Practice Fidelity and Sustainability of School Reform: A Study of the Schoolwide Enrichment Model in an Independent Elementary School

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Certificate of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Charles Sturt University or any other educational institution, except where due acknowledgement is made in the thesis. Any contribution made to the research by colleagues with whom I have worked at Charles Sturt University or elsewhere during my candidature is fully acknowledged.

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Cynthia Boyd
January 2012
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The proposal for this research was approved by Charles Sturt University’s Ethics in Human Research Committee. The protocol number is 2010/085 (see Appendix M).
Abstract

After many years of research on school reform, two issues continue to be of concern—practice fidelity (Bain, 2010; O'Donnell, 2008) and sustainability (Bain, 2007; Elmore, 1996; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995). Practice fidelity refers to the degree or veracity with which the pedagogical components of a reform model are being implemented within classrooms (Bain, 2007). Sustainability refers to the longevity of an innovation, but it also encompasses the idea of institutionalization, whether or not the reform model becomes “built in” or embedded into the existing structures and culture of the school (Berman & McLaughlin, 1976; Datnow, 2005). There is relatively little mention of the fidelity with which reforms are being implemented in the evaluation literature, while the sustainability of reforms over time has proven to be difficult to accomplish. The desired outcomes do not seem to match the efforts and time that have been devoted to the reforms.

This study seeks to determine the extent with which the pedagogical components (Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching) associated with the Schoolwide Enrichment Model (SEM) are being implemented with fidelity. Critical to the data generation and analysis are six principles of self-organization (Bain, 2007) associated with the theory of self-organizing schools (SOS). Its principles provide a theoretical lens for the study and focus on the need to more deeply understand the factors that contribute to practice fidelity and sustainability. A mixed methods design was used to examine the practice fidelity of the SEM and sustainability factors as they relate to the implementation of this model in an independent elementary school. Structured classroom observations along with evaluations of teacher, administrator, and student perspectives comprise the data gathered in the study. These data were employed to determine the sustainability of SEM at one site as well as the relationship between sustainability and practice fidelity.
The results showed a moderate-to-high range of practice fidelity, with the exception of the Curriculum Modification Techniques results in Phase 1 of the classroom observations. The results showed variability from component to component as well as variability from teacher to teacher. The results for all methods and elements of the SEM showed an increase in practice fidelity over time, which stands in contrast to the literature which shows fading implementation over time (Berends, Bodilly, & Kirby, 2002; Cook et al., 1999; Datnow, 2003).
Chapter One: Introduction

This chapter describes the purpose and context for the study. The significance of a study concerning practice fidelity and sustainability of school reform models is established followed by an outline of the overarching research questions and the subquestions that provide the basis for this study.

1.1 Purpose of the Study

After many years of research on site-based school reform, practice fidelity and sustainability continue to be issues of concern. There is relatively little mention in the literature of the fidelity with which reforms are being implemented (Bain, 2010; O'Donnell, 2008), and the sustainability of site-based reforms over time has proven to be difficult to accomplish (Bain, 2007; Elmore, 1996; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995). The purpose of this case study is to look deeply into the experience of one school to determine whether it is possible to sustain a site-based school reform over time and to examine the factors that contribute to practice fidelity and sustainability. Practice fidelity refers to the fidelity or integrity with which the pedagogical components of a model, approach, or innovation are implemented in classrooms over time (Bain, 2007). Sustainability in this study refers to the longevity and the embedding of the reform into the culture of the school (Berman & McLaughlin, 1976; Datnow, 2005; Hargreaves & Goodson, 2006). A review of the literature indicates there are eight reoccurring factors that influence the sustainability of school reform initiatives (Bain, 2007; Berends et al., 2002; Bodilly, 1996, 1998; Datnow, 2002, 2005; Desimone, 2002; Elmore, 1996; Elsworth, Kleinhenz, & Beavis, 2004; Fullan, 2007; Levin, 2007; Meiers, Ingvarson, Beavis, Hogan, & Kleinhenz, 2006; Ridley & Kendall, 2005; Zhang, Shkolnik, & Fashola (2005). In this study, the presence and impact of these factors will be examined over a 7 month period of time.

The intents of this study are as follows:
• To establish the extent to which the SEM was implemented with practice fidelity over time. This fundamental purpose is primary given the lack of examples of sustained, high fidelity, site-based school reforms in school settings.

• To provide insight into the factors that influence sustainability by undertaking a deep examination of the presence and impact of these factors at Glenwood Academy;

• To help secure and sustain the SEM at Glenwood Academy.

1.2 Context and Significance of the Study

Glenwood Academy is an independent elementary school serving 230 junior kindergarten to grade 8 students. It is located in a community of southwestern Ontario, Canada, in which there is a high concentration of independent elementary and high schools offering a range of instructional methods and teaching and learning philosophies.

Following an assessment of the school’s effectiveness in meeting the needs of the community and an analysis of the unique culture of the existing school community, the administration of Glenwood Academy chose to implement the Schoolwide Enrichment Model (SEM; Renzulli, 1977; Renzulli & Reis, 1985, 1997). In the summer of 2006, three teachers/administrators received training in the SEM, and a 5-year plan of implementation was drawn up. Four or five professional development days per year were set aside for teacher training, specifically in the areas of differentiated instruction, meeting the needs of high-achieving students within mixed abilities classrooms, and the implementation of enrichment approaches that are associated with the model. In addition, a week-long summer session at the University of Connecticut (Confratute) has been attended by most of the teachers to date. At the time of this investigation, Glenwood Academy was in its fourth year of the 5-year implementation plan.
Although site-based school reform models exist in abundance, establishing the sustainability of these models has proven to be a challenge (Bain, 2007; Datnow, 2002, 2005; Elmore, 1996; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995). This study sets out to develop a deeper understanding of the implementation of a reform and to find ways that might increase the longevity as well as the institutionalization of SEM at Glenwood Academy, resulting in significant and effective change. This study may also generate useful information for others engaged in similar school reform efforts.

The Self-Organizing School, an existing theory structure (Bain, 2007), provides a lens through which a deeper understanding of the key themes of this study, practice fidelity and sustainability, can be realized. There are three reasons for employing the SOS theory in this study. First, Desimone (2002) noted that there is a lack of theory in the implementation and examination of school reforms. Second, the SOS theory has been previously applied to site-based school reform study (Bain, 2007), resulting in progressively higher levels of practice fidelity and student achievement. Third, the post hoc analysis of site-based school reforms frequently produces a list of needs or difficulties, for example, more time, more money, resources, leadership, or professional development (Bain, 2007; Tyack & Cuban, 1995). Addressing these issues has been an inadequate approach to explain practice fidelity or sustainability in the past (Bain, 2007). A need exists to look more holistically and in an integrated fashion. The SOS theory was chosen to serve as a lens for this study to help to provide a deeper understanding of the implementation of SEM at Glenwood Academy.

A review of the literature on school reform provides repeated examples of factors that have influenced the sustainability of reform efforts despite the difficulty in achieving high levels of practice fidelity. Effective professional development, accessibility to needed resources, positive teacher attitudes and perceptions, collaboration of staff, strong and supportive leadership, comprehensiveness of the reform, attention given to time
issues, and increased student achievement are all noted as factors that, when present, can have a positive effect on the sustainability of a reform model (Datnow, 2002, 2005; Desimone, 2002; Elmore, 1996; Elsworth et al., 2004; Fullan, 2007; Levin, 2007; Meiers et al., 2006; Ridley & Kendall, 2005; Zhang et al., 2005).

A review of the literature on school reform indicates that practice fidelity is rarely a focus (Bain, 2010; O’Donnell, 2008). A compilation of research related to the SEM (Renzulli & Reis, 1994) and recent communication with Dr. Sally M. Reis, Principal Investigator for the National Research Center on the Gifted and Talented (personal communication, February 9, 2009 & August 4, 2009), indicates that neither practice fidelity nor sustainability have been the focus of any of the SEM investigations to date.

To understand the issues associated with the sustainability and practice fidelity of site-based school reform, a need exists to look beyond what could be described as the “usual suspects” or points of breakdown (Bain, 2007, p. 35) in site-based school reforms such as resource needs, quality of professional development, or school leadership. Though these issues are repeatedly described in the literature on sustainability of school reform, they are not likely to be solutions in and of themselves to successful education reform (Bain, 2007). Previous efforts to meet these needs have proven to be insufficient, sometimes providing temporary solutions (Bain, 2007; Berman & McLaughlin, 1976; Cuban, 2001). A holistic approach that reflects a deeper understanding of what is going on in schools is needed. Scaling quickly and lack of time for reflection on the part of developers and implementers is evident (Bain, 2007). Rather than approach the issues of site-based school reform only as a list of things to do differently, a need exists to approach site-based school reform with theory in mind. A theory can provide the “big picture” thinking required to provide success in the implementation of the SEM that has been lacking in school innovations in the past (Bain, 2007, p. 40). Bain’s (2007) Self-
organizing School provides a useful theoretical lens for this investigation as it has been shown to predict and explain both practice fidelity and sustainability. The Self-organizing School (SOS) is grounded in complexity and self-organizing systems theory. The purpose of the SOS theory is to enable systems to deal successfully with the changes that result from implementing research-based practices. The application of the SOS has proven to positively influence practice fidelity and sustainability in a decade-long school reform innovation undertaken from 1992–2003 (Bain, 2007, 2010).

In response to the identified issues concerning the sustainability of site-based school reforms and practice fidelity, the aim of the proposed study is to seek to answer the following overarching research questions:

- To what extent are the specific pedagogical practices associated with the SEM being implemented with fidelity within the classrooms at Glenwood Academy?
- How does this practice fidelity, or lack thereof, relate to the sustainability of SEM at Glenwood Academy?
- To what extent are the theoretical principles associated with the SOS theory reflected in the implementation of the SEM at Glenwood Academy?

A single case study research design was used to investigate the practice fidelity and sustainability of the SEM. An in-depth study of the teaching practices throughout one academic year at Glenwood Academy provided insight into the practice fidelity and the sustainability of one implemented reform model.

Six methods were used to conduct the in-depth study of this single case. This study took place in two phases as each of the following subquestions of the overarching research questions were addressed. Each phase included classroom observations, teacher surveys, student interviews, teacher interviews, and administrator interviews. Phase 2 then ended with focus group interviews.
To what extent are the specific pedagogical practices associated with the Schoolwide Enrichment Model (SEM) being implemented with fidelity within the classrooms at Glenwood Academy?

- What do the classroom observations tell us about the practice fidelity of SEM in the classrooms of Glenwood Academy over time?
- What are the teachers’ perspectives concerning their own delivery of the core pedagogical practices associated with SEM, and do these change over time?
- What are the students’ perspectives concerning the delivery of the core pedagogical practices that are associated with SEM, and do these change over time?
- What are the teachers’ perspectives concerning the presence or absence of the key pedagogical components of the SEM in the school over time?

How does this practice fidelity, or lack thereof, relate to the sustainability of SEM at Glenwood Academy?

- Throughout the reform process, how do teachers rate the success of the eight sustainability factors as indicated in the review of the literature (professional development, accessibility to needed resources, positive teacher attitudes and perceptions, collaboration of staff, strong and supportive leadership, comprehensiveness of the reform, attention given to time issues, and growth in student achievement)?
- How do teachers see these factors impacting the core pedagogical practices that are associated with SEM, both schoolwide and in their personal practice?

To what extent are the theoretical principles associated with the SOS theory reflected in the implementation of the SEM at Glenwood Academy?

- Are the assumptions or the “simple rules” of the SEM widely held and understood?
• Is the SEM embedded in the broader design of the school, creating similarity at scale?

• Do members of the school community share a common pattern of language in relation to the pedagogical features of the SEM?

• Is there evidence of emergent feedback?

• Does the SEM disperse control of the SEM practices and procedures across the school?

• Is there evidence of bottom-up self-organization as a product of the use of the SEM?

• Is there evidence of a school schema for the SEM?

1.3 Conclusion

The purpose of chapter one was to provide an introduction to this study. Establishing the sustainability of school reform models has proven to be a challenge in past reforms. A focus on the fidelity with which reforms have been implemented in schools is rare. This study set out to develop a deeper understanding of the implementation and the sustainability of a school reform model.

Chapter two provides a foundation for the study by reviewing relevant literature relating to the practice fidelity and sustainability of school reform models.
Despite many attempts to change education and countless research-based innovation efforts, the literature on site-based school reform suggests that it is difficult to sustain the impact of these innovations on schools (Bain, 2007; Elmore, 1996; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995). Improving levels of student achievement is the reason for the initiation of many reforms, yet literature on site-based reform shows that they have little effect on student achievement and great variation in implementation (Berends et. al, 2002; Borman, Hewes, Overman, & Brown, 2002; Desimone, 2002; Zhang et al., 2005). Teaching practice has a great effect on student achievement (Brophy, 1986; Elmore, 1996; Hattie, 2003, 2009; Tyack & Cuban, 1995), yet we know little about whether practice is changing when site-based reforms are implemented. Of these many accounts of school reform efforts, few report on whether the various components of the innovations are being practiced with fidelity or the effects this fidelity may have on the desired outcomes of the reform models (Bain, 2010; O’Donnell, 2008).

The intent of this review is to lay the foundation of the proposed study by reviewing the relevant literature on school reform, particularly noting issues of sustainability and practice fidelity. Initially, descriptions and clarifications of key terms related to school reform are provided. Eight sustainability factors of school reform are then drawn from site-based and large-scale initiatives. Practice fidelity and a rationale for its focus within this study are explained, along with the need for direct classroom observation in order to measure it. The Self-organizing School (Bain, 2007) is introduced as a theory that enables systems to deal successfully with the changes that result from implementing research-based practices. It is used in this investigation of the SEM as a theoretical lens given that it has been shown to predict and explain both practice fidelity and sustainability (Bain, 2007, 2010; Bain & Parkes, 2006). The SEM is then presented...
as an innovation that has experienced success in schools (Renzulli, 2000; Sytsma, 2003; VanTassel-Baska & Brown, 2007). Specifics of the SEM are provided in order to establish it as a school reform model that is worthy of adoption by schools seeking to improve the quality of teaching and learning, to lay the groundwork for understanding the proposed research, and to offer a rationale for studying the SEM. Past SEM studies are examined to determine the effects that SEM has had on schools and establish existing gaps in the research, particularly in the areas of sustainability and practice fidelity.

2.1 Educational Change

Change in education is inevitable and may come about because it is imposed upon us, because we initiate it, or because we voluntarily participate in it due to dissatisfaction with the present situation (Tyack & Cuban, 1995). Change is not synonymous with progress (Schlechty, 2001; Tyack & Cuban, 1995). There have been many previous changes in education that have not been beneficial and many that have been resisted by teachers (Hargreaves & Goodson, 2006). In addition, what is often defined as change in education does not involve “change in practice” (Fullan, 2007, p. 30) but simply change in the way we do school. This includes changes to single dimensions of schooling such as schedules, grades, subjects, textbooks, or even programs (Renzulli, 2005).

Real change is multidimensional. It affects at least three dimensions of education— instructional resources or materials, teaching approaches, and beliefs (Fullan, 2007). Change must occur in practice in all dimensions in order for it to have a chance of affecting the desired outcomes (Desimone, 2002; Fullan, 2007). In an innovation, the materials and resources are the most visible aspect and the easiest of the three to employ change. Change in beliefs is more difficult, as change initiatives frequently challenge the often tacit core values held by teachers about education. New resources can be made available to teachers, but without a change in teaching method or
a clear understanding of the need for such materials and an understanding of the theory behind the materials, change is not likely to have a lasting impact. Fullan (2007) warns that “change will always fail until we find some way of developing infrastructures and processes that engage teachers in developing new knowledge, skills, and understandings” (p. 29).

Most schools are constantly changing, and the reason for the lack of significance in this change is not the resistance of schools, nor is it a failure of schools to change, but that the alterations that are taking place are not affecting the way teachers teach and the way students learn (Desimone, 2002; Elmore, 1996; Schlechty, 2001). The changes that are taking place are often merely modifications to schedules, class sizes, textbooks, or length of class periods. The change that counts the most is in the daily interactions of teachers and students—that which affects the teaching and learning process (Tyack & Cuban, 1995).

### 2.2 Educational Reform

Tyack and Cuban (1995, p. 4) use educational reform to mean “planned efforts to change schools in order to correct perceived social and educational problems.” Fullan (2007, p. 7) warns that reform is not just putting the latest policy into place, but it means “changing the cultures of classrooms, schools, districts, universities, and so on. There is much more to educational reform than most people realize.” The word reform is often used to label any changes that can take place in schools, such as the addition of kindergarten to a program or the change in the structure and timing of the school day, but in this review, reform refers to changes that attempt to affect classroom practices (Noddings, 2007). The term site-based school reform is used in this review to refer to intentional efforts to improve teaching and learning in one school location.

In order to implement change that is lasting, it is important that we focus on what is happening in the classroom and that we notice whether the pedagogical practices that
are associated with the implemented reforms are being carried out and are affecting teaching and learning (Bain, 2007; Desimone, 2002; Elmore, 1996; Renzulli, 2005; Schlechty, 2001; Tyack & Cuban, 1995).

2.3 Sustainability

The term sustainability is used throughout this review to encompass both the longevity of an innovation as well as its institutionalization. In contemporary research, the term sustainability is used, whereas earlier studies generally used the term institutionalization. The two concepts generally go hand-in-hand in that, if a reform model is to be sustained over time, it is one that is institutionalized, and a reform that has been institutionalized is one that has been sustained over time (Datnow, 2005).

Institutionalization refers to a stage in an innovative process when the reform becomes a component of the life of the school—when it is common, routine practice and no longer has the special project status (Berman & McLaughlin, 1976; Datnow, 2005; Hargreaves & Goodson, 2006).

Therefore, a site-based school reform is sustained when the change that is being implemented becomes built in or embedded into the existing structures and culture of the school, thereby becoming a legitimate part of an ongoing practice. A sustained reform is one that becomes a part of the very fabric of the school, and very few innovations reach this stage “when they become a routine and effortless part of most teachers’ practice” (Hargreaves & Goodson, 2006, p. 5).

2.4 Factors Influencing Sustainability

To date, sustainability of school reform has been difficult to accomplish. In Datnow’s (2002) qualitative longitudinal study of 13 U.S. elementary schools in a diverse urban school district engaged in reform, she found for the most part that reforms were not sustained. After 6 years, only four of the 13 schools retained their chosen reform designs. Datnow (2005) set out to specifically address the sustainability of
Comprehensive School Reform (CSR) in a longitudinal case study of six CSR models. CSR is an approach to school improvement in the United States with an intention to improve education. It is supported by federal, state, and local legislation (Desimone, 2002). Examples of CSR models are Success for All, Comer School Development Program, and Accelerated Schools. Datnow found that after 3 years, reforms discontinued in six of the 13 schools, two other schools were still implementing reforms but at low levels, and only five of the schools continued to implement their CSR models either moderately or at high levels. Berends et al. (2002), in an evaluation of the New American Schools (NAS) project (a nonprofit organization with a mission to increase student achievement through school improvement initiatives), also found that reforms were not embedding in schools. After 2 years, only half of the 40 schools studied were implementing the models at the level targeted by design teams, and after 5 years, evidence levels of the models were lower. Zhang et al. (2005), in an examination of growth in student achievement and CSR, also found that implementation of CSR models did not deepen over time.

A review of the literature (Bain, 2007; Berends et al., 2002; Bodilly, 1996, 1998; Datnow, 2002, 2005; Desimone, 2002; Elmore, 1996; Elsworth et al., 2004; Fullan, 2007; Levin, 2007; Meiers et al., 2006; Ridley & Kendall, 2005; Zhang et al. 2005) indicates eight reoccurring factors that influence the sustainability of school reform initiatives. Effective professional development, accessibility to needed resources, positive teacher attitudes and perceptions, collaboration of staff, strong and supportive leadership, comprehensiveness of the reform, attention given to time issues, and student achievement are all noted as factors that, when present, can have a positive effect on the sustainability of the reform. When these factors are not present, reform models can be prevented from embedding or lasting in schools.
2.4.1 Effective professional development. Professional development is a key component to successful school reform (Bain, 2007; Desimone, 2002; Elmore, 1996; Fullan, 2007; Meiers et al., 2006; Ridley & Kendall, 2005). Bodilly (1998) found that in CSR models the professional development that is required to implement the designs in classrooms is often lacking. Desimone (2002), in a survey of the literature on CSR implementation, reports that when implementing CSR, teachers prefer professional development that is tailored to their specific needs in the classroom. In the case of implementing external models, the designs alone are not sufficient. Schools require significant professional development, technical assistance, and materials in order to carry out the designs. Bodilly, in a review of four districts that were implementing NAS models, associates higher levels of implementation with designs that had whole-school training, facilitators, and extensive training days including the availability of already established sites where teachers could observe the model in practice. Elsworth et al. (2004) report on the evaluation of the Middle Years Reform Program (MYRP), which was conducted in all Victorian government secondary colleges and P-12 schools (Australia). The program was designed to provide schools with the support needed to develop and implement initiatives to improve literacy, attendance, and “thinking curriculum.” This study shows that extensive professional development undertaken by all staff was seen as invaluable and was an indication to staff members that administrators were serious about school change.

In a 3-year evaluation on Excellence in Cities (EiC), an initiative targeting major urban areas in England with an overarching aim of generating long-term and sustainable improvement in schools, Ridley and Kendall (2005) report that, because professional development is so key in the implementation of reform models, mobility of teachers was an issue. Meiers et al. (2006) evaluated the Getting it Right-Literacy and Numeracy Strategy (GiR-LNS) in Western Australian schools. The focus was on improvements in
teaching literacy and numeracy in the early years of schooling, particularly for students at risk. They reported that professional development was considered a key factor of sustainability, which created a challenge for teachers who worked part-time and missed out on essential learning opportunities.

2.4.2 Accessibility to needed resources. Levin (2007), in the Ontario Education Strategy (OES), examines sustainable education renewal in a large-scale change initiative in Ontario, Canada that focused on elementary school literacy and numeracy outcomes and a commitment to increase high school graduation rates. He reported that a focus on resources to support better outcomes for students must take place. Successful site-based school reform gives high priority to increased salaries, prep time for teachers, specialist teachers, expanded staffing in key areas, renovations and repairs to older buildings, and programs. Alternatively, Elsworth et al. (2004), in reporting on the MYRP, noted that insufficient funding can be a concern for schools implementing innovations. Likewise, Ridley and Kendall (2005) noted, concerning the EiC initiative, that insufficient resources can prove to be a barrier to the implementation of a reform model.

According to Renzulli (2005) and Desimone (2002), in order to step up our education practice and provide students with quality teaching and learning, improved curricular material to carry out innovations is necessary.

Bodilly (1996) reported that school reform designs that offered the most resources and the most structure were faster to start up than models that required teacher-developed materials or that required planning or development by staff. Datnow (2005) found that CSR models that had high demands on systems, for instance requiring many resources, did not sustain over time and that sometimes reforms that were most comprehensive were ones that do not need many resources.

