriculum documents for kindergarten to grade 9 and an additional 246 curriculum documents for grades 10 to 12. Of the total 372 curriculum documents 69 curriculum documents were selected for qualitative document analysis. These included: 18 curriculum documents covering grades 10 to 12 Social Studies; 24 curriculum documents covering grades 10 to 12 English Language Arts; 14 curriculum documents covering grades 10 to 12 Math; and 13 curriculum documents covering grades 10 to 12 Science. See Appendix C for a complete list of the curriculum and intertextual documents selected for this study.

The official curriculum and many of the intertextual documents were published on the BC Ministry of Education website and available in PDF, Word, or HTML format. All the curricula documents were formatted as uniform, low detail, schematic diagrams from three to eighteen pages in length. The curriculum design for each course consisted of first page with a short description followed by a schematic diagram composed of nine key elements: the official logo of the BC Ministry of Education, the subject area, the name of the course, the grade level, a series of 4 to 14 big ideas placed in boxes, a table of learning standards divided into two columns with curricular competencies learning standards on the left and content learning standards on the right.

An example of this schematic diagram approach to curriculum design that is followed in all of the curricula documents is shown in Figure 4. The schematic diagram of Mathematics Grade 10 – Foundations of Mathematics and Pre-calculus shows both the layout and the three key elements: big ideas and learning standards composed of curricular competencies and content.

Figure 4

Mathematics Grade 10 - Foundations of Mathematics and Pre-calculus

BRITISH COLUMBIA
Ministry of Education

Area of Learning: MATHEMATICS — Foundations of Mathematics and Pre-calculus Grade 10

BIG IDEAS

Algebra allows us to **generalize** relationships through abstract thinking.

The meanings of, and **connections** between, each operation extend to powers and polynomials.

Constant rate of change is an essential attribute of linear **relations** and has meaning in different representations and contexts.

Trigonometry involves using **proportional reasoning** to solve **indirect measurement** problems.

Representing and analyzing **situations** allows us to notice and wonder about relationships.

Learning Standards

Curricular Competencies	Content
<p><i>Students are expected to do the following:</i></p> <p>Reasoning and modelling</p> <ul style="list-style-type: none"> • Develop thinking strategies to solve puzzles and play games • Explore, analyze, and apply mathematical ideas using reason, technology, and other tools • Estimate reasonably and demonstrate fluent, flexible, and strategic thinking about number • Model with mathematics in situational contexts • Think creatively and with curiosity and wonder when exploring problems <p>Understanding and solving</p> <ul style="list-style-type: none"> • Develop, demonstrate, and apply mathematical understanding through play, story, inquiry, and problem solving • Visualize to explore and illustrate mathematical concepts and relationships • Apply flexible and strategic approaches to solve problems • Solve problems with persistence and a positive disposition • Engage in problem-solving experiences connected with place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> • operations on powers with integral exponents • prime factorization • functions and relations: connecting data, graphs, and situations • linear functions: slope and equations of lines • arithmetic sequences • systems of linear equations • multiplication of polynomial expressions • polynomial factoring • primary trigonometric ratios • financial literacy: gross and net pay

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Source:

https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/curriculum/mathematics/en_mathematics_10_foundations-of-mathematics-and-pre-calculus_elab.pdf

Subsequent pages of each document included elaborations for the big ideas, curricular competencies and content. These elaborations consisted of lists of verbs, facts, phrases, definitions, sample questions, learning strategies, and suggested instructional activities. See Appendix D for an example of a complete curriculum document.

Data Collection

This case study includes two qualitative data collection techniques - interviews and documents. According to Yin (2014) case studies should employ multiple data collection techniques as sources of evidence. This is especially true in educational policy research where documents are “often chosen as a second or supplementary way of collecting data in order to add rigour to a study through a multi-method form of triangulation” (Cardno, 2018, p. 626). A

discussion of the primary and secondary data collection methods is followed by a brief review of how the use of multiple data sources for triangulation supports the credibility and trustworthiness of the study. Lastly, a brief review of the ethical guidelines that were followed is presented.

Primary Data Sources: Semi-structured Open-ended Interviews

Funnell and Rogers (2011) recommend the use of interviews for theory-guided case studies as this technique of data collection allows questions to be constructed around the “causal chain” (p. 451) and may provide evidence of differences, if any, in teachers’ perceptions, decisions and actions resulting from implementation of the curriculum design. Interviews allow the participants to discuss if what they do during classroom instruction is different “from what they believe they should be doing according to policy” (p. 111). Interviews also allow them to talk “about why they undertake some activities that may appear to be at variance with the program design or omit parts of the program design” (p. 112). Detailed narrative accounts from participants can provide compelling empirical evidence of whether or not, and why or why not, a policy instrument has been implemented as intended. Furthermore, semi-structured interviews provide rich data on whether teachers understand how the curriculum redesign is supposed to work and whether or not it contributed to changes in their behaviours. This is in line with Schneider (1982) who suggests that when researching policy instruments with “studies of implementation” (p. 719) it is important to investigate the actual tasks and activities carried out by the teachers that they report has been “produced by the policy itself”. In order to do this “one of the quickest and simplest ways to identify unintended consequences is to ask a good informant” (p. 726). Others, including Fontana and Frey (2000) agree that interviewing “is one of the most common and powerful ways in which we try to understand our fellow human beings” (p. 645) because interviews allow the interviewee the opportunity to convey their own

experiences, evaluations, and judgements of the topic of study (Seidman, 1998). As well, Patton (2002) states interviews are well suited for research aimed at obtaining in-depth responses about peoples' "perceptions" (p. 4).

Semi-structured open-ended interviews are used as according to Jacard and Jacob (2010) this allows for a range of questions to be asked but leaves room for new questions to be raised spontaneously by the interviewer depending on what the interviewee says. Bryan (2012) reports semi-structured open-ended interviews have been successfully used in studies to elicit rich descriptions while enabling the researcher to verify statements and probe for additional information. To improve data collection Wengraf (2001) recommends that interviewer questions should be prepared in advance with sufficient openness in design to allow for subsequent questions to be improvised "in a careful and theorized way" (p. 5). Pre-prepared questions ensure "that the research agenda is covered but also allows the interviewee to be expansive and lead the interview to a certain extent" (Cotton, 2006, p. 71).

According to Weiss (1994) broad, semi-structured, open-ended interview questions may be used for research problems that seek to identify the factors that facilitate, impede, redirect, or impair a hypothesized causal process. Taking into consideration the suggestions of Weiss (1994), and Hammer and Wildavsky (1993) an "interview guide" (p. 64) was created and structured into four parts: a statement framing the interview; a background question; a question on participants perceptions of the curriculum redesign during implementation; a question on teachers' thoughts on attributes of the curriculum redesign; and a closing question that provides the participant the opportunity to give retrospective comments on the curriculum redesign as well as any final thoughts. These open and broad questions enable the participants to freely provide answers through a detailed account of their experience while also allowing them to convey the aspects of

the experience that they feel is most important to them. As noted from the literature on case studies, the goal of the researcher is to establish an open, comfortable interaction with the participants. Participants are encouraged to speak honestly regardless of whether the statements are positive or negative, asked to elaborate on statements, provided the opportunity to discuss their perceptions, insights, and understandings in detail, and encouraged to give freely spontaneous responses and personalized answers. The interview guide is found in Appendix B.

Potential participants were contacted via an introductory email that included a brief description of the goals of the study and what their participation would entail. A consent form was provided which explained the details of the study and the participation requirements. All of the respondents accepted the invitation to participate in the study and gave their informed consent. None of the participants were offered or received any compensation for their participation. In total seven participants agreed to voluntarily participate in the study. All of the participants were assigned pseudonyms to protect their anonymity.

Interviews were scheduled for a time most convenient to the participants and took place over a three-month period. One-on-one audio-video interviews of one to two hours in length were conducted with the anonymized participants allowing them to speak candidly without the potential for being influenced by other participants. All interviews were audio-video recorded to capture the data provided by the participants with precision. This allowed the researcher to pay full attention during the interview without the distraction of ongoing note taking. To enhance validity and internal consistency a single investigator conducted all of the interviews. Transcriptions of the audio-video interviews captured the data provided by the participants and served as the empirical evidence for the analysis.

Secondary Data Sources: Documents

The use of documents for data collection as a complementary strategy to interviews in qualitative case studies is well recognized (Bowen, 2009; Flick, 2009; Murphy, 1980; Wood, Sebar & Vecchio, 2020). Yin (2014) notes that as case study requires multiple sources of evidence documents are a well-recognized means of obtaining data that may be used “to corroborate and augment evidence from other sources” (p. 107). As documents provide “fixed evidence about the social world” (Miller & Alvarado, 2005, p. 350) this additional unit of observation may provide context for the phenomenon being investigated through interviews. This point is reiterated by Bowen (2009) who states a main purpose of document data collection is to “verify findings or corroborate evidence from other sources” (p. 30) adding to the “trustworthiness (credibility) of the findings”. Moreover, Yanow (2007) and Flick (2009) note “documents can be a very instructive addition to interviews” (p. 261) as the data collected may be used to provide context for the interview findings as well as corroborate, refute, or challenge them. While Morgan (2022) notes that neither interview data collection nor document data collection alone can “provide a complete understanding of the phenomenon being investigated” (p. 66) and their combined application is recommended. This method of data collection is of further importance to this study as investigating the implementability of a new curriculum design has two key aspects – the design of the documents themselves and teachers’ perceptions of the document design. In other words, policy documents have both a purpose and a “target audience” (Bowen, 2009, p. 33) therefore policy research necessarily involves both “documents and people” (Bardach & Patashnik, 2020, p. 100). The data from the relevant documents contributes to an understanding of the “intended content” (Scott, 1990, p. 28) of the curriculum designer;

while the complementary data from the interviews provides evidence of the effects of the document on the reader - the “received content”.

As a set of subject area curriculum documents were referenced during the interviews it was determined that these policy documents and associated intertextual documents would provide the most relevant information to the research questions of the study. Curriculum documents as official education policy documents are distinctive in that they are intertextual in that they always “reflect and refer (often implicitly) to other documents” (Atkinson & Coffey, 2004, p. 56) as their authority or legality is founded on legislation and other organizational documents. Policy document data collection requires accommodation of this “intertextuality” and the recognition of the “complex inter-linkages between documents” (Atkinson & Coffey, p. 69). Therefore, a systematic search for these curriculum and intertextual documents started with the BC Ministry of Education websites and included both sets of documents. Accordingly, the official curriculum documents selected for this study are the mandated educational program guides as per the Educational Program Guide Order (Ministerial Order 304/20) authorized under the School Act, section 168 (2)(a)(c)(e) that are published on the BC Ministry of Education website in PDF, Word, and HTML format. A total of 69 curriculum documents were selected from the entire set of official curriculum documents and included: 18 curriculum documents covering grades 10 to 12 Social Studies; 24 curriculum documents covering grades 10 to 12 English Language Arts; 14 curriculum documents covering grades 10 to 12 Math; and 13 curriculum documents covering grades 10 to 12 Science. The associated intertextual documents for each of these curriculum documents were accessed via the internet from the official Ministry of Education websites and included webpages, PDFs, and webinars. These documents were reviewed following the “well-known conceptual framework” (Cardno, 2018, p. 628) established

through the work of Alexander (2013), Atkinson & Coffey (1997), Bell & Stevenson (2006), Bowen (2009), Flick (2009), Ng (2016), and Taylor et al. (1997). This approach consists of reviewing the documents in terms of three main points: 1) context – rationale of the policy document and intended audience; 2) content – structure, intertextual documents, rhetorical features, and inclusions or omissions; and 3) consequences.

Triangulation

Triangulation involves the collection of data from multiple sources in order to increase the reliability a study by providing a means of corroboration as well as a means for facilitating validation through cross verification. Maxwell (2004) writes that the requirements of triangulation may be met by “collecting information from a diverse range of individuals and settings or using a variety of methods” (p. 258) including interviews, the researchers own experiences as a participant-observer, teachers’ explanations, member checks and soliciting feedback from individuals being studied, and documents. Yin (2014) explains qualitative, theory-guided, case studies provide for this understanding of triangulation through multiple sources of data that contribute to the trustworthiness of the data. While Patton (2002) and Bowen (2009) state studies may combine the complementary methods of document analysis with interview analysis for data triangulation to minimize the potential for bias and ensure the trustworthiness of the findings. Within this study the means of triangulation included the use of different data sources and methods – a set of semi-structured, open-ended interviews, and a set of curriculum and intertextual documents. The combination of these data sources and methods allowed for the comparison of data between sources and corroboration of the findings.

Ethics

The study has been carried out according to the ethics guidelines required by the university. This research project was classified as “minimal risk” and the relevant ethical principles of the guidelines were implemented. The ethical guideline requirements were met through the creation and dissemination of an invitational letter containing a brief description of the study along with an accompanying letter containing information that participants had been purposefully selected and what participation entailed. As well, a comprehensive informed consent form was provided to participants with the following sections: researchers’ statement; the principal investigators; purpose and description of the study; study procedures; foreseeable risks; potential benefits; incentives; recording technique; privacy and confidentiality; dissemination of results; voluntary participation; and verification of consent. The privacy and confidentiality of the participants was preserved through the removal of personal identifiers, anonymization, and the use of pseudonyms throughout the study. The audio-visual recordings were deleted after being transcribed and the information provided was protected from unauthorized access through storage in a secure location. Participation in the study was voluntary and no incentives were offered for participation. Confidentiality and privacy will continue after completion of the study as no individually identifiable information will be included in any publication or presentation.

Data Analysis

As this is a theory-guided case study with a clearly conceptualized theoretical framework that includes a set of 17 pre-identified possible themes Hayes (2021) and others (Bowen, 2009; Cardno, 2018; Morgan, 2022; Owen, 2014; Wood et al., 2020) recommend the use of a theory-led thematic analysis – a deductive approach to the collection of data. Theory-led thematic

analysis is “widely used in the case study literature” (Wood et al., 2020, p. 456) across a diverse range of disciplines and it is recommended for the analysis of both interviews and documents (Braun & Clarke, 2006; Morgan, 2022). A “theory-led thematic analysis” (Hayes, 2021, p. 197) uses themes “which have been established beforehand” to categorize the coded data collected from the interviews and documents. Within this study the theoretical framework identified a set of key themes based on the causal story, assumptions, and attributes of rule policy instruments that the coded interview data was likely to contain. These themes included disposition, implementation, and collective implementation from the causal story and assumptions of policy instrument theory and the attributes of rule policy instruments that are recognized in the literature as contributing to the goodness of the design of rule policy instruments in general and curriculum rule policy instruments in particular. As shown in Table 1 an initial set of seventeen attributes were generated including: accountability, choice, clarity, cognitive burden, coherence, continuum of growth, coordination, effectiveness, efficiency, equity, feasibility, guidance, legitimacy, procedural fairness, responsiveness and societal mandate. The next two sections present the details of this mode of analysis and includes a brief discussion of the steps involved in the theory-led thematic analysis process.

Theory-Led Thematic Analysis of Interviews

Theory-guided, theory-driven, or theory-led thematic analysis (Hayes, 2021) allows the researcher to “compare different research participant’s views on the same topic” (p. 203) in order to discover how the qualitative data supports and enriches or refutes and challenges “an established theory” (p. 204). The purpose of this type of analysis is to identify those patterns of data within the themes that are most “relevant to answering *a particular* research question” (Braun & Clarke, 2012, p. 57). Under this analytical approach “theory comes first and generates

predictions” (Miles et al., 2020, p. 201) of what people will actually say and how that fits with what the theory assumes or expects them to say. As Taylor and Ussher (2001) explain during the process of thematic analysis “themes do not just lay about waiting to be discovered, they do not simply emerge, but must be actively sought out” (p. 310) therefore this analytical method is unavoidably informed by the researchers’ theoretical orientation. Accordingly, this method of data analysis allows the researcher to identify patterns and relationships to meaningfully answer theory-guided research questions (Braun & Clarke, 2013) as it involves interpretation or “reading the data through the lens of an existing theory” (p. 123). The use of “theory-driven data coding and analysis” (p. 58) enables the researcher to bring “to the data a series of concepts, ideas, or topics that they use to code and interpret the data”. As noted in the introduction the theoretical framework identified a set of possible themes based on the causal story, assumptions, and attributes of rule policy instruments that the coded interview data was likely to contain. Following the advice of Braun and Clarke (2012) these pre-identified themes represent the patterns of meaning which are important to answering the “research questions being explored” (p. 57). This study uses a semantic approach where the interview data is analyzed explicitly as the stated perceptions of the participants and the presentation of excerpts within the findings serve the purpose of providing evidence, support, and validation of the interpretations offered.