2.4.3 Positive teacher attitudes and perceptions. Reform needs to mesh with teachers’ existing understanding of professionalism (Fullan & Hargreaves, 1992).
Elsworth et al. (2004) found that the implementation of MYRP validated some teachers’ own ideas and philosophies about teaching and learning, which resulted in the feeling that they could be change agents “supported by a sound body of research and literature” (p. 135). They found that all of the teachers interviewed showed excellent understanding of the main features of MYRP and that these features coincided with their own beliefs about teaching and learning.

Alternatively, staff resistance can hinder the progress of reforms. Meiers et al. (2006) found that the number two factor that hindered success of the GiR-LNS was the resistance of teachers, either to working with specialist teachers or to working with the innovation.

Datnow (2005) noted that teachers were not equally committed to CSR models, some seeing test scores as most important in the end and giving them priority over the reform’s recommended practices. In schools where reforms did not continue, there was a lack of buy-in amongst most of the staff. In some of those cases there was turnover in leadership as well as a greater degree of criticism or at least misunderstanding about the reform.

2.4.4 Collaboration of staff. In Ridley and Kendall’s (2005) evaluation of EiC (EiC was initiated with a secondary school reform program, and a year later the Primary Pilot was launched), they reported that the Primary Pilot led to increased collaboration, not only within schools but with other initiatives and the local community. They found that change is more successfully instilled when teachers resist working in isolation. 

Meiers et al. (2006) found that the amount of time teachers worked collaboratively with specialist teachers throughout the implementation of the GiR-LNS had effects on the range of outcomes, efficacy, sustainability, student attitudes, teaching practice, curriculum, and knowledge. Lack of time for collaboration was a hindering factor. Elsworth et al. (2004) concurred that a very positive aspect that contributed to the
implementation success of the MYRP was the regular collaboration of cross-faculty teams. In the implementation of CSR models, Datnow (2002) also noted that sustainability does not result from individuals or institutions acting in isolation.

2.4.5 **Strong and supportive leadership.** Principals and other school leaders play key roles in successful school change (Fullan, 2007; Levin, 2007). Meiers et al. (2006) noted that support from school administration was very important for the effectiveness of the GiR-LNS, and the most frequently listed facilitating factor was the effectiveness of the specialist teacher in the school. When principals and school leaders are seen as strongly committed to the beliefs and understanding of innovations, or are reported as heavily promoting the teaching and learning focus, this commitment is seen as a contributing factor to the implementation (Elsworth et al., 2004; Meiers et al., 2006). Instability of leadership or institutional direction has been seen as a hindrance to the progression of reform models (Datnow, 2002).

Some reform programs facilitated the development of teacher leaders (Elsworth et al. 2004; Ridley & Kendall, 2005), which was seen as a contributing factor to sustainability in the implementation of both the EiC and the MYRP innovations.

Continuity of leadership is important, and commitment to reform must be apparent among all key stakeholders (Datnow, 2002; Levin, 2007). Sustainability was more likely when CSR models helped educators meet local, district, and state demands or at least did not conflict with them (Datnow, 2002). Discontinuance of reform models or changes in the reform were sometimes due to broader changes in district and state contexts (Datnow, 2005).

2.4.6 **Comprehensiveness of the reform.** Single component tinkering in schools has not been successful in the past (Bain, 2007; Renzulli, 2005). Levin (2007) reports that although the OES centered on a few student outcomes, it was not limited to them. Strong support for all curricular areas was needed and was expanded upon. He suggests
that the Ontario theory of improvement “recognizes schools as ecologies” (p. 329). The strategy involves building capacity among teachers and improving leadership, parental involvement, policies, and resources. The innovation recognizes the need for comprehensiveness. Comprehensiveness refers to completeness—that the essential features of an innovation are woven into all aspects of the organization (Bain, 2007).

Lack of comprehensiveness in school reform will hinder results. For example, “creating more rigorous curriculum standards . . . without providing improved curricular materials and teachers’ ability to use the materials effectively, negates any potential value that new standards may have for improving academic performance” (Renzulli, 2005, p. 83). Single component tinkering that seeks to force change in classrooms may only create an illusion of improved achievement—for example, high-stakes testing (Renzulli, 2005).

The presence of too many innovations can also be destructive. Berends et al. (2002) found that in many schools CSR was taking place at the same time as other reform efforts that did not link to the CSR model. This reduced the capacity for teachers to implement reform designs, as they were simply overloaded. It was also found that when district and design teams did not coordinate their policies, it negatively affected implementation.

There must be a good match between the school and the design features. Schools must adopt designs that do not conflict with other efforts in the school (Bodilly, 1996; Desimone, 2002; Meirs et al. 2006). Schools must first understand themselves and take seriously the mapping of the design and the engagement with the reform process (Bain, 2007). The model must suit the school goals in order to reach sustainability (Datnow, 2003).
2.4.7 Attention given to time issues. School reform is a slow process (Tyack & Cuban, 1995), and the rate at which the innovation takes place is crucial to its sustainability (Desimone, 2002). Solid, meaningful change takes time (Fullan, 2007).

A consistent issue in school change, reported by teachers, is shortage of time. Teachers report that it can take years before they fully understand what a design entails (Bodilly, 1998). Bodilly (1996) reported that teams and sites differed in their ability to provide time for the development of the innovation. However, regardless of the amounts provided, staffs pleaded for more noninstructional time within the school year and for more years to implement their reforms before the results were judged. Meiers et al. (2006) report that lack of time for collaboration was one of the top hindering factors in the implementation of the GiR-LNS. Teachers reported a great appreciation for the fact that every effort was made to provide time for teachers to meet and develop good curriculum and teaching programs that added to the success of the MYRP (Elsworth et al., 2004). Also noted in this study was a perceived reluctance by some teachers to change due to increases in teacher workloads, which clearly link to a lack of time.

2.4.8 Student achievement. A key assumption underlying school reform efforts is that implementation will eventually change classroom learning, resulting in improved student outcomes. However, past reform efforts have shown that despite the efforts, implementation and outcomes vary considerably across sites (Berends et al., 2002; Zhang et al., 2005). School reforms have had modest effects on student achievement (Bain, 2007; Renzulli, 2005). In a study examining the growth in student achievement and its relationship to CSR implementation in 649 schools, Zhang et al. (2005) reported that growth in math and reading achievement was not consistently greater as a result of CSR implementation, and the relationship between CSR implementation and student growth varied according to CSR model. The achievement shown in studies indicates
little effect when measured against the effort, time, and money on the reforms themselves (Bain, 2007). If reforms are to be sustainable, obviously this must change.

2.5 Scaling Up

Bain (2007, p. 2) defines scale as “how a practice that is implemented in a smaller unit (e.g., a classroom or single school) is translated into the practice of multiple units (e.g., many classrooms or many schools).” In school reform, there are pockets of success, but it has proven to be very difficult to move beyond these pockets and reach a wider span of success (Elmore, 1996). The problem with scale, according to Elmore (1996), is that innovations that attempt to change the core of educational practice—how teachers understand the nature of knowledge and the student’s role in learning, and how these ideas about knowledge and learning are manifested in teaching and class work—seldom have far-reaching affects and often do not have long life spans. There are particular, traditional ways of schooling, and the further an innovation is from the philosophy of this core, the less likely it is to succeed on a large scale.

Literature on school reform suggests that the scaling of research-based innovations in schools is rare (Elmore, 1996; Fullan, 2007; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995; Zhang et al., 2005). Berends et al. (2002), in the evaluation of the NAS project, report that a rush to scale up when the innovation was not well developed resulted in lack of success at scale.

2.6 Practice Fidelity

While there are extensive evaluative accounts of school reform and much literature available on the purposes, issues, and results of school change (Bain, 2007; Elmore, 1996; Fullan, 2007; O’Donnell, 2008; Tyack & Cuban, 1995), there is relatively little mention of the fidelity with which these reforms have been implemented and their classroom impact (Bain, 2007; O’Donnell, 2008). O’Donnell (2008) conducted a review of the literature available on the fidelity of implementation of K-12 interventions and
found only 23 studies that provided evidence of implementation fidelity. Only five of those studies used research methods to measure beyond a descriptive level. All five studies consistently showed significantly higher outcomes when the programs were implemented with fidelity.

Implementation fidelity (sometimes referred to as implementation integrity) generally refers to whether an innovation or reform model is being implemented according to the intentions of the developers (Bain, 2010; Kurki, Boyle, & Aladjem, 2006; O’Donnell, 2008). This would include alterations in a broader sense, such as adequate provision of appropriate resources or professional development as recommended by the designers of the model. These are important in determining the fidelity with which the program is being carried out in schools. Practice fidelity is distinguished from implementation fidelity in that it focuses on the observable change in classroom practice over time.

There is also limited focus on implementation fidelity in reform studies. Both large-scale and site-based reform initiatives from a variety of geographic locations (England, US, Canada, and Australia) were reviewed for this study. They include Comer School Development Program in Maryland, US, Core Knowledge Sequence in the US, Evaluation of the Middle Years Reform in Victoria, Australia, The Ontario Education Strategy in Canada, Getting it Right: Literacy and Numeracy Strategy in Western Australia, and Excellence in Cities in England (Cook et al., 1999; Datnow, Borman, & Stringfield, 2000; Elsworth et al., 2004; Levin, Glaze, & Fullan, 2008; Meiers et al., 2006; Ridley & Kendall, 2005). The methods used in these studies to establish perspectives concerning the strengths and issues of the initiatives include narratives, interviews, and ratings of teachers, school administrators, and parents. These methods are less effective in determining whether the pedagogical components of reform models are being practiced with fidelity in classrooms.
Fidelity is often either assumed or established indirectly through surveys or interviews (O’Donnell, 2008). Often though, survey and interview data do not match classroom observation data (Applebaum & Schwartzbeck, 2002). Direct observations of teaching practices can provide productive feedback for next steps in the innovation process, can determine the degree of practice fidelity over time (Bain, 2007; Datnow, 2003), and can establish whether the level of practice fidelity varies from teacher to teacher (Berends et al. 2002, Cook et al. 1999; Datnow, 2003).

None of the studies in this review establish practice fidelity of classroom implementation through structured classroom observations over time. Practice fidelity is defined as “the integrity with which the pedagogical approaches associated with a reform are implemented across classrooms over time” (Bain, 2010, p. 4). For example, a pedagogical approach that is associated with the SEM is the accommodation of different students’ talents and interests in the delivery of lessons and materials being used. To determine the practice fidelity of this approach, observations would be made concerning the existence of opportunities to express learning through previously tested individual talents and interests and then to determine their success level over a period of time.

Research-based teaching practice can have a profound effect on student achievement (Hattie, 2003). It makes sense then that school reforms are likely to have effects on teaching and learning when the research-based pedagogical components of the reforms, intended to increase achievement effects, are implemented with integrity. However, the literature on site-based reform models shows modest effects on student learning and variable implementation fidelity (Borman et al. 2002; Zhang et al., 2005). With a worldwide view of site-based management reforms and over a period of more than 25 years, Gertler, Patrinos, and Rubio-Codina (2007) note that there is little evidence of effects of these innovations. Even where high levels of implementation fidelity are reported, modest effects are indicated (Borman et al., 2005). These efforts to
measure the implementation of reforms do not seem to be addressing the factors that actually affect teaching and learning. A focus on practice fidelity, the implementation of the pedagogical components of the reform models, may be the missing feature in school reform today that would lead to improved student learning.

Apparent in all of the aforementioned literature are two distinct issues concerning school reform. The first is that sustainability of reform efforts has been difficult to accomplish (Bain, 2007; Datnow, 2002, 2005; Elmore, 1996; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995). Evident in the literature are eight factors that are valued by school reform participants to be key components to sustaining an innovation: effective professional development, accessibility to needed resources, positive teacher attitudes and perceptions, collaboration of staff, strong and supportive leadership, comprehensiveness of the reform, attention given to time issues, and increased student achievement. The presence of these factors is noted to have a positive effect on the sustainability of reforms, but in the absence of these factors, reform models are prevented from embedding or lasting in schools.

The second challenge presented to school reformers is the lack of site-based evidence of practice fidelity on which to base evaluations of the effects of reform initiatives. The need for direct classroom observations to establish this practice fidelity is called for.

Though the issues of sustainability and implementation fidelity have proven to be points of breakdown in previous studies, attempting to fix these issues cannot be an end goal of this study. Prior efforts in educational reform to provide for these shortfalls have proven to be an inadequate solution (Bain, 2007). A more sophisticated approach that brings a deep understanding of the innovation’s real needs, a framework for understanding the key transactions in the teaching and learning process and in problem-solving needs and issues, is called for.
The success of school reform is often thought of in practical terms, but the success of an innovation also depends on its theory structure (Bain, 2007), which must be well defined, and then influence all the many working elements of the innovation. Theory is to be the map and then the driving force for the reform from the beginning to the end, from the vision to the smallest of details. Desimone (2002) unfortunately described Comprehensive School Reform as being atheoretical. Conversely, in the Self-organizing School Project, Bain (2007) attributes the progressively higher levels of implementation integrity and the gains in student achievement in part to the fact that the design was based on a complete theory. We cannot expect successful reforms without a theory structure.

The theory of Self-organizing Schools will be used as a theoretical lens through which the implementation of the SEM at Glenwood Academy can be examined. The theory involves six principles that evolved from a study of a site-based reform model by Bain (2007). The purpose of the theory was to “explain how schools can successfully adopt bodies of research-based practice at scale” (Bain, 2007, p. 41). The Self-organizing School (Bain, 2007) is grounded in complexity and self-organizing systems theory.

2.7 Complexity Theory and Self-Organization

Complexity theory is an offspring of chaos science, which suggests that predicting natural phenomena beyond the short term is naïve (Knight, 1998). This theory has been applied to organizational theory, proposing that most organizations are potentially chaotic and turbulent in nature as they operate in a climate of instability and stability, with both positive and negative feedback. Complex equilibrium is required, as conditions for chaos are always present (Brodnick & Kraft, 1997, p. 10). Within complex systems, the process of constantly adapting to change is known as “surfing the edge of chaos” (Pascale et al., 2000 as cited in Bain, 2007, p. 78).
Complexity theory attempts to explain how complex systems work and change (Coppieters, 2005). A system is defined as “a group of interacting, interdependent elements that form a complex whole” (Brodnick & Kraft, 1997, p. 7). Complex systems are open, with information constantly moving across the system boundaries. There is constant change. Complex systems are holistic, as no one part can control the system. The boundaries are difficult to determine, as there is much interrelation between agents in the system. They demonstrate *autopoi*esis, which originates from the Greek meaning self-production or self-making. Complex systems are self-organizing, as they transform themselves (Coppieters, 2005).

Complex systems are distinguished by a capacity for self-organization and emergence. Self-organization and emergence are not characterized by what is imposed from without, but rather the system is driven by its principles, philosophy, values, and processes such as feedback, communication, and relationships. Self-organizing systems are made up of agents who contribute to the ongoing development of the system (Waldrop, 1993 as cited in Bain, 2007). Agents working together in a manner where all become “more than the sum of the parts” (Odell, 1998, p. 1) can form entities, which are referred to by Odell (1998) as emergent structures. Emergence “is the existence of a coherent pattern that arises out of interactions among simpler objects” (Odell, 1998, p. 1). Emergent systems are not top down but emerge from the bottom up. People simply working in an institution as noninteracting individuals will not produce an emergent structure. An example of simple rules leading to emergence is a flock of birds, where each movement seems choreographed (Odell, 1998):

Furthermore, the movements of the flock seem smoother than those of any one bird in the flock. Yet, the flock has no high-level controller or even a lead bird. Each bird follows a simple set of rules that it uses to react to birds nearby. (p. 2)
2.8 Self-Organization in Schools

While theories of self-organization have been prevalent in various fields, it is more recently that the theory has been applied to the field of education (Bain, 2007). The theory of self-organizing systems fits well with education (O’Day, 2002), as it is a system that struggles to realize dispersed control in a traditionally autonomous environment. Self-organization does not occur naturally in schools (Bain, 2007). Bain identifies six principles that, within the context of self-organizing schools (SOS), will allow for bottom-up self-organization as noted in complex, self-organizing, and emergent systems. The SOS was tested in a decade-long study in a school that implemented the theory as a design metaphor. It was shown to predict both practice fidelity and sustainability.

These six theoretical principles, when applied, can help schools scale up their reforms with a goal to influence student learning in classrooms. In this study the theory of self-organizing schools will be used as a theoretical lens for examining the SEM at Glenwood Academy. This study uses the SOS theory structure to understand more deeply the factors that underlie practice fidelity and sustainability. The six theoretical principles of self-organization are as follows:

A school-level schema is “a commonly held set of professional understandings, beliefs, and actions about teaching and learning” (Bain, 2007, p. 44). The six principles are designed to function interactively to create a common school schema. This contradicts common occurrences in schools where teachers tend to work in isolation and are left on their own to practice as they choose (Rowe, 2003). The schema represents that which is commonly understood and valued by the members as well as a common knowledge that is gained from research.

An important feature of school-level schema is a common language or pattern language, which is necessary to work in collaboration. The schema and pattern language
related to the SEM (for example, *Type III enrichment, higher order thinking, Total Talent Portfolio*) will develop over the course of the study and will make the generation of feedback possible. When all of the school community understands and applies this language, “they possess the prerequisite knowledge and language to not only share in the use of those practices but also benefit from their achievement effects” (Bain, 2007, p. 46). Key features of the school schema, the core pedagogical components of the SEM, are represented in all instruments in this study.

*Simple rules* help a school to assign value on a few specific things and pour their energy and support into those few things. Simple rules are explicit, and they drive the way teaching and learning are done in a school. Bain (2007) suggests that “simple rules are about doing less, well, to accomplish more” (p. 49). Simple rules provide a foundation for successful collaboration of its members. The study will investigate whether the simple rules associated with the SEM were evident in the implementation of the model. The simple rules of the SEM were established at Glenwood Academy upon introduction of the model and drive the use of differentiated instruction in classrooms and other features of the design. Throughout this study, simple rules concerning the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching are reiterated throughout the classroom observations, surveys, interviews, and focus groups.

The beliefs, values, and actions about teaching and learning in a self-organizing school are embedded in every part of the organization (Bain, 2007). For example, the expression of the school’s simple rules throughout all elements of the design causes them to become entwined within the very fiber of the school. A value and belief associated with the SEM is a focus on student talents and strengths, rather than an emphasis on weaknesses. *Embedded design* is demonstrated when this value of student talent and strengths becomes a self-repeating pattern, expressing this simple rule of the SEM.
throughout the system. Embedded design goes beyond repeating the content of the design throughout all aspects of the school reform model, as each design element must become embedded in all of the others. In this study embedded design will be investigated by examining whether or not the SEM is embedded in the broader design of the school and whether the members of Glenwood community share a common pattern language in relation to they key features of the SEM.

The simple rules, the specifics of the SEM teaching and learning approaches, are represented in observation protocols, surveys, interviews, as well as in the professional development and the day-to-day action of the agents. A connection will be made across the instruments, as feedback generated from multiple instruments, methods, and perspectives will be cross-referenced.

In a self-organizing school, similarity at scale happens when the key features of a system are embedded at all levels, from students, to support staff, to teachers, and administration. It should be noted that scale or scaling up has been addressed previously in this review of the literature, referring to an innovation gaining a wider span of success, for example from one classroom to another, then school-wide, or even district-wide. Similarity at scale refers to a situation where the schema and embedded design of a school looks similar at all levels of the school (Bain, 2007). At Glenwood Academy, a group of students operating in a newspaper cluster would behave similarly to a group of teachers interacting at a division meeting or a team of administrators working through a policy manual. This study will investigate whether the SEM is impacting the school at multiple levels. Key features of the school schema are represented in student interviews, teacher surveys and interviews, as well as administrator interviews. If responses to items on the data collection instruments are similar across all levels, similarity at scale will be evident. The intent is to arrive at a common picture of what is occurring in the school
Evidences regarding the implementation of the SEM. A pattern language at all levels will be evidence of a school schema.

*Emergent feedback* in self-organizing schools is a system of feedback that is used to make next-stage decisions, and “the mechanisms for sharing feedback are deeply embedded in the design and are required for its ongoing implementation” (Bain, 2007, p. 53). Emergent feedback happens as all participants take ownership of the chosen model and it “permits every individual to successfully fulfill the roles of administrator, teacher, and learner in interconnected ways. Everyone is responsible to everybody else for the success of the system as it pursues its core activity” (Bain, 2007, p. 53). Emergent feedback happens regularly, not just at critical times. It is emergent as opposed to summative. The capacity of Glenwood Academy to progress in the implementation of the SEM depends on feedback. The study will establish whether emergent feedback amongst the participants is taking place. Feedback will propel the schema to perpetuate as participants’ capacity grows. Throughout this study feedback will be generated from all instruments. Participants will be invited to provide qualitative and quantitative feedback in writing as well as verbally in the one-on-one interviews and in focus group discussion. If there is a consistency of responses of all agents, a common framework for action will be evident. Emergent feedback is a way that Glenwood Academy can speak to itself (Bain, 2007), and this process can create a circumstance for change and adaptation.

Self-organizing schools are *bottom-up* in nature. Leadership is collective in that all members see themselves as leaders and change agents, and their collective power shapes the school. This is contrary to a traditional top-down approach where individual leadership centers on the role of a principal. A bottom-up approach necessitates authentic collaboration, which requires structures and networks that enable the feedback to occur and facilitate *dispersed control* to the agents who pool their collective intelligence. This
study will investigate the existence of dispersed control of the SEM practices and procedures across the school as well as the existence of bottom-up self-organization as a result of the implementation of SEM. Students and teachers will provide the majority of the feedback in this study. Reflection on the teaching and learning process and an invitation to collaborate and provide feedback to support change and adaptation of the SEM can empower the agents and result in a migration from traditional top-down leadership to a bottom-up approach.

A self-organizing school applies the six principles interactively to articulate and scale up the schema and design. According to Bain (2007, p. 57) the interconnectedness of the principles is key; they are a way “to reconcile the content and the process of a school reform” (Bain, 2007, p. 57). A school identifies its essential content through simple rules. This content is integrated by the embedded design principle into an organizational design. This content and process are scaled up to all levels of the school through similarity at scale and dispersed control, providing all connection needed in order for self-organization to occur. Emergent feedback sustains and progresses the design (Bain, 2007).

Schools adopting site-based reform models are like any system that is attempting a new endeavor. There is such an emphasis on creation and gaining a foothold that time for reflection is not taken. Therefore, a focus on theory is needed (Bain, 2007). The self-organizing school theory is designed to focus on the current condition of the system and then determine where to go next. A recognition of the existence or absence of these principles throughout the application of the SEM at Glenwood Academy will help reformers understand the system as is, and create a plan for next steps in the implementation of the reform. A focus on the adaptive capability within schools helps systems to deal with the ever-changing circumstances that schools are in through a
bottom-up, not the traditional top-down, fashion. This is done as agents within the system pool their intelligence to transcend individual capacities (Bain, 2007).