There are several recommended steps for how to conduct a theory-led thematic analysis. Miles et al. (2020) suggest that the process should consist of “data condensation, data display, and conclusion drawing/verification” (p. 8). While Yin (2014) suggests an iterative and recursive process of “repeated cycles” (p. 136) of review and interpretation of the research questions, theoretical framework, literature, and data. Additional steps in the analytical process are recommended by Braun and Clarke (2006, 2013), Fereday and Muir-Cochrane (2006), Hayes

(2021), and Maxwell (2004) including: familiarization, coding, collation of coded data, development of codes into themes, refinement of themes, relating the themes to the theoretical framework of the research questions, discussion, and results. The approach used in this study involved the following seven steps:

1. Familiarization: The researcher gets to know the data during the transcription of the interviews. The researcher transcribes the entire interview and during transcription takes notes and thinks about preliminary codes that describe content.
2. Generation of Initial Codes: The researcher generates and assigns descriptor codes to the data in order to organize it into meaningful groups or categories. Each descriptor code is used to identify a perception, idea or concept that is expressed in that part of the transcript. A brief description of the code identifies or labels why this information is of interest and is not an interpretation of what is said in the interview. All the data is coded.
3. Collation of the Coded Data: An Excel spreadsheet is used to create a table. All of the interview extracts are collated so they fit into groups under each descriptor code. Context is maintained by keeping the interview extracts with the code. If a section of the interview has multiple codes that interview section is put in more than one code category.
4. Development and Collation of Codes into Themes: Themes are “broader” (Braun & Clarke, 2006, p. 18) than codes and involve active interpretation therefore the researcher searches for patterns or themes for descriptor codes across the interviews. This is an iterative process that involves looking at the list of codes and the associated interview extracts then collating the codes into the broader pre-identified themes. The researcher also generates and assigns theory-led themes that may not have been previously identified but which may indicate “a coherent and meaningful pattern in the data relevant to the

research question” (Braun & Clarke, 2013, p. 121) and contribute to a “convincing and compelling story about the data”.

5. **Review and Refine Themes:** The researcher then reflects on the relationship between the codes and the themes. Important questions include: “Do the codes support the themes?”, “Are there contradictions?”, “Do themes overlap?”, “Do the themes suitably represent insights into the interviews?”. The data and codes within the themes should cohere together meaningfully and there must be clear distinctions between themes. The researcher seeks to create a set of themes which are coherent and distinctive. This is an iterative process that involves going between the themes, codes, and interview extracts. The goal is to ensure that the researcher has coded all the relevant data and has the right number of coherent and distinct themes to represent the data accurately. This process is stopped when the researcher can no longer add anything of significance to the analysis.
6. **Name, Define, and Describe Themes:** The researcher then names, defines, describes and explains what is interesting about each theme and why the theme is interesting in terms of the theory and literature. The researcher relates the themes to the research questions through a consideration of what the essence of each theme is, what the theme tells, how the theme relates to other themes, and how the theme relates to the overall research questions. Extracts from the interviews are selected that provide a sufficient level of evidence for the claims being made and to provide vivid and compelling examples “that clearly illustrate the analytical points” (Braun & Clarke, 2012, p. 67).
7. **Findings and Discussion:** The last step presents the name, theoretical definition, summary of statements, and excerpts made by participants for each theory-led theme. The overall purpose is to “tell the reader a coherent and persuasive story about the data” (Braun &

Clarke, 2015, p. 121) while “contextualising it in relation to existing literature”. Themes are connected logically and meaningfully to present a well-constructed and coherent story about the data.

The theory-led thematic analysis of the interviews followed the seven steps noted above. The analytical process began with the transcription of the interviews. Verbatim transcripts were produced that did not include instances of voice tone, pauses, or demonstrations of emotion. The transcription process included corrective re-listening to correct for errors and cross-check for accuracy. An Excel spreadsheet was used to organize the coded material by interviewee and subject area. An iterative process was used during coding and context was maintained by keeping interview extracts with the code. If a section of the interview had multiple codes these interview sections were put under each of the code categories. No interpretation took place during the coding process. Once all the interviews were coded the data was iteratively collated using the theoretically pre-identified themes from the causal story of policy instrument theory and the attributes of well-designed policy instruments and an additional theme generated during the analysis. The process of reviewing and refining the data into codes and then themes was ended when all the interview data was seen to be accurately represented within a set of coherent and distinctive categories or themes. The themes were named and theoretically defined with a brief description of the importance of the theme within the theory and literature. A total of ten themes related to the theoretical framework, the literature, and the research questions emerged from the data: 1) disposition; 2) implementation 3) collective implementation; 4) choice; 5) clarity; 6) cognitive burden; 7) continuum of growth; 8) equity; 9) accountability; and 10) professional learning. Extracts from the interviews were selected to illustrate the analytical points and to provide evidence for the claims made in the findings.

As the interviews provided the primary data sources these were conducted and analyzed first with the documents as secondary data sources analyzed afterwards. Both the interview and document analyses followed the same seven step process with two minor differences. First, the themes identified during the interview analysis served as the themes during the classification of the codes for the documents. Second, as recommended by a number of scholars (Atkinson & Coffey, 1997; Banathy, 1996; Bell & Stevenson, 2006; Bowen, 2009; Cardno, 2018; Flick, 2009) the document analysis takes into consideration six key features of education policy documents: 1) type of document, 2) theory, 3) model, 4) intertextual documents, 5) silences, and 6) rhetorical features. These differences are more fully described in the next section.

Theory-Led Thematic Analysis of Documents

A theory-led thematic analysis of documents is recommended as an “ideal method” (Morgan, 2022, p. 73) for qualitative studies when the research questions are focused on individuals’ perceptions of a policy instrument intervention (Braun & Clarke, 2006). The procedures of a theory-led thematic document analysis parallel those used during an analysis of interviews and involve “finding, selecting, appraising (making sense of), and synthesizing data contained in documents (Bowen, 2009, p. 28) into major themes. When themes have already been established through a theory-led thematic analysis of interviews (Cardno, 2018) these a pre-identified themes may be used for a document analysis as long as they are “recognized and declared as such” (Bazeley, 2009, p. 9). The use of the same themes for the analysis of both interviews and documents has been used in other studies of education policy instruments (Flick, 2009; Owen, 2014; Wood, Sebar & Vecchio, 2020). By using the same themes for both the interview and document analysis (Bowen, 2009) the findings may be better integrated and related to the research questions.

When themes have been previously established Bowen (2009), Atkinson & Coffey (1997), Bell & Stevenson (2006) and Cardno (2018) suggest the following four steps for a theory-led analysis of education policy documents:

1. select the pre-existing curriculum and intertextual documents based on their relevance to the research questions and the completed interviews.
2. analyze each set of documents by the a priori categories or themes taking into consideration the six key features of education policy documents: 1) type of document, 2) theory, 3) model, 4) intertextuality, 5) silences, and 6) rhetorical features.
3. present the findings at the descriptive level with data extracts providing illustrative examples and create a coherent story of the documentary evidence.
4. discuss whether or not the findings of the document analysis corroborate, challenge, or extend the findings of the interview analysis.

The “distinctive nature” (Cardno, 2018, p. 627) and “specific features” of education policy documents means that the six key features noted above in step 2 are a necessary part of the analytical process. Furthermore, these six features have been identified by researchers (Atkinson & Coffey, 1997; Banathy, 1996; Bell & Stevenson, 2006; Bowen, 2009; Cardno, 2018; Flick, 2009; Yin, 2014) as of such importance that it is recommended that a close reading of the documents should be carried out. A close reading of the documents is based on the words themselves and seeks to observe, report, and interpret the details, explicitness, clarity, and meaning of each of the features within the text. A more detailed look at each of the six features follows.

The first key feature is type of policy document. Different types of policy instrument documents reflect different levels of coercion ranging from the least coercive voluntary policy

instrument documents such as information, to moderately coercive policy instrument documents such as financial incentives, to the most coercive policy instrument documents such as mandated rules or regulations which prescribe certain behaviours (Bemelmans-Videc et al., 2010; Prince, 2005; Salamon, 2002). Accordingly, the type of curriculum policy document sets out the level of coerciveness and the level of professional autonomy that is expected during implementation. The second key feature is theory as Sabatier and Mazmanian (1979) and Yin (2014) emphasize all policy instruments must have an adequate causal theory for how change will occur that should be communicated as essential information to teacher implementers. Indeed, to “influence and structure human agents” (Prior, 2003, p. 3) curriculum policy documents are expected to be formal, collectively written, codified, and theory-based (Hall & Andriani, 2003; March & Olsen, 1989; March & Simon, 1993; May, 2002). The need for an explicit theory within the documents is reiterated by Flick (2009) who explains that since a key purpose of curriculum policy documents is to legitimize institutional routines or practices the underlying theory should be described and explained in full. Researchers have found that one of the key reasons education policy reforms are not fully implemented as intended occurs when the policy documents are “based on an empirically unsustainable theoretical relationship” (Psacharopoulos, 1989, p. 179). In other words, educational policy documents should be based on “research-proved cause-effect relationships – not goodwill intuition” (Psacharopoulos, p. 179) as research has found that implementation will be problematic if there is no theory, the theory is basically misconceived, or the incorrect theory is used in a policy instrument document (Bardach & Patashnik, 2020; Hogwood & Gunn, 1984).

The third key feature is model. According to Greenberger et al., (1976), a model is “not a theory” (p. 49) instead it is a simplified representation of the relationships within a system that

serves a change “function” (Prior, 2003, p. 4) and is meant to be “read” and applied to cause some effect. When education policy documents include models as the means for change the elements, relationships, and the sequence of “actions that will bring about a desired outcome” (Banathy, 1996, p. 51) must be clearly explained. An explicit, clearly written, detailed, description and explanation of the model will “enhance” (p. 52) implementers’ perceptions and understanding of how the instrument is intended to cause change and provide for a common understanding of how the document is supposed to work (King & Kraemer, 1992). Lippitt (1973) explains that for planned educational change to occur “an effective change model should serve as a guide, enabling those in the real-life situation to develop a course of action” (p. 336). In other words, the underlying model of an education policy document is expected to provide a clear guide to “decision-making and action-taking” (Lippitt, p. 337). Again, as with theory, evidence for the model should be included that shows the “innovation will achieve what the innovator claims for it and that it will have no negative consequences” (Majone, 1989, p. 5). Importantly, if only selected characteristics of a model are presented within an education policy document the intent may be to bolster a position or point of view to “reinforce and justify decisions” (Greenberger et al., 1976, p. 26) and secure compliance (Atkinson & Coffey, 2004).

The fourth key feature is intertextuality. Atkinson and Coffey (1997) explain that official education policy documents always “refer to other *documents*” (p. 86). Mandated education policy documents “reflect and refer (often implicitly) to other documents” (p. 87) as their authority or legality is founded on these intertextual legislative documents. Through the “complex inter-linkages between documents” (Atkinson & Coffey, 2004, p. 69) public education agencies “create versions of reality” (p. 57) and the “forms of knowledge appropriate to it” (p. 58) to inform, guide, and coerce action. The intertextual nature of education policy documents

means they are not “transparent representations” of organizational routines or decision-making processes. Instead, through intertextuality individual education policy documents serve as key parts of an interconnected system of organizational governance that are used to attain predictability and uniformity in routines in an environment with a great range and variety of persons, decisions, actions, events, and situations.

The fifth key feature is silence. According to Ng (2016) and Bowen (2009) education policy documents must be “assessed for completeness” (p. 33) by determining if the documents provide “great detail on some aspects...and little or nothing on other aspects”. Bell and Stevenson (2006) note the “‘silences’ (what is not stated)” (p. 12) are as important to identify as “what is clearly and openly articulated”. This is reiterated by Cardno (2018) who states that during the analysis of education policy documents it is particularly important to “establish not only what is said but also what is not said” (p. 633). Silence as indicated by the “absence, sparseness, or incompleteness of documents” (Bowen, 2009, p. 33) may signal that the policy makers have intentionally given “little attention” to certain matters or decided that certain perspectives or “certain voices” should not be heard. In other words, the silences found in educational policy documents may reflect what was decided and not what was actually said during the writing process (Atkinson & Coffey, 1997) and may therefore indicate the assumptions made as to what is important and what is not important to communicate.

Lastly, the sixth key characteristic is rhetorical features. According to Majone (1989) rhetorical features as a means of argument and persuasion are central to the writing of education policy documents as these documents are intended to persuade the target audience to change their view of reality, beliefs, values, decisions, and behaviours. “Rhetoric is the craft of persuasion” (Majone, p. 7) and “persuasion is needed in order to increase both acceptability of

advice and the willingness to act on less than conclusive evidence” (p. 8) especially when a theory or model is not fully presented and explained within an education policy document. Furthermore, Atkinson and Coffey (2004) note that “*rhetorical features*” (p. 73) may be used to persuade the reader as to the value or importance of the content or view of reality found in the educational policy document by appealing to their beliefs, emotions, logic, or perceptions. Other rhetorical features that may be used to persuade or influence the targeted reader to agree, adhere to, and implement the educational policy document include amplification, repetition, vagueness, advocacy, limited options, structure, formatting, and appeals to “intellectual merits” (Majone, 1989, p. 2) or authorities.

The theory-led thematic analysis of the documents followed the seven steps explained earlier under interviews as well as the four steps and six features noted in the section above. The analytical process began with the selection of the curriculum and intertextual documents referred to during the interviews. The relevant 69 curriculum documents for grades 10 to 12 Math, Science, Social Studies, and English Language Arts were printed out. The text of the documents was coded through an iterative process and then collated into the themes identified during the interview analysis. At the same time the relevant intertextual documents were identified, searched for, and printed for reference. The identification and search process for the intertextual documents that provided information on the six key features of the curriculum documents was notable for the amount of time required and the difficulty of the search and retrieval process due to the fact they are published on Ministry of Education websites where the data is not permanent. While the intention was to include all of the related intertextual documents in the analysis the lack of a published permanent comprehensive guide meant that some key documents may have been missed. The process of reviewing and refining the data into codes and then themes was

ended when all the document data was seen to be accurately represented within a set of coherent and distinctive categories or themes. The themes were named and theoretically defined with a brief description of the importance of the theme within the theory and literature. A total of six themes were identified during the policy document analysis: 1) choice, 2) clarity, 3) cognitive effort 4) continuum of growth, 5) equity, and 6) accountability. Extracts from the curriculum documents and intertextual documents were selected to illustrate the analytical points and to provide evidence for the claims made in the findings. A list of the curriculum documents is found in Appendix C.

In summary, theory-led themes were used to provide the empirical referents (Walker & Avant, 2011) for both the wide ranging and comprehensive set of teacher subjective evaluation statements made extemporaneously during the semi-structured open-ended interviews and the document analysis. This approach is recommended by Yin (2014) who states the research questions and theoretical framework may be used to provide a set of analytical priorities for the identification and selection of themes. The use of theory-led themes as empirical referents solves the problem of addressing what may otherwise be overly abstract concepts of teachers' perceptions of the curriculum and the features of the curriculum policy documents. As well, the selection of well-established theory-based themes allows the researcher to "tell the reader a coherent and persuasive story about the data" (Braun & Clarke, 2015, p. 121) while "contextualising it in relation to existing literature" in order to answer research questions.

Chapter Five Results

This chapter presented the results of the theory-guided thematic analyses of the participant interviews, curriculum, and intertextual documents. To contextualize the results a brief review of the interview guide questions was presented. The results from both the interview and document analyses were then reported. These results have been organized into three categories: themes relevant to the elements of the causal story; themes relevant to the attributes of well-designed rule policy instruments; and themes relevant to requirements for implementation. Within these categories the results for the following ten individual themes are presented: disposition, implementation, collective implementation, choice, clarity, cognitive burden, continuum of growth, equity, accountability and professional learning. Lastly, the overall results of the study are briefly summarized.

As explained in the methodology a semi-structured, open-ended interview method was applied to the interview guide questions as this was the recommended method for inquiries seeking to identify the factors that facilitate, impede, redirect, or impair a hypothesized causal process (Weiss, 1994). The full interview guide is found in Appendix B and includes an opening statement which explained the aim of the study was to learn about participants' experiences, thoughts, feelings, and perceptions implementing the curriculum design. A background question was then used to collect data on teaching experience and subject areas. Then the following three main questions were asked:

- 1) In general, what has implementation of the curriculum design been like for you? Please walk me through the experience in as much detail as possible?

2) If you were the curriculum designer – what, if anything of the curriculum design would you keep and what would you change?

3) Can you describe what stands out for you in terms of this curriculum design for your subject area?

The interview ended with a closing question which stated: Thank you for all this valuable information. Are there any other thoughts, perceptions, opinions, or experiences you would like to share or that you think is important to know about the curriculum design?

The intent of these open and broad interview guide questions was to allow the participants to provide a detailed account of their experiences freely and extemporaneously while also allowing them to choose and convey the aspects of their experiences that they felt was most important to them. In my role as the interviewer a key strategy was to remain silent while the participants were talking and allow them to think out loud. When appropriate I repeated statements made by participants or asked for further detail for the purpose of clarification. The interviews ranged in length from just under one hour to approximately one and a half hours and were ended when all the questions had been asked and the participants indicated that they had nothing more to say.

In respect of the findings, the results of the interview and document analyses have been categorized into three set of themes. The first set of three themes provided findings from the interviews that were related to elements of the causal story and addressed the research question centred on teachers' perceptions of the curriculum design during implementation and included: 1) disposition – willingness to implement the curriculum documents; 2) implementation – actual implementation of the curriculum documents during classroom instruction; and 3) collective

implementation – teachers’ perceptions of the level of implementation within their schools or districts. The next set of six themes were selected from the seventeen pre-identified attributes of well-designed rule policy instruments as most representative of the data following the systematic coding and collation of the interviews. The results from both the interview and document analyses addressed the research question centred on teachers’ perceptions of how the intrinsic attributes of the curriculum design supported or hindered implementability and included the themes: 4) choice – level of professional autonomy legally assigned to the teacher; 5) clarity – curriculum written in such a way that the teacher was able to read and understand it without needing to turn to, or rely on others, to explain to them what to do and how to do it; 6) cognitive burden – the ease or difficulty of understanding or making sense of the curriculum; 7) continuum of growth – the explicit, written progression of big ideas and learning standards from K to 12; 8) equity or inclusion – the principle that all students were entitled to equitable access to learning and opportunities to pursue excellence in all aspects of their education; and 9) accountability – the means for measuring, evaluating, monitoring, and documenting student curricular achievement and attainment. The third set of themes provided findings on requirements for successful implementation and included: 10) professional learning. While this theme was neither an element of the causal story nor an attribute of well-designed rule policy instruments it was relevant to the theoretical framework and was noted in the curriculum design literature as a critical requirement for successful implementation to occur (Darling-Hammond et al. 2009; Erickson & Lanning, 2014; Netolicky, 2020; Timperley et al., 2020): 10) and it was therefore included.

Table 2 presented the three categories of themes which resulted from the policy instrument theory-led thematic analysis of the interviews. It included: three themes related to

elements of the causal story; six of the seventeen pre-identified attributes of well-designed rule policy instruments; and one theme related to requirements for implementation. Under each category the name of the theme and a description or definition was provided.

Table 2

Themes Resulting from the Theory-Led Thematic Analysis of the Interviews

Themes Related to Elements of the Causal Story	
Disposition	Willingness of participants to implement the new curriculum design
Implementation	Theory, model, and rules were fully brought into day-to-day classroom practice
Collective Implementation	All or the great majority of teachers adopt and fully implemented the curriculum design
Themes Related to Attributes of Well-Designed Rule Policy Instruments	
Choice	Level of professional autonomy assigned to teachers in relation to implementation of the curriculum
Clarity	Curriculum written in such a way that the teacher was able to read and understand the document without the need to turn to, or rely on other to explain to them what to do
Cognitive Burden	The ease or difficulty of understanding and making sense of the curriculum document
Continuum of Growth	The presence of an explicit progression of learning within and across grade levels
Equity	The design provided all students with equitable access to the most challenging curriculum and opportunities for excellence in achievement
Accountability	The design provided a means for measuring, evaluating, monitoring, and documenting student curricular achievement and attainment
Themes Related to Requirements for Successful Implementation	
Professional Learning	Adequate allocation of time, resources, and opportunities for teachers to participate in talks, workshops, courses and conferences to develop the necessary knowledge and skills to implement the new curriculum design

The findings were presented using the following format: name of theme, definition of theme, and findings grouped into two categories of subject areas – humanities and math/science, where appropriate. The presentation of quotes from the interviews and excerpts from the documents served the purpose of providing evidence, support, and validation of the claims made

within the findings (Miles et al., 2020). The intent of this organizational structure was to present the findings in a consistent and coherent manner.

Themes Relevant to Elements of the Causal Story

The first group of themes provided the results from the interview analysis for the research question: What are teachers' perceptions of the implementability of the curriculum redesign within their subject areas? These themes included: disposition or willingness to implement the new design; actual implementation of the new design; and perceptions of collective implementation of the new design.

Disposition


The theme 'disposition' was defined as the willingness of participants to implement the curriculum redesign (May, 2002; Simon, 1997). Teacher disposition towards the curriculum reflected whether or not the implementer perceived the design as being "in correspondence with their own views, feelings, or objectives" (Bemelmans-Videc, 2010, p. 8). It included how implementers perceived the reasonableness and value of what was required and their willingness to comply with the mandate (May, 2002; Vedung & Van der Doelen, 2010; Wallner, 2008; Webb, 2005).

Results of the Interview Analysis: The teacher-participants in the humanities group expressed a positive disposition towards the curriculum documents and a willingness to implement the new curriculum design. The level of approval by the humanities teachers was illustrated by Dawson who said, "I really enjoy this curriculum, I think it's really, really good" and Casey who stated that "it is good and progressive and useful to have a lot of the ideas presented in that way. I think it is helpful as I've said I think there are lots of good points there." Participants perceptions of the layout, organization, and usability of the curriculum design were

positive. For instance, Dawson stated, “I do like the way the new curriculum is set up. Like just from a physical document standpoint, I like that it is interactive...you can see the pared down curriculum and then go to the more elaborate...this new curriculum is definitely more useable than the previous one.” For reference, Figure 5 showed the first page of a three-page humanities curriculum document as an example of the visual layout or format referred to by the teacher-participants.

Figure 5

Social Studies Grade 12 Physical Geography - Big Ideas and Learning Standards

		Area of Learning: SOCIAL STUDIES — Physical Geography		Grade 12	
BIG IDEAS					
Incorporating data from a variety of sources allows us to better understand our globally connected world.		Natural processes have an impact on the landscape and human settlement.		Interactions between human activities and the atmosphere affect local and global weather and climate.	
Learning Standards					
Curricular Competencies			Content		
<i>Students are expected to be able to do the following:</i> <ul style="list-style-type: none"> Use geographic inquiry processes and geographic literacy skills to ask questions; gather, interpret, and analyze data and ideas from a variety of sources and spatial/temporal scales; and communicate findings and decisions (evidence and interpretation) Assess the significance of places by identifying the physical and/or human features that characterize them (sense of place) Assess the interpretations of geographic evidence after investigating points of contention, reliability of sources, and adequacy of evidence (evidence and interpretation) Draw conclusions about the variation and distribution of geographic phenomena over time and space (patterns and trends) Evaluate how particular geographic actions or events affect human practices or outcomes (geographical value judgments) Evaluate features or aspects of geographic phenomena or locations to explain what makes them worthy of attention or recognition (geographical importance) Identify and assess how human and environmental factors and events influence each other (interactions and associations) Make reasoned ethical judgments about controversial actions in the past and/or present, and determine whether we have a responsibility to respond (geographical value judgments) 			<i>Students are expected to know the following:</i> <ul style="list-style-type: none"> structure of, feedback within, and equilibrium of natural systems distinguishing features of the atmosphere, hydrosphere, cryosphere, lithosphere, biosphere, and anthroposphere connections and interactions between the spheres features and processes of plate tectonics and their effects on human and natural systems features and processes of gradation and their effects on human and natural systems natural disasters and their effects on human and natural systems features and processes of Sun–Earth interactions and resulting patterns of climate, landscapes, and ecosystems climate, weather, and interactions between humans and the atmosphere characteristics of global biomes, including climate, soil, and vegetation features and processes of the anthroposphere and their effects on natural systems. natural resources and sustainability 		
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Source: https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/curriculum/social-studies/en_social-studies_12_physical-geography_elab.pdf

The humanities teacher-participants stated that the new curriculum was in alignment with their personal values, beliefs and approaches towards education. For instance, Dawson strongly

approved the new curriculum design and stated, “I feel the curriculum design is finally catching up to where I am. I honestly feel like my implementation has been farther ahead and I’ve been waiting for curriculum to become official, kind of lend validation, I suppose to the methods that I have been developing and using.” While Terry stated, “the newer version works better with how I think about education... this isn’t a curriculum I would fight against...it is more aligned with what I wanted to do” in the classroom. Participants consistently stated that the more visual schematic layout of the new curriculum design made it easier to see the relationships between the elements. For instance, Terry explained, “the newer curriculum is more visual and allows for connections between the ideas in the curriculum to form naturally and logically.”

A positive disposition towards the curriculum redesign was shared by some of the science and math teachers such as Jan who stated “I think this document is wonderful...It’s very exciting. I am on the edge of my seat because I recognize that these are the things, I want my own children to leave high school with. These are the qualities that I think employers are looking for. It has the transferrable skills that we want for all people.” While Dawson reported adoption of the curriculum documents while they were still being drafted,

I just jumped right in with the draft curriculum even though we weren’t sure how all of that was going to pan out because it sometimes takes a few years. So, I just decided it just makes sense to move forward with the new curriculum. I just worked with the draft curricula and developed my competency charts using those pieces of the draft curriculum. In contrast, Stevie reported a less positive disposition towards the math curriculum document due to the perception that it was not sufficiently skill based,

I really believe that the different courses use different parts of your brain, they are trying to develop different skills and abilities and we shouldn’t be treating them all the

same...And this is what I think is one of the biggest problems with trying to apply this particular kind of twenty first century type of learning to a course like mathematics, which is really trying to develop just key skills that students are going to use in other fields and in other classes....they need to know how to do algebra, they need to know how to do trigonometry...I don't think that the particular type of curriculum model works well in those types of classes...these are classes that are more skill based...to develop those key skills it really just needs to be like sit down and you do it over and over again...that's how I feel about math, our math courses, it's more you have to learn how to do this and it takes practice, over and over and over again. And once you learn how to do it then you can use it in creative ways.

The results indicated that the humanities teacher-participants had positive dispositions towards the curriculum documents and had been very willing to implement them. They spoke positively about the design in terms of visual layout and content. They consistently stated it aligned with their values and beliefs about education. The math and science teachers were in some instances positive and other instances less positive. The concern was expressed that the math curriculum documents were not sufficiently skill based.

Implementation

The theme implementation was defined as occurring when the theory, model, and rules for instruction and assessment of the mandated curriculum were fully brought into day-to-day practice and consistently delivered to all students by the classroom teacher (Connelly & Connelly, 2013; Funnell & Rogers, 2011; O'Donnell, 2008; Spillane et al., 2002).

Results of Interview Analysis: In terms of actual implementation, none of the participants reported full implementation of all the elements of the curriculum design. Teachers had several

reasons for why they either were not able to, or chose not to, fully implement the curriculum design. In the humanities group Dawson stated it was necessary to modify the curriculum document in order to make it workable for classroom instruction by reformatting it into a competency chart using “I can” statements. For reference, Figure 6 presented an example of “I can” competency charts for the core competencies element of the curriculum design. “I can” competency charts were formulated with explicit statements of the attitudes, competencies, and content within the core competencies used for both instruction and assessment.

Figure 6

Sample Competency Chart with "I can" statements

CRITICAL THINKING	
Analyze and Critique:	
<input type="checkbox"/>	I can show if I like something or not
<input type="checkbox"/>	I can identify criteria that I can use to analyze evidence
<input type="checkbox"/>	I can analyze evidence from different perspectives
<input type="checkbox"/>	I can reflect on and evaluate my thinking, products, and actions
<input type="checkbox"/>	I can analyze my own assumptions and beliefs and consider views that do not fit with them
Question and Investigate:	
<input type="checkbox"/>	I can explore materials and actions
<input type="checkbox"/>	I can ask open-ended questions and gather information
<input type="checkbox"/>	I can consider more than one way to proceed an investigation
<input type="checkbox"/>	I can evaluate the credibility of sources of information
<input type="checkbox"/>	I can tell the difference between facts and interpretations, opinions, and judgments
Develop and Design:	
<input type="checkbox"/>	I can experiment with different ways of doing things
<input type="checkbox"/>	I can develop criteria for evaluating design options
<input type="checkbox"/>	I can monitor my progress and adjust my actions to make sure I achieve what I want
<input type="checkbox"/>	I can make choices that will help me create my intended impact on an audience or situation

Note. Core competency “I can” statements from North Vancouver School District. Adapted from Tu Loan Trieu SD43 (2017). Source: <https://nvsd44curriculumhub.ca/wp-content/uploads/2017/08/ENG-Core-Competencies-Checklist.pdf>

Terry stated that the curriculum’s emphasis on individual student development meant the curriculum document had to be adapted and modified for classroom use:

Because of time and space constraints I am having to adapt the curriculum and modify it to give each student the best experience I can in my classroom while acknowledging that not everyone is engaging with every idea and concept in the curriculum as written. The number one obstacle to implementing this curriculum in a more complete and meaningful way is to reduce class size as the curriculum is expansive. There's a lot on it and a lot of it is personal, introspective work that we need time and space to do well.

Some participants expressed uncertainty as to whether or not they had correctly implemented all the elements of the curriculum design. For instance, Casey remarked that the design was "so free it's difficult to know where you stand on some levels and you're like, am I doing this right? I think I'm doing this right. Well, I'm doing my best." Erin stated that uncertainty as to how to implement all of the elements of the curriculum design meant only parts had been implemented at times:

I don't know if I am doing it right or wrong...there are always good intentions but I don't think I've ever made it through the entire curriculum for a course. I would keep the big ideas and I would get rid of everything else. I really like the big ideas because I am a big ideas person. To be honest I just look at the big ideas and then I look at the content and I use that as kind of like my check list - key questions – the big question drives the curriculum and the content really serves those questions.

Uncertainty as to whether or not they had implemented the curriculum design correctly was shared by the math and science teacher-participants. For instance, Jan stated that the lack of examples and guidance meant the curriculum design hadn't been fully implemented:

To date I haven't done what I think they want me to do which is to have a learning standard which is content and competency wrapped together and then assessing that. I

think the big confusion, I think what is taking a lot of time is we have curricular competencies on one side and the content on the other and they are supposed to meld together and I think a lot of people are probably wondering – ok – great, so could someone just do that, could someone just say how do these fit together and give us some examples.

Stevie found the curricular competencies element of the math curriculum design so difficult to understand that this element was ignored during implementation,

The math curriculum document is very confusing. If I was to try to implement the curriculum competencies that would be a huge hindrance and I think a huge disadvantage to the students. Focusing more on the content side of that curriculum document is kind of the only approach that I could see to take with it. For math I would say just because of how convoluted and confusing it is I just can't implement it cleanly...I don't understand how I'm supposed to be implementing it.

In contrast, Stevie evaluated the physics curriculum design as on the whole “really nice and really easy to implement” however, the proficiency scale within the formative assessment component of the design was viewed as non-implementable:

The idea behind the proficiency scale doesn't really make any sense in terms of practicality. I tried it this last semester actually with my physics 11 class. I tried to implement a proficiency scale model and it just became a confusing veil over top of what their actual grade was going to be because I have to give them a percentage grade at reporting time. You can't half implement the assessment. You either need to say you are getting a proficiency grade and that's it or the students don't care...it just makes it confusing.

For reference, Figure 7 shows the four-level proficiency scale provided by the BC Ministry of Education. Teachers were assigned responsibility to create formative assessments using this four-level proficiency scale for each of the learning standards. However, there was no clear guidance on how this scale was to be linked to the mandated letter grades and percentages set out in the Provincial Letter Grades Order (M304/20) for high school level courses.

Figure 7

Proficiency Scale as shown in “A Framework for Classroom Assessment”

Proficiency Scale	Emerging	Developing	Proficient	Extending
	The student demonstrates an initial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a partial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a complete understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a sophisticated understanding of the concepts and competencies relevant to the expected learning.

Note. A Framework for Classroom Assessment (BC MOE, n.d., p. 10). Source:

<https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/assessment/a-framework-for-classroom-assessment.pdf>

These results indicated that the humanities and math/science teacher-participants actively judged and evaluated the curriculum design during implementation. The results also indicated that a positive disposition towards the curriculum design did not always result in implementation. Although the humanities teacher-participants had positive dispositions towards the curriculum documents actual implementation involved critical evaluation and resulted in decisions to modify, adapt or ignore elements of the design. The results also showed that a negative disposition towards the curriculum design meant full fidelity of implementation did not occur. This was found in the case of the math teacher-participant who stated the curriculum design was

not sufficiently skill based and subsequently the non-skill elements were ignored. Overall, the results of the interview analysis indicated fidelity of implementation was mediated by teacher-participants' ability to make sense of the curriculum design and their judgements as to the appropriateness of the elements of the curriculum design for instruction and assessment.

Collective Implementation

The theme 'collective implementation' was defined as all or the great majority of schoolteachers adopted and fully implemented the curriculum design during classroom practice (Baldwin et al., 2012; Kilman & Covin, 1989; Reynaud, 2002). Greif (2006) stated that curriculum functions as a set of "rules" (p. 15) that are intended to support collective implementation to attain both organizational and societal goals by enabling, guiding, and motivating all teachers to engage in the preferred instructional behaviors. System-wide education program reform is predicated on the assumption that teachers as a collective will implement the mandated curriculum documents (Howlett, 2019).

Results of Interview Analysis: The participants extemporaneously reported their perceptions of how the curriculum design was implemented by other teachers within the schools. Erin spoke at length about how some teachers' dispositions towards the curriculum documents were less than positive which mediated opportunities for collective planning:

It's not something that we really talk a lot about in departmental meetings. We don't talk about the curriculum...There's not a lot of 'let's take a look at the curriculum'...there's a lot of eyerolling...in meetings there's a bit of here we go again, another curriculum. Maybe people individually are looking at the curriculum and designing their courses based on that – I have no idea.