If a school increases its capacity for self-organization, emergent behaviour occurs, and it can move towards implementing a reform with fidelity (Bain, 2007). The reform model that generates bottom-up self-organizing behaviour will be responsive to the change that occurs in schools all the time and will recognize that there is no beginning or end in adopting change, but rather it is a constant process of adapting.

By looking at the pedagogical components of the SEM at Glenwood Academy through this lens of SOS, a deeper understanding will arise. The extent to which there is evidence of the principles of the SOS theory will provide an understanding of the practice fidelity and the sustainability of the SEM at Glenwood Academy.

2.9 The Schoolwide Enrichment Model (SEM)

The following section presents an overview of the SEM, which is the focus of this study. It provides a context for its inception and intentions, theoretical and organizational components, service delivery components (the pedagogical practices that are associated with the model), and a rationale for studying this model.

The Schoolwide Enrichment Model (SEM) is a school improvement model (Renzulli, 1977; Renzulli & Reis, 1985, 1997) that has been implemented with academically gifted students and, more broadly, with all students in heterogenous elementary schools and in high schools (Renzulli, 2005). The SEM has its roots in practices that were initially designed for gifted and talented students (Renzulli & Reis, 1997). The model is a result of the previously developed Enrichment Triad Model (Renzulli, 1977) which was combined with a more flexible approach to identifying high achieving students called the Revolving Door Identification Model (Renzulli, Reis, & Smith, 1981). The SEM has been implemented and studied since the 1970s (Renzulli, 2005), primarily in the United States but also internationally (Sytsma, 2003) and has
evolved over the years as education in general has changed. Formal research has been conducted that has helped to scale up this site-based innovation (Renzulli & Reis, 1994). The goal of the SEM is to provide enjoyable, yet challenging high-end learning to all students, no matter what their ability level, within a variety of school settings (Renzulli, 2005). SEM includes components that are designed to improve student achievement (Renzulli, 2005; Renzulli & Reis, 1994). The model provides a framework by which schools can exercise flexibility to create programs that best suit their unique cultures, resources, faculty strengths, and student demographics (Renzulli & Reis, 1997).

2.10 Theoretical and Organizational Components of the SEM

The model includes both theoretical and organizational components (Renzulli, 2003), stressing that an organizational model (concerned with administration, plans, schedules, time blocks, pullout programs, grade skipping, or differentiation in the regular classroom), although important, does not tell us the why, what, or how of reform. Theoretical models consist of the philosophy or the principles that the experiences and activities are built upon. Theoretical models often draw upon the work of leading theorists, researchers, or philosophers (Renzulli, 2003). The intent of this model is not to separate the gifted from the nongifted but rather to encourage all students to reach their maximum potential by providing opportunities and resources.

This research-based innovation is supported by theorists such as Howard Gardner, Robert Sternberg, Mihaly Csikszentmihalyi, and Benjamin Bloom (Renzulli, 2003, 2005) and their call for high levels of performance and creativity in students (Bloom, 1985; Csikszentmihalyi, Rathunde, & Whalen, 1997; Gardner, 1993; Sternberg, 1985). Views originating from these theorists include focusing on concepts rather than skills, interdisciplinary teaching and theme-based studies, student portfolios, performance assessment, cross-grade grouping, alternative use of time (scheduling
patterns), hands-on learning, firsthand investigations, and application of knowledge and thinking skills to complex problems (Renzulli, 2005).

The SEM is not an add-on to already existing school programs (Friedman, 2005; Renzulli, 2000), nor is it intended to replace existing delivery components of a school. Rather, it can be understood as an umbrella under which many types of differentiated and enriched learning experiences can be provided (Renzulli, 2003). Equity in education can be achieved only if the diversity of students is acknowledged and if high achieving students are given as many rights to accommodations in their learning as those who experience learning difficulties (Fiedler, Lange, & Winebrenner, 2002; Renzulli, 2003; Tomlinson, 1999b, 2005; Willard-Holt, 2003; Winebrenner, 2000).

The following are features that characterize SEM programs (Friedman, 2005, p. 1).

- High standards and advanced levels of academic challenge for all students
- A flexible approach to curriculum modification that accommodates individual needs
- Responsiveness to the needs of low achieving students by replacing traditional remedial methods with an enrichment approach used successfully for years with higher achieving students
- Development of motivation, creativity, thinking skills, and cooperativeness by taking student interests and learning styles into consideration
- A hands-on approach to enrichment that focuses on the use, rather than assimilation, of information and the student’s role as a firsthand inquirer
- A guarantee of faculty ownership and involvement through a comprehensive planning process that includes teachers, administrators, and specialists
2.11 Delivery Components of the SEM

There are specific pedagogical practices that are at the heart of the Schoolwide Enrichment Model (Renzulli, 2000; Renzulli & Reis, 1997). These are key features of the school schema as they represent the beliefs and values, or the simple rules (Bain, 2007) of the SEM. These teaching and learning components aid in identifying students’ strengths, interests, and talents as well as their current knowledge and ability levels. They then provide teachers with a foundation and structure by which they can decide on the most suitable learning experience for the students. These components are the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching.

2.11.1 The Total Talent Portfolio. The Total Talent Portfolio represents a simple rule of the SEM. It is a method by which information about students’ abilities, interests, learning styles, and expression preferences is gathered and then used to help the students set personal goals and express their learning, or to design enrichment activities for students. Teachers can individualize curriculum activities for each student using this portfolio. The Total Talent Portfolio is available from the Renzulli Learning System, which is a web-based computer program, or it can be completed through various other paper-and-pencil surveys. This information focuses on the students’ strengths rather than their deficits.

2.11.2 Curriculum Modification Techniques (differentiation techniques). The purpose of Curriculum Modification Techniques is to adjust the levels of learning so that all students in the classroom are challenged, to increase the number of high order learning experiences for students, and to incorporate various enrichment experiences into the regular curricular experiences. These differentiation techniques represent another simple rule (Bain, 2007) of the SEM.
Teachers are encouraged to carry out Curriculum Modification Techniques by implementing various procedures such as curriculum compacting, critical analysis of textbooks to avoid presenting repetitious and busy learning, careful teaching planning in order to introduce greater depth to the regular curriculum, and a variety of differentiation instructional techniques.

It is important that teachers and administrators stay abreast of current literature and resources on differentiated instruction so as to have a variety of instructional tools to draw from in order to meet the needs of their students (Heacox, 2002; Tomlinson, 1999a, 2001; Tomlinson & Allan, 2000). This should be a key component of professional development for schools implementing the SEM.

Curriculum compacting is an instructional technique used to make appropriate adjustments for students in any subject area (Heacox, 2002; Reis, Westberg, Kulikowich, & Purcell, 1998; Tomlinson, 2001). It serves students who are either above average in their ability or who display strengths or high interest in a particular content area. Once teachers have defined the outcomes of a given unit of instruction, they can identify students who have already mastered the outcomes. This can be done in a variety of ways including review of previous assignments and tests or classroom participation, or it could involve pretesting. Then enrichment options are provided for the student to ensure that repetition of previously mastered material does not take place. The term compacted out is often used when a student goes through this process.

2.11.3 Enrichment Learning and Teaching. The Enrichment Learning and Teaching component of SEM takes into consideration that each learner is unique and their abilities, interests, and learning styles differ. Further, students learn better when they enjoy what they are doing. Learning is more meaningful when content and process are learned in the context of real-world problems. Although some formal instruction can be used in enrichment learning, it is recognized that knowledge and thinking skill
acquisition results from a student’s own construction of meaning. Through the Enrichment Learning and Teaching component, passive learning is replaced with independent and engaged learning.

A triad model exists in the SEM in order to systematically apply Enrichment Learning and Teaching to the classroom (Renzulli, 2000). This model consists of Type I, Type II, and Type III forms of enrichment.

Type I enrichment experiences are designed to expose students to a wide variety of topics of interest, occupations, hobbies, professionals, areas of study, or even places. School personnel organize Type I experiences by contacting speakers or arranging performances or demonstrations in order to expose students to new ideas.

Type II enrichment experiences consist more of materials or methods that are designed to promote thinking skills or how-to skills. They involve training in areas such as critical thinking or problem solving or skills such as analyzing, referencing, communicating, or classifying. They often involve advanced instruction in a specialized area of interest for specific students. Often a Type II experience is preparing a student to carry out a Type III investigation.

Type III enrichment experiences provide the chance for students who wish to investigate further a topic or idea about which they have become curious, excited, or even passionate. Type III enrichment experiences involve a commitment of time during which students will assume the role of a firsthand investigator. This can be done individually (once a student has been compacted out of a particular unit or subject, allowing time for research) or within homogeneous groups within a classroom, or it can be carried out in cross-aged clusters throughout the entire school. Type III investigations involve a student encountering a real-world problem, a firsthand investigation, and preparing a presentation to an audience.
Interaction among the types is of utmost importance. For instance, a Type I experience is rich in and of itself for any student but may be richer if it leads that student to carry out a Type III investigation. A Type II experience will aid a student in acquiring the skills needed to achieve a Type III investigation and finally if a student or a group of students choose to share or present their Type III experience to another group, it can become that second group’s Type I experience (Renzulli, 2000).

2.12 The Schoolwide Enrichment Model as Whole School Reform

The Schoolwide Enrichment Model is a reform effort that encompasses all aspects of schooling (Renzulli, 2005). It is comprehensive by design. Attempts to alter single components of school systems has proven to be unsuccessful in school change attempts and often only gives off the appearance of improvement rather than necessary lasting change (Renzulli, 2005; Tyack & Cuban, 1995). Creating more rigorous curriculum standards, high-stakes testing, extended school days, and changed teacher certification requirements are some examples of single-component school change.

It is crucial that substantial change, if it is to really matter, must focus on the act of learning (Fullan, 2007; Tyack & Cuban, 1995). Changes in organizational and administrative structures are important but do not address directly the question of how we can improve learning—that which happens in classrooms where teachers, students, and curriculum interact.

2.13 Research on the Schoolwide Enrichment Model

A number of studies on the SEM have proved its effectiveness in specific aspects of school improvement, demonstrating the need for gifted education pedagogical practices and, in particular, the benefits that occur when all students, not just the gifted, are offered such programs (Mulhern, 2003; Renzulli & Reis, 1994, 1997; Scot, Callahan, & Urquhart, 2009; VanTassel-Baska & Brown, 2007). Studies related specifically to the SEM show positive results in the areas of student attitudes towards reading (Reis, Eckert,
McCoach, Jacobs, & Coyne, 2008), student achievement in social studies and science (Field, 2009), reading comprehension and reading fluency (Field, 2009; Reis et al., 2008), and improved student learning and engagement when enrichment strategies (Newman, 2005; Olenchack & Renzulli, 1989), enrichment clusters (Reis, Gentry & Park, 1995), and curriculum compacting (Reis et al., 1993) are applied to the programs. These site-based studies throughout the US employed experimental and quasi-experimental designs that included both qualitative and quantitative research methods. Questionnaires, observations, surveys, and ratings of teachers, parents, principals, and students were used successfully to establish perspectives and perceptions of key stakeholders but were not used to determine whether the specific pedagogical practices associated with the innovations were being implemented with fidelity in the classrooms.

Sustainability is also not a key focus of concern in these studies, though positive achievement effects, quality professional development, support from leadership, availability of teaching resources, the provision of time, and positive teacher attitudes and perceptions were referred to throughout the SEM-related studies as valued and needed components to the change process in schools. The SEM has helped to define what works well for gifted students since the mid-1970s and across more than 2,500 schools (Burns, 1998). It has more than two decades of research, development, and implementation behind it. Few site-based models can boast such longevity. A review of the SEM studies leaves the impression that sustainability is often assumed, as it is not a leading inquiry in field studies. The need exists to research the sustainability factors of the SEM in light of current research which identifies sustainability of school reforms to be a problem (Datnow, 2002, 2005).

None of the aforementioned studies employed observation at a microlevel to determine the fidelity of implementation of specific teaching practices. Sometimes classroom observations are used to confirm findings in interview or questionnaire data or
to establish the presence or absence of macrolevel change (Appelbaum & Schwartzbeck, 2002; Datnow, 2003) but none of these studies implemented classroom observation at a microlevel to determine practice fidelity (Bain, 2007). The extent to which the effects of a model can be attributed to the program depends on whether it is being practiced with fidelity.

A compilation of research related to the SEM (Renzulli & Reis, 1994) and recent communication with Dr. Sally M. Reis, Principal Investigator for the National Research Center on the Gifted and Talented (personal communication, February 9, 2009 and August 4, 2009), confirms that neither fidelity of implementation nor sustainability have been the focus of any of the SEM investigations to date.

To understand the issues associated with the sustainability and fidelity of reforms, a need exists to look beyond these points of breakdown in site-based school reforms such as resource needs or quality of professional development and school leadership (Bain, 2007). Though these are repeated issues in literature on sustainability of school reform, previous efforts to meet these needs as a solution to educational problems has proven to be “incomplete and inadequate” (Bain, 2007, p. 36). A need exists to approach the implementation of the SEM with theory in mind, as a theory can provide the “big picture” thinking required to provide success in the implementation of the SEM that has been lacking in school innovations in the past. The Self-Organizing School (SOS) is grounded in complexity and self-organizing systems theory. The purpose of the self-organizing theory is to enable systems to deal successfully with the changes that result from implementing research-based practices.

2.14 Conclusion

The purpose of chapter two was to lay a foundation for this study on the practice fidelity and sustainability of the Schoolwide Enrichment Model by reviewing the relevant literature on school reforms.
In chapter three the theoretical lens for the study is described, as well as the design, methodology, sampling, data collection, and procedure. The methodology chosen for this study was determined by the research questions and involves classroom observations, teacher surveys, student interviews, teacher interviews, administrator interviews, as well as focus groups.
Chapter Three: Methods

The purpose of this chapter is to describe the research methodologies used to answer the research questions of this study. This chapter begins with an overview of the data collection and procedure of the study. A description of the theoretical lens and of a single study research design and mixed methods approach is then provided. Reliability, validity, strengths, limitations, sampling, instruments, and ethical considerations are then discussed.

3.1 Overview

Teachers, administrators, and students from Glenwood Academy made up the sample for this study. Data collection took place in two phases. Phase 1 began with three classroom observations for each of the 10 participating teachers. Observations were conducted by the researcher to determine the practice fidelity of the three core pedagogical components of the SEM. Classroom observations were followed by teacher surveys that provided the teachers’ perspective concerning their implementation of the pedagogical components of the SEM in their classrooms. Interviews with 40 students were then conducted to provide the students’ perspective concerning the implementation of the pedagogical components of the model in their classrooms. Teacher interviews were then carried out. Teachers reported on the success of the eight sustainability factors, as determined from the literature, and the impact of these factors on the pedagogical components of the SEM at Glenwood Academy. Phase 1 ended with four administrator interviews, which provided the administrators’ perspectives of the prevalence of the six SOS principles in the school. These same methods were carried out again in Phase 2 of the study, with the addition of two teacher focus group discussions.

3.2 Theoretical Lens

The theoretical lens for this study is based on The Self-Organizing School: Next-Generation Comprehensive School Reforms (Bain, 2007). The book is an account of the
Self-Organizing School Project, an 11-year study of a secondary school reform project. The focus of the work was to embed a research-based practice into the life of a school by using a practical theory of school design. *Self-organization* is a term that refers to a way in which a school can undergo constant and dynamic change by producing bottom-up solutions in which participants collaborate on ideas and decisions and thus exceed their individual capacities (Bain, 2007). This kind of change has been shown to produce high levels of practice fidelity and sustainability over time (Bain, 2007).

The design process for self-organization involves an application of six principles: simple rules, embedded design, similarity at scale, emergent feedback, dispersed control, and school-level schema (Bain, 2007). The goal of the SOS is to produce an adaptive complex system that is capable of dealing with ongoing change by implementing these six principles.

A single study research design and a mixed methods approach were used to investigate the practice fidelity and sustainability of the SEM at Glenwood Academy. A variety of methods were used to conduct the in-depth study of this single case as each of the research questions was addressed. In this study, the self-organizing theory, as seen in Figure 1, was used as the theoretical lens in an effort to provide a deeper understanding of the factors that contribute to practice fidelity and sustainability. As a benchmark, the theory provides a set of key characteristics that are linked to successful site-based change. This is accomplished through the recognition of the existence or absence of these characteristics throughout the application of the SEM at Glenwood Academy. The self-organizing principles are the criteria against which the implementation of the SEM will be measured but not the way in which the research will be conducted.
Investigating the practice **fidelity** and **sustainability** of the SEM at Glenwood Academy through the following research questions

- To what extent are the specific pedagogical practices associated with the SEM being implemented with fidelity within the classrooms at Glenwood Academy?
- How does this practice fidelity, or lack thereof, relate to the sustainability of SEM at Glenwood Academy?
- To what extent are the theoretical principles associated with the SOS theory reflected in the implementation of the SEM at Glenwood Academy?

**Figure 1.** Theory of self-organization as a lens for investigating the SEM.
By looking at the pedagogical components of the SEM at Glenwood Academy through this lens of SOS, a deeper understanding of practice fidelity and sustainability of the SEM as a school reform model will arise. This will be accomplished using a case study research design.

### 3.3 Case Study Research Design

Case study research design is a primary method of qualitative investigation (Creswell, 2008;Fraenkel & Wallen, 2000; Gall, Gall, & Borg, 1999; Gay, Mills, & Airasian, 2009; Miles & Huberman, 1994). It involves “in-depth, field-based studies of particular instances of the phenomenon, known as cases” (Gall et al., 1999, p. 289). Creswell (2008) refers to case study as the in-depth exploration of a “bounded system” based on extensive data collection” (p. 476). This system could take the form of individuals, a group, an event, or a process. A case is bounded, as it is “separated out for research in terms of time, place, or some physical boundaries” (p. 476). Miles and Huberman (1994) similarly define case as “a phenomenon of some sort occurring in a bounded context. The case is, in effect, your unit of analysis” (p. 25). In this study, Glenwood Academy represents a bounded system, and bounded within that system are the teachers, students, administrators, and all the activities that are relevant to understanding the practice fidelity and sustainability of the SEM as a school reform model in this unique setting.

#### 3.3.1 Single case study

Depending on the number of cases to be studied, a case study can be a single, multiple, or collective case study (Gay et al., 2009). This particular study is a single case study in that it involves an instance of a single school. It is a unique case and has the possibilities of providing valuable insights for others in similar situations (Fraenkel & Wallen, 2000). The applicability to other situations is based on the deep analysis of the practice fidelity and sustainability of the SEM at Glenwood Academy and the extent to which those circumstances and the findings are deemed
relevant to other settings.

3.3.2 Intrinsic, instrumental, or collective case study. Creswell (2008) describes three types of case studies: intrinsic case, instrumental case, and collective case study. When a researcher is interested in understanding the specific case itself due to perhaps the uniqueness or particular merit of the case, it is called an intrinsic case. When the focus of a study is a specific issue where the case is used to illustrate that issue, this case is called instrumental. The study will shed light on a particular issue. Collective case study includes multiple cases which are described and compared in order to provide insight into an issue. This study is an example of both intrinsic and instrumental case study. It is intrinsic in that the aim of this study is to understand more about practice fidelity and sustainability of the SEM at Glenwood Academy. It is instrumental in that it addresses the issues presented in the literature concerning both the lack of focus on the fidelity of implementation of reforms as well as the difficulty in accomplishing the sustainability of reforms over time.

Figure 2 displays the specific characteristics of this single case study. The study seeks to understand the practice fidelity and sustainability of a bounded system, Glenwood Academy. It is an intrinsic and instrumental case study and will involve collecting extensive and multiple forms of data through observations, interviews, surveys, and focus group interviews.
Involves an in-depth understanding of a case or bounded system

Relates to understanding an event, activity, process, or people

Identification of the type of case

Involves collecting extensive data using multiple forms of data collection

Glenwood Academy as a single case

Understanding practice fidelity and sustainability of the SEM

Intrinsic and instrumental case study

Observations, interviews, surveys, focus groups

**Figure 2.** Characteristics of this case study design.

### 3.4 Reliability and Validity in Case Study Design

This research implements both qualitative and quantitative data collection methods and therefore understanding reliability and validity from both perspectives is important to this study. The specific reliability and validity tactics that are considered in order to present a rigorous case study design for this particular study are outlined in Table 1.
4.3.1 Reliability and validity. Reliability in qualitative work refers to dependability (Miles & Huberman, 1994), and that the research has been completed with care. Reliability implies that “the process of study is consistent, reasonably stable over time and across researchers and methods” (Miles & Huberman, 1994, p. 278). In quantitative research, reliability often implies “the extent to which a test or procedure produces similar results under constant conditions on all occasions” (Bell, 2005). A common critique of case study is that findings are based on the investigator’s impressions only.

Tactics must be used to increase construct validity when carrying out a case study that includes using multiple sources of evidence, establishing a chain of evidence, and finally having the case study draft reviewed by key informants (Yin, 2009). A theoretical framework of the SOS will guide the chain of evidence in this study.

External validity refers to the transferability of the findings of a study to other contexts (Miles & Huberman, 1994); in other words, to what degree can the findings be generalized? External validity has been a barrier in doing case studies, as critics typically conclude that single cases do not offer a basis for generalization (Yin, 2009). It may be true that single case study results will not transfer to a “larger universe” (Yin, 2009, p. 43); however case studies can generalize results to become a broader theory. In this instance the use of the case to pursue evidence of a theory structure enables the findings of the single case to support, alter, or refute a theory which has been more broadly applied. As such the use of the theory links this work to other studies that employ the SOS theory.
Table 1
Case Study Reliability and Validity Tactics

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<thead>
<tr>
<th>Test</th>
<th>Tactic</th>
<th>Phase of research</th>
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<tbody>
<tr>
<td>Reliability</td>
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<tr>
<td>• Dependability</td>
<td>• Completed with care</td>
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<td>• The study could be</td>
<td>• The study could be repeated with similar results (Yin, 2009)</td>
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<td>- Dependability</td>
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<td>• The study could be repeated with similar results (Yin, 2009)</td>
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<tr>
<td>Construct validity</td>
<td>• Ensure that research questions are clear (Miles &amp; Huberman, 1994)</td>
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<tr>
<td>• Identifying correct</td>
<td>• The researcher’s role is clearly described (Miles &amp; Huberman, 1994)</td>
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<tr>
<td>- Operational measures</td>
<td>• Data analysis shows consistency from source to source (Miles &amp;</td>
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<td>- being studied (Yin,</td>
<td>- Same protocols used on all participants (Miles &amp; Huberman, 1994)</td>
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<td>2009)</td>
<td>• Multiple sources of evidence (Yin, 2009)</td>
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<td>• Generalization</td>
<td>• Establish chain of evidence (Yin, 2009)</td>
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<tr>
<td>• Generalization</td>
<td>• Draft reviewed by key informants (Yin, 2009)</td>
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<tr>
<td>External validity</td>
<td>• Use of theory (Yin, 2009)</td>
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<tr>
<td>• Generalization</td>
<td>• Participants, setting, and processes are fully described (Miles &amp;</td>
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<td></td>
<td>• Theory is well described and diverse enough to encourage a broad</td>
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<td>• Applicability (Miles &amp; Huberman, 1994)</td>
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<td>• Applicability (Miles &amp; Huberman, 1994)</td>
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3.5 Strengths and Limitations of the Design

The following outlines the strengths and limitations particular to this research design.

3.5.1 Strengths. The design of this study implements features of both qualitative and quantitative approaches while maximizing on the flexibility of case study design (Creswell, 2008). Data are derived from multiple participants and multiple instruments, providing a full close-up picture and diverse perspectives of a phenomenon (Silverman, 2006). This design will allow the researcher to maintain the holistic and meaningful attribute of the real-life event (Yin, 2009), yet provide solid numeric evidence of the level of practice fidelity of the key pedagogical components of the SEM at Glenwood Academy.

The design is viewed through the theoretical lens of a self-organizing school. The six theoretical principles associated with the SOS theory are school-level schema, simple rules, embedded design, similarity at scale, emergent feedback, and dispersed control (Bain, 2007). These principles are represented throughout the implementation of the SEM as seen in Table 2. Support for a theory is a matter of inference. It is not absolute proof, but the data derived from a setting can be seen to support or refute a theory structure.
Practice Fidelity and Sustainability

Table 2
Principles of Self-Organization Represented in This Design

<table>
<thead>
<tr>
<th>Self-organizing principle</th>
<th>Represented in this study</th>
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| Embedded design           | • Data derived from multiple participants and multiple instruments  
                           | • Volume of feedback  
                           | • Repeated use of tools over time (two phases)  
                           | • Simple rules and specifics of the SEM teaching and learning approaches are represented in observation protocols, surveys, interviews—a connection of theory and design and feedback tools  
                           | • Schema reflects consistencies in school’s design that guide the day-to-day action of agents |
| Similarity at scale       | • Multiple participants at different levels (students, teachers, researcher, administrators)  
                           | • Responses to items on data collection instruments are similar for students, teachers, administrators  
                           | • Design scales up to all levels  
                           | • Perceptions of agents at different levels are similar  
                           | • A common picture of what is occurring in the school regarding the implementation of SEM is similar across all levels of agents  
                           | • Pattern language at all levels is seen as supporting school schema |
| Emergent feedback         | • Volume of feedback from observations, surveys, interviews and focus groups  
                           | • Feedback throughout all phases of the study  
                           | • Consistency of responses of all agents shows a common framework for action |
| Simple rules              | • High levels of implementation integrity  
                           | • A set of beliefs and values of the SEM is articulated through off-site and on-site professional development  
                           | • Simple rules of the SEM are represented on all data collection instruments  
                           | • Simple rules are articulated through many lesson design tools provided to teachers throughout professional development |
| School schema             | • Deep embedding of the pattern language of the SEM in all instruments and similarity in responses  
                           | • Feedback from many agents at many levels  
                           | • Consistency and regularity of responses of agents due to a common framework |
| Dispersed control         | • Constant adaptation and change permits the SEM to evolve  
                           | • Data reflects engagement of agents and bottom-up collaboration  
                           | • Migration from traditional top-down leadership to a bottom-up approach |
3.5.2 Limitations. Case studies are a relatively new development in research when compared to other approaches and they have been critiqued as having less rigor than some other approaches (Creswell, 2008; Yin, 2009). Yin (2009, p. 14) notes that too often in the past, investigators have been “sloppy”, not following “systematic procedures”, or have allowed “equivocal evidence or biased views” to influence their results. The use of a well-planned design that begins with clear research questions and includes a theoretical framework, qualitative and quantitative data, and a variety of research methods and instruments will create focus and rigor for this study.

In qualitative studies, because much depends on the researcher, researcher bias can be a limitation (Fraenkel & Wallen, 2000). Bias can occur throughout the process, from designing the protocols to analyzing them (Yin 2009) with the possibility of selective reporting (Bell, 2005). A researcher of a single case study must work with precautions in place in order to deal with all data fairly (Yin, 2009).

To learn about a situation, to understand the experiences of the participants, a researcher must become involved in the activities at the research site (Creswell, 2008). A participant observer “is an observational role adopted by researchers when they take part in activities in the setting they observe” (Creswell, 2008, p. 222). This role requires that participants are comfortable with the observer. Researcher bias can take place when “the researcher has some previous knowledge about the subjects,” and this knowledge may cause the “researcher to convey some clue that affects the subjects’ reaction or may affect the objectivity of his or her judgment” (Best & Kahn, 1998, p. 166). In this study, the researcher was a member of the faculty of the school and had collaborated with the members in all of the reform efforts. There was a deep knowledge and involvement with the setting. In order to remain neutral throughout this process, it was imperative that the researcher acknowledged researcher biases and be explicit about the inevitable biases that exist (Miles & Huberman, 1994). The following preventative measures against bias
were taken (Miles & Huberman, 1994):

- The study’s methods and procedures were described in detail, providing a complete picture.
- A sequence was made clear as to how data were collected, analyzed, and communicated.
- The researcher was as self-aware as possible and explicit about assumptions or biases and how they might affect the study.

There is a concern that single case study provides little basis for generalization (Bell, 2005; Yin, 2009). Generalization is a term referring to the applicability of the findings from one setting to another, different from the one in which they were obtained (Gay et al., 2009). Yin (2009) suggests that “case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes” (p. 15). The goal of this research is to expand and generalize theories, not statistics (Yin, 2009). Findings from this study may apply to other schools that are interested in the implementation or the sustainability of the SEM or of another chosen reform model.

Another common limitation of case study is the amount of time and resources needed to collect and analyze multiple sources of data in order to gain the in-depth understanding of the phenomenon (Yin, 2009). As well, a researcher would have to be competent in more data collection and analysis skills (Silverman, 2006). These limitations were considered, but in order to understand practice fidelity and sustainability of the SEM at Glenwood Academy, only multiple types of data from multiple sources will give an in-depth, well-developed, broad perspective that is needed.

3.6 Mixed Methods

In order to address the research questions that guide this study, an approach that would provide comprehensive and holistic insight into the practice fidelity and the
sustainability of a school reform model is needed (Creswell, 2008). Therefore, a mixed methods research approach was selected for this study.

Mixed methods research is a procedure for mixing qualitative and quantitative approaches, combining the data from both into a single study (Creswell, 2008; Gay et al., 2009; Miles & Huberman, 1994). Miles and Huberman (1994, p. 42) declare this to be a “very powerful mix.” A mixed methods approach allows the researcher to maximize the strengths of both the qualitative and the quantitative data.

This approach allows for quantitative data to be collected and analyzed in order to show frequency or degree of occurrences in an objective way, but also allows the qualitative data to share the perspectives of people that are involved in the study, allowing for a more intimate and intricate perspective. Gay et al. (2009, p. 462) add that a mixed methods approach allows the researcher to “build on the synergy and strength that exists between quantitative and qualitative research methods to understand a phenomenon more fully than is possible using either quantitative or qualitative methods alone.” Linking qualitative and quantitative data allows the researcher to confirm one approach with the other, elaborate or provide richer detail to the quantitative with the qualitative by supplying the background data, filling in the blanks, giving explanation to the participants’ quantitative responses, or illustrating the quantitative findings.

In this study, classroom observations, teacher surveys, student interviews, and teacher interviews allowed for both qualitative and quantitative data to be collected. Judgments concerning the existence of key pedagogical components of the SEM (for example observed, not observed, missing), ratings on their instructional success (completely successful, successful, neither successful nor unsuccessful, unsuccessful, completely unsuccessful), and ratings on the sustainability factors (for example, professional development can be rated as completely successful, successful, neither successful nor unsuccessful, unsuccessful, or completely unsuccessful) all allowed
students and teachers to provide quantitative data. Open-ended questions on surveys, interviews, and observations, for example, “How has your experience with professional development impacted your implementation of SEM”? allowed the researcher, teachers, administrators, and students to respond in a narrative format, inviting remarks of clarification or explanation. These questions allowed for an intimate, in-depth look into the experience of the administrators, teachers, and the students as learners.

A triangulation mixed method design (Creswell, 2008) was implemented, in that qualitative and quantitative data were collected simultaneously, and equal priority or emphasis was given to both qualitative and quantitative data. Phase 1 of data collection included all protocols, and then Phase 2 repeated the implementation of each of the protocols, with the addition of the focus groups at the end of Phase 2.

Data were combined and the results used to understand the practice fidelity of each teaching component of SEM and the relationship of this practice fidelity to sustainability. Triangulation mixed method design was useful in this study as “one data-collection form supplies strengths to offset the weaknesses of the other form” (Creswell, 2008, p. 557). In this study, quantitative data gathered from the classroom observations, student interviews, teacher surveys, and teacher interviews provided concrete evidence of the implementation of the SEM pedagogical components as well as the presence of some key sustainability factors. The qualitative data, collected from the same protocols, provided a more in-depth perspective of the context of the study and the participants’ perspectives.

3.7 Data Collection and Procedure

The following outlines the data collection and procedure used in carrying out this study including purposive sampling, data collection methods and tools, analysis, and ethical considerations.
3.8 Purposive Sampling

Teachers, administrators, and students from Glenwood Academy made up the sample for this study. Descriptions of teacher and student participants are provided in Table 3 and Table 4.

Table 3
*Teacher Participant Details*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Years of teaching experience (range)</th>
<th>Years of experience with SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher A</td>
<td>1–5</td>
<td>3</td>
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<tr>
<td>Teacher B</td>
<td>1–5</td>
<td>1</td>
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<tr>
<td>Teacher C</td>
<td>1–5</td>
<td>1</td>
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<tr>
<td>Teacher D</td>
<td>11–20</td>
<td>3</td>
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<tr>
<td>Teacher E</td>
<td>20+</td>
<td>3</td>
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<tr>
<td>Teacher F</td>
<td>6–10</td>
<td>3</td>
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<tr>
<td>Teacher G</td>
<td>6–10</td>
<td>3</td>
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<tr>
<td>Teacher H</td>
<td>11–20</td>
<td>3</td>
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<tr>
<td>Teacher I</td>
<td>11–20</td>
<td>3</td>
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<tr>
<td>Teacher J</td>
<td>20+</td>
<td>3</td>
</tr>
<tr>
<td>Student</td>
<td>Age</td>
<td>Grade</td>
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<td>5</td>
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<tr>
<td>3</td>
<td>13</td>
<td>8</td>
</tr>
</tbody>
</table>
The sample of teachers included all of the teachers at the school who met the following criteria:

1. They have taught at the school for at least one year and have taken part in the on-site professional development pertaining to SEM.

2. Their job description allowed them opportunities to practice the main pedagogical components of the SEM. Some teachers, for example the Physical Education Instructor, and the Resource Instructor decided that for the purposes of this study, limited data could be retrieved from their practice.

3. They agreed to participate in the study.

Ten of the school’s 15 teachers met the criteria and participated in the study.

The student sample included four students from each classroom, or four students for each teacher-participant. A concentration on a smaller number of students was made in an attempt to avoid any superficial perspectives as well as to avoid unnecessary volumes of data. One student per teacher may not provide adequate data, whereas data from two students would provide opportunity for agreement or difference in perspectives.

The students were selected based on the following:

1. Students selected were allowed to participate in the study for only one teacher. For example, a student who was providing data for their Second Language class would not also provide her or his perspective for Math class. This was done in an attempt to involve as many students as possible.

2. Students selected would have been part of the school for at least one year. It was beneficial to the study that students were familiar with the basic concepts and terminology of the SEM.
3. Students who met the first two criteria were selected at random to participate in the study. Numbers were drawn, and the student that corresponded to that number (as on class attendance list) were selected for the study. When a student was selected and was disqualified due to the given criteria, another was selected instead. This selection of students provided a variety of perspectives.

4. Students selected were required to receive parental consent in order to participate in the study.

5. Students selected for the study were also required to give their informed assent to participate.

3.9 Data Collection Methods

Data were collected using researcher-designed data instruments. The instruments of this study were designed to generate effective feedback that was necessary to make a determination about the practice fidelity and sustainability of the SEM at Glenwood Academy. The SOS principles were investigated first in the form of direct questioning within the protocols. The SOS principles were also investigated through their representation in the data and methods in carrying out the study. Finally, the SOS principles were identified through evidence of performance in terms of sustainability and practice fidelity whereby the sustained levels of implementation are used in collaboration with the other evidence sources to infer evidence of the theory.

Descriptions of each data collection method with associated advantages and limitations are identified in Table 5.
Table 5
*Data Collection Tools: Advantages and Limitations (Creswell, 2008)*

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Advantages</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom observations</td>
<td>Opportunity to record information in a natural setting</td>
<td>Individuals are unaccustomed to formal research</td>
</tr>
<tr>
<td></td>
<td>Allows for direct comparison across categories</td>
<td>Requires consistent, good listening skills and careful attention to detail on the researcher’s part</td>
</tr>
<tr>
<td>Teacher surveys</td>
<td>Provides useful information of that which cannot be observed</td>
<td>Dependent on writing ability of participant</td>
</tr>
<tr>
<td></td>
<td>Provides measurable data</td>
<td>Responses may be limited due to time constraints</td>
</tr>
<tr>
<td></td>
<td>Allows for direct comparison across methods</td>
<td>Nonverbal communication cannot be noted</td>
</tr>
<tr>
<td></td>
<td>Can be completed on teacher’s own time schedule</td>
<td>Responses are limited to the given questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time-consuming for teachers</td>
</tr>
<tr>
<td>Student interviews—</td>
<td>Provides measurable data</td>
<td>Some students may be hesitant to speak; others not</td>
</tr>
<tr>
<td>Part 1: one-on-one</td>
<td>Allows for direct comparison across methods</td>
<td>Time-consuming</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presence of researcher may affect participants’ answers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responses are limited to the given questions</td>
</tr>
<tr>
<td>Student interviews—</td>
<td>Provides useful information of that which cannot be observed</td>
<td>Students may be hesitant to speak; others not</td>
</tr>
<tr>
<td>Part 2: one-on-one</td>
<td>Participant can describe detailed information</td>
<td>Time-consuming</td>
</tr>
<tr>
<td></td>
<td>Provides measurable data</td>
<td>Presence of researcher may affect participants’ answers</td>
</tr>
<tr>
<td></td>
<td>Allows for direct comparison across methods</td>
<td>Responses may be filtered through views of the interviewer</td>
</tr>
<tr>
<td>Teacher interviews—</td>
<td>Participant can describe detailed information</td>
<td>All participants are not equally articulate</td>
</tr>
<tr>
<td>one-on-one</td>
<td>Interviewer is not limited to given questions</td>
<td>Time-consuming</td>
</tr>
<tr>
<td></td>
<td>Provides measurable data</td>
<td>Responses may be filtered through views of the interviewer</td>
</tr>
<tr>
<td></td>
<td>Allows for direct comparison across methods</td>
<td>Presence of researcher may affect participants’ answers</td>
</tr>
<tr>
<td>Administrator interviews</td>
<td>Provides useful information of that which cannot be observed</td>
<td>All participants are not equally articulate</td>
</tr>
<tr>
<td></td>
<td>Participants can describe detailed information</td>
<td>Time-consuming</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responses may be filtered through views of the interviewer</td>
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<tr>
<td></td>
<td></td>
<td>Presence of researcher may affect participants’ answers</td>
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<tr>
<td>Focus group interviews</td>
<td>Potential to collect extensive data</td>
<td>Difficult to get all participating teachers together</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can be dominated by one voice</td>
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<tr>
<td></td>
<td></td>
<td>Some may be reluctant to speak</td>
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<tr>
<td></td>
<td></td>
<td>Responses may be filtered through views of the researcher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presence of researcher may affect participants’ answers</td>
</tr>
</tbody>
</table>
Data collection took place in two phases. Phase 1 included the following:

1. Three classroom observations  
2. Teacher surveys  
3. Student interviews—Part 1 and Part Two  
4. Teacher interviews  
5. Administrator interviews  

Phase 2 included the following:

1. Three classroom observations  
2. Teacher surveys  
3. Student interviews—Part 1 and Part 2  
4. Teacher interviews  
5. Administrator interviews  
6. Focus group interviews  

The following provides a description of the instruments and of the procedure by which they were used in this study. Instruments include Classroom Observation protocol, Teacher Survey protocol, Student Interview—Part 1 protocol, and Student Interview—Part 2 protocol, the Teacher Interview protocol, Administrator Interview protocol, and the Focus Group Interview protocol.

3.9.1 Classroom observations. Classroom observations “usually consist of detailed notation of behaviours, events, and the contexts surrounding the events and behaviours” (Best & Kahn, 1998). Observation “is the process of gathering open-ended, firsthand information by observing people and places at a research site” (Creswell, 2008, p. 221). Direct classroom observations of teaching practices provided the researcher with one perspective that was triangulated with others in order to provide the productive feedback needed to determine the practice fidelity of the SEM at Glenwood Academy and provide feedback for next steps in the innovation (Bain, 2007; Datnow, 2003).
The most common form of implementation measurement in innovation studies have been the views of the involved teachers (Berends et al., 2002). This study included teacher and student perspectives but also direct classroom observations of key pedagogical components of the SEM.

The classroom observation protocol includes 17 items in three categories: the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching. The items describe the essential characteristics of the category and represent the key features of the SEM schema and simple rules (see Appendix A).

The researcher/observer judged whether the dimension existed in the observed lesson as *observed*, *not observed*, or *missing*. The *observed* rating indicates that the item was evident to the researcher in the 40-minute observation period, and *not observed* indicates that the item did not occur during the observed lesson. A *missing* rating indicates that the item may not have been evident within a particular observed 40-minute segment, but there was clear evidence that the item occurred outside of that observed time frame, for example the item had been observed in earlier observations or in written materials or had been explained by the teacher. It is important to determine whether the practices associated with the reform model exist before participants or researchers are required to rate the effectiveness of the practices.

The protocols were designed to present an overall percentage implementation integrity for each category, for each phase of observation. For example, there are six observable items in the Total Talent Portfolio category. The percentages of *observed*, *missing*, and *not observed* items were calculated for all observations in Phase 1 and then again in Phase 2. Each observation category also includes a narrative component available for the observer to place any information that might shed light on the observations pertaining to circumstances within the classroom, unit being taught, or any reflective comments that the researcher deemed important to that particular observation.
Protocols were designed to include those categories that represent the key pedagogical components of the SEM. Within these categories, qualitative data were examined and descriptions and themes were generated as a means of addressing the research questions concerning the practice fidelity of each key pedagogical component and the sustainability of the SEM.

Observation events were scheduled with all participating teachers using a sign-up schedule. The observer accommodated teachers as much as possible on the lessons they wished to have observed. A schedule was created, and teachers signed up during the available periods of their choice. Each participating teacher was observed three times in Phase 1 (September 2010–December 2010) and three times in Phase 2 (January 2011–March 2011). A combination of objective feedback as well as narrative feedback was implemented to give the teacher a full picture of the practice fidelity of each pedagogical component.

The researcher undertook all classroom observations. As the researcher is a member of the faculty of this particular site, students and teachers were familiar with the researcher’s presence in the classrooms, both for formal evaluation purposes as well as for informal “walk-throughs.” The researcher’s present role in the school entails providing theory and practice support for teaching and learning, including curricular resources or teaching methodology. The researcher had the advantage of being an “inside” observer who is familiar with the setting, but it was important to the study that the difference between these accustomed types of observations and that of data collection for the doctoral study were explained to all participants clearly and in advance. This explanation took place on two separate professional development days, one in June 2010, at the end of the school year prior to this study, and the other session in August, 2010, at the commencement of the school year in which the study took place. Teachers were given a detailed explanation of the study and its purposes and a chance to view all
protocols that would be utilized throughout the study. With the concurrence of the principal, the only classroom observations that the researcher conducted during the course of the 2010–2011 school year were for this study.

The observer chose an unobtrusive location in each classroom for each observation event. Both the objective portion of the protocol and the narrative were completed within the lesson period. Observations were 40 minutes in length, the length of one lesson period. Emergent feedback, a principle of self-organization, was valued throughout this research process. It was communicated to each teacher participant that the observation would be available for immediate discussion, feedback, and reflection if the teacher did not wish to wait until the cycle of three observations was complete.

3.9.2 Teacher surveys. After each round of three classroom observations, each teacher completed a survey which provided her or his perception of the practice fidelity of SEM in their classrooms and in the school. Each teacher survey includes 15 items in three categories: the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching (see Appendix B). As in the Classroom Observation protocol, these items also describe the essential characteristics of each pedagogical component and represent the key features of the SEM schema and simple rules. The difference in this protocol from the observation protocol is that all items are not necessarily observable in a lesson, but teacher participants might support their ratings with documents or “behind the scenes” evidence or practices (for example lesson plans, assessment forms, curriculum compacting forms, filed talent and interest surveys, unit plans, various grouping plans, or notes of reflection created by teachers throughout the year that show their practice of differentiated instruction or curriculum modification techniques.). These sources of evidence were not required to be viewed by the researcher.
Participating teachers were asked to rate each item as *completely successful,* *successful,* *neither successful nor unsuccessful,* *unsuccessful,* or *completely unsuccessful* for the observed lessons. For example, in the Enrichment Learning and Teaching component, teachers were asked to rate the success of the following: “Throughout the observed lessons, I provided Type III enrichment activities for high achieving students.” *Completely successful* indicates that the teacher evidenced thoughtful and deliberate planning and implementation of this particular characteristic of the Enrichment Learning and Teaching component in more than one of the lessons observed. *Successful* indicates that the teacher evidenced planning and implementation of a particular characteristic in one or more of the lessons observed. *Neither successful nor unsuccessful* is a neutral rating option for the observer. *Unsuccessful* indicates that the teacher evidenced little planning and implementation of a particular characteristic of SEM, and finally, *completely unsuccessful* indicates that the teacher evidenced no planning or implementation of a particular characteristic of the SEM.

The survey protocols were designed to present overall percentage implementation integrity for each category for each phase of the study. For example, there are five items in the Enrichment Teaching and Learning category. The percentage of each item would be calculated for all surveys in Phase 1 and then again in Phase 2.

Each category also includes a narrative component available for the teacher participant to include any information that might shed light on their ratings or add anything that they would like to add that was not already asked. As well, each category includes an overall implementation question, inviting teachers to rate their own overall implementation of characteristics of key pedagogical components of the SEM, for example, Curriculum Modification Techniques. Protocols were designed according to categories that represent the key pedagogical components of the SEM. From the qualitative data, descriptions and themes were generated as a means of addressing the
research questions concerning the practice fidelity of each key pedagogical component and the sustainability of the SEM.