A concern over the level of collective implementation of the curriculum documents was echoed by Reese who pointed out that:

There are still teachers that don't really follow that even though we are supposed to... when you are in a school, and you are trying to function as a department in certain courses and half the people are on board and half the people aren't it can lead to tension...other people were just using the textbooks from before and not really following it to be honest. They just didn't really switch.

Additionally, Casey speculated that other teachers found implementation more difficult because the new design required integration of First Peoples curricular competencies and content learning standards without adequate examples and guidance on how integration was to occur:

When we see that it's in every single curriculum document it leads to some teachers just totally glossing over it because they don't think they can integrate it into their classes, some teachers go further and some teachers don't do it at all...and the result is that we are getting a very uneven delivery of that.

(For reference, while more recent graduates of teacher education programs were required to have “at least 3 credit/semester hours of study related to Indigenous Pedagogies and Unappropriated Indigenous Knowledge” (BCTC, 2022, p. 3) this would not have been a requirement in previous teacher education programs required for certification.)

Jan expressed apprehensiveness about how difficult it was to implement the curriculum design within a department where other teachers understood and implemented the curriculum differently:

What if I do this as an individual teacher – what do I do when no one in the department sees it in the same way? When I look around at schools today it still seems pretty similar

in a lot of ways in a lot of math classrooms where the teacher is teaching content and the focus of instruction is content and procedure over the curricular competencies.

Within the math and science group participants stated that some teachers perceived the curriculum design as both vague and confusing. Dawson described colleagues as “not feeling good about it...people were like ‘oh now do I have to throw out my whole course, I can’t teach this anymore, I can’t teach that anymore... people are nervous about change.” While Stevie reported, “I’ve spoken to other math teachers about the curriculum document and we’re all kind of, we don’t understand the left side of the curriculum, the curriculum competencies don’t make any sense to us.”

These results indicated that teacher-participants from both the humanities and math/science groups perceived that some of their colleagues may have judged and evaluated the curriculum design and then decided to accept, modify, ignore, or choose alternatives for implementation.

Themes Relevant to Attributes of Well-Designed Rule Policy Instruments

The second group of themes provided the results from both the interview and document analyses for the research question: What are teachers’ perceptions of the implementability of the intrinsic attributes of the curriculum redesign within their subject area? These themes included: choice, clarity, cognitive burden, continuum of growth, equity, and accountability. For each of the themes the results from the interview analysis were presented first and followed by the results from the document analysis.

Choice

The theme ‘choice’ was defined as level of professional autonomy assigned to individual teachers in regard to the implementation of the curriculum (Thaler & Sunstein, 2008; Thaler et

al., 2014). As noted previously, Gronlund and Brookhart (2009) reported mandated curriculum policy documents conventionally prescribed the “intended outcomes of instruction in performance terms without restricting the means of achieving them” (p. 7).

Results of Interview Analysis: In terms of the level of professional autonomy, the humanities teacher-participants reported that choice or professional autonomy during instruction was important. The interview analysis found that the new design contributed to teachers’ perceptions that a higher level of professional autonomy or choice had been given to them and that this was viewed very positively. Reese stated the curriculum design “allows a lot of leeway for teachers during classroom instruction. I got to choose what I thought was important for the student.” While Erin stated, “the new curriculum is less prescriptive, so it sort of gives the teacher a lot more freedom...a lot more wiggle room. It gives me a lot of freedom to design a course that suits the needs of the kids.” Casey reported that curriculum designed with a high level of professional autonomy also meant that less guidance was provided:

It was quite freeing to have these new documents that were a little bit more open and very encouraging with regards to the choice of materials and representing different types of different opinions and that’s one thing that I did appreciate. They left a lot of room for the teachers to implement as they thought fit which can be good or can be bad. In some areas it is great that it is open to interpretation and other areas it’s maybe not so great. Because it can lead to confusion or lack of not necessarily uniformity but let’s say cohesion among different teachers of the same areas. Because of the vagueness and because of the curricular competencies... sometimes teachers can maybe get a little bit lost in what actually the curriculum is suggesting they do specifically and how. I feel that most activities that happen in an English classroom can fall under those documents. I don’t feel

like it necessarily gives guidance to those teachers who maybe are a bit caught up in the way that they used to teach... it doesn't give them a ton to anchor their new teaching approaches on so it can just result in the same types of things, and just having them fall under the new curriculum language anyways because it is quite open-ended.

The teacher-participants of the math and science group also reported positive perceptions of the high level of choice and the flexibility offered in the curriculum design. For instance, Jan described the design as “much more open and up to the individual teacher. I think it gives teachers a lot of flexibility – which is great.” Stevie also found the new design provided a high level of professional autonomy:

It provides teachers with more freedom to implement those themes in a way that is best suited to their students... it feels like I've been given more free reign in physics to kind of take different units and explore those units in the way that I would like which is nice...you have some core units you have to teach and then you have some optional ones you are allowed to kind of pick from so it really allows you to choose how dense your course is going to be...you can pick optional units and have more of a broad range of topics and you won't go as deep but you get a better sample of all of the different types of physics out there. The physics one I quite like. I like the extra freedom it gives me.

The results indicated that the high level of choice or professional autonomy offered by the new curriculum design was viewed positively by the participants across subject areas as it was perceived as having allowed increased levels of instructional freedom and flexibility.

Results of Document Analysis: The analysis of the curriculum and intertextual documents found that the new curriculum was purposefully designed to increase the level of professional autonomy assigned teachers. The goal was to improve teaching through a shift of

responsibility for the configuration of learning standards from the collective to the individual in order to increase flexibility and opportunities for innovation as well as personalized instruction. These goals were presented in “Enabling Innovation: Transforming Curriculum and Assessment” which stated the new design for “curriculum and assessment guidelines” (p. 2) was meant to reduce the number of prescribed learning standards, prioritize competencies, and shift the responsibility for “organizing learning standards in various configurations” for both instruction and assessment from the members of the design committees “based on their collective experience in the education system and knowledge of developmental stages” (p. 4) to individual classroom teachers. Additionally, the language used in some of the schematic diagrams reinforced the importance of teacher professional autonomy and the shift in responsibility for the configuration of learning standards. For example, the Grade 11 Social Studies document stated, “the learning standards are less prescriptive than past curricula” and the “shift to less prescriptive learning standards places greater emphasis on acquiring and developing key disciplinary thinking skills”. The intertextual document “Curriculum Overview” reported the new design was intended to provide “flexibility” to teachers by allowing them to “combine the learning standards in various ways.” This goal was reiterated in “BC’s Redesigned Curriculum: An Orientation Guide” which stated that the structure allowed “teachers [to] combine the three elements in ways they see fit” (p. 2). Again, this high level of flexibility was intended to improve instruction by supporting innovation and the level of personalized instruction.

The results of the document analysis indicated that the intent of the curriculum design had been to increase the professional autonomy of teachers to improve instruction. Responsibility for formulation of the learning standards had been shifted from the collective to

the individual teacher. This shift had been intended to increase flexibility, innovation, and the level of personalized instruction.

Clarity

The theme ‘clarity’ was defined as curriculum having been written in such a way that the teacher was able to read and understand the document without having needed to turn to, or rely on others, to explain to them what to do and how to do it (Kerwin & Furlong, 2011) so “guessing” (Marsh, 2004, p. 27) would not occur. As legal documents, clarity is of considerable importance because a mandated curriculum document had to do more than communicate information or present descriptive statements – it had to provide explicit, clear, consistent, and unambiguous guidance (Clements, 2007; Spillane et al., 2002).

Results of Interview Analysis: Participants from both groups expressed the need for the curriculum design to provide more clarity. In regard to the humanities Terry stated the language used in the curriculum design was at times repetitive and vague:

The curriculum document does seem to repeat itself many times, sometimes it seems like it is saying the same thing over and over and over. Some of the verbs are vague...when it says evaluate the relevance, accuracy and reliability of texts well, we need to talk about what does it mean to evaluate? In what way? And how do you evaluate something’s relevance?

Casey also perceived a need for clear and unambiguous guidance within the curriculum design especially in assessments:

I definitely think that the curriculum challenges you to think in a new and innovative ways, but it doesn’t necessarily give you guidance on how to do that. There isn’t much guidance in the assessment area – there’s not a ton of guidance there. There are a few

rubrics, but I mean it doesn't really capture the nuances of how different the students can be. I mean it just leaves a lot up to the teachers to interpret what is a pass and what is a failure.

Dawson reported that within the curriculum design, "there's tons of crossover and it could use some editing." To improve the clarity of the document and make it "more useable" for instruction, Dawson found it necessary to completely modify and reformat the design into a set of charts that more clearly linked the elements together:

So, what I did was I looked at each of the competencies, the bullets under the competencies, and I linked each one to a big idea. I also linked each of the big ideas and those competencies and content to two main categories...which in the most basic terms are reading and writing... and laid out proficiency levels for the competencies and content...so we had descriptions of what an emerging learner looks like for each one of those competencies or pieces of content, what a developing learner looks like, what an extending learner looks like...it makes quite a complicated chart.

Reese reported there was a shared view amongst teachers that the curriculum design was at times confusing especially in regard to the meaning or definition of terms such as competency:

It was extremely confusing for everybody. What's a competency? That was the first question everybody had. What do they mean by that? It was kind of like here it is – figure it out...It was kind of like what's going on? I didn't have a good feel for the new assessment strategy. It might have been that other people understood what competency meant but I just don't think that we as a profession fleshed out what that meant.

Within the group of math teachers, Jan expressed concern over the lack of overall clarity within the design, the lack of clear definitions for the concepts used, and the lack of a clear explanations as to the relationships between the elements of the design:

I'm going to be honest. I don't know what you mean by big ideas. So, like when I look at those big ideas I go okay, I don't know what to do with them to be honest.... I think what the ministry wants us to do is to take the curricular competency and take the curricular content – and put those together in a learning standard...the curricular competencies are like three times as long as the content. Which can be troubling for a traditional math teacher, we don't even know what to do with that. When I work with other teachers, I make a little grid and I write down the curricular competencies...and then I ask them do you know what these are? And they don't know what the curricular competencies are... I would love it if someone would say here's some examples of learning standards for math 12, math 11, and math 10 and math 9... I don't know if that is in this document. Where are the learning standards?

Jan also expressed concern over the lack of explicit, written guidance on how to assess some of the learning standards:

How do you teach me or any other teacher to move from being able to assess whether a kid can add numbers which is fairly straight forward in terms of assessment to 'I can think creatively in curiosity and wonder when exploring problems'...That is just wide open...the average math teacher who has been steeped in their own experience, which has been procedure, procedure, procedure, get the right answer, get the right answer, don't ask too many questions, just get the right answer and then maybe they have some new insights in university, but then they come into the school system...How does one

wrap 'thinking creatively in curiosity and wonder' specifically to content?...it would be nice to know. Are we supposed to do marry this with every competency? With every unit? With every content? What are we doing? How do you measure that?

Stevie spoke at length as to the lack of clarity in the new math curriculum design and how difficult it had been to understand:

I find it really difficult to understand, it's not clear, the language doesn't really make sense, sometimes things are said multiple times in different ways and it just doesn't seem to have any clear focus or structure to it. I don't know what it's trying to do. It seems to be trying to talk about math without math, without using math terminology...it doesn't seem to be saying anything in some of the sections. It sounds like someone is trying to use synergetic words to make it more extravagant and it doesn't actually say anything clearly. So as a teacher I read it and I don't know what they are really saying here...I feel like they took a document that made sense for mathematics and they just kind of muddled it all up with extra language that didn't make things clear, that kind of made things convoluted and it doesn't really help teachers...it doesn't give them more options it just makes it more confusing in terms of what they are supposed to be teaching. I have resorted to looking at the content section on the right side to determine exactly what content I am supposed to be teaching...the left side curriculum competencies don't really make much sense to me. I don't understand how I'm supposed to be implementing it. It doesn't feel like we know how to implement the assessment with this proficiency scale...nobody seems to have any idea of how we are supposed to do it...we have been given time to kind of explore it but people don't know what to do, they don't know how to implement the assessment and just giving us time to talk about how we don't know what

to do doesn't help us. We need examples, we need someone to come and say this is what it is going to look like in the senior grades and these are some examples of how you implement it.

The results of the interview analysis found that, across the subject areas, the curriculum design was at times perceived by teacher-participants as lacking in clarity. Participants reported they had not always been able to understand the individual elements of the design or the relationships between them. They expressed a need for greater clarity through better definitions, more guidance, examples, and explicit explanations of the linkages between the elements of the design.

Results of Document Analysis: As the mandated curriculum was a legal document the analysis for the theme clarity has taken into consideration the six key features of curriculum as an education policy document: type of document, intertextuality, theory, model, silence, and rhetorical features. The type of document reflected the level of coercion – curriculum may be voluntary where implementation was not required by teachers and curriculum may be mandated through subordinate legislation that legally requires teachers to have implemented the curriculum as written. The document analysis found that all of the curriculum policy documents were mandated through the Educational Program Guide Order (M196/22) effective August 11, 2020 and authorized by the School Act, section 168 (2) (a) (c) (e). The curriculum documents or educational program guides specified the “Learning Standards of the Provincial Curriculum” mandated for use in BC public schools. The roles and responsibilities of teachers were set out in the School Act, sections 17(1) and (2) and the attendant School Regulation, section 4 (Regulation OIC No. 140/21). The regulation stated teachers were employed by a board to “provide an educational program to students in a school” and “must perform the duties set out in the

regulations” including the instruction, assessment and evaluation of individual students and groups of students. The results of the document analysis indicated instructional compliance was mandated. This was seen in the use of definitive words such as “required to”, “must”, and “expected to” within the statute, regulations, and ministerial orders. The scope of practice for professional autonomy was found in other areas such as instructional strategies or resources. Within the curriculum design itself definitive words indicated to teachers that instruction and learning were to be based on the schematic diagrams or educational program guides. For instance, Grade 10 English Language Arts - Composition stated “students are expected individually and collectively to be able to”, “students are expected to know the following”; and Grade 12 Mathematics - Calculus stated “students are expected to do the following” and “students are expected to know the following”.

In terms of the feature intertextuality, the document analysis found that the great majority of information and guidance for the schematic diagrams was located in an extensive set of intertextual documents provided on, linked to, or referenced in a number of BC Ministry of Education websites. These intertextual documents included statutes, regulations, ministerial orders, web pages, webinars, videos, documents, articles, and books. In regards to the features - theory and model, the document analysis found that the some of the intertextual documents stated that the design was based on a Know-Do-Understand (KDU) model while the schematic diagrams neither presented nor referenced this model. As well, neither the schematic diagrams themselves nor the intertextual documents provided the theory upon which the Know-Do-Understand (KDU) model was based.

The document analysis of the feature – silence, noted as the “sparseness, or incompleteness of the documents” (Bowen, 2009, p. 33) found that the standard convention for

schematic diagrams to provide visual guidance through the use of arrows or lines was not applied. Neither arrows nor lines were used to indicate how the big ideas were linked to the two-column table containing curricular competencies learning standards and content learning standards. In terms of sparseness, the analysis found guidance within the curricula documents consisted of brief statements. For example, in Grade 11 Explorations in Social Studies guidance consisted of the statement “you may combine Big Ideas and Content, and add Elaborations to the Curricular Competencies to construct the curriculum” and “identify, adapt, or create Big Ideas, if desired, after you have reviewed and selected the Content topics”.

Regarding the sixth characteristic - rhetorical features, the document analysis found inconsistency and ambiguity to be a recurrent feature both within individual schematic diagrams, and between the schematic diagrams and intertextual documents. For example, within the individual schematic diagrams the document analysis found inconsistency in the formulation of the two types of learning standards. For the most part, curricular competencies learning standards were fully formulated as an observable performance or product and used the standard verb-object-condition format for the descriptor across subject areas and courses. For example, in Grade 11 Science – Physics a curricular competency learning standard was written as “apply (verb) the concepts of accuracy and precision (object) to experimental procedures and data (condition)” while the content learning standards did not follow the same formulation of verb-object-condition and were instead written as lists of words or phrases.

Further inconsistency and ambiguity were found as to the types of learning standards. An intertextual document identified in the literature as a source for the Know-Do-Understand (KDU) model stated there were three types of learning standards: knowledge, skills, and attitudes (McTighe & Wiggins, 2013). However, the schematic diagrams explicitly presented only two

types of learning standards: curricular competencies learning standards and content learning standards. Ambiguity as to the types of learning standards was further found in some subject area schematic diagrams where attitudes learning standards were located under curricular competencies learning standards. For example, the Grade 12 English Language Arts curriculum placed an attitude learning standard, “read for enjoyment and to achieve personal goals” under curricular competencies; and the Grade 12 Math – Calculus curriculum placed the attitude learning standards “think creatively and with curiosity and wonder when exploring problems” and “solve problems with persistence and a positive disposition” under curricular competencies learning standards.