### 3.9.3 Interviews

One-on-one interviews were conducted with participating students, teachers, and administrators. Face-to-face interviews allow for questions to be clarified and place less burden on the participant in terms of reading and writing (Fraenkel & Wallen, 2000). The researcher posed all questions, and the answers were recorded in handwriting and/or typing by the researcher.

Creswell (2002) describes the difference between typical qualitative study and quantitative study interviews—structured and unstructured interview styles. In quantitative research, close-ended response options in structured interview formats are used. The researcher obtains scores or numerical values. In qualitative research open-ended questions are generally asked in order to generate in-depth responses and promote authentic, meaningful conversation between the interviewer and the interviewee—an unstructured interview format. Semistructured interviews are described as interviews that accommodate both close-ended and open-ended responses. This study is a mixed methods study—incorporating both qualitative and quantitative research. Although administrator and focus group interviews accommodated open-ended responses, it should be noted that a survey-like tool was used to conduct the student and teacher interviews, allowing for the generation of numerical values as well as face-to-face meaningful dialogue between the interviewer and the interviewee.

### 3.9.4 Student interviews

One-on-one interviews were conducted with students using the Student Interview—Part 1 and Part 2 protocols (see Appendix C), providing a student perspective into the practice fidelity of the instructional components of the SEM.

*Student Interview—Part 1* protocol includes six items. The items fall within the same three categories that are represented in the observation and survey protocols but are not subdivided in the student interview in order to preserve a simpler, student-friendly
protocol. These items also describe the essential characteristics of each category and represent the key features of the SEM schema and simple rules.

Students were asked to judge whether each item existed in their teachers’ lessons as all of the time, sometimes, or never. Statements are provided in student language, and each statement, once rated by students, indicates the student’s learning experiences as they relate to the pedagogical components of the SEM. For example, “My teacher has given me interest, talent, and/or learning style inventories and I have completed them” reveals whether the students’ learning has included the Total Talent Portfolio. The student’s rating of the statement “I have experienced Type I Enrichment activities (guest speakers, interest centers, videos, field trips etc.) that have helped me to become interested in new topics” indicate that student’s involvement in Enrichment Learning and Teaching, particularly Type I activities.

Student Interview—Part 2 protocol invited students to rate their teacher’s success in carrying out the instructional components of the SEM in the classroom. Quantitative data were collected as the students rated the success of their teacher’s delivery of six items that fall within the three major pedagogical components that represent the key features of the SEM schema and simple rules. Student rating choices are as follows: Completely successful, successful, neutral, unsuccessful, or completely unsuccessful.

Student Interview—Part 1 and Part 2 were designed to present overall percentage implementation integrity for each item for each phase of study, as with the aforementioned protocols. Qualitative data were obtained as students were invited to comment on their overall feelings about the SEM as well as to add anything they felt was important or had not already been asked. Protocols were designed according to categories that represent the key pedagogical components of the SEM. Within these categories, descriptions and themes were generated as a means of addressing the research
questions concerning the practice fidelity of each key pedagogical component and the sustainability of the SEM.

Interviews were scheduled with students during October 2010 (Phase 1) and February 2011 (Phase 2). Part 1 and Part 2 of the interview with students were conducted in one sitting and took approximately 15 minutes to complete.

**3.9.5 Teacher interviews.** A face-to-face interview was conducted with each teacher-participant, providing the opportunity for them to tell their professional stories, their experiences with SEM. The eight sustainability factors that have been derived from the literature provided the framework for this interview and are as follows:

- Professional development
- Accessibility to needed resources
- Positive teacher attitudes and perceptions
- Collaboration of staff
- Strong and supportive leadership
- Comprehensiveness of the reform model
- Attention given to time issues
- Student achievement

There is one page for each sustainability factor on the teacher interview protocol (see Appendix D). There are five questions pertaining to each sustainability factor that follow a pattern. Teachers were asked to provide an overall rating of the success of the sustainability factor in the school, the impact of the factor on the Total Talent Portfolio, on Curriculum Modification Techniques, and on Enrichment Learning and Teaching practices. For example, on the page dedicated to Accessibility to Needed Resources, teachers are asked: “What is your overall rating of the accessibility of needed resources for the SEM and in our school since we began the reform process?” “How do you rate the impact of this accessibility to needed resources on the use of the Total Talent
Portfolio?” “How do you rate the impact of the accessibility to needed resources on Curriculum Modification Techniques?” and “How do you rate the impact of the accessibility to needed resources on Enrichment Learning and Teaching practices?”

Quantitative data were gathered as teachers rated each item as completely successful, successful, neither successful nor unsuccessful, unsuccessful, or completely unsuccessful. The survey protocols were designed to present an overall implementation percentage for each category for each phase of the study.

Qualitative data were obtained as teachers responded to open-ended questions concerning each sustainability factor as they relate to the teachers’ own practice. For example, “How have your own experiences concerning the accessibility to needed resources impacted your implementation of the SEM?”

The interview protocols were designed to present an overall sustainability percentage of each factor, for each phase of the study. The percentage of each factor was calculated for all surveys in Phase 1 and then again in Phase 2.

Each category on the teacher interview protocol also includes a narrative component available for the teacher participant to include feedback on how their own experiences concerning each sustainability factor impacted their implementation of SEM. This protocol was also designed according to categories that represent the key pedagogical components of the SEM. Within these categories, descriptions and themes were generated as a means of addressing the research questions concerning the practice fidelity of each key pedagogical component of the SEM and its relationship to each sustainability factor.

Interviews were scheduled with teachers through an email exchange, once in November 2010 (Phase 1) and once in February 2011 (Phase 2). Each interview protocol was completed in one sitting and took approximately 45 minutes to complete.
3.9.6 Administrator interviews. A face-to-face interview was conducted with each participating administrator, using the Administrator Interview protocol (see Appendix E). Direct questioning was used to determine the existence of the six SOS principles. A continuation of the investigation of the SOS principles occurred through the triangulation of information across sources to detect the six SOS principles as well as through evidence of performance in terms of sustainability and practice fidelity whereby the sustained levels of implementation are used in collaboration with the other evidence sources to infer evidence of the theory.

Interviews were scheduled with administrators through a verbal exchange, once in November 2010 (Phase 1) and once in February 2011 (Phase 2). Each interview protocol was completed in one sitting, taking approximately 30–40 minutes to complete.

3.9.7 Focus group interviews. Focus group interviews can be used to collect shared understanding from participants regarding the process of study that they are involved in, or they can obtain views from specific people (Creswell, 2008). The contents for the focus group protocols in this study (see Appendix F) emerged from survey, interview, and observation data.

Focus groups were conducted at division meetings, which are prescheduled each month, with four to six participants at each session. These were conducted in March 2011, at the end of Phase 2. The researcher asked a number of open-ended questions of the group in an attempt to elicit a conversation about participants’ own practice fidelity and sustainability issues of the SEM at Glenwood Academy. Specific questions within the focus group interview concerning the existence of feedback and understanding of the key elements detected the existence of the six SOS principles.

All participants were encouraged to speak. Note taking is a difficult feat, due to the potential amount of interaction. Therefore, with the consent of the participants, sessions were audio-recorded to ensure the accounting of input from all participants.
3.10 Data Analysis

Researcher-created protocols employed in this study provided the opportunity for both qualitative and quantitative data collection and analysis. In analyzing quantitative data, descriptive statistics permit the researcher to account for information “described in many, many scores with just a few indices” (Fraenkel & Wallen, 2000, p. 211). The classroom observation data in both phases were analyzed using descriptive statistics to produce mean and standard deviation data for each teacher in each phase and overall averages for implementation fidelity for both phases. Descriptive statistics were used to analyze data derived from the classroom observations, teacher surveys, student interviews, and teacher interviews.

Frequency analysis was used to analyze the data derived from all rating instruments showing the breakdown of the three components of the SEM, which are the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching, for each of the student and teacher ratings. For the teacher survey, frequencies were calculated for responses on each of the Likert scale items, showing frequency of specific teaching strategies that relate to the three components of the SEM. Likewise, for the student interviews, frequencies were calculated for Part 1 indicating student perspective on the amount of time (all of the time, sometimes, never) their teachers delivered specific characteristics, showing the existence of the three pedagogical components of the SEM. Frequencies were also calculated for Part 2 of the student interview, as student perspectives indicated the level of successful implementation of the specific classroom characteristics of the three components of the SEM. Teacher interviews were designed to show the impact of the eight sustainability factors on the three pedagogical components of the SEM and on teachers’ experience of the SEM. Frequencies were calculated for responses to each of the Likert scale items. Classroom observation protocols were designed to show whether evidence of the three
pedagogical components of the SEM existed in teacher-delivered lessons. Frequencies were calculated for each of these items as observed, not observed, or missing.

The administrator interviews and the focus group interviews are comprised of open-ended items. Interview and survey protocols also include open-ended items. Teacher interviews include questions concerning the teachers’ overall rating of each of the eight sustainability factors as they pertain to each of the SEM components as well as their own experience with the eight sustainability factors and their impact on the implementation of the SEM. Student interview protocols invite respondents to comment on their own feeling about the SEM as well as anything they would like to add that was not already asked of them. The teacher survey also invites teachers to note anything concerning each component of the SEM that they have not already been asked in the survey questions.

Analyzing qualitative data is an inductive process, generalizing codes and themes from the specific and detailed data (Creswell, 2008). In this study, data were examined and reexamined as the researcher sought to develop a deeper understanding about the information provided by observations, surveys, interviews, and focus groups. Transcripts were labeled to form descriptions and broad themes in the data (Creswell, 2008). Patterns were identified to develop concepts that allowed the researcher to formulate assertions concerning the practice fidelity and sustainability of the SEM. In this way the researcher was able to devise interpretations of the different forms of data that accumulated. This analysis of data provided a picture of the current condition of the organization and, along with examination of these data and a focus through the theoretical lens of the self-organizing school theory, a determination of where to go next could be made.

Data derived from all instruments, both quantitative and qualitative, were triangulated both in Phase 1 and then again in Phase 2. The frequency and percentage
implementation data derived from the rating scales of surveys, observations, and interviews were compared to the perspectives of the student, teacher, and administrator participants obtained from the open-ended questions. Interpretations were made as to whether results from the qualitative (descriptions, themes) and quantitative (frequency and percentage) data support or contradict each other. This process of triangulation provides a broader perspective concerning the commitments, factors, and issues that contribute to the implementation fidelity and the sustainability levels found at Glenwood Academy.

3.11 Reliability and Validity of Instruments

The term reliability often refers to instruments and tests in quantitative research, although reliability can also be considered in qualitative data applying to techniques that are used to collect, analyze, and compose the data (Bell, 2005), ensuring that the study is dependable and completed with care.

In this study, reliability was addressed as protocol questions were well thought out and written carefully. The same protocol was used with all participants, and the protocols were piloted.

Pilot studies were implemented to ensure that the participants understood the directions provided and that the questions were worded clearly and in such a way that participants understood them and would be able to provide useful feedback for the study (Creswell, 2008). Pilot studies were conducted in June 2010 in order to determine the completeness and examine the content validity of the protocols (Gay et al., 2009). Three months prior to the study, teacher survey and teacher interview protocols were piloted by two teachers who are both knowledgeable about the SEM. These teachers were relocating to other countries and would not be available to take part in this study. The classroom observation protocol was piloted by the researcher. The researcher observed the classrooms of the two relocating teachers. Three students who had met the student
selection criteria piloted the student interview protocol, one from the primary division, one from the junior division, and one from the intermediate division.

In the past, validity has been linked more to quantitative data, but over the years has been used by qualitative researchers as well, in an effort to defend the accuracy and credibility of their studies (Gay et al., 2009). Trustworthiness and understanding are key words used to describe validity, and they are facilitated in this study by using several strategies including triangulation, peer review and debriefing, member checking, and the collection of detailed and descriptive data.

*Triangulation* is a process of enhancing the accuracy of a study and involves corroborating evidence from different perspectives to get a more complete picture (Bell, 2005; Creswell, 2008). Multiple data collection methods (classroom observations, teacher surveys, student interviews, teacher interviews, administrator interviews, and focus group interviews) from multiple sources or perspectives (students, teachers, and administrators) were conducted at different times (Phase 1 in the fall of 2010 and Phase 2 in the winter of 2011) in order to attain consistent findings that would lead to an understanding of the practice fidelity and the sustainability of the SEM at Glenwood Academy. Methods and data triangulation were used in an attempt to reduce bias and enhance reliability.

Staff members who have knowledge and understanding of the SEM acted as critical friends to offer *peer review and debriefing*. This was accomplished as reflections and input were provided throughout the entire research process (Gay et al., 2009).

The final draft of the report was offered to the research participants to ensure that their opinions and ideas are represented accurately, a validity process known as *member checking* (Creswell, 2008; Gay et al., 2009). An open invitation was provided to teachers and administrators to discuss the study throughout the process and to review interview transcripts.
As much detailed and descriptive data as possible were collected in order to permit comparison and provide accuracy.

3.12 Ethical Considerations

It is the goal of the researcher to limit participant risk and to respect the participants, the site, and the audience (Creswell, 2008). In the following section ethical issues of informed consent, confidentiality, access, and insider status are addressed.

3.12.1 Informed consent. Informed and voluntary consent is critical to the conduct of any research (Bell, 2005; Creswell, 2008; Miles & Huberman, 1994). The emergent nature of certain qualitative approaches to data generation means that any consent provided by research participants is tentative, continuously renegotiable, and can be reversed at any time, particularly as new and unforeseen aspects of the research participation become apparent (Miles & Huberman, 1994). The following information was addressed with participants prior to the study:

- The focus of the research
- The guiding research questions
- Why and for whom the research is being done
- How data will be collected
- Uses of the data and how their analysis will be reported and disseminated
- Who will be asked to participate in the research
- Who will conduct the research
- How data will be handled and who will have access to them
- What feedback participants will receive and when will it be received
- Ways in which decisions about participation can be renegotiated or reversed
- The timeline of the study and expectations of the participants

There were opportunities for potential participants to seek clarification, before commencing their participation, on any aspect of the study about which they felt they
needed further information. Such opportunities were made available to participants throughout the study.

Informed consent was obtained from all participants legally able to provide this, prior to their participation in this study (see Appendices G, H, I, J, K). Student participants, defined as minors, were asked to provide their assent to participate in the study themselves, following the informed consent of parents or legal caretakers. No one was coerced into participating in this study, either at the commencement or at any point during the study, and it was communicated clearly that participants may opt out of the study at any time with no negative consequences.

3.12.2 Confidentiality. Information given by participants in this study is confidential, and this was communicated to the participants in advance. Once data were collected, copies of data were created and participant names were removed from these copies. Original copies of protocols containing the data were stored in a location other than the school building in which the study took place, and these originals will be destroyed after the statutory requirements concerning length of storage have been met. Names of participants or the school will not be used in any publications and at any time during the study; participants have the right to request that the data collected about them not be used.

It was communicated to the participants that their status, job, or reputation as a teacher, administrator, or student would not be in question as a result of their participation in this study. In this way participants of this study were protected from discomfort or psychological harm. This study did not present any risks to the participants or to their role as a teacher, administrator, or student.

3.12.3 Access. Permission was gained at different levels in order to gain access to the site of data collection (see Appendix L). Formal written permission was sought and obtained from the board of Glenwood Academy as well as from the principal of the
school once written information about the project had been provided to them. This information included:

- The purposes of the study
- Time and resources required by participants and the researcher
- How the report will be used
- Confidentiality and consent considerations
- What might be gained from the study

Approval from the Charles Sturt University ethics committee was also sought and obtained (see Appendix M).

3.12.4 Insider status. Administrators and teachers, including the researcher, have been involved in the development of the SEM at Glenwood for at least 4 years, working towards sustainability of a model that has been deemed worthy of implementation. The researcher was situated in this study as an “insider” due to the fact that the researcher had experienced that which was being researched, had been part of the researched community (as a teacher and a curriculum coordinator), and had a professional working relationship with the participants of the study (Coy, 2006; Foster, 2009; Kanuha, 2000). Insider status provided an advantage in this study, as trust had been established with the participants prior to the study and teachers and administrators continued to acknowledge the researcher as “one of them.” Student participants also had the advantage of familiarity with the researcher, which enhanced the interview process, reducing possible tensions that could arise from interactions with an outside researcher. In conducting insider research, Coy (2006) found that communication was enhanced between the researcher and the participants in that the researcher already had an understanding of the vernacular language of the particular community, which could be limited for an outside researcher. Foster (2009), in conducting insider research, found that engagement with participants was meaningful because they also knew the situation of the researcher, and
this resulted in a connection. It was the intent of the researcher in this study to continue to nurture the positive working relationship amongst all participants and to maintain the trust that had been established by respecting various views, recording views as they are, and assuring participants that we are not looking for “the right: answer but were seeking an authentic view of where the school was at in terms of SEM implementation. Together the researcher, teachers, and administrators, along with student input, might conclude what the next steps will be as a result of this study with an end goal in mind— that of a healthy, thriving learning environment that will be beneficial to all members.

3.12.5 Challenges of insider status. An “insider” conducting research usually does so from an emic perspective, or a subjective and informed position as opposed to an etic perspective, which is more objective or removed from the situation (Kanuha, 2000). A researcher with insider status is often invested in the geography, situation, or experience, and this contributes to the process or act of research (Kanuha, 2000). However, insider status also presents possible challenges to research that must be acknowledged, and cautionary strategies must be put in place to counter these challenges, as outlined in Table 6.
<table>
<thead>
<tr>
<th>Challenges</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited need on the researcher’s part to probe questions about information that is already familiar (Kanuha, 2000)</td>
<td>Each time a participant implies the researcher understands what he or she is speaking of, ask them to clarify or elaborate “for the record” (Kanuha, 2000) Member checking (Miles &amp; Huberman, 1994) to ensure data are complete and truthful</td>
</tr>
<tr>
<td>Researcher is in a position of authority and/or influence</td>
<td>A constant consciousness of this role on the researcher’s part throughout the data collection and analysis stages of research (Foster, 2009) Offer choice to decline to cooperate (Coy, 2006) Clear explanation given to all participants of the purposes and goals of the research and the disconnect of the results to their status as a member of the community Member checking (Miles &amp; Huberman, 1994)</td>
</tr>
<tr>
<td>Bias, prejudice, preunderstandings (Foster, 2009)</td>
<td>Reflexive research approach Member checking (Miles &amp; Huberman, 1994)</td>
</tr>
<tr>
<td>Blurred boundaries (Coy, 2009)</td>
<td>Change in role throughout data collection phase – researcher conducts observations only in connection with the study but not as a school administrator Clarity over practitioner role is clearly defined in advance of the study</td>
</tr>
</tbody>
</table>
In conducting insider research, Kanuha (2000) found that interviewing and analyzing data posed challenges implicit to the role of the researcher. Assumptions could easily be made on the researcher’s part concerning information that was already familiar to the researcher. A conscious effort has to be made to allow participants to elaborate and tell their stories fully. Foster (2009) acknowledges possible prejudices or preunderstandings of participants that must be dealt with reflexively in all research, not only insider research. It is also important that the researcher provide the participants with clear information about the study and provide opportunity for participants to monitor any misconceptions, as a form of *member checking* (Miles & Huberman, 1994).

Coy (2006) addresses the issue of blurred boundaries when conducting insider research, as two roles are being carried out by the researcher/coworker. A constant consciousness of both roles throughout the data collection and analysis stages of research must be had (Foster, 2009). Throughout the data collection stage of this study the researcher conducted classroom interviews only for the purpose of this study, and not in conjunction with any other aspect of the researcher’s role as a school administrator, in order to help clear the boundaries for the participants. It must be recognized that the researcher is in a position of authority and influence (Fraenkel & Wallen, 2000). Careful consideration on the researcher’s part concerning these issues is of utmost importance as an administrator with inside status in this situation.

3.13 Conclusion

This chapter has described the methods of this study, the single study research design, and a mixed methods approach used to investigate the practice fidelity and sustainability of the SEM at an elementary school. The various methods and participant groups involved in this in-depth study were discussed. The following chapter details the results of this study and their relation to the literature as presented in Chapter 2.
Chapter Four: Results

The purpose of this chapter is to present the findings of the study. Results from classroom observations, teacher surveys, student interviews, teacher interviews, administrator interviews, and focus group interviews are presented and discussed in light of the research questions concerning practice fidelity, sustainability, and the SOS principles.

4.1 Practice Fidelity

Practice fidelity refers to the fidelity or integrity with which the pedagogical components of a model, approach, or innovation are implemented in classrooms over time (Bain, 2007). In the literature, implementation fidelity refers to whether a model, approach, or innovation is being implemented according to the developers’ intentions, generally referring to changes in a broader sense, for example leadership, professional development, or resources (Bain, 2007; Kurki et al., 2006; O’Donnell, 2008). Practice fidelity focuses on the practical changes—the implementation of the core pedagogical components of the model in classrooms over time. It should be noted that in this study the word implementation is also used to describe levels of execution of the characteristics of the core pedagogical components of the SEM in classrooms, leading to practice fidelity.

Results of direct classroom observations of the SEM teaching practices, teacher perspectives of the lessons observed (surveys), and student perspectives of SEM teaching practices (interviews) are combined in order to address the following research questions: To what extent are the specific pedagogical practices associated with the Schoolwide Enrichment Model (SEM) being implemented with fidelity within the classrooms at Glenwood Academy?

- What do the classroom observations tell us about the practice fidelity of SEM in the classrooms of Glenwood Academy over time?
• What are the teachers’ perspectives concerning their own delivery of the core pedagogical practices associated with SEM, and do these change over time?
• What are the students’ perspectives concerning the delivery of the core pedagogical practices that are associated with SEM, and do these change over time?
• What are the teachers’ perspectives concerning the presence or absence of the key pedagogical components of the SEM in the school over time?

The section begins with a description of response frequencies across the two phases for each of the three methods that were used to determine answers to the research questions concerning practice fidelity—classroom observations, teacher surveys, and student interviews. This is followed by implementation benchmarks, a brief explanation of what the acceptable implementation percentage ranges would be for classroom observation data that contribute to these research questions.

The presentation of results is organized in the following way: The first section describes the results of the researcher’s classroom observations. The second section describes the teachers’ perspective of the presence of the three pedagogical components in their classrooms, provided through teacher surveys, and the third section presents the students’ perspective, provided by interviews. Within the presentation of each method lies a breakdown of results showing the practice fidelity level of each of the three main pedagogical components of the SEM: Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching.

Overall classroom observation results, showing the practice fidelity level of the three main pedagogical components of the SEM: Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching, are provided. Individual teacher results, both according to pedagogical component and by overall implementation are also provided in order to show variability from teacher to teacher.
Classroom observations are then presented by pedagogical component—first Total Talent Portfolio, then Curriculum Modification Techniques, and finally Enrichment Learning and Teaching.

Results of the teacher surveys, teachers’ perspectives of their own and the overall school implementation of the SEM pedagogical components, are then presented. First, an overall rating of practice fidelity from the teachers’ perspective is provided. Individual teacher results are then presented in order to show variability from teacher to teacher. Teacher survey results are then provided according to pedagogical component—first the Total Talent Portfolio, then Curriculum Modification Techniques, and finally Enrichment Learning and Teaching.

Student interview results are provided in two parts—first showing student perceptions of the overall existence of the three pedagogical components of the SEM, followed by student ratings of the pedagogical components of SEM in their classrooms. The results of student interviews are then presented according to pedagogical component—first the Total Talent Portfolio, then Curriculum Modification Techniques, and then Enrichment Learning and Teaching.

Each section ends with a summary that responds to the research questions, triangulating the data from the different approaches and the different sources, noting similarities and differences across the methods, phases, and the participants. This summary describes what the classroom observations, teacher surveys, and student interviews tell us about the practice fidelity of the SEM in classrooms at Glenwood Academy over time.

4.2 Response Frequencies Across the Phases

To determine the extent of practice fidelity of the SEM teaching components over time, data collection took place in two phases. The data for the two phases are presented in a Phase 1 column on the left side and a Phase 2 column on the right of the
corresponding tables. Each phase included three classroom observations for each participating teacher, one completed survey from each participating teacher, and one 2-part interview with each participating student. Table 7 displays the number of responses for each method for Phase 1, Phase 2, and then for Phases 1 and 2 combined.

Table 7
Response Frequencies

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of responses Phase 1</th>
<th>Number of responses Phase 2</th>
<th>Total number of responses Phases 1 and 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom observations</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Teacher surveys</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Student interviews</td>
<td>40</td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

Ten of the school’s 15 teachers volunteered to participate in the study, and four students were randomly selected for each teacher-participant. Therefore, there were 40 out of the school’s 230 students that participated in this study. All participating teachers and all participating students provided the intended number of responses across the phases.

4.3 Classroom Observations

The following section presents results of the classroom observations. It begins with a description of implementation benchmarks, followed by an overall view of classroom observation results concerning the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching. This is followed by individual teacher results of classroom observations. Finally, the classroom observation results for each SEM pedagogical component are provided.
4.3.1 Implementation benchmarks. Implementation benchmarks were developed in order to provide some definition for the data derived from classroom observations and to clarify the expected levels of implementation required for different components of the SEM approach. Table 8 shows the implementation benchmarks for each of the pedagogical components.

Table 8

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Talent Portfolio</td>
<td>80–100%</td>
<td>60–79%</td>
<td>0–59%</td>
</tr>
<tr>
<td>Curriculum Modification</td>
<td>80–100%</td>
<td>60–79%</td>
<td>0–59%</td>
</tr>
<tr>
<td>Techniques (other than</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>compacting)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• compacting</td>
<td>&gt;50%</td>
<td>20–49%</td>
<td>0–19%</td>
</tr>
<tr>
<td>Enrichment Learning/Teaching</td>
<td>90–100%</td>
<td>70–89%</td>
<td>0–69%</td>
</tr>
</tbody>
</table>

Total Talent Portfolio items include the accommodation of student learning styles, talents and interests, expression styles and strengths. Evidence of these accommodations are expected to appear in classrooms in all or nearly all of the lessons. Because Total Talent Portfolio items should be occurring at a high degree of frequency, a rating of 80%-100% is considered high, 60%-79% is considered moderate, and 0%-59% is considered low. The same range is used for all Total Talent Portfolio items.

Curriculum Modification Technique items include the accommodation for individual and group differences and the provision of suitable learning experiences for
struggling students and highachievers alike. Curriculum Modification Technique items include differentiation teaching and learning strategies that are expected to appear in classrooms in all or nearly all of the lessons. Because Curriculum Modification Techniques should be occurring at a high degree of frequency, a rating of 80%–100% is considered high, 60%–79% is considered moderate, and 0%–59% is considered low.

There is one item of exception in the Curriculum Modification Techniques category. Implementation of curriculum compacting varies depending on the subject, the unit within the subject, and the student; therefore a different benchmark is used for this item. Because curriculum compacting is expected to occur less frequently, a rating of 50%–100% is considered to high, 20%–49% is considered moderate, and 0%–19% is considered low.

Enrichment Learning and Teaching includes items that are expected to occur in SEM classrooms each day and for each lesson. These items include the use of strategies that promote higher order thinking, such as language and use of questions, all of which should be occurring at a very high degree of frequency. Therefore, a rating of 90%–100% is considered high, 70%–89% is considered moderate, and 0%–69% is considered low. The same range is used for all Enrichment Learning and Teaching items.

The varying circumstances of classroom use of the SEM pedagogical components, Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching, is one reason for the use of a multimethods approach to the practice fidelity component of this study (classroom observations by the researcher, teacher surveys, and student interviews). Multiple perspectives and multiple methods and the triangulation of these data facilitate the provision of a more accurate depiction of the practice fidelity of the SEM pedagogical components at Glenwood Academy.
The classroom observation protocol includes 17 items (see Appendix A) that have been derived from the three pedagogical components of the SEM and describe the essential characteristics of each category. Table 9 describes the extent to which the key characteristics of the SEM were observed in each of the lessons. The researcher rated the 17 items in the lessons as observed, not observed, or missing. The observed rating indicates that the item was evident to the researcher in the 40-minute observation period, and not observed indicates that the item clearly did not occur during the observed lesson or in lessons linked with the observed lesson. A missing rating indicates that the item may not have been evident within a particular observed 40-minute segment, but there was clear evidence that the item occurred outside of that observed time frame (for example, in an ongoing lesson). The researcher also recorded narrative data throughout the observations. Some of these qualitative data are used to support the quantitative data in the following sections. Percentage breakdowns of each item falling within the three pedagogical components are provided in a subsequent section.

Table 9  
*Classroom Observations Overall*

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th></th>
<th>Phase 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Not Observed</td>
<td>Missing</td>
<td>Observed</td>
<td>Not Observed</td>
</tr>
<tr>
<td>Total Talent Portfolio</td>
<td>66%</td>
<td>31%</td>
<td>3%</td>
<td>82%</td>
<td>13%</td>
</tr>
<tr>
<td>Curriculum Modification Techniques</td>
<td>43%</td>
<td>57%</td>
<td>0%</td>
<td>65%</td>
<td>32%</td>
</tr>
<tr>
<td>Enrichment Learning/Teaching</td>
<td>91%</td>
<td>9%</td>
<td>0%</td>
<td>96%</td>
<td>4%</td>
</tr>
</tbody>
</table>
Table 9 indicates three main findings in relation to the research questions—the extent to which the three components of the SEM were implemented in classrooms, the variability of practice fidelity from component to component, and how the practice fidelity level of the SEM changed over time.

Enrichment Learning and Teaching showed the highest and most consistent presence in the classrooms, as it was observed in 91% of the lessons in the first phase and 96% in the second phase. Curriculum Modification Techniques items were observed least often of the three components, showing a presence in the classrooms in 43% of the observed lessons in the first phase and 65% in the second phase of the study. These results indicate considerable variability from component to component (a range of 43%–96%). Variation is important to note here. It is clearly addressed in the literature as an issue in the implementation of school innovations – showing great variation of implementation within schools (Berends et al., 2002; Zhang et al., 2005).

There was an increase in the overall practice fidelity levels of each of the components from Phase 1 to Phase 2 of the study. Curriculum Modification Techniques showed the greatest percentage increase over time (an increase of 22%), followed by Total Talent Portfolio (an increase of 16%), and then Enrichment Learning and Teaching (an increase of 5%). Implementation percentages of each item of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Teaching and Learning items are provided in the subsequent sections.

While Table 9 shows the total percentage of observed, not observed, and missing items that fall within the three pedagogical categories of the SEM, Table 10 describes these same observations according to individual teacher participant results. Percentages in Table 10 describe the total results of each classroom teacher’s observations—three observations in Phase 1, then three observations in Phase 2. Percentages represent the amount of times the items on the Classroom Observation protocol were observed. For
example, if Total Talent Portfolio items were reported *observed* for 15 out of the 18 classroom visits, the percentage for that teacher would be 83%. The mean implementation (for each teacher) of the Total Talent Portfolio (TTP), Curriculum Modification Techniques (CMT), and Enrichment Learning and Teaching (ELT) observations is provided for Phase 1 and for Phase 2 as well as the mean for Phase 1 and Phase 2 observations combined. The percentages shown indicate the items that were reported *observed* by the researcher only. The purpose is to show the variability or lack of variability of practice fidelity levels from teacher to teacher throughout the two phases of the study.

Table 10  
*Classroom Observations – Individual Teacher Results*

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th></th>
<th>Mean</th>
<th></th>
<th></th>
<th>Mean</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TTP</td>
<td>CMT</td>
<td>ELT</td>
<td></td>
<td>TTP</td>
<td>CMT</td>
<td>ELT</td>
<td></td>
</tr>
<tr>
<td>Teacher A</td>
<td>83%</td>
<td>50%</td>
<td>100%</td>
<td>78%</td>
<td>100%</td>
<td>83%</td>
<td>100%</td>
<td>94%</td>
</tr>
<tr>
<td>Teacher B</td>
<td>89%</td>
<td>72%</td>
<td>93%</td>
<td>85%</td>
<td>94%</td>
<td>83%</td>
<td>93%</td>
<td>90%</td>
</tr>
<tr>
<td>Teacher C</td>
<td>72%</td>
<td>61%</td>
<td>93%</td>
<td>75%</td>
<td>100%</td>
<td>67%</td>
<td>100%</td>
<td>89%</td>
</tr>
<tr>
<td>Teacher D</td>
<td>50%</td>
<td>33%</td>
<td>73%</td>
<td>52%</td>
<td>50%</td>
<td>61%</td>
<td>100%</td>
<td>70%</td>
</tr>
<tr>
<td>Teacher E</td>
<td>78%</td>
<td>22%</td>
<td>100%</td>
<td>67%</td>
<td>100%</td>
<td>67%</td>
<td>100%</td>
<td>89%</td>
</tr>
<tr>
<td>Teacher F</td>
<td>67%</td>
<td>67%</td>
<td>73%</td>
<td>69%</td>
<td>72%</td>
<td>50%</td>
<td>93%</td>
<td>72%</td>
</tr>
<tr>
<td>Teacher G</td>
<td>56%</td>
<td>28%</td>
<td>100%</td>
<td>61%</td>
<td>83%</td>
<td>44%</td>
<td>100%</td>
<td>76%</td>
</tr>
<tr>
<td>Teacher H</td>
<td>83%</td>
<td>28%</td>
<td>100%</td>
<td>70%</td>
<td>72%</td>
<td>72%</td>
<td>93%</td>
<td>79%</td>
</tr>
<tr>
<td>Teacher I</td>
<td>50%</td>
<td>39%</td>
<td>87%</td>
<td>59%</td>
<td>67%</td>
<td>78%</td>
<td>100%</td>
<td>82%</td>
</tr>
<tr>
<td>Teacher J</td>
<td>50%</td>
<td>33%</td>
<td>87%</td>
<td>57%</td>
<td>83%</td>
<td>50%</td>
<td>73%</td>
<td>69%</td>
</tr>
</tbody>
</table>
Table 10 shows three main findings relating to the research questions. It addresses the extent to which teachers were implementing the three components of the SEM, the variation from teacher to teacher, and the change in practice fidelity levels of the SEM over time. Because research on site-based school reforms shows great variation of implementation within schools (Berends et al., 2002; Zhang et al., 2005), it is important in this study to report the level of consistency from teacher to teacher.

Overall, Table 10 shows moderate to high practice fidelity levels of the pedagogical components for the majority of teachers. Enrichment Learning and Teaching shows the highest implementation levels. In Phase 2, nine of the 10 teachers show high levels (a range of 93%–100%), with Teacher J (73%) showing a moderate level of practice fidelity. In Phase 1, observations for eight teachers show high levels of practice fidelity for Enrichment Learning and Teaching (a range of 87%–100%), with the exception of Teachers D and F, both with moderate levels of 73%. The lowest levels of practice fidelity were observed for Curriculum Modification Techniques for teachers D (33%), E (22%), G (28% and 44%), H (28%), I (39%), and J (33%).

The means for Phase 1 and Phase 2 indicate the average of each teacher’s implementation percentages for Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching combined. The mean implementation percentages throughout Phase 1 and Phase 2 for each teacher show variability of implementation (a range of 52%–94%). Relatively high mean implementation levels (over 80%) were observed for Teacher B in the first phase and for Teachers A, B, C, E, and I in the second phase. The lower mean implementation levels (below 60%) were observed for Teachers D, I, and J in the first phase. The combined Phase 1 and Phase 2 mean implementation percentages for each teacher show an implementation variability range of 61%–87%.
Individual teacher scores show increased implementation levels from Phase 1 to Phase 2. Each of the 10 teachers’ mean implementation levels increased from Phase 1 to Phase 2. Teacher I showed the largest implementation increase (23%), and Teacher F showed the lowest increase (3%) from Phase 1 to Phase 2.

Table 11 describes the mean implementation levels of the three pedagogical components of the SEM of all 10 teacher participants combined, as well as the standard deviation scores for the observations. Standard deviation is used to show a measure of variability from teacher to teacher.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>67.30</td>
<td>10.25</td>
</tr>
<tr>
<td>Phase 2</td>
<td>81.00</td>
<td>9.15</td>
</tr>
<tr>
<td>Overall–Phases 1/2</td>
<td>74.10</td>
<td>9.07</td>
</tr>
</tbody>
</table>

Table 11 shows that while implementation levels of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching combined increased from Phase 1 to Phase 2 (an increase of 13.70%), there were only small reductions in the standard deviation scores for implementation from teacher to teacher from Phase 1 to Phase 2, indicating little change in the variability from teacher to teacher.

4.4 Results According to the SEM Components

Consistent with the definition of practice fidelity as the presence or absence of the key pedagogical components of the SEM in the classrooms, the following section describes the practice fidelity of the SEM across the school by breaking down the classroom observations according to pedagogical component: Total Talent Portfolio,
Curriculum Modification Techniques, and Enrichment Learning and Teaching across the two phases of the study.

4.4.1 Total Talent Portfolio. The Total Talent Portfolio is a method by which information about students’ abilities, talents, interests, learning styles, and expression preferences (students’ favoured mode of expressing their learning, for example writing, acting, dancing, drawing, oral communication) is gathered and then used to help the students to set personal goals, express their learning effectively, or to aid teachers in designing enrichment activities for students. This information is vital to implementing the core pedagogical components of the SEM, as it allows teachers and students to know and understand the uniqueness of each child and know which learning activities will help teachers and students build on existing strengths and interests and tailor curriculum activities as needed.

Table 12 shows the extent to which the items of the Total Talent Portfolio were observed in classrooms over the 60 lesson observations throughout Phase 1 and Phase 2 of this study.
Table 12

<table>
<thead>
<tr>
<th>Table 12 Classroom Observations for the Total Talent Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observed</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Accommodation of different learning Styles…</td>
</tr>
<tr>
<td>Accommodation of different student talents and interests…</td>
</tr>
<tr>
<td>Opportunity for student expression styles…</td>
</tr>
<tr>
<td>Various teaching methods Used…</td>
</tr>
<tr>
<td>Focus on student strengths…</td>
</tr>
<tr>
<td>Evidence of student inventories…</td>
</tr>
<tr>
<td>Average</td>
</tr>
</tbody>
</table>

Overall, the results in Table 12 indicate that from the researcher’s perspective, there was a moderate level of practice fidelity of the Total Talent Portfolio items in Phase 1 (66%) and a high practice fidelity level in Phase 2 (82%). The highest implementation levels were observed in the use of various teaching methods in Phase 1 (90%) and in Phase 2 (97%), as well as in a focus on student strengths rather than their weaknesses in Phase 2 (97%). The lowest implementation levels were observed in the
accommodation of different student talents and interests (47%) and the accommodation of expression styles (40%), both observed in Phase 1 of the study.

Practice fidelity increases were observed across the phases for all of the Total Talent Portfolio items, except for evidence of student inventory in the classroom, which decreased in implementation by 10%. The greatest implementation increases were observed in the accommodation of different student talents and interests (an increase of 40%) and in the accommodation for student expression styles (an increase of 30%).

A moderate implementation level (67%) for the accommodation of different learning styles in Phase 1 was observed, and a high implementation level (83%) for this same item was observed in Phase 2. The researcher noted an item observed when more than one learning style was accommodated for in the observed lesson. In one primary class, six students who scored high in the mathematical–logical learning style of the inventory were accommodated with an alternate challenging, student-driven math project, while the other students in the class were involved in a grade-level activity. In another observation, an intermediate class of students was assigned a project and presentation that included research on a famous scientist. Students were encouraged to investigate and to present in ways that accommodated their learning styles. One student created an oversized visual of a Blackberry to accommodate visual learners as he taught about the invention of the Blackberry.

In 30% of the lessons in Phase 1 and in 17% of the lessons in Phase 2, accommodation for only one learning style was made, therefore recorded as not observed. In one lesson in Phase 1, the accommodation of learning styles was noted as missing due to the fact that the observer was present for one 40-minute segment of an ongoing lesson. However, observed student work showed evidence that the accommodation of more learning styles was previously addressed in this continued lesson.
A low implementation level (47%) was observed for the accommodation of different students’ talents and interests in Phase 1, and a high level (87%) was observed in Phase 2. Observed lesson accommodations included technology, business, strategy games, fine arts, citizenship, foreign countries, politics, social action, linguistics, religion, athletics, and literature. For 53% of the observations in Phase 1 and 13% of the observations in Phase 2, there was no indication in the lessons for the accommodation of student talents and interests.

The accommodation of various student expression styles shows low implementation levels (40%) in Phase 1. In Phase 2, responses to this item increased to a moderate implementation level (70%). *Observed* indicates that more than one expression style (writing, acting, dancing, drawing, oral communication, etc.) was accommodated for in a lesson. Observed expression styles which were accommodated for included drama, oral expression, independent investigations, creative writing, painting, drawing, and dance. Accommodation of expression styles was considered *not observed* in 57% of lessons in Phase 1 and in 30% of lessons in Phase 2, because in these lessons, only one expression style was accommodated for throughout the observed lessons. Many of these lessons involved direct instruction followed by one prescribed independent or group response by students. At times when students were provided choice in their response to the learning, the choices did not represent a variety of expression styles (for example choices included various writing forms only).

An example of an observed lesson where several expression styles were accommodated for in one lesson was a junior language class. Students were given an assignment that centred on novels of their own choosing. Students expressed their learning in the form of classroom presentations, using their natural gifts and abilities by creating shadowboxes, dramas, monologues, cooperative class activities, models, various forms of writing, and poster-boards.
Practice Fidelity and Sustainability

Observations for the implementation of various teaching methods within the lesson were high in Phase 1 (90%) and in Phase 2 (97%). Observed differentiated instruction included the following instructional methods: full-class discussions, small-group instruction, direct instruction using SMART Board technology, interactive activities using SMART Board technology, math games, note-taking, interviewing, sequencing of plotline events, listening to audio-recorded narrative, PowerPoint presentations, sketching demonstrations, strategic questioning, teaching through music, story telling, viewing videos, problem solving, textbook instruction, use of laptops, small-group interaction, journaling, math manipulative instruction, student presentations, and one-on-one conferencing.

A focus on student strengths rather than their deficits through teacher language, use of materials, and choice of activities also shows high practice fidelity levels in Phase 1 (83%) and in Phase 2 (97%). In an observed art class, one-on-one conferencing was provided in order to improve each student’s project by presenting growth opportunities and noting different starting points for each student. In this class various students found (and built upon) their personal strengths, whether those were in the area of art theory, the history of art, an eye for colour by creating shades and tints, or in their creativity or skill to actually draw or paint. High levels of vocabulary and high expectations of students were noted in several of the observations. One particular teacher focused on positive language at all times, asking students what it is they did well and if any changes need to be made to accomplish that. Her positive language included “What are you able to show us?” “What are you able to do?” and “You may teach the class what you learned using your own personal strengths and giftedness.” Even though there were students struggling academically in this class, there was no indication of a focus on what students were not able to do.
In 17% of the lessons in Phase 1 and in 3% of the lessons in Phase 2, a focus on student strengths rather than their deficits was not observed by the researcher. Though a variety of strengths and weaknesses in students were evident in each classroom, teachers did not tend to make allowances for each student to maximize on their own strengths. In some cases high expectations were not evident, as the teacher delivered a “one size fits all” lesson. In other observations, accommodations were not observed for struggling students to overcome their deficits by emphasizing their strengths.

Moderate practice fidelity levels were observed by the researcher for student inventory evidence in the classrooms in Phase 1 (70%) and in Phase 2 (60%). In some classrooms colourful individual student bar graphs displayed styles of learning. In other classrooms autobiographical poems entitled “100% Me” highlighted specific student preferences and strengths. In primary grades, learning styles, preferences, and expression styles were displayed in creative pictorial ways. Some of these displays required students to “dress” images of themselves with various attire that would display their likes, strengths, or preferences. For example, blue pants indicated a love of reading, one button indicated a preference to work independently, three buttons indicated a preference to work in groups, and a colouring of the eyes indicated that the student was a visual learner. Some teachers grouped student names on display boards in the classroom beneath learning style categories as a reference for grouping students for various projects and assignments. For example, the names of all kinesthetic learners were grouped in one category, visual learners in another.

Inventories were not observed in 20% of the lessons in Phase 1 and 10% in Phase 2. This item also shows more missing ratings than any of the other Total Talent Portfolio items: 10% in Phase 1 and 30% in Phase 2. Typically the homeroom teachers gathered the inventories of their own homeroom group of students and displayed them in their classrooms. No accommodations had been made for rotary teachers (rotary refers to
subject specialist teachers, for example French, Music, Visual Art, or History. They may or may not have a homeroom group of students themselves) to benefit from these inventories in their own classrooms, nor had rotary teachers conducted their own inventories of students that were not in their own homeroom group. Another practice contributing towards the low scores for this item was that teachers displayed student inventories in their classrooms immediately after administering them at the beginning of the school year (Phase 1). During Phase 2 of the study, inventories were sometimes removed from classroom walls, so they were no longer visible, even though they might be accounted for in their lesson preparation.

4.4.2 Summary for classroom observations – Total Talent Portfolio. Results from the classroom observations show the extent to which the Total Talent Portfolio was being implemented with fidelity within the classrooms at Glenwood Academy over time. Classroom observation results of the Total Talent Portfolio show moderate to high practice fidelity levels in the classrooms at Glenwood Academy. The implementation of various teaching methods within each lesson shows the highest implementation levels of all items across the phases.

The two phases of classroom observations show increases in the characteristics pertaining to the Total Talent Portfolio, suggesting greater practice fidelity over time. The two items that evidence the lowest implementation (both in Phase 1), the accommodation of student talents and interests and the accommodation of student expressions styles, are also the two items that showed the greatest implementation increase across the phases. There was an overall implementation increase of 16% of Total Talent Portfolio from Phase 1 to Phase 2.