The results of the document analysis found that the curriculum design had been mandated for full implementation. The design was found to be highly intertextual in that explanatory and guidance information was found in the associated documents that were provided separately from the schematic diagrams. Intertextual documents provided information on the Know-Do-Understand model but no information was found on the theory upon which it was based. Instances of ambiguity or inconsistency within the schematic diagrams, and between the schematic diagrams and intertextual documents was found to be a recurrent feature.

Cognitive Burden

The theme of ‘cognitive burden’ was defined as the ease or difficulty of understanding or making sense of the curriculum design (Flick, 2009; Thaler & Sunstein, 2008). Before classroom implementation could occur, the teacher must have understood and made sense of what the mandated curriculum has directed them to do (Spillane et al., 2002). A curriculum design that was “salient and easy to access has a higher chance of guiding behavior and decisions” (Munscher et al., 2016).

Results of Interview Analysis: Participants differed in their perceptions as to the ease or difficulty of understanding the new curriculum design. For the humanities, Dawson observed that a large amount of personal time was required to understand the curriculum design and modify it into a more efficient design for classroom use:

It takes a lot of time...it is really front end loaded with a lot of thought to really help kids. Does it mean a lot of extra hours? Yes. I spent a summer. I just really have taken the new curriculum and just built it into kind of a tool that me and the kids interact with. I think kids should engage with curriculum and I think they should know what it is that their government is requiring that they learn how to do. I think it is really important for kids to know up front what the expectations are of them... I transformed it into something that I think they can engage with. I kept the competencies. I kept the content. I reworked a little bit of some things because I've taught for a long time, so I know what's appropriate, better than maybe somebody who was building the curriculum...I've tried to make it more efficient...I am always trying to cut out where there is overlap...what I did was I went through it and I think I made it more efficient.

In regards to the amount of time needed Reese reported that, "we weren't given time to do it so I would take my own time to sit and have a late night looking at curriculum documents" and then try "to figure out how am I going to apply this to the course I am teaching...it was nerve wracking." Reese reported a sense of being overwhelmed by the new curriculum design and mentioned the need for aligned curriculum resources, "I was too overwhelmed with trying to run a course without a textbook, so I used a textbook from Alberta... not the whole textbook just a chunk of it. If I didn't have that it would have been even worse, to be honest."

Erin explained that the breadth of content in the new curriculum design could have been intimidating to teachers if they did not feel adequately prepared in terms of professional education and expertise, and reported:

If you have one degree and it's focused solely on one thing it can be quite intimidating to suddenly having to be tackling things like science and technology, climate change, the future of the world and race relations in English class, 'Like what? Aren't we just supposed to read Shakespeare and *Of Mice and Men*?' Some people on my staff are like, 'I can't teach residential schools I don't know anything about it. I'm not indigenous. So, I am going to stick with what I have always done.' When I team teach with somebody, I see them struggling with the content. There's more focus on things like addressing racism in the classroom, addressing climate change, addressing sexism, addressing homophobia. You know like the old curriculum wasn't as explicit – it's now like right in there, like teaching genocide...if I am teaching grade 9 English the curriculum now is very different than the old curriculum because it focuses on things that traditionally wouldn't have been considered as English curriculum.

Participants from the math and science group found that a large amount of time was required to understand the curriculum documents. For instance, Jan stated:

It would be nice if this document came with some time. When you look at the facets, profiles and illustrations I find it's a lot to look at. It's a lot to know. It's a lot to take in all of that.... I see it taking one's whole career to make it so.... I think there's a lot of confusion out there as to what we are supposed to be doing...it's a very in-depth document...when are we going to have time to wrestle with that. This is an incredible amount of work to really wrestle and make sense of. I'm seeing this as probably a two-

week intensive thing – that’s what it would take to really wrap your mind around it in a meaningful way. We need meaningful time with meaningful direction with meaningful examples.

The results of the interview analysis found that teacher-participants perceived the new curriculum design as having required them to spend a considerable amount of personal time and effort to understand and make sense of it. The participants reported new learning areas has been introduced to established subject areas. The analysis found that some of the participants felt there had been insufficient professional learning offered in advance of the new learning areas.

Results of Document Analysis: The document analysis found that the schematic diagrams provided minimal guidance and explanations. The schematic diagrams did not provide, link to, or reference any of the intertextual documents in which definitions, explanations, and guidance were given. The Ministry of Education website provided an easily found brief orientation guide but a full understanding of the history, elements, model, and goals of the new design required a systematic search through over 23 separate websites and a careful review of the 105 articles and documents presented in “References Relevant to BC’s Curriculum and Assessment Transformation”. The document analysis also found an impermanence in the internet address and content of webpages which served as key intertextual documents. As a result of the separation of the schematic diagrams from the large number of explanatory intertextual documents I found that it took an exceptional amount of time and effort to search for, find, and read the information necessary for understanding the design.

Continuum of Growth

The theme ‘continuum of growth’ was defined as curriculum that provides “progressively more challenging” (Stotsky, 2012, p. xiii) learning standards that move “students from concrete,

experience-based and emotion-laden thinking to more abstract and rational thinking, with an increasing fund of information and ideas”. The “progression from novice to expert should be central in curriculum design” (Tomlinson et al., 2009, p. 7) as education programs are publicly funded (Kliebard, 2002) based on the expectation that all learners will experience a progression in each of the learning areas as they advance through the grade levels from K to 12.

Results of Interview Analysis: Three of the participants within the humanities group extemporaneously reported their perceptions of the progression in learning found in the curriculum design. Reese stated that the progression of learning standards within the curriculum documents could be improved:

In terms of progression...with the new design you have kids in grade 11 who have taken socials 10 who are just enrolling in a grade 12 course without taking socials 11...which is not good...as well I got the impression that whatever we taught in grade 11 really wasn't preparing them for anything in the grade 12 courses.

Casey perceived a lack of explicit, articulated progression in learning standards between the grade levels within the curriculum design:

If you look at the curriculum documents side by side. Let's say you are looking at English 10 and 11 or 11 versus 12 the language is extremely similar. Even if you were to look at grade 9 versus grade 12 it's not really that different. There is a huge gap between students. So now there's this kind of vague curriculum document and these classes with huge gaps between student's knowledge and abilities. I do think it is important to have levels of skills acquisition so that students can actually get good at something before they move onto the next...there doesn't seem to be basically any of that happening. It's just a difficult scenario.

While Terry expressed the need for an explicit continuum of growth or progression of learning to ensure teachers were aware of and able to monitor student progression through the learning standards within, and between grades:

In an ideal world you would be able to say to students at the end of the year you learned numbers one through eight but not nine and ten and I will let your teacher next year know that you did not learn nine and ten on the curriculum. So, they can fill in the blanks. That does not happen. I couldn't tell you for each student what parts they are missing and there certainly isn't that communication between grades... the coordination between grades isn't there. It's not matched up perfectly – the curriculum – as its written.

Dawson stated that an explicit continuum of growth was required for math and science curricula as student learning progression through the grade levels in these subject areas was dependent on the attainment of the pre-requisite learning standards:

Maybe it feels a bit tedious right, it's like learning your arithmetic in the early grades, you need to become automatic in this in Chemistry 11 so when you choose to do chemistry in grade 12 you've got this skill. With Math there are certain competencies...that apply to any content you are using...but there is also some content that you need to learn so that you can move on to the next grade level.

The results of the interview analysis indicated that teacher-participants felt an explicit, articulated, continuum of growth or progression in learning standards was needed in the humanities and math/science curriculum documents. The participants reported that an explicit progression of learning standards supported the monitoring of learning. It is important to note that the teacher-participants fully supported individual student choice as to their pathway through the subject areas as they advanced through the grade levels. Their concern was that the

progression of learning standards “could be improved” and that the curricular competencies and content learning standards were “not matched up perfectly” between the grades within the same subject area. As a consequence, they remarked that it was difficult to identify and remediate “gaps between student’s knowledge and abilities.”

Results of Document Analysis: The analysis of the intertextual documents found that during the consultation process teachers had requested that explicit, written, continuums of growth be included in the new curriculum design. The intertextual document “Curriculum Redesign Update, Winter 2014” reported that during the design consultations teacher-respondents “particularly in the areas of English Language Arts and Mathematics” (p. 6) had requested that the Ministry of Education ensure that the curriculum documents include an explicit, written continuum of growth as:

If a truly clear developmental continuum is established, then it will make it easier for all teachers/learners, especially those in multi-grade classes, to monitor progress and plan next steps in learning in order to ensure effective instruction and learning.

English Language Arts teachers stated that a continuum of growth was needed to facilitate student learning:

We will need a continuum that will give some direction as to what skills the students need to be learning at the different stages of their learning...to facilitate their ability to find meaning and joy in literature (p. 8).

The analysis found that these requests had been partly addressed through the intertextual document “Continuous Views” which defined the continuum of growth as the progression of Big Ideas, Curricular Competencies and Content from K to 12. It provided tables with a partial progression of the big ideas, curricular competencies, and content learning standards from K to

10 for Science and Social Studies. There were no tables of progression for the big ideas, competencies and content learning standards for grades 10 to 12 English Language Arts, Social Studies, Sciences or Mathematics.

Equity

The theme of ‘equity’ was defined as “the principle that all students are entitled to equitable access to learning, opportunities for achievement, and the pursuit of excellence in all aspects of their education” (BC MOE, 2016, p. 1). Ayers et al. (2009) stated equity meant “the principle of fairness, equal access to the most challenging and nourishing educational experiences, the demand that what the most privileged and enlightened are able to provide their children must be the standard for what is made available to all children” (p. xiv).

Results of Interview Analysis: Three participants from the humanities group provided extemporaneous statements of their perceptions of the issue of equity within the curriculum design. Terry perceived that the way in which English Language Arts was divided into separate courses that focused on specific aspects of the subject area had detrimentally impacted students’ opportunity to learn:

What’s interesting in English is that grade 10 and 12 have streams, there’s just not a grade 10 English there’s all different types. I don’t know how I feel about that. When I teach those streams, I lament the loss of things that are happening in my other classes...it does feel like students are missing out.... for students I imagine that they might find out later on they regret their choice or that there is something happening in one of the other classes that they really wish they could have done – and they don’t get to now. I do lament the missed opportunities some students might have if they choose the streams that

are easier from their perceptions...there are those missed opportunities...when we stream students they miss out on the diversity of their peers. Its not ideal.

Terry appeared to have suggested that the division of grade 10 English Language Arts into nine separate courses which focused on different aspects of the listening/speaking, reading/writing areas of learning students had not received equal “opportunities for achievement”.

Another teacher-participant speculated that the removal of required courses and required coverage of learning standards might have affected some student’s opportunities to achieve higher levels of curricular attainment. Reese suggested students might be assisted in reaching their academic potential through required courses that provided all students with the same opportunities for achievement:

Maybe students should be learning a few of those things...there should be a requirement that they are learning those things instead of letting the teacher decide. Dropping required courses for graduation is a contentious issue... I don’t think kids should be shortchanged.

Erin noted that while the format of the new design had changed and new areas of learning had been introduced the overall content was “essentially” the same as the previous design in terms of equity and inclusion, “there’s a lot of things that are wrong with it. I think it is not working at all for kids who are vulnerable. It’s not really working for a lot of our indigenous kids, not for them at all.” Erin further remarked that the curriculum design lacked both guidance on equity and learning standards specifically designed to address the needs of vulnerable or at-risk students:

I think it works well when you are dealing with very competent kids who can show you that they learned the content in a very traditional way. If a student has written an essay that according to all the exemplars and rubrics is definitely a six out of six it is clear that they can express themselves in a written form at an academic level. But what do I do

when I get a kid who can't write? Truly gifted kids, they write the exam and they get every question right. The standards meet the one kind of student. But that one kind of student isn't the majority of students at our school.

The results of the interview analysis indicated that some of the teacher-participants perceived the separation of courses into streams that focused on specific areas and particular aspects of a subject area as possibly mediating some students' opportunities for achievement. One of the teacher-participants judged the curriculum documents as having been written for the mainstream of students and noted there was an absence of detail learning standards or guidance on how to ensure equity or inclusion in the classroom.

Results of Document Analysis: The analysis found equity or inclusion had been a major goal during the consultation and planning process of the curriculum design. The intertextual document "Enabling Innovation: Transforming Curriculum and Assessment" stated that "equity" (BC MOE, 2012, p. 4) would be a major principle of the new design and that "the needs of the full range of students" would be provided for. Analysis of the schematic diagrams found that the design did not present a picture of what inequities existed or provide detail and direction on how to address the needs of at-risk and vulnerable students. Additionally, there was an absence of links or references to the intertextual documents that mandated the roles, responsibilities, and duties of teachers in regard to students with special needs. Guidance on equity and inclusion was found in the intertextual document "Curriculum Overview" which provided information from the Special Education Services: Manual of Policies, Procedures and Guidelines (BC MOE, 2016) but did not reference or link to this source or to the Special Needs Students Order (M235/07) or the Individual Education Plan Order (M261). Acknowledgement that the final curriculum design did not include information or guidance on equity and that it had been written for the majority of

students was found in the intertextual document “Curriculum Overview” which stated that the “curriculum used in British Columbia schools remains designed for the majority of students” (BC MOE, n.d.).

Accountability

The theme of ‘accountability’ was defined as the means for measurement, evaluation, monitoring, and documentation of student curricular achievement and attainment (Bascia et al., 2014; Cohen & Ball, 1990; Cohen et al., 2007; McLaughlin, 1990; May, 2007; Schmidt & Prawat, 1999). The public school system was “accountable” (Bell & Stevenson, 2006, p. 75) to the elected representatives, public, parents, and students for the accurate measurement, documentation, and reporting of pupil curricular learning and performance within public education programs. According to Erkens et al., (2017), the “credibility” (p. 4) of public-school reporting on student curricular achievement and attainment is dependent on accurate, trustworthy, and reliable classroom assessments. According to Erickson and Lanning (2014) within a concept-based curriculum design assessments are used to support accountability by providing “accurate evidence of students’ progress toward the learning targets” (p. 115).

Results of Interview: All four of the participants within the humanities group expressed concern over the absence of information and guidance on assessment in the curriculum design. Terry didn’t “want to criticize this curriculum” but felt it was important to state that the curriculum design needed improvement in terms of “assessment and tracking progress.” Terry stated that ideally, the curriculum design should be explicitly linked to the report card, “you should be able to draw lines between what shows up on their report card and the curriculum” which would remove the need for “letter grades and numbers.” This point was reiterated by

Dawson who stated there was a need for the curricular competencies learning standards and content learning standards to be explicitly linked with the report card:

I would love to see some kind of connection between the report card and the curriculum. And I think that means probably getting rid of numbers on the report card, getting rid of letters on the report card. I think curriculum design and assessment need to go hand in hand. They need to work together. They need to really match. When we get to a point where we think properly about our assessment, we will be able to build better curriculum design...it is the assessment tools that aren't there. I know the Ministry was scrambling to try and develop some tools.

Reese speculated that the assessment component of the curriculum was not included in the design due to a decision to delay this aspect of the design process:

They delayed the whole transition in assessment until later...they didn't say to us okay we are going to start with this, keep your old assessment method and then later we will switch the method of assessment. The communication about all of that was not clear.

Erin expressed concern that a lack of explicit direction and guidance on how to assess student learning of the core competencies had meant that this area of the curriculum design had not been implemented, assessed, and documented as well as it could have been:

There is also another huge issue and that's the core competencies. We are responsible for delivering those but there is absolutely zero accountability. No teacher is ever asked did you teach this core competency? How did you teach it? When did you teach it?... So, there is really very little accountability in terms of those core competencies and unfortunately without those core competencies being addressed it is very difficult for kids to learn. We kind of just expect teachers are going to teach those core competencies, just

because they are good people...nobody is checking...I would say 30% to 40% of the kids are not at the standard that the curriculum is asking them to be...in English they say it is all subjective and if you can speak, if you can talk, you can pass English. I'm like no, this kid can't write a sentence. They can't fill out a job application. They don't know what capital letters are. I said I think it is actually dangerous because if a kid is going out and gets a job but they literally can't read the safety manual or they can't or they don't understand the instructions on how to turn off the lights or whatever, that's putting lives in danger. You are giving them a document that says they can do these certain things – the standards – but they can't.

For reference, Figure 8 shows the core competencies – the “intellectual, personal, social, and emotional proficiencies that all students need to engage in deep, lifelong learning” (BC MOE, n.d., p. 1). The intertextual document “BC’s Redesigned Curriculum” stated that core competencies must be part of both instruction and assessment.