4.4.3 Curriculum Modification Techniques. Practice fidelity of Curriculum Modification Techniques, the second of the three key pedagogical components of the SEM, is accomplished by strategically implementing various procedures, both in
planning and in lesson delivery, in order to avoid repetitious learning and to add depth to
the regular curriculum. Applying Curriculum Modification Techniques in the classroom
is fundamental to the implementation of SEM as it ensures that all students in the
classroom, regardless of ability level, are challenged. Implementing Curriculum
Modification Techniques increases the number of high-order learning experiences and
provides opportunities for enrichment experiences within the regular curriculum.

Table 13 shows the extent to which the items of Curriculum Modification
Techniques were observed in classrooms over the 60 lesson observations throughout
Phase 1 and Phase 2.
### Table 13
*Classroom Observations for Curriculum Modification Techniques*

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th>Phase 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Not observed</td>
<td>Missing</td>
<td>Observed</td>
</tr>
<tr>
<td>Students are grouped for differentiation…</td>
<td>30%</td>
<td>70%</td>
<td>0%</td>
<td>60%</td>
</tr>
<tr>
<td>Tasks are differentiated for individuals…</td>
<td>57%</td>
<td>43%</td>
<td>0%</td>
<td>73%</td>
</tr>
<tr>
<td>Evidence of curriculum compacting…</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Evidence of student self-direction…</td>
<td>53%</td>
<td>47%</td>
<td>0%</td>
<td>73%</td>
</tr>
<tr>
<td>Focus on advanced level thinking/knowledge…</td>
<td>83%</td>
<td>17%</td>
<td>0%</td>
<td>97%</td>
</tr>
<tr>
<td>Teacher’s lesson plan shows evidence of SEM…</td>
<td>17%</td>
<td>83%</td>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td>Average</td>
<td>43%</td>
<td>57%</td>
<td>0%</td>
<td>65%</td>
</tr>
</tbody>
</table>

Overall, the results in Table 13 indicate that there was a low implementation level (43%) in Phase 1 and a moderate implementation level (65%) in Phase 2 of Curriculum Modification Techniques. The highest implementation levels were observed in lessons that focused on advanced level thinking or knowledge, rather than age-and grade-level “fact finding” both for Phase 1 (83%) and for Phase 2 (97%), as well as teacher lesson plans that showed evidence of SEM differentiation in Phase 2 (80%). These were in fact
the only observations that presented high ratings in all of the observations for Curriculum Modification Techniques. The lowest implementation levels were observed for teachers’ lesson plans showing evidence of SEM differentiation (17%) in the first phase and for curriculum compacting (10%) in the second phase.

Of the six items observed, five showed implementation increases from Phase 1 to Phase 2. Curriculum compacting showed a decrease of 10%. The greatest increases in implementation were observed in teachers’ lesson plans showing evidence of SEM differentiation (an increase of 63%), student groupings for differentiation (an increase of 30%), and evidence of student self-direction (an increase of 20%).

The grouping of students for differentiated activity showed low implementation levels (30%) in Phase 1 and moderate implementation levels in Phase 2 (60%). This means that students were grouped to accommodate ability levels, learning styles, expression styles, or interests or talents in these lessons. Though differentiated grouping was not implemented at high or consistent levels across the school, examples were observed throughout the divisions. In one observed primary math lesson, three academic levels of groupings were observed. All students were working on the concept of multiplication, while one group was working independently on an enrichment lesson which involved the integration of language and social studies skills and knowledge into the lesson. One group was assisted by the teacher to solve basic multiplication concepts, while another group was working at grade-level multiplication concepts. For an intermediate math class, students were grouped with lesson pacing as a consideration, as an enriched group moved at a quicker pace than the rest of the class. Some groupings required considerable amounts of instructional planning in advance by the teacher, as in the case of an early years class where activity folders were created for each particular group, with one group at a time working with the teacher and three groups independently working through the various activities within their folders.
In Phase 1, 70% and in Phase 2, 40% of the observed lessons did not include student grouping for differentiated activity. It was observed that students did not work in pairs or groups for any of these lessons, but rather worked independently throughout the lessons.

A low implementation level was observed for differentiated tasks or activities for individual students in Phase 1 (57%), and moderate implementation levels (73%) were observed for this item in Phase 2. Examples of differentiation were not observed consistently across the phases, not for 43% of the observed lessons in Phase 1 and 27% of the lessons in Phase 2. Differentiated instruction for abilities, talents, interests, learning styles, or expression styles were not evident from the researcher’s perspective throughout these observed lessons. The teaching and learning in these classroom observations presented instruction of the curricular expectations without a consideration of ability levels, interests, talents, expression styles, or learning styles.

Individual differentiated instruction through time, pace, one-on-one help, choice, tiering, and alternate assignments — accommodating for abilities, learning styles, expression styles, and interests and talents — were observed across the divisions. In a class of second language instruction, there was a wide range of student ability, even though the students were in the same grade level. Some students had recently transferred from countries where they had previously received no instruction for this particular language (French). Others had attended Glenwood Academy for their entire education experience to date, receiving French language instruction since junior kindergarten. Others came from schools where they were immersed much more heavily in the language. Yet, it was observed that all students were able to accomplish the same curricular objectives through tiered activities. In a science class, differentiated instruction was provided, both according to ability (students chose to complete either a study, an experiment, or an innovation) and by interest (the topic of study was entirely up to each
Evidence of curriculum compacting showed a moderate implementation level (20%) in Phase 1 and a low implementation level (10%) in Phase 2. In both Phase 1 and Phase 2 of the study, curriculum compacting was noted as *not observed* in 80% of the lessons. Qualitative data indicate that for some of these lessons, although differentiation was provided, it was not done through curriculum compacting. Teachers showed a capacity to compact for subject areas such as math, reading, or spelling but found it less convenient, effective, suitable, or possible in other subject areas. Where students could conduct their own independent investigations within the curricular expectations, such as science or social studies, compacting was not implemented.

Evidence of curriculum compacting was noted as *missing* for 10% of the lessons in Phase 2 only. This rating was provided in the case of an early years class observation where a particular child was compacted for the majority of his math lessons but not for the 40-minute observed math lesson. In the midst of the second phase of this study, this particular student will have completed all curricular expectations for his year and plans were in place to move him ahead to the next grade before the end of the year, allowing him to advance as his skill level dictates.

An example of curriculum compacting was observed in a primary class where a group of six students were compacted out of a math unit. They had evidenced achievement of curriculum expectations through unit pretesting. They were working through a new unit called *Unraveling the Mystery of the Moli Stone*—part of a research-based math program intended for gifted and talented students in grades 3 to 5 called *Project M³ – Mentoring Mathematical Minds*. This particular unit involved increased depth, complexity, and problem-solving skills as students extended their learning beyond
the curricular requirements. For example, they become familiar with the Chinese and Egyptian number systems. Similarly, an intermediate math lesson involved a group that had been compacted out and were working on algebra activities while the rest of the class continued to work on an equations unit.

A low level of implementation was observed in Phase 1 (53%) for evidence of student self-direction in the lessons, and a moderate implementation level (73%) was observed for this item in Phase 2. Although examples of student self-direction were evident across the divisions, 47% of the observed lessons in Phase 1 and 27% of the lessons in Phase 2 did not evidence this item. These lessons involved teacher-directed learning activities with prescribed student expressions of learning that did not require self-direction on the students’ parts. An example of student self-direction was observed in a primary class where students were presented with an open-ended activity in which they were required to create a pattern rule in any way they chose. Student results varied greatly, consisting of numbers, pictures, words, colours, and shapes. Student explanations of their patterns ranged from very simple (a pattern rule of abab involving circles and squares) to much more detailed (a pattern rule of aabaabbaaabb involving colours, patterns, and shapes of animals). The students who created the more detailed pattern rules were also found to bring patterns off the page and into their own real world by applying concepts to their own lives. In another classroom observation, students were studying genres of media in a second language class. Student self-direction was evident in many aspects of the lesson. Students chose their genre, which aspect of that genre they would study, the expression style they would use to show their learning, and how they would present their learning to their audience. In another observation, a junior class was building upon previous learning about bullying. Students were then given a choice as to how they would apply bullying concepts to real-world situations and then how they would teach the concept to their peers.
A focus on learning that required advanced level thinking or knowledge, rather than age-and grade-level fact-finding, was perceived by the researcher to have high implementation levels, both in Phase 1 (83%) and in Phase 2 (97%). In an early years lesson it was observed that the teacher did more facilitating, rather than teaching, by implementing informal conversations with individual students and small groups of students all throughout the learning activity. This conversation was undertaken in a manner that drew advanced level thinking from the students. Various strategies to promote advanced level thinking were noticed in other classrooms, such as the use of open-ended questions, comparing and contrasting, synthesizing, summarizing, implementing Venn diagrams, using high-level vocabulary, creativity, imagination, and problem solving. In a junior class, a lesson on Canadian government encouraged students to analyze the promises of local politicians and then to take a critical stance on the statements of the politicians. In an intermediate art class, students did not just practice emulating particular art forms, but they studied the artist behind the style, drawing their own conclusions and forming their own critiques.

In Phase 1, 17% of observed lessons and in Phase 2, 3% of observed lessons were reported not observed for this characteristic, indicating that there was not evidence of advanced level thinking, but rather the lesson showed only grade-and age-level teaching and learning. For example, one junior class math lesson involved the teacher leading the class to correct their workbook homework from the previous day. Students volunteered their answers as the teacher recorded them on the chalkboard.

In Phase 1, teacher lesson plans showing evidence of SEM differentiation was reported as having low implementation levels (17%) but rose to high implementation levels (80%) in Phase 2. Some teacher planning evidenced differentiation for abilities, some for interests, and some for learning and expression styles. Several teachers planned for various groupings to accommodate for these differences. Some teacher planning also
In Phase 1, 83% of teaching plans did not include SEM differentiation, and in Phase 2, 13% of lesson plans did not indicate evidence of SEM differentiation. Even when teachers included SEM differentiation in their lessons, they would often not include it in their daily plans. At the end of Phase 1, some teachers expressed a need for an SEM planning checklist. A lesson plan companion checklist was created that includes various instructional methods, learning styles, expression styles, Bloom’s Taxonomy, Type I, II, and III enrichment, and intentions for differentiated instruction for students or groups of students. This checklist could be incorporated electronically onto all teachers’ daily plans. The use of this checklist improved several teachers’ implementation of this protocol item from Phase 1 (17% observed) to Phase 2 (80% observed).

4.4.4 Summary for classroom observations—Curriculum Modification Techniques. Results from the classroom observations show the extent to which Curriculum Modification Techniques were being implemented with fidelity within the classrooms at Glenwood Academy over time. By Phase 2, teachers were implementing all Curriculum Modification Techniques items from a moderate to high degree, except for curriculum compacting. The highest implementation level across the phases is seen for a focus on advanced level thinking and knowledge in the lessons.

The two phases of classroom observations show an increased presence, suggesting a greater implementation over time of Curriculum Modification Techniques. There is an overall increase of 22% of Curriculum Modification Techniques implementation from Phase 1 to Phase 2.

4.4.5 Enrichment Learning and Teaching. Enrichment Learning and Teaching is a pedagogical component of the SEM that replaces passive learning with engaged, and sometimes independent learning. Students learn better when they enjoy what it is they are learning, and their learning is more meaningful when the content and the process are
learned in the context of real-world problems. SEM theory is built upon the concept that each student is unique and all deserve a chance to learn. Enrichment is offered not only to high achievers but to any student in the classroom. Therefore, Enrichment Learning and Teaching components can be seen in the regular classroom, not only classrooms for gifted students. Particular to Enrichment Learning and Teaching are Type I, Type II, and Type III enrichment. Type I experiences are designed to expose students to a wide variety of topics and interests. Type II experiences consists of materials or methods that promote thinking skills or how-to skills, often preparing students to carry out Type III investigations or enrichment experiences which involve students conducting their own research, taking the role of a firsthand investigator in a subject area or field of study of their own choice. Types I, II, and III enrichment are addressed directly within the teacher survey and the student interview protocols of this study. The classroom observation protocols include general components of Enrichment Learning and Teaching that can be seen in classrooms on any given day.

Table 14 shows the extent to which the items of Enrichment Learning and Teaching were observed in classrooms over the 60 observed lessons throughout Phase 1 and Phase 2 of this study.
### Table 14

*Classroom Observations for Enrichment Learning and Teaching*

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th></th>
<th>Phase 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Not observed</td>
<td>Missing</td>
<td>Observed</td>
<td>Not observed</td>
<td>Missing</td>
</tr>
<tr>
<td>Prior teaching and learning/thinking Skills...</td>
<td>93%</td>
<td>7%</td>
<td>0%</td>
<td>93%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Verbal interaction of teacher promotes higher order thinking...</td>
<td>87%</td>
<td>13%</td>
<td>0%</td>
<td>97%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Teacher questioning promotes higher order thinking...</td>
<td>87%</td>
<td>13%</td>
<td>0%</td>
<td>97%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>High levels of student engagement...</td>
<td>97%</td>
<td>3%</td>
<td>0%</td>
<td>93%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Content is challenging for all students...</td>
<td>90%</td>
<td>10%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Average</td>
<td>91%</td>
<td>9%</td>
<td>0%</td>
<td>96%</td>
<td>4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Overall, the results of Table 14 indicate that there was high implementation of Enrichment Learning and Teaching in both Phase 1 (91%) and in Phase 2 (96%). The highest implementation levels were observed in the promotion of higher order thinking through verbal interaction of the teacher in Phase 2 (97%), teacher questioning that promotes higher order thinking in Phase 2 (97%), high levels of student engagement in Phase 1 (97%), and challenging content for all students in Phase 2 (100%). All Enrichment Learning and Teaching items fell within the high implementation level.
range. The lower of these items were both observed in Phase 1—the promotion of higher order thinking through the verbal interaction of the teacher (87%) and promotion of higher order thinking through teacher questioning (87%).

Three of the five observable items of the Enrichment Learning and Teaching increased in implementation from Phase 1 to Phase 2, all of which showed an increase of 10%. The implementation level for evidence of taught thinking skills or prior teaching and learning employed in the lesson remained the same from Phase 1 to Phase 2, and the item concerning high levels of student engagement decreased in implementation by 4% from Phase 1 to Phase 2.

Evidence in the lesson that thinking skills are taught or prior teaching and learning is employed showed high implementation in Phase 1 (93%) and in Phase 2 (93%). In an intermediate math class the teacher began with a review of a recently completed unit—going over the toughest problem that students had encountered in that last unit. Then the teacher provided a view of where they would be going in the upcoming unit and how this all relates to the previous unit. There was constant referral to previous units and how they were building on what they had already learned. In an early years class it was evident that students had been learning sign language and other specific routine and organization skills. During the observed lesson, students implemented these previously taught routines and organization skills as they carried out independent and group activities. A grade 7 class clearly demonstrated their ability to implement the Independent Investigation Method (learned in a previous grade). As they carried out their investigations, they demonstrated the research steps and the vocabulary of the program, using skills that were previously taught and reinforced throughout their education at Glenwood Academy.

Verbal interaction of teachers that promoted higher order thinking was observed in 87% of the observations in Phase 1 and in 97% of the lessons in Phase 2 of this study.
In one intermediate religion class the teacher and the students carried out higher order thinking discussions. One dialogue concerned the idea that creativity might take on a scientific form. Students also queried why God might place a tree in the Garden of Eden and not permit the people to touch it. In a junior health class, the teacher and students had a conversation surrounding the topic of bullying, deciding on the difference between physical aggression and verbal aggression. The teacher presented fictional scenarios, and the students then identified whether the scenarios met the bullying definition that they had previously learned—did it involve repetitive action and an imbalance between the victim and the bully? Students applied these concepts to real life within their small groups. All of this was done through verbal interaction. In an early years class, social and behavioural issues were being addressed by the verbal interaction of the teacher and students, encouraging students to take responsibility and become problem solvers in the situation. The teacher refrained from solving the problem for the students but rather created verbal scaffolding as the students worked through their conflict. The researcher observed that some teachers modeled the verbal skills they wanted their students to use and as a result observed students implementing these skills.

The researcher reported that 13% of the lessons in Phase 1 and 3% of the lessons in Phase 2 did not include higher order thinking promoted by the verbal interaction of the teacher. In these lessons the language of the teacher was directive, straightforward, not inviting students to think beyond the grade-level objectives of the lesson. These lessons did not incorporate the Bloom’s higher order thinking skills such as application, synthesis, or analysis, but primarily were lessons involving knowledge and comprehension levels of thinking.

Teacher questioning that was open-ended and promoted higher order thinking also showed high levels of implementation. It was observed in 87% of the lessons in Phase 1 and in 97% of the lessons in Phase 2. Sometimes this questioning took on an oral
format, with teachers encouraging student thinking with questions such as, “How could this narrative [storybook] be considered to be a book about Math?” “What is a granular solid?” “Is God a person?” “What is creativity?” and “How might the thickness of line promote or take away from harmony?” Sometimes teacher questioning in the classrooms was explicitly taught to the students and modeled for them to use. One teacher had reminders on a bulletin board of how to ask effective questions and how to provide great answers to great questions. Teacher questioning was seen by the researcher to promote high-end student questioning. In a junior level class, the teacher taught her students how to ask “fat” questions, and students were given the opportunity to practice as they interviewed a guest speaker. Some teacher questioning took a written form. One primary teacher shared with the researcher that as she prepared to teach a Robert Munsch reading unit, she was conscious in her question writing to include all levels of Bloom’s Taxonomy. As well, she created a writing response opportunity for students to continue thinking about the story and use analyzing, evaluating, and application skills.

The researcher observed that in 13% of the observed lessons in Phase 1 and in 3% of the lessons in Phase 2, questioning to promote higher order thinking was not implemented. In these cases teacher questioning remained at a fact-finding level, or the strategy of questioning was not used at all in the teaching and learning process of that lesson.

A high level of student engagement was observed in Phase 1 (97%) and in Phase 2 (93%). Some engagement of students resulted from sheer enjoyment of activities, as one child in the early years program proclaimed, “That activity looks fun!” Another child in a primary class showed a high level of engagement and enjoyment in reading due to a boost in confidence, freely sharing aloud, “I read the word forest all by myself yesterday!” Many teachers aimed to create enjoyable activities for students to increase engagement, for example, creating a unit about students’ favourite authors, or
transforming a traditional health lesson on nutrition into a bingo game, or simply providing choices for students that matched their preferred interests and talents. In a junior math class it was noted by the researcher that all but two students had a hand raised throughout a direct-instruction portion of the math lesson, engaging themselves through participation. Students wanted to share their answers and also wanted to demonstrate their learning on the SMART Board.

In Phase 1, 3% of the lessons and in Phase 2, 7% of the lessons did not evidence this level of student engagement, and the item was noted as not observed. In these lessons the researcher observed some students in the class to be disengaged for more than a 10-minute duration.

In Phase 1 of the study 90% of the observations showed that the content of the lesson was challenging for all students in the classroom, and observed was recorded for this item for 100% of the observed lessons in Phase 2. In an early years class the teacher presented a “challenge” math activity for all students who wished to take the opportunity. This “challenge” required the students to estimate answers before performing calculations for the addition problems. Many students in the class were enthusiastic about taking this challenge and about explaining what estimation was. In a primary science lesson the teacher presented the complete scientific method to the class as an enrichment addition to her lesson. When it came time for students to carry out their experiments, some students simply wrote a beginning, middle, and an end, whereas others were able to go much beyond that, following the scientific steps that were presented by the teacher. The teacher therefore, was successful in getting students to create “their best” work—that which each student was capable of doing, whether they were a struggling learner or a high achiever. In a junior social studies class the teacher was successful in presenting the challenge of understanding various government structures, which was evidenced in the level of questions that students asked aloud, such
as, “What is an embassy?” “Why might the Iranian government separate families when they try to move out of the country?” “Do you have to be a Canadian citizen to go back and visit Iran once you have left?” and “How does a child become a Canadian Citizen as opposed to an adult?” Each student undertook challenges as they felt capable. A junior math class was discussing the concept of large numbers. Some students presented problems such as $52 \times 100 = 5,200$, whereas two very capable students in the class presented larger numbers to the class, such as $13,140,000$, thus adding an extra challenge to any who were able to understand it.

In Phase 1, 10% of the lessons were reported as *not observed* due to the fact that a grade-level lesson was presented, with little or no challenging content. In some lessons there were students that were visibly not being challenged with the work that was presented to them, finishing earlier than the rest of the class or showing signs of disengagement or distraction.

4.4.6 Summary for classroom observations—Enrichment Learning and Teaching. Results from the classroom observations show the extent to which Enrichment Learning and Teaching, of the three main pedagogical components of the SEM, was being implemented with fidelity within the classrooms at Glenwood Academy over time. Overall, classroom observation results of Enrichment Learning and Teaching show high implementation levels (a range of 87%–100%) across the phases. Even with such high implementation levels, an increased implementation of Enrichment Learning and Teaching items is seen over time (an increase of 5%).

4.5 Summary for Classroom Observations

Results from the classroom observations address the first research question: *To what extent are the specific pedagogical practices associated with the SEM being implemented with fidelity within the classrooms at Glenwood Academy?* and the research
subquestion: What do the classroom observations tell us about the practice fidelity of SEM in the classroom of Glenwood Academy over time? in the following ways:

- Overall classroom observation results of the Total Talent Portfolio show moderate to high practice fidelity levels, Curriculum Modification Techniques results show low to moderate levels of practice fidelity levels, and Enrichment Learning and Teaching results show high levels of practice fidelity across the phases. A specific area of growth still apparent (after Phase 2) is the evidence of student inventories in the classrooms.

- There was an overall increased presence from Phase 1 to Phase 2, suggesting greater practice fidelity over time, of the Total Talent Portfolio (an increase of 16%), Curriculum Modification Techniques (an increase of 22%), and Enrichment Learning and Teaching (an increase of 5%).