Figure 8

Core Competencies

<p>Communication -The Communication competency encompasses the knowledge, skills, processes and dispositions we associate with interactions with others. Through their communication, students acquire, develop and transform ideas and information, and make connections with others to share their ideas, express their individuality, further their learning, and get things done. The communication competency is fundamental to finding satisfaction, purpose and joy.</p>	<p>Thinking - The Thinking competency encompasses the knowledge, skills and processes we associate with intellectual development. It is through their competency as thinkers that students take subject-specific concepts and content and transform them into a new understanding. Thinking competence includes specific thinking skills as well as habits of mind, and metacognitive awareness. These are used to process information from a variety of sources, including thoughts and feelings that arise from the subconscious and unconscious mind and from embodied cognition, to create new understandings.</p>	<p>Personal and Social - The Personal and Social competency is the set of abilities that relate to students' identity in the world, both as individuals and as members of their community and society. Personal and social competency encompasses what students need to thrive as individuals, to understand and care about themselves and others, and to find and achieve their purposes in the world.</p>
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Note. From BC Ministry of Education Core Competencies <https://curriculum.gov.bc.ca/competencies>

Participants from the math and sciences group also expressed concern about the delay in alignment of the assessment and reporting requirements. Jan remarked that the delay in publishing the assessment component of the new curriculum had meant the competencies model was not used for summative assessments or reporting so that, “at the end of the term formative assessments get converted into a range of percentages.” Stevie made similar remarks about this issue:

I think the disconnect is between the assessment and reporting at the end of the term. It doesn't matter what you do in your classroom in terms of your assessments...at the end of the course you have to give a percentage grade between 0 and 100. And as long as we keep that as the end goal it doesn't matter what you do in your classroom because at the end of the day the students are going to be evaluated between 0 and 100.

The results of the interview analysis found that both groups of participants expressed a preference for a curriculum design with explicit, detailed information, and guidance on formative and summative assessments for the learning standards and the core competencies to improve accountability.

Results of Document Analysis: The analysis found that the schematic diagrams lacked information and guidance on assessment and did not reference or link to the relevant intertextual documents. Information and guidance on assessment was located in a set of intertextual documents. The School Act, sections 17(1) and (2) stated that teachers were required to participate in the regular periodic assessment, review, monitoring, and reporting of student curricular achievement and attainment based on classroom assessments and provincial exams. The School Regulation (OIC No. 140/21) stated that teachers were responsible for “examinations” and the evaluation of “each student’s intellectual development, human and social

development and career development”. The Student Progress Report Order (M230/19) indicated that teachers were expected to ensure students achieved or surpassed the learning standards found in the curriculum design. As well, teachers were directed to report the results of assessments that indicated student progress using performance scales, structured written comments, and letter grades.

Analysis of the intertextual documents found that there had been a delay in the conceptual alignment of the assessment component with the elements of the curriculum document. The intertextual document “Exploring Curriculum Design: Transforming Curriculum and Assessment” (BC MOE, 2013) indicated there was awareness of the need to fully conceptualize and operationalize assessment during the curriculum design process as “it was evident that there was a need to make changes to the current assessment program in order to align assessments and reporting with the overall intent of the directions proposed” (p. 4). However, the alignment of assessment with the new curriculum design did not take place and according to the intertextual document “K-12 Student Reporting Policy Framework”, a new reporting framework that “aligns with the redesigned curriculum, unifies existing policy options, and creates consistency across the province” wasn’t completed and would not be completed and implemented until the 2023/24 school year.

The analysis found that the delay in the conceptual alignment of the assessment component of the curriculum design had resulted in significant differences in the use of metrics for classroom assessment between grades K to 9 and grades 10 to 12. For instance, the intertextual document “K-12 Student Reporting Policy Framework: Interim Supporting Materials Grades K to 9” stated that classroom teachers were required to develop and use the four-point Provincial Proficiency Scale to assess, evaluate, and describe student learning as emerging,

developing, proficient, or extending expectations for each of the learning standards they had selected for instruction. However, the use of proficiency scales, while recommended, was only required for some grades 10 to 12 subject areas. For example, the intertextual document “Classroom Assessment Resource Package English Language Arts 10-12” recommended a three-point proficiency scale of developing, proficient, and extending; and a four-point proficiency scale of emerging, developing, proficient, and extending to be written as “I can” statements. The intertextual document “Provincial Letter Grades Order” (M304/20) directed grades 10 to 12 teachers to assess, evaluate, and report student progress with letter grades, percentages, and proficiency descriptors such as: A (86-100) excellent or outstanding, B (73-85) very good, C+ (67-72) good, C (60-66) satisfactory, C- (50-59) minimally acceptable, and F (0-49) has not demonstrated or is not demonstrating minimally acceptable. The analysis found a conceptual disconnect between the proficiency scales set out for formative assessments and the metrics required for use during summative assessments and reporting.

Themes Relevant to Requirements for Implementation

The third group of themes provided the results from the interview analysis that were relevant to requirements for implementation and included professional learning. This theme has been recognized in the literature (Cohen & Hill, 2001; Erickson & Lanning, 2014; Timperley et al., 2020) as of importance to the implementation of rule policy instruments in general and curriculum documents in particular.

Professional Learning

The theme of ‘professional learning’ was defined as the allocation of time, resources, and opportunities for teachers to have participated in continuing professional development such as talks, workshops, courses, and conferences to develop new knowledge, skills, and expertise

(Netolicky, 2020; Timperley et al., 2020). Professional learning was widely recognized in policy instrument and curriculum design literature as a critical requirement for successful implementation. Erickson and Lanning (2014) state that when concept-based models for curriculum were adopted, a professional learning program was needed as “problems emerge fairly quickly if teachers are handed a concept-based curriculum and are expected to implement it without accompanying professional development” (p. 58). The degree to which implementers were provided with opportunities for professional learning had been found to be a key element in explaining why problems have been encountered during the implementation stage of curriculum and other policy instruments (Cohen & Hill, 2001; Timperley et al., 2020).

For reference, a major study on the BC Education Plan by Sanford and Hopper (2019) reported that significant funding had been provided by the Ministry of Education for the provision of “opportunities to engage in professional learning” (pg. 6) however, “ministerial change” (pg. 67) was noted by BCTF president Glen Hansman as having had an effect on the “pace of change” (pg. 68) in terms of addressing the need for “professional development supports”.

Results of Interview Analysis: All of the participants stated that a greater amount of organized professional learning opportunities that addressed their concerns and questions would have supported implementation of the curriculum design. In the humanities group Terry noted that professional learning opportunities had been limited to “collaborating with colleagues, I check in with colleagues and go from there.” While Reese reported the implementation stage of a curriculum design was different from the design stage and required additional time for professional learning, “rollout is different than design...the whole rollout was flawed...there

wasn't enough in-service or professional development time." (It is important to note that these statements are the perceptions of the teacher-participants and are not definitive.)

Dawson also stated a need for additional professional learning opportunities to be offered during working hours:

So, here's where my big complaint will come in. Here's where I think we need full scale improvement to this. I think the school district tried. I think they did their best. But there is not enough funding to provide enough time for teachers to really do what they need to do to be really fully prepared and really good in the classroom without investing tons of their own time. I've invested tons of my own time...My three or four hours of prep a week is not enough to both teach and implement a new curriculum.

This point was reiterated by Erin who stated, "I think in terms of actual implementation there could be more support for teachers in thinking about how do I actually do this? What does responsive embedded work look like?" Casey stated that the presentation of examples of successful implementation during professional development activities would be helpful:

I feel lately the professional development has not been ideal because we haven't been able to get together and discuss these ideas together. I think it would be more helpful if they showed us more examples of how they think those ideas can be implemented – more examples – more lessons. If these competencies are what you want us to be teaching – showing us some really great examples of that would be powerful...it would be nice if there were more examples of things that they deemed great implementation of what those ideas mean.

Participants from the math and science group made similar statements to those of the humanities group. Jan simply reported that "no one has sat me down and told me what to do with

that document. There is not a continuity of professional development, so how is anything going to change?" While Stevie commented on the lack of alignment between the content of the professional learning opportunities and the changes made to the curriculum design:

The one thing I would add is the implementation of the new curriculum. I think it was done very poorly because you create this new curriculum and teachers have been told that it's coming for years. I'm still waiting for answers to questions that I have and I feel that if you are going to redesign the curriculum you should have it well thought out. It doesn't feel like it is well thought out because of this assessment piece that we can't get any answers on. We keep being given time as teachers to think it out for ourselves and I think that's a little unfair...we were given five days to talk about it and we had two pro-d days a few years ago...we didn't know how we were going to implement the assessment and so those conversations...we just talked in circles...it feels like this should have been thought out before it was sent out to us.

The results of the interview analysis indicated the participants perceived the need for an increase in externally provided time, resources, and opportunities to participate in professional learning that would focus on addressing their questions and concerns.

Summary of the Findings

This qualitative, theory-guided study was focused on the investigation of the relationship between curriculum design, teachers' perceptions, and implementation. The data from the theory-led thematic analysis of the interviews and the documents was organized into three categories of themes. The first category – themes related to the causal story, provided the results for the first research question centred on teachers' perceptions of the curriculum design during implementation. The second category - themes related to the attributes of a well-designed rule

policy instruments, provided the results for the second research question centred on teachers' perceptions of how the intrinsic attributes of the curriculum design supported or hindered implementability. The third category – themes related to requirements for implementation while neither an element of the causal story nor an attribute of a well-designed rule policy instrument was relevant to the theoretical framework and was noted in the literature as necessary for successful implementation.

In regard to the first research question on teachers' perceptions of the implementability of the new curriculum within the subject areas the analysis found that the humanities and science teacher-participants had a positive disposition towards the new curriculum design. Some of the math teacher-participants had a less positive disposition towards the curriculum design due to the belief that a uniform, low-detail, competency-based curriculum was not adequately skill based for the subject area. In terms of actual implementation, regardless of their disposition towards the curriculum design, both the humanities and math/science participants reported that while they accepted the curriculum design there was a need to adapt, modify, ignore, or choose alternatives to elements of the curriculum to make it workable for classroom instruction. Some teacher-participants extemporaneously reported that: other teachers in the schools also expressed a range of dispositions towards the curriculum design; other teachers may have simply ignored or sought alternatives to the design; and that this had mediated overall fidelity of implementation.

Regarding the second research question on teachers' perceptions of the intrinsic attributes of the new curriculum design it was found that participants positively viewed the level of professional autonomy or choice offered by the design as it allowed for greater flexibility during planning and instruction. The results of the intertextual document analysis indicated the intent of the design had been to increase teacher professional autonomy to improve instruction. For the

theme clarity the analysis found that teacher-participants at times perceived the curriculum design as lacking in clarity. The results of the document analysis found a lack of clarity within the schematic diagrams and the intertextual documents which were found to contain inconsistencies, ambiguities, and partial explanations and guidance. In regard to cognitive burden participants remarked that a large amount of time and effort was required to understand the new design concepts and their relationships. The results of the document analysis found that while the schematic diagram format supported instructional flexibility a considerable amount of time and effort was needed to locate, read, and understand the explanatory intertextual documents. The results from the interview and document analyses found that an explicit written continuum of growth or progression of learning standards was provided for some grades and subject areas but was not provided for grades 10, 11, and 12 English Language Arts, Social Studies, Mathematics and Science. The lack of a continuum of growth was perceived by some teacher-participants as having interfered with the ability to monitor and support individual student progression in learning. Both the interview and document analyses indicated equity was not part of the curriculum design and intertextual documents were available to assist teachers in identifying and addressing inequities. In terms of accountability, both the interview and document analyses indicated within the humanities and math/science there was a disconnect between the curriculum and assessment in terms of metrics and reporting. Lastly, the interview analysis indicated humanities and math/science teacher-participants felt there had been an insufficient allocation of time and resources for organized professional learning opportunities to support implementation of the new curriculum design.

The next chapter offers four major findings for the study based on the data from the interview and document analyses noted above and contextualises the major findings in light of the aims of the study, the theoretical framework, and the literature.

Chapter Six Discussion

This chapter summarizes, interprets, and explains the overall key findings of the study. This study has four major findings: 1) teachers' perceptions of the curriculum design mediate implementation; 2) individual attributes of the curriculum design may support or hinder implementability; 3) mandated curriculum should be supported with on-going professional learning opportunities; and 4) within the same public education reform program the two different causal stories of policy instrument theory and extended policy instrument theory may be interpreted as being simultaneously in play. A detailed discussion of each of the major findings is presented and organized into three parts: how the finding supports or challenges the causal story of policy instrument theory and extended policy instrument theory, how the finding connects to the literature, and how the finding relates to the research problem.

At the outset of this inquiry, I stated that the purpose of the study was to investigate the specific issue of teachers' perceptions of a mandated new curriculum design that was being used as the central driver in an overall public education reform program. As previously noted, the curriculum redesign approach to public education reform is founded on the causal story and assumptions of policy instrument theory where it is assumed that "behavior results from rules...so we can change that behavior by changing the rules" (Wilson, 1989, p. 11) and that a mandated new curriculum design will result in the "alteration of *beliefs*" (Fullan, 2001, p. 39) as teachers' perceptions are "transformed, further developed, or otherwise altered during implementation" (p. 40). Research on the actual behaviour of implementers targeted by mandated rules has led theorists and researchers (Kahneman, 2013; Luke et al., 2013; Sunstein, 1996, 2013, 2017; Thaler & Sunstein, 2008; Thaler et al., 2013) to acknowledge the need to take into consideration implementers' perceptions of the curriculum by incorporating two new

conditions into the causal story - goodness of design, and teachers' perceptions of the goodness of the design. While this elaboration of policy instrument theory has been referred to as "informed regulation" (Sunstein, 2017, p. 5) and the "pro-adaptation perspective" (Century & Cassata, 2016, p. 199), in this study this iteration of policy instrument theory is referred to as extended policy instrument theory. This study may be seen as an implementability inquiry as it investigates curriculum design through the lens of the teacher implementer with the goal of better understanding how teachers' perceptions of the curriculum documents mediate implementation and how the intrinsic attributes of the curriculum documents are perceived by the teacher as helping or hindering implementation. The results were presented, summarized, and then synthesized into the following four major findings of the study.

Four Major Findings of the Study

This study sought to use a policy instrument theoretical framework to better understand the relationship between curriculum design, teachers' perceptions, and implementation. The four major findings of this study are: 1) teachers are active decision makers with a personal epistemology who judge and evaluate the curriculum design during implementation and then decide to accept, adapt, modify, ignore, or search for alternatives; 2) mandates do not guarantee automatic or one-to-one implementation – other policy instruments and experiences such as professional learning are needed; 3) perceptions of the attributes of the curriculum design mediate implementation; and 4) the iteration of policy instrument theory used for curriculum by policy makers within an educational reform program is of consequence. A detailed discussion of each of the major findings is organized into four parts: major finding, how the finding supports or challenges policy instrument theory and extended policy instrument theory, how the finding connects to the literature, and how the finding relates to the research problem.

Teachers' Perceptions of the Curriculum Design Mediate Implementation

The first major finding is that teachers' perceptions of the curriculum design mediate implementation. The results indicated that teachers are active decision makers with a "personal epistemology" (Hofer, 2001, p. 353) of durable perceptions or beliefs with which they judge and evaluate the curriculum design during implementation and upon which they decide to accept, adapt, modify, ignore, or search for alternatives. This study found that across subject areas teachers have a set of pre-existing perceptions, beliefs, values, education, experience, and tacit knowledge with which they evaluate and judge the mandated curriculum design during implementation. This finding aligns with the assumptions and causal story of extended policy instrument theory which includes teachers' perceptions as a condition of the theory and acknowledges the valuable role it plays in both the design and implementation of phases of curriculum policy reform.

In terms of the literature, this major finding is consistent with previous studies on the relationship between teachers' perceptions and curriculum reform. Researchers such as Haney et al. (1996) found in their study of teacher perceptions and competency-based curriculum reform that it is important to take into consideration the influential nature of teacher perceptions on changes in classroom practice. While Cheung and Ng (2000) found that if a "teacher does not believe that a particular curriculum design is valuable, he or she will not implement it voluntarily" (p. 357) instead teachers may alter it to make it more "congruent with his or her own belief system" (p. 358). In a review of curricular innovation in science education Bryan (2012) reports that studies have found there is a "critical relationship between teachers' beliefs and instructional decisions" (p. 483) and "*teachers' beliefs mediate the curriculum implementation process*". While Mullis et al. (2004) found that when teachers perceive the curriculum as not

well designed, they will replace the prescribed curriculum with an alternative. This finding aligns with a study by Remillard (2005) which found that teachers are active users and interpreters of curriculum documents. Additionally, the results were very similar to studies by Schoenfeld (2011) and Fives and Buehl (2012) which found that teachers will decide to accept, reject, ignore, modify, or seek alternatives to the redesigned curriculum based on their perceptions of the appropriateness of the design. In terms of studies focused on the case of BC curriculum redesign this finding is consistent with the results of other studies (Broom, 2016, 2020; Gacoin, 2017, 2018, 2019; Sanford & Hopper, 2019) which found less than optimal levels of implementation of the mandated new curriculum design.

In regard to the research problem, a public education reform program that relies on a mandated new curriculum design to be the key driver of change or improvement may be seen as being founded on the causal story and assumptions of policy instrument theory. Under policy instrument theory, the government seeks to solve education program problems through a policy instrument intervention – in this case a rule-based curriculum that is intended to change “the behaviour of individuals” (Savoie, 2015, p. 242). However, if teachers’ perceptions of the implementability of the new curriculum design are mixed or negative then the intended instructional behaviour may not occur and the curriculum may not be implemented as intended (Bemelmans-Videc et al., 2010; Pressman & Wildavsky, 1984; Wolman, 1981). Researchers have stressed for over two decades that education reform programs based on the redesign of competency-based curriculum will fail (Haney et al. 1996) when the influential nature of teacher perceptions of the curriculum design is neglected. This finding suggests that education reform programs should consider the central role of teachers’ perceptions during the design and the implementation of new curricula documents.

Individual Attributes of the Curriculum Design May Support or Hinder Implementation

The second major finding is that the individual attributes of the curriculum design were perceived by teachers as either helping or hindering implementation. This study found that teachers across subject areas spontaneously identify and recognize the individual attributes of a curriculum design and then judge or evaluate how these attributes contribute to or constrain its implementability. The theory-led thematic analysis found that teacher-participant statements could be categorized into six attributes or themes of the curriculum design that were seen as particularly important and worthy of judgement and evaluation: choice, clarity, cognitive effort, continuum of growth, equity, and accountability. These six themes (attributes of curriculum implementation) represent an important set of the seventeen design and evaluation attributes of well-designed rule policy instruments recognized within the policy instrument literature (Baldwin, 1995; Baldwin et al., 2012; Dunn, 2018; Johnson, 2009; May, 2002; Priest, 1998; Salamon, 2002; Van Meter & Van Horn, 1975; Webb, 2005) and the curriculum literature (Ayers et al., 2009; Bransford et al., 2000; Curry & Temple, 1992; Gagne et al., 2005; Leithwood, 1986; Luke et al., 2008; Luke et al., 2013; Robinson et al., 1985; Stotsky, 2012; Tanner & Tanner, 1980; Toepfer, 1982; Supovitz & Spillane, 2015). Furthermore, all of the participants perceived the attribute of choice, defined as professional discretion and autonomy, as a positive feature of the design that facilitated implementability of the curriculum. This finding shows that teachers actively judge the individual elements, attributes, or characteristics of the curriculum design and that these attributes are similar to those identified in other studies focused on evaluating the design of rule policy instruments.

This finding aligns with the literature on implementability studies which seek to better understand how implementers' perceptions of the attributes of a curriculum or other rule policy

instrument design facilitate or inhibit implementation. Honig (2006) found teachers' perceptions of the "implementability" (p. 2) of a curriculum document is a key issue when curriculum redesign plays a central role in public K-12 education reform initiatives. This finding also aligns with other implementability studies (Brouwers et al., 2015; Century & Cassata, 2016; Engell et al., 2021; Gagliardi et al., 2012; Hall & Hord, 2020; Olson et al., 2020; Shiffman et al., 2005) that have focused on how implementers' perceptions of the attributes or characteristics of curriculum and other program guides mediate implementation. Within the field of curriculum and instruction this finding corresponds with a study by Luke et al. (2013) which found that "the technical form [of the curriculum] matters" (p. 9) as a well-designed curriculum may "enhance teacher professionalism" and improve student curricular achievement.

In regard to the problem of curriculum redesign within public education reform programs this finding may be used to facilitate the improvement of future curriculum designs by identifying the intrinsic attributes of curriculum designs which are reported by teachers as helping or hindering implementability. The attributes identified in this study, along with other attributes recognized in the literature, may be used to formulate an implementability appraisal framework for use during the curriculum design process. Curriculum designers are tasked not only with formulating what may objectively be judged a good design – they must also formulate a curriculum design which teachers perceive, or subjectively evaluate and judge, to be good if fidelity in implementation is to occur.

Mandated Curriculum Should be Supported with On-Going Professional Learning

The third major finding is that implementation of a mandated new curriculum design would be enhanced through opportunities for on-going professional learning. This study clearly shows mandates alone do not result in implementation of a new curriculum design. All of the

teacher-participants stressed that the provision of on-going professional learning opportunities is critical to sense-making, understanding, and implementation of a new curriculum design.

Meaningful professional learning is a complementary policy instrument which is theorized as an intervention (Timperley et al. 2020) that is central to change and a “tool” (Netolicky, 2020, p. 5) that can be used to positively shape teacher practice. Gagne et al. (2005) explain that the goal of professional learning is to improve student curricular achievement and attainment through improved instruction. The causal story of professional learning assumes that in order to improve levels of student achievement instruction must be improved through learning opportunities that influence the “beliefs, and thereby behaviours of professional” (Netolicky, 2020, p. 18) and if the professional learning doesn’t shift teacher “beliefs or practices, it isn’t successful professional learning” (p. 49). Kirsten (2020), Darling-Hammond et al. (2009) and Timperley et al. (2020) all suggest that professional learning should be aligned with the mandated new curriculum design to have the greatest impact on successful implementation as professional learning has been found to effectively shape teachers’ beliefs, attitudes, values, skills, and instructional behaviour.

The finding aligns with the literature which shows that a singular reliance on curriculum as a stand-alone mandated policy instrument to influence, control, or shape teacher instructional behaviour may not be successful. Hannaway and Woodroffe (2003) note that educational policymakers must “recognize the limitations of mandates, by which we mean regulations or rules, intended to shape behavior, as a policy instrument” (p. 4). Cook (1984) found that even though the activities of a policy instrument have been mandated it “does not guarantee that the activities will take place” (p. 196). Previously mentioned implementability studies by Engell et al. (2021) and Woods and Jeffery (2002) have challenged the belief that mandates alone will

result in the conversion of implementers' perceptions, decision making and behaviour. While a mandate may be necessary it is not sufficient – the curriculum must also be well-designed and professional learning opportunities should continue to be offered to teachers to ensure understanding if implementation is to occur as intended. All of the participants in this study stated that a greater amount of organized professional learning opportunities during work hours would have supported implementation of the mandated curriculum design. Put simply, the findings indicate that teachers must fully understand a new curriculum design before they can implement it.

In regard to the issue of reliance on a new curriculum design as the key driver of a public education reform program, this finding suggests that implementation would be more likely to occur as intended if an in-depth, on-going, comprehensive professional learning program that aligns with the new elements of the curriculum design is provided. Implementation is a separate and unique step in the curriculum reform process and sufficient resources should be allocated to ensure teachers are given the opportunity to attend workshops, seminars, and in-service as needed to ensure they are prepared to implement the curriculum design.

Two Sets of Policy Actors – Two Theories at Play

The fourth major finding is that both policy instrument theory and extended policy instrument theory appear to be at play in this case of educational program reform. The results of the interview and document analyses indicate that teacher-participants were active and engaged policy actors who judged and evaluated the individual attributes of the mandated curriculum documents, found choice to be of considerable importance, and individually decided to accept, adapt, modify, ignore, reject, or seek alternatives to the curriculum based on their perceptions. These results reflect the causal story and assumptions of extended policy instrument theory for

mandated curriculum documents namely: 1) teachers are active decision makers who judge and evaluate the curriculum design; 2) based on their perceptions teachers will decide to accept, modify, ignore, reject, or seek alternatives to the prescribed curriculum; 3) the goodness of the design mediates implementation; and 4) the coerciveness of a policy instrument does not guarantee that it will be effective as an intervention for influencing or controlling teachers' perceptions, decision making and instructional behaviour.

In contrast, the results of the document analysis and reports in the literature may be interpreted as suggesting that policy instrument theory had been implicitly adopted by the BC Ministry of Education. A mandated new curriculum design was the key intervention for the BC Education Plan public education reform program. The singular reliance on a new curriculum design as the key driver for educational change within the educational reform program reflects the causal story and assumptions of policy instrument theory. Policy instrument theory assumes that teachers' perceptions, decision making, and instructional behaviour should and can be shifted, transformed, influenced, controlled, or otherwise altered through a mandated new curriculum design (Berman & McLaughlin, 1976; Clements, 2007; Fullan, 2007, 2016; O'Donnell, 2008; Ostrom & Crawford, 2005; Ruiz-Primo, 2005; Smith & O'Day, 1991; Tanner & Tanner, 1980).

In terms of the research problem a public education reform program that relies on a mandated new curriculum design as the key intervention or strategy for change may benefit from adopting the policy instrument theory which best explains what actually occurs at the classroom level during implementation. In this case, the results clearly show that the assumptions, causal story, and conditions of extended policy instrument theory appear to better explain the results of the theory-led thematic analysis of the teacher-participant interviews than policy instrument

theory. Whereas, the assumptions and causal story of policy instrument theory appear to explain the rationales, decisions, and actions taken by policy makers as reported in the literature and found during the theory-led thematic document analysis.

Taken together, the four major findings of the study provide theoretical insights and explanations of teachers' perceptions of the implementability of the new curriculum design and the individual attributes of the new curriculum design and provide suggestions as to, why or why not, the mandated new curriculum design is working as intended. As well, the results of this study indicate that public education reform programs that rely heavily on the redesign of the curriculum as the key instrument of change may be better served by adopting the bifurcated causal story of extended policy instrument theory as it includes the key conditions: teachers' perceptions of implementability, and goodness of design.

Chapter 7 Conclusion

This study investigated the relationship between a mandated new curriculum design, teachers' perceptions, and the implementation process. The literature review showed that there are two iterations of policy instrument theory that curriculum policy makers may choose between – policy instrument theory and extended policy instrument theory. Research questions were based on extended policy instrument theory and were centred on teachers' perceptions of the implementability or goodness of the mandated new curriculum design and teachers' perceptions of how the intrinsic attributes of the new curriculum design support or hinder implementability. As explained previously, government seeks to improve public education programs through mandated policy instrument interventions such as a new curriculum design based on the policy instrument theoretical assumption or belief that a change in the design will cause a preferred change or conversion in teachers' perceptions, decision making, and instructional behaviour during the implementation process. When this theory of change serves as the foundation for a public education reform program an investigation into whether the evidence supports this belief is of importance.

The four major findings of this study showed the critical role of teachers' perceptions for the overall success of an educational reform program that relies on curriculum as a policy instrument of change. The findings indicate that teachers are active and engaged policy actors; the goodness of the curriculum design matters; mandates alone are not effective as instruments of change; and the policy instrument theory used to conceptualize the relationship between policy and practice is of consequence. The findings of this study support the causal story and assumptions of extended policy instrument theory and the developing literature on implementability. The evidence from this inquiry indicates that policy makers and curriculum

designers are tasked not only with formulating what may objectively be judged a good curriculum design – they must also formulate a curriculum design which teachers perceive or subjectively evaluate and judge to be good if fidelity of implementation is to occur. This study provides an alternative to the conversion conceptualization of a mandated new curriculum design currently found in the field and provides a theoretical pathway for improving educational reform programs by recognizing and incorporating teachers' perceptions into the curriculum design, implementation, evaluation, and redesign process. The aims of this study were achieved and may be seen as contributing to the body of literature on teachers' perceptions of curriculum, curriculum as a policy instrument of change, and the role of curriculum in educational reform programs.

Implications and Contributions to Knowledge

There are several implications for policy makers, curriculum designers, teachers, and future research given the findings of this study. First, the research literature on curriculum policy and teacher practice has not made extensive use of policy instrument theory for investigating the relationship between curriculum design and teacher implementation in public education reform programs. This study attempted to address this gap in the research literature and contribute to the field of curriculum and instruction by explicitly introducing policy instrument theory as the theoretical framework for the inquiry. Policy instruments are a well theorized area of public administration, organizational behaviour, and policy studies – it is important for future research on curriculum policy and teacher practice to access this rich body of literature and avoid trial and error approaches to how curriculum as a policy instrument is understood and used in education reform programs. As well, this theoretical approach may be used in future studies to investigate

the relationships between curriculum, teachers' perceptions, and implementation in different groups of teachers such as those in elementary education programs.

Second, this study showed that the policy instrument theory being used in an education reform program is consequential. Education reform programs that rely on mandated curriculum designs as the key driver of change would benefit by having policy makers explicitly state the iteration of policy instrument theory that they have chosen to conceptualize the relationship between the curriculum and teacher practice. When policy makers act on an implicit, unstated policy instrument theory of change, the causal story and assumptions are not transparent and therefore cannot be brought into question or critically examined before being applied. As well, the associated research literature may not be reviewed to determine if there is evidence to support adoption of the theory or if a better theory is available. Curriculum may be more effectively used as an instrument of change in education reform programs when policy makers explicitly state the theory being used, the causal story and assumptions, and how evidence-based research supports the choice. This study also suggests that evaluations of the level of success of an education reform program would also benefit from an explicit statement and explanation of the theory of change being used. This study and the related literature on the attributes of a well-designed rule policy instruments show that difficulties in implementation due to the intrinsic attributes of the design may be anticipated and can be prevented through an evaluation of the implementability of the curriculum design before operationalization.

Third, the findings from this study support other research that indicates a reliance on mandated curriculum documents alone is likely to be ineffective as an instrument of change and should be supplemented by other aligned policy instruments such as professional learning. The findings from this study show that teachers are very aware of the critical role professional

learning plays in supporting understanding or sense-making of new curriculum designs mandated for implementation. Policy makers would benefit by using information from this study and the extensive literature on professional learning to better understand how to help teachers transition to a new curriculum design.

Fourth, this study clearly shows that teachers are active and engaged policy actors who have the capacity to influence an entire education reform program based on their perceptions of the goodness of the curriculum design and the implementability of the intrinsic attributes of the design. The findings from this study suggest that policy makers would benefit by providing teachers with increased opportunities to candidly participate in the curriculum design process. Acknowledging and incorporating feedback as to teachers' perceptions of the curriculum during the design, implementation, and evaluation phases of the policy process would enhance the likelihood of a successful education reform program. Teachers' tacit knowledge, beliefs, perceptions, and values should not be theoretically problematized as barriers or limitations to be overcome but as valuable resources to be incorporated into the entire curriculum design, implementation, evaluation, and redesign process. As noted in the literature review, theoreticians have extended policy instrument theory (Century & Cassata, 2016; Sunstein, 2017; Thaler & Sunstein, 2008; Thaler, Sunstein & Balz, 2013; Kahneman, 2013) with new conditions that value, acknowledge, and incorporate implementers' perceptions within a mandated rule policy instrument rather than problematizing them. As opposed to conversion, this "informed regulation" (Sunstein, 2017, p. 5) or "pro-adaptation" (Century & Cassata, 2016, p. 199) approach to rule policy instruments such as curriculum promotes choice and autonomous professional judgement by giving teachers two mandated options: a prescribed default option of an official, explicit, collectively written set of well-designed learning standards; and a prescribed

alternative option of implementing individually developed, tacit learning standards aligned with the goals of the educational program and based on teachers' perceptions, knowledge, skills, education and experience.

In summary, the results from this study fit with the existing knowledge on the important role of teachers' perceptions when a new curriculum document is mandated for implementation as part of an education reform program. This study provides two new insights – the version of the policy instrument theory being used is of consequence, and teachers' perceptions of the intrinsic attributes of the curriculum design mediate implementation. The findings from the study have several consequences for theory and practice namely: public education agencies and future research may benefit from considering use of the more recently developed extended policy instrument theory when planning education reform programs. In addition, implementability studies may be used to ensure well designed curriculum emerge in practice. While a shift in theory and practice from problematizing teachers' perceptions to conceptualizing them as a solution to education program problems may prove to be a productive new area for research.

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Appendices

Appendix A: Definitions of Terms

The following key terms and definitions are presented as they have specific meanings within the scope of the study.

accountability - “the ability of one actor to demand an explanation or justification of another actor for its actions, and to reward or punish that second actor on the basis of its performance or its explanation....it is a basic mechanism of administrative or bureaucratic government” (Rubin, 2006, p. 74).

cognitive effort – the decision-making process involves time, effort, and resources (Shah & Oppenheimer, 2008); also, *cognitive load* – rules are proposed actions derived from a causal analysis that have been chosen from a broader set of possible alternative actions to guide the decision-making process of the teacher and reduce cognitive load (Robinson et al. 1985).

competence or task - performance of a pre-specified action, thought, or behaviour.

conversion – a rule bound approach to teacher decision making that does not take into consideration the “subjectively reasonable beliefs that teachers already hold” (Fenstermacher, 1978, p. 169).

curriculum- “rules about behavior, especially about making decisions” (Riker, 1980, p. 432).

curriculum decision-maker – “practitioners in school systems responsible for decisions related to curriculum material adoption and implementation” (Remillard et al., 2012, p. xvii).

decision-making – the act of selecting an alternative from a group of alternatives...the choice of action - how we process information, weigh options, choose and act

educational program guide- an organized set of rules for learning activities designed to enable learners to become literate, to develop their individual potential and to acquire the knowledge, skills and attitudes needed to contribute to a healthy, democratic and pluralistic society and a prosperous and sustainable economy

explicit knowledge - knowledge that is codified and theory based or causal as it is meant to explain “why things work” (Hall & Andriani, 2003, p. 145) and allows for predictions to be made

feasibility - the policy instrument is technically capable of being implemented (Wolman, 1981)

implementability - “the degree of ease with which an intervention or innovation can be implemented successfully in a given context” (Engell et al. 2021, p. 2); the “characteristics of the

guidelines that may enhance their implementation by users” (Gagliardi, Brouwers & Bhattacharyya, 2012, p. 27).

implementation – the process of putting into practice a policy instrument within a public program that is expected to change the perceptions, decisions and behaviours of the target group; the “change may be externally imposed or voluntarily sought; explicitly defined in detail in advance or developed and adapted incrementally through use; designed to be used uniformly or deliberately planned so that users can make modifications according to their perceptions of the needs of the situation” (Fullan, 2007, p. 84).

indicator – specific empirically measurable characteristics of educational programs on which evidence can be collected that allows a determination of whether rules or standards are being attained (Van Damme, 2004).

information seeking – the process of searching for information in a purposeful manner so as to be able to alter one’s state of knowledge in order to close a cognitive gap and make a decision (Choo, 2005).

innovation – a process in which the organization defines technical or task related problems and then actively develops new knowledge, ideas or concepts first at the tacit knowledge level based on the expertise and experience of individuals and groups which are then converted into explicit or rule-based knowledge codified through formal written collective organizational rules, routines, and procedures which align with the prevailing assumptions, beliefs, and norms to solve them (Nonaka, 1994).

legitimacy – “the degree of actual support a government may realize for its choices, because the actors involved perceive them as in correspondence with their own views, feelings, or objectives” (Bemelmans-Videc, 2010, p. 8). Authority may be considered legitimate when the premises provided for decisions are accepted and used as the basis for decision making and subsequent behaviour. In other words, authority is accepted when a person permits their “behavior to be guided by the decisions” (Simon, 1997, p. 12) of an authority “without independently examining” its merits.

mandate – “regulations or rules intended to shape behaviour, as a policy instrument” (Hannaway & Woodroffe, 2003, p. 4).

Ministry of Education – a government or public agency or authority operating under statutory and administrative law.

outcomes – “the educational results of the operational curricular process” (Conrad & Pratt, 1983, p. 28).

perceptions – beliefs, values, understandings, judgements or evaluations that guide decision making and subsequent behaviour.

personal epistemology – a person’s underlying beliefs about knowledge and knowing that influences how they make decisions relating to knowledge claims and new information (Hofer, 2001).

public education agency - government entity that has been created through an enabling statute that defines its tasks, powers, and sources of funding.

rule - formal written statements of knowledge, procedures, and routines developed through collective deliberation that serve as a voluntary or prescribed guide to individual decision making or choice within the organization and which supports judgement as well as normative, reasonable and predictable behaviour for the attainment of organizational goals (March & Olsen, 1976; March & Simon, 1993); day-to-day decision making rules which determine the actions of individual actors in the organization (Ostrom et al., 1994).

rule policy instrument - “clear rules and expectations for the delivery of programs and services to the public” (BC Ministry of Education, 2019, para. 1); rules used to “*alter the behaviour of others according to defined standards or purposes with the intention of producing a broadly identified outcome or outcomes, which may involve mechanisms of standard-setting, information-gathering and behaviour modification*” (Black, 2002, p. 20).

student - a person enrolled in an educational program provided by a provincial school or an authorized board.

teacher – “a person holding a certificate of qualification who is employed by a board to provide an educational program to students in a school” and who supervises “the student’s progress through the educational program” or administers or supervises the provision of instruction to students within an educational program (BC School Act, 1996).

Appendix B: Interview Guide Questions

Pre-Interview Orientation – this involved introductions, review of the paperwork including informed consent and permission for recording the interview.

Opening Statement

The aim of this study is to learn about your experience, thoughts, feelings, and perceptions implementing the curriculum design. I want to understand classroom implementation of the curriculum design from your point of view. This is in many ways a research collaboration where I will be asking you to tell your story in order to learn from your expertise and experience. Please share your experience, thoughts, feelings, and perceptions freely.

Background Question

Tell me about your teaching experience. Topics: years of experience, subject areas, experience teaching different curriculum designs, and experience with curriculum development or evaluation.

Main Questions

1. In general, what has implementation of the curriculum design been like for you? Please walk me through the experience in as much detail as possible.
2. If you were the curriculum designer – what, if anything of the curriculum design would you keep and what would you change?
3. Can you describe what stands out for you in terms of this curriculum design for your subject area?

Closing Question

Thank you for all this valuable information. Are there any other thoughts, perceptions, opinions, or experiences you would like to share or that you think is important to know about the curriculum design?

Appendix C: Curriculum Documents and Intertextual Documents

Curriculum Documents

English Language Arts	
Grade 12	Composition
	Creative Writing
	English Studies
	Literary Studies
	New Media
	Spoken Language
	English First Peoples
Grade 11	Composition
	Creative Writing
	Literary Studies
	New Media
	Spoken Language
	English First Peoples: Literary Studies and New Media
	English First Peoples: Literary Studies and Spoken Language
	English First Peoples: Literary Studies and Writing
Grade 10	Composition
	Creative Writing
	Literary Studies
	New Media
	Spoken Language
	English First Peoples: Literary Studies
	English First Peoples: New Media
	English First Peoples: Spoken Language
	English First Peoples: Writing
Mathematics	
Grade 12	Apprenticeship Mathematics
	Calculus
	Computer Science
	Foundations of Mathematics
	Geometry
	Pre-Calculus
	Statistics
Grade 11	Computer Science
	Foundations of Mathematics
	History of Mathematics
	Pre-Calculus
	Workplace Mathematics
Grade 10	Foundations of Mathematics and Pre-Calculus
	Workplace Mathematics

Science	
Grade 12	Anatomy and Physiology
	Chemistry
	Environmental Science
	Geology
	Physics
	Specialized Science
Grade 11	Chemistry
	Earth Sciences
	Environmental Science
	Life Science
	Physics
	Science for Citizens
Grade 10	Science
Social Studies	
Grade 12	20 th Century World History
	Asian Studies
	B.C. First Peoples
	Comparative Cultures
	Comparative World Religions
	Contemporary Indigenous Studies
	Economic Theory
	Genocide Studies
	Human Geography
	Law Studies
	Philosophy
	Physical Geography
	Political Studies
	Social Justice
	Urban Studies
Grade 11	Explorations in Social Studies
	Francophone History and Culture
Grade 10	Social Studies

Intertextual Documents

K-12 Student Reporting Policy Framework. <https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/legislation-policy/public-schools/student-reporting-framework>.

K-12 Student Reporting Policy Framework Interim Supporting Materials: Grades K to 9.

https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/k-12_student_reporting_policy_framework-interim_supporting_materials.pdf

A Framework for Classroom Assessment.

<https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/assessment/a-framework-for-classroom-assessment.pdf>

BC Graduation Program Policy Guide: Grades 10 to 12.

<https://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/support/graduation/graduation-policy-guide.pdf>

BC Ministry of Education (2016). Special education services: A manual of policies, procedures and guidelines. Victoria, BC: BC Ministry of Education

BC's Redesigned Curriculum: An Orientation Guide.

https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/supports/curriculum_brochure.pdf

Classroom Assessment Resource Package English Language Arts 10-12.

<https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/assessment/classroom-assessment-resource-package-ELA-10-12.pdf>

Continuous Views. <https://curriculum.gov.bc.ca/curriculum/continuous-views>

Curriculum Overview. <https://curriculum.gov.bc.ca/curriculum/overview>

Curriculum Redesign Update, Winter 2014.

<https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/historical/curriculum-redesign-update-winter.pdf>

Educational Program Guide Order (M196/22).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m333_99.pdf

Enabling Innovation: Transforming Curriculum and Assessment.

https://www.bced.gov.bc.ca/irp/docs/ca_transformation.pdf

Exploring Curriculum Design: Transforming Curriculum and Assessment.

https://www.bced.gov.bc.ca/irp/docs/exp_curr_design.pdf

Individual Education Plan Order (M261).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m638_95.pdf

Provincial Letter Grades Order (M304/20).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m192_94.pdf

References Relevant to BC's Curriculum and Assessment Transformation.

<https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/supports/references.pdf>

Required Areas of Study in an Educational Program Order (M307/16).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m295_95.pdf

Schimmer Webinars on Classroom Assessment. <https://curriculum.gov.bc.ca/classroom-assessment/webinars>

School Act [RSBC 1996] Chapter 412.

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96412_00_multisc

School Regulation (OIC 140/21).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/d/bcreg_26589.pdf

Special Needs Students Order (M235/07).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m150_89.pdf

Student Progress Report Order (M230/19).

https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m191_94.pdf

Appendix D: English Language Arts Grade 12 – Spoken Language



SPOKEN LANGUAGE 12 (4 credits)

Description

Spoken Language 12 is designed to support students in the refinement of spoken language forms. The course provides opportunities for students, with increasing independence and self-sufficiency, to study, create, write, and present original and authentic pieces for a range of purposes and audiences using real-world applications with impact and effectiveness. They will develop their craft through processes of drafting, reflecting, revising, and practising to build a body of publishable and/or performance-based work that demonstrates breadth, depth, and evidence of sophisticated and specialized spoken language pieces for a range of situations.

The following are possible areas of focus in Spoken Language 12:

- performance – suggested content/topics include spoken word/slam poetry, poetry recitation, oral storytelling, readers' theatre, radio/podcasts/video posts
- oral tradition – suggested content/topics include oratory, local story knowledge, oral history
- professional applications – suggested content/topics include speech writing/presenting, proposals, interviewing, event facilitation, radio/podcasts/video posts (information items), voice-overs

BIG IDEAS

The exploration of **text and story** deepens our understanding of diverse, complex ideas about identity, others, and the world.

People understand **text** differently depending on their worldviews and perspectives.

Texts are socially, culturally, geographically, and historically constructed.

Language shapes ideas and influences others.

Voice is powerful and evocative.

Learning Standards

Curricular Competencies	Content
<p><i>Using oral, written, visual, and digital texts, students are expected individually and collaboratively to be able to:</i></p> <p>Comprehend and connect (reading, listening, viewing)</p> <ul style="list-style-type: none"> • Read for enjoyment and to achieve personal goals • Understand and appreciate the role of story, narrative, and oral tradition in expressing First Peoples perspectives, values, beliefs, and points of view • Understand the diversity within and across First Peoples societies as represented in texts • Understand the influence of land/place in First Peoples and other Canadian texts • Use information for diverse purposes and from a variety of sources • Evaluate the relevance, accuracy, and reliability of texts • Select and apply appropriate strategies in a variety of contexts to comprehend written, oral, visual, and multimodal texts, to guide inquiry, and to transform thinking • Understand and appreciate how different forms, formats, structures, and features of texts reflect a variety of purposes, audiences, and messages • Think critically, creatively, and reflectively to analyze ideas within, between, and beyond texts • Identify and understand the role of personal, social, and cultural contexts, values, and perspectives in texts • Appreciate and understand how language constructs personal, social, and cultural identities • Construct meaningful personal connections between self, text, and world • Evaluate how techniques and devices enhance and shape meaning and impact 	<p><i>Students are expected to know the following:</i></p> <p>Text forms and genres</p> <p>Creative spoken genres</p> <p>Text features and structures</p> <ul style="list-style-type: none"> • Oral language features and structures • form, function, and genre of texts • features and structures of First Peoples texts • narrative structures found in First Peoples texts • issues related to the ownership of First Peoples oral texts and protocols for their use • the legal status of First Peoples oral tradition in Canada <p>Strategies and processes</p> <ul style="list-style-type: none"> • multimodal writing strategies • metacognitive strategies • writing processes • reading strategies • oral language strategies • presentation techniques

Learning Standards (continued)

Curricular Competencies	Content
<p>Create and communicate (writing, speaking, representing)</p> <ul style="list-style-type: none"> • Respectfully exchange ideas and viewpoints from diverse perspectives to build shared understanding and transform thinking • Respond to text in personal, creative, and critical ways • Select and apply speaking and listening skills in a variety of formal and informal contexts for a range of purposes • Select and apply appropriate spoken language formats for an intended purpose • Use writing and design processes to plan, develop, and create engaging and meaningful texts for a variety of purposes and audiences • Express and support an opinion with evidence to achieve purpose • Evaluate and refine oral texts to improve clarity, effectiveness, and impact • Use the conventions of Canadian spelling, grammar, and punctuation proficiently and as appropriate to the context • Use acknowledgements and citations to recognize intellectual property rights • Transform ideas and information to create original texts, using various genres, forms, structures, and styles 	<p>Language features, structures, and conventions</p> <ul style="list-style-type: none"> • features of oral language • elements of style • usage and conventions • citation techniques • literary elements and devices • literal and figurative meaning

Big Ideas – Elaborations	ENGLISH LANGUAGE ARTS – Spoken Language Grade 12
<ul style="list-style-type: none">• text/texts: “Text” and “texts” are generic terms referring to all forms of oral, written, visual, or digital communication:<ul style="list-style-type: none">– Oral texts include speeches, poems, plays, oral stories, and songs.– Written texts include novels, articles, and short stories.– Visual texts include posters, photographs, and other images.– Digital texts include electronic forms of all of the above.– Oral, written, and visual elements can be combined (e.g., in dramatic presentations, graphic novels, films, web pages, advertisements).• story: narrative texts, whether real or imagined, that teach us about human nature, motivation, behaviour, and experience, and often reflect a personal journey or strengthen a sense of identity. They may also be considered the embodiment of collective wisdom. Stories can be oral, written, or visual and used to instruct, inspire, and entertain listeners and readers.	

Curricular Competencies – Elaborations	ENGLISH LANGUAGE ARTS – Spoken Language Grade 12
<ul style="list-style-type: none"> • land/place: refers to the land and other aspects of physical environment on which people interact to learn, create memory, reflect on history, connect with culture, and establish identity • relevance: Consider the extent to which material has credibility, currency, and significance for the purpose, and whether it resonates with personal experience. • reliability: Consider point of view, bias, propaganda, and voices left out, omitted, or misrepresented. • variety of contexts: Distinguish between independent and collaborative settings, and formal and informal situations. • multimodal texts: texts that combine two or more systems, such as linguistic, visual, audio, gestural, and spatial, and that can be delivered via different media or technologies (e.g., spoken word/slam poetry, recitation, oral storytelling, readers' theatre, debate, radio/podcast/social media, YouTube, interviews, voice-overs) • forms: Within a type of communication, the writer, speaker, or designer chooses a form based on the purpose of the piece. Common written forms include narrative, journal, procedural, expository, explanatory, news article, e-mail, blog, advertisements, poetry, novel, and letter. • formats: refers to the consideration of format choices including layout, sequencing, spacing, topography, and colour • structures: refers to the way the author organizes text • features of texts: elements of the text that are not considered the main body. These may include typography (bold, italic, underlined), font style, guide words, key words, titles, diagrams, captions, labels, maps, charts, illustrations, tables, photographs, and sidebars/textboxes. • reflectively: includes metacognitive strategies, such as identifying strengths and areas of focus, setting goals, making plans for improvement, and self-assessment • Respectfully exchange ideas and viewpoints: using active listening skills and receptive body language, paraphrasing and building on others' ideas; disagreeing respectfully, extending thinking (e.g., shifting, changing) to broader contexts (social media, digital environments), collaborating in large and small groups • writing and design processes: There are various writing and/or design processes depending on context, and these may include determining audience and purpose, generating or gathering ideas, free-writing, making notes, drafting, revising and/or editing, and selecting appropriate format and layout. • audiences: Students expand their understanding of the range of real-world audiences. These can include children, peers, community members, professionals, and local and globally connected digital conversations. • refine oral texts to improve clarity, effectiveness, and impact: <ul style="list-style-type: none"> – creatively and critically manipulating language for a desired effect – consciously and purposefully making intentional stylistic choices, such as using sentence fragments • acknowledgements and citations: includes citing sources in appropriate ways to understand and avoid plagiarism and understanding protocols that guide use of First Peoples oral texts and other knowledge 	

Content – Elaborations	ENGLISH LANGUAGE ARTS – Spoken Language Grade 12
<ul style="list-style-type: none"> • Creative spoken genres: <ul style="list-style-type: none"> – spoken word/slam poetry – recitation – oral storytelling – readers' theatre – debate – radio/podcasts/social media – presentations – public service announcements (PSAs) • narrative structures found in First Peoples texts: for example, circular, iterative, cyclical, linear • First Peoples oral texts: Listen to and comprehend a wide range of authentic First Peoples oral texts reflecting a variety of purposes, messages, and contexts, including texts relating to life lessons, individual and community responsibilities (rites of passage, family histories, creation stories, formal speeches). • protocols: First Peoples stories often have protocols for when and where they can be shared, who owns them, and who can share them because they are told by many people and passed down through generations. There are no recognized authors. • First Peoples oral tradition: <ul style="list-style-type: none"> – In Canadian law, First Peoples oral history is valid evidence of ownership of the land. – The Supreme Court of Canada recognizes that First Peoples oral tradition is as important as written documents in considering legal issues. 	

Note. From https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/curriculum/english-language-arts/en_english-language-arts_12_spoken-language_elab.pdf