4.6 Teacher Surveys

The following section presents results of the teacher surveys, one method used to address the research questions concerning practice fidelity in this study. The intent of the surveys was to investigate the perceptions of the teachers concerning the level of success they were experiencing in their implementation of the pedagogical components of the SEM in their classrooms. Clearly, teacher perceptions are critical to their engagement with an innovation (Hattie, 2009). This section begins with an overall view of the teacher survey results concerning the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching. This is followed by individual teacher results of the surveys; then the survey results for each pedagogical component of the SEM is provided. Finally, the observation data described in the previous classroom observation section are triangulated with teachers’ perceptions of their implementation success.
The teacher survey protocol includes 15 items (see Appendix B) in the three categories that have been derived from the three pedagogical components of the SEM and describe the essential characteristics of the category. Unlike the items in the classroom observation protocol, these items are not necessarily observable within the time constraints of a 40-minute observation or from an onlooker’s point of view at all. The teacher participants rated themselves on the same three lessons observed by the researcher. However, the teachers might support these ratings through documentation (or other evidence forms) that would not be seen by the researcher during an observation. In this way, teacher surveys expanded on the classroom observation data. Table 15 describes the overall percentage of responses for each of the three core pedagogical components of the SEM (one survey completed after three observed lessons in Phase 1, then another survey completed after three observed lessons in Phase 2). Teacher response choices for each item falling within the three pedagogical components were completely successful (CS), successful (S), neither successful nor unsuccessful (N), unsuccessful (U), or completely unsuccessful (CU). Teachers rated themselves as completely successful (CS) if they demonstrated thoughtful and deliberate planning and implementation of the item in more than one of the lessons observed. Teachers used the successful (S) rating if they demonstrated planning and implementation of the item in one or more of the observed lessons. Teachers rated themselves as unsuccessful (U) when they demonstrated little planning and implementation of the item and completely unsuccessful (CU) when they demonstrated no planning or implementation of the item in the observed lessons. The neither successful nor unsuccessful (N) rating was used by teachers when they found themselves in a quandary, not feeling confident that they could rate themselves as successful or as unsuccessful. At times the teachers felt that recently learned SEM items were being implemented only partially, therefore, a neither successful nor unsuccessful (N) rating was most appropriate. Teachers also provided
qualitative data in instances where they wished to clarify their ratings with narrative, to
comment, or to provide further information that would enhance the quantitative data.
Percentage breakdowns of each item falling within the three broad categories are
provided in a subsequent section.

Table 15
*Teacher Surveys Overall*

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Talent Portfolio</strong></td>
<td>CS</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>8%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Curriculum Modification Techniques</strong></td>
<td>14%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Enrichment Learning/Teaching</strong></td>
<td>13%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

Table 15 indicates the three main findings in relation to the research questions
from the teachers’ perspective—the extent to which the three components of the SEM
were successfully implemented in classrooms, the variability of implementation from
component to component, and how this implementation of the SEM changed over time,
from phase to phase.

Responses in the category *completely successful* ranged from 8%–32% and
responses in the category *successful* ranged from 52%–60%. The most responses in the
category *completely successful* are seen for Curriculum Modification Techniques (14%
in Phase 1 and 32% in Phase 2). The most teacher responses in the category *successful*
are seen for the Total Talent Portfolio (60% in Phase 1 and 58% in Phase 2).
Teacher surveys show variability of implementation from teacher to teacher. The category *completely successful* shows a wide range of responses (8%–32%) by the teachers. The category *successful* shows less variability in teacher responses, with a range of 52%–60%. The findings were consistent with the classroom observation results which show variability of implementation, with the mean implementation percentages throughout Phase 1 and Phase 2 for each teacher showing a range of 52%–94%.

There was an increase in responses for the successful implementation of all three components from phase to phase. Eight percent of teacher responses were in the *completely successful* category in Phase 1 and 18% in Phase 2 for the Total Talent Portfolio items (a 10% increase). In the *completely successful* category responses increased for Curriculum Modification Techniques from 14% to 32% (an 18% increase), and for Enrichment Learning and Teaching, from 13% to 20% (a 7% increase) across the phases.

While Table 15 shows the overall percentage of teacher responses concerning the items that fall within the three pedagogical categories of the SEM, Table 16 describes these same responses according to individual teacher participant results. Percentages in Table 16 describe the total results of each classroom teacher’s rating of their own successful implementation of the pedagogical components of the SEM once in Phase 1, then once in Phase 2 of the study. The purpose is to show the variability or lack of variability of successful implementation from teacher to teacher throughout the two phases of the study.
Table 16
*Teacher Surveys—Individual Teacher Results*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>TTP %</th>
<th>CMT %</th>
<th>ELT %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
</tr>
<tr>
<td>A</td>
<td>100</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>B</td>
<td>50</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>C</td>
<td>75</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>D</td>
<td>25</td>
<td>75</td>
<td>40</td>
</tr>
<tr>
<td>E</td>
<td>50</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>F</td>
<td>50</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>G</td>
<td>50</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>H</td>
<td>75</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>I</td>
<td>50</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>J</td>
<td>100</td>
<td>100</td>
<td>67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Phase 2</th>
<th>TTP %</th>
<th>CMT %</th>
<th>ELT %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
</tr>
<tr>
<td>A</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>B</td>
<td>75</td>
<td>25</td>
<td>100</td>
<td>67</td>
</tr>
<tr>
<td>C</td>
<td>25</td>
<td>50</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>D</td>
<td>50</td>
<td>50</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>E</td>
<td>50</td>
<td>50</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>F</td>
<td>100</td>
<td>80</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>G</td>
<td>50</td>
<td>50</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>H</td>
<td>50</td>
<td>50</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>I</td>
<td>25</td>
<td>50</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>J</td>
<td>100</td>
<td>60</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.
Table 16 shows teacher perceptions of their successful implementation of the three components of the SEM in their classrooms and the variation in perceived implementation success from teacher to teacher.

Teachers reported the highest implementation success for Curriculum Modification Techniques in Phase 2. Teachers A and B reported 100% ratings in the completely successful category. All other teachers reported ratings in the successful category, with three more teachers providing ratings in the completely successful category—Teachers C, D, and E. For Curriculum Modification Techniques in Phase 2, only Teacher F reported a rating in the unsuccessful category, and there were not any ratings in the completely unsuccessful category.

The most ratings in the unsuccessful category reported by teachers were for Enrichment Learning and Teaching in Phase 1 (Teachers F, G, and I). Only Teacher I reported ratings for the category completely unsuccessful (Phase 1 and Phase 2 for Total Talent Portfolio).

Every teacher, except for Teachers C and G, reported successful implementation, where all of their ratings were either in the completely successful or successful categories (and no ratings for the categories neither successful nor successful, unsuccessful or completely unsuccessful) for at least one component in one phase. Teacher A provided ratings in the categories completely successful and/or successful for all components in all phases except for Curriculum Modification Techniques in Phase 1. These data indicate that all teachers except for two perceive themselves to be successful in at least one area of SEM implementation. Teachers H and J did not provide any ratings in the completely successful category for their targeted lessons. Teacher F and Teacher I reported ratings in either the unsuccessful or completely unsuccessful categories more than any of the other teachers (4 ratings for Teacher F and 6 ratings for Teacher I). Teacher ratings of their implementation show variation from teacher to teacher across the components and across
the phases. However, these data also indicate that all teachers experienced, from their perspective, successful SEM implementation throughout the phases of the study.

The following section describes the teachers’ perceptions of their success in implementing the SEM across the school by breaking down teacher surveys according to pedagogical component—Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching, across the two phases of the study. It should be noted that due to the small population size of teacher participants, the following teacher survey tables (and later the teacher interview tables) present the actual number of teachers. Percentages are also provided in order to provide consistency in the reporting of the findings of the study.

4.6.1 Total Talent Portfolio. Table 17 describes the teachers’ perceptions of the extent to which the items of the Total Talent Portfolio were successfully implemented in Phase 1 and 2 of this study.
Table 17

*Teacher Surveys for Total Talent Portfolio*

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Phase 2</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I accommodated learning styles/interests/ expression styles through student choice of tasks</td>
<td>1 (10%)</td>
<td>6 (60%)</td>
<td>3 (30%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (20%)</td>
<td>7 (70%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Student inventories were taken into account in my lesson planning and delivery</td>
<td>1 (10%)</td>
<td>3 (30%)</td>
<td>5 (50%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
<td>4 (40%)</td>
<td>4 (40%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td></td>
</tr>
<tr>
<td>My teaching instruction was differentiated to meet learning differences</td>
<td>1 (10%)</td>
<td>8 (80%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (30%)</td>
<td>6 (60%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>My overall implementation of the TTP</td>
<td>0 (0%)</td>
<td>7 (70%)</td>
<td>2 (20%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
<td>6 (60%)</td>
<td>2 (20%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Average Responses</td>
<td>8%</td>
<td>60%</td>
<td>30%</td>
<td>0%</td>
<td>5%</td>
<td>18%</td>
<td>58%</td>
<td>18%</td>
<td>5%</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers not all sets of ratings add to 100.

Overall averages show that in Phase 1, 68% of teacher responses concerning their targeted lessons evidenced successful implementation of the Total Talent Portfolio (8% *completely successful* and 60% *successful*). In Phase 2, 76% of teacher responses indicate that they perceived successful implementation of the Total Talent Portfolio items (18% *completely successful* and 58% *successful*).
High implementation levels are seen for the following items: In Phase 2, two teachers reported that the accommodation of student Total Talent Portfolios through student choice was *completely successful*, and seven teachers reported that this item was *successful*. In Phase 1, one teacher rated the implementation of differentiated teaching instruction *completely successful*; eight teachers rated their implementation *successful*. This same item in Phase 2 shows three teachers perceived their lessons as *completely successful* and six perceived their lessons as *successful*.

Completely unsuccessful implementation was reported by some teachers for their overall implementation of the Total Talent Portfolio (one *completely unsuccessful* rating in Phase 1) and for considering student inventories in their lesson planning (one *completely unsuccessful* rating in Phase 1 and in Phase 2).

Increases in practice fidelity are evident across the phases for all Total Talent Portfolio items. The highest increase in teacher perceptions of *completely successful* implementation were for differentiated teaching instruction (one *completely successful* rating in Phase 1, three *completely successful* ratings in Phase 2) an increase of two teacher ratings.

In Phase 1, one teacher rated the accommodation of learning styles, interests, talents or expression style inventories through student choice in assignments as *completely successful*, and six teachers rated this item *successful*. Therefore, seven out of 10 teachers perceived this item to be implemented with success for their targeted lessons in Phase 1. In Phase 2, two teachers provided ratings in the category *completely successful* and seven provided ratings in the category *successful*. Therefore, nine out of 10 of the teachers experienced successful implementation in their targeted lessons for this item in Phase 2.

In an intermediate science class, a teacher delivered a lesson that involved learning about wildlife and pesticides. This lesson included a student role-play activity,
accommodating kinesthetic and intrapersonal learners as well as those who enjoy drama as an expression style. The assignment that followed up on student learning in this lesson allowed for student choice in product creation and included video production, song composition, and PowerPoint generation and presentation. In another intermediate class the teacher commented, concerning a long-term project, “students made the choices, not me. [There was] not a lot of ‘teaching’ provided. Instructions were given in written form and posted [electronically for student access] to Renzulli.” In this case, the teacher reported teaching the Type II skills needed to create this project in advance, then each child independently carried out their investigations without receiving direct instruction, but rather one-on-one conferencing.

In Phase 1, three teachers reported ratings in the categories neither successful nor unsuccessful for accommodating learning, interests, and expression styles through student choice. Two of these teachers commented that they implemented this item in their classrooms, but only occasionally.

In Phase 1, four teachers reported success in taking their student inventories into account in their lesson planning (one completely successful and three successful). In Phase 2, 5 teachers reported successful implementation (one completely successful and four successful).

In Phase 1 and in Phase 2, one teacher provided a rating in the category completely unsuccessful for this item, reporting that student inventories were not taken into account as the targeted lessons were planned. A particularly high number of teachers (five teachers in Phase 1 and four teachers in Phase 2) provided ratings for this item in the category neither successful nor unsuccessful. Teachers’ descriptions of their practice explain these ratings. One teacher explains, “I find it challenging to use the Total Talent Portfolio per se, as there are other factors that come into play when planning for lessons, especially those involving small collaborative groups, such as ‘who will get
along with whom,’ strengths and weaknesses, etc. The line between using the Total Talent Portfolio and everything else I know to be true about my students is at times blurred.” In Phase 1, one teacher commented, “my goal is to work towards using the Total Talent Portfolio more effectively in my classroom. Students take the inventories, but next steps need to be done to utilize this information more [in planning and teaching].” Another teacher explained her lack of use of the Total Talent Portfolio in Phase 1; “I am beginning to create portfolios with student input (which is an important part of TTPs). I am moving towards proper implementation of the TTP by the end of the year. The students need to learn and see examples of good work, room for improvement [on their] work, etc.” This teacher also reported that in an early years class, because the students are so young, it is difficult to get the profiles/inventories completed early in the year (Phase 1), profiles that will truly reflect student strengths. These comments support the data from the classroom observations. Not observed was reported for evidence of student portfolios in the classrooms (20%), the accommodation of learning styles (30%), talents and interests (53%), or expression styles (57%).

One teacher reported successful implementation of student inventories in her junior health class where she had assigned a group project on safety. She noted that “the groups were created primarily according to personalities, interests, and talents” and were planned this way by the teacher. In each group, student strengths (acting, drawing, speaking, or writing) were maximized on. Later, groups taught the class one aspect of safety that they themselves became experts on through their own research.

The third item of the Total Talent Portfolio represented on the teacher survey concerns instruction that is differentiated to accommodate the various learners. One teacher provided a rating in the category completely successful in Phase 1, and eight teachers provided ratings in the category successful. In Phase 2, three teachers deemed their lessons completely successful and six successful. Therefore, nine out of 10 teachers
reported utilizing students’ Total Talent Portfolio with success in Phase 1 and in Phase 2. One teacher commented that her use of the Total Talent Portfolio in her lesson preparation and delivery is closely related to her level of familiarity with the Total Talent Portfolio (the longer it is used at the school, the better she will get to know this tool) as well as her knowledge and understanding of her students (which increases as the year goes on). An intermediate teacher commented that the prewritten curriculum that he was using for a Religion class offered several methods for students to demonstrate their learning which provided for differentiated instruction quite efficiently for him, increasing his implementation of this item. In an intermediate art class students participated in individual conferences with the teacher so that each student’s work could be differentiated in terms of ability, talent, or interest. A junior teacher reported success in this area as she was able to provide some direct instruction for students needing the extra direction in a math unit, yet compact some high achievers out of this more “basic” lesson and move forward with a problem-solving format.

One teacher in Phase 1 and one teacher in Phase 2 provided a rating in the category neither successful nor unsuccessful. Teachers did not report any ratings in the categories unsuccessful or completely unsuccessful for this item. Explanations for these ratings were not provided.

The final item of the Total Talent Portfolio that was rated by the teachers was a description of their own overall implementation of the Total Talent Portfolio. In Phase 1 and in Phase 2, two teachers rated their overall use of the Total Talent Portfolio as neither successful nor unsuccessful. Teachers did not report ratings in the category unsuccessful in Phase 1, but one teacher did in Phase 2. One teacher provided a rating in the category completely unsuccessful in Phase 1. Teachers did not provide explanations for these ratings.
In Phase 1, there were not any teachers who felt their overall implementation of the Total Talent Portfolio was completely successful, although seven rated their overall implementation as successful. In Phase 2, one teacher provided a rating in the category completely successful and six provided ratings in the category successful. Therefore, in Phase 1 and in Phase 2, seven out of 10 teachers indicated that they experienced success in their overall implementation of the Total Talent Portfolio. Some teachers reported that they just needed time and practice with the Total Talent Portfolio to feel that they were completely successful in all areas of instruction. One teacher commented, in Phase 2, regarding her use of the Total Talent Portfolio, “in some ways (such as hands-on independent learners, group learners) I feel the lessons were very successful. In other ways such as technology or research (as examples) I feel there is significant room for improvement.”

4.6.2 Summary for teacher surveys—Total Talent Portfolio and triangulation of data. Results from the teacher surveys show the extent to which the Total Talent Portfolio was being successfully implemented within the classrooms over time, from the teachers’ perspective, at Glenwood Academy.

Overall, few ratings in the categories completely unsuccessful (5% in Phase 1 and 3% in Phase 2) or unsuccessful (0% in Phase 1 and 5% in Phase 2) were provided for the implementation of the Total Talent Portfolio items. Teachers did not perceive their implementation of these items as unsuccessful overall. However, there were few ratings in the category completely successful for Total Talent Portfolio items (8% in Phase 1 and 18% in Phase 2). The majority of responses were in the successful (60% in Phase 1 and 58% in Phase 2) or neither successful nor unsuccessful (30% in Phase 1 and 18% in Phase 2) categories.

The teachers’ descriptions of their practice show that many teachers perceived that their implementation of the accommodation of learning styles, interest styles,
expression styles and their incorporation of student inventories into their lesson plans were still in the developmental stages. Overall, results of teacher ratings (68% of the responses in Phase 1 and 76% of the teacher responses in Phase 2) indicate successful implementation (completely successful and successful combined) of the Total Talent Portfolio items throughout the targeted lessons, indicating room for growth in successful implementation. The classroom observation results (for items that correspond to the teacher survey items) corroborate these findings in the teacher survey in that the accommodation of learning styles was not observed in 30% of the lessons, accommodation of talents and interests was not observed in 53% of the lessons, accommodation of expression styles was not observed in 57% of the lessons, and evidence of student inventories in classrooms was not present in 20% of the classroom observations. Not observed ratings for these four Total Talent Portfolio items continued into Phase 2 (17%, 13%, 30%, and 10% respectively) but were reported for fewer observations than in Phase 1. The ratings and descriptions of both the classroom observation and the survey results indicate that practice fidelity of the Total Talent Portfolio items, particularly the accommodation of learning styles, talents and interests, expression styles, and the use of inventories in the classrooms have increased from Phase 1 to Phase 2, but continue to present opportunity for further increase.

Teacher survey results show that nine out of 10 teachers in Phase 1 and in Phase 2 perceived successful implementation (a combination of completely successful and successful) in providing differentiated instruction to meet the various needs of the students. The researcher reported that various teaching methods were implemented in 90% of the observed lessons in Phase 1 and in 97% of the lessons in Phase 2. Therefore, from both the teachers’ perspective and the researcher’s perspective, there are high levels of practice fidelity where differentiated teaching methods and instruction are concerned.
Teacher surveys show an overall increase in teachers’ perceptions of their successful implementation of the Total Talent Portfolio (8% completely successful in Phase 1 and 18% completely successful in Phase 2). Classroom observation results also show an overall increase in Total Talent Portfolio implementation from Phase 1 to Phase 2 (66% observed in Phase 1 and 82% observed in Phase 2).

4.6.3 Curriculum Modification Techniques. Table 18 describes the teachers’ perceptions concerning the extent to which the items of Curriculum Modification Techniques were successfully implemented in Phases 1 and 2.
### Table 18

**Teacher Surveys for Curriculum Modification Techniques**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th>Phase 2</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
</tr>
<tr>
<td>I accommodated individual and group</td>
<td>3 (30%)</td>
<td>6 (60%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>differences through various instructional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I encouraged student questioning</td>
<td>2 (20%)</td>
<td>5 (50%)</td>
<td>3 (30%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students were starting and finishing at</td>
<td>1 (10%)</td>
<td>4 (40%)</td>
<td>5 (50%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>different places</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I provided opportunities for self-</td>
<td>1 (10%)</td>
<td>7 (70%)</td>
<td>2 (20%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>direction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall my implementation of CMT</td>
<td>0 (0%)</td>
<td>8 (80%)</td>
<td>2 (20%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Responses</td>
<td>14%</td>
<td>60%</td>
<td>26%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Overall averages show that in Phase 1, 74% of teacher responses concerning their targeted lessons indicate successful implementation of Curriculum Modification Techniques (14% *completely successful* and 60% *successful*). In Phase 2, 84% of teacher responses indicate that they perceived successful implementation of Curriculum Modification Techniques (32% *completely successful* and 52% *successful*).

In Phase 2, all of the teachers reported perceptions of successful implementation in the provision of different starting and finishing places for the students.
completely successful and six successful) and in the provision of opportunities for self-direction (four completely successful and six successful).

There was only one rating in the unsuccessful category, and that was in Phase 2 for the accommodation of individual and group differences. There were not any ratings in the completely unsuccessful category for Curriculum Modification Technique items.

Implementation increases are seen across the phases for four of the five Curriculum Modification Techniques items. In noting the completely successful ratings, the highest increases in teachers’ perception of successful implementation are seen for the provision of different starting and finishing places for students (an increase of three teacher ratings) and for the provision of student self-direction opportunities (an increase of three teacher ratings). One item, the accommodation of individual and group differences, received the same number of ratings in the completely successful category in Phase 1 and Phase 2.

The accommodation of individual and group differences through conferences, flexible grouping, tiered assignments, curriculum compacting, or other differentiated instructional strategies was rated by three teachers as completely successful and by six teachers as successful in Phase 1. Therefore, nine out of 10 of the teachers reported successful implementation of this Curriculum Modification Techniques item in the targeted lessons. In Phase 2, three teachers provided ratings in the completely successful category and 5 teachers provided ratings in the successful category. Therefore, eight out of 10 participating teachers reported that their implementation of this item was successful.

In one intermediate science class the teacher implemented teacher–group conferences and flexible grouping to accommodate the various needs of her students. A primary teacher reported on her differentiated instruction, specifically her accommodation through curriculum compacting: “I use it primarily for math and
spelling.” The researcher’s and the teachers’ descriptions in the teacher surveys and classroom observation results show that these are the two subject areas where compacting is most often used by teachers in the school. Teachers described these as the least complicated subject areas in which they can develop their practice of curriculum compacting. For an art class, a teacher shared that he provided “freedom of subject matter and painting style to suit student passion and/or strengths,” thereby accommodating various differences in the class.

In Phase 1 and in Phase 2, there was one rating in the category neither successful nor unsuccessful. In Phase 2, one teacher provided a rating in the unsuccessful category. A rotary teacher shared that some students in the school take her subject only twice a week. This infrequency limits her ability to provide more opportunities for modification. She reported that differentiation is still possible and can be facilitated, but it requires more reflection and intentional implementation on her part.

The opportunities for student questioning that would facilitate self-discovery of key concepts was reported to be completely successful by two teachers and successful by five teachers in Phase 1. Therefore, seven out of 10 teachers reported successful implementation of this item in their targeted lessons. This same item of the Curriculum Modification Techniques protocol was reported completely successful by three teachers and successful by six teachers in Phase 2. Therefore, nine out of 10 teachers reported successful implementation in the targeted lessons.

Three teachers in Phase 1 and one teacher in Phase 2 perceived their reported opportunities for student questioning in their targeted lessons to be neither successful nor unsuccessful. An early years teacher reported, “regarding self-discovery and key questions, I am intentionally using questions, but feel there is room for improvement with student direction and self-discovery in questions.” There were no ratings in the unsuccessful or completely unsuccessful categories in Phase 1 or Phase 2 for this item.
The third item of Curriculum Modification Techniques that was rated by teachers was the provision of different starting and finishing places for various students. In Phase 1, one teacher reported implementation of this item as completely successful and 4 teachers reported successful. Therefore, only five out of 10 teachers perceived successful implementation of this item during the first phase of the study. In Phase 2, four teachers rated this item completely successful and six teachers as successful, showing that all of the teachers perceived success in their implementation of this item in the second phase. A primary teacher provided an example of successful implementation for a math lesson that evidenced various starting points for students. Some students worked their way towards an enrichment lesson as they demonstrated mastery over the concept being taught, whereas others began with an enrichment group immediately.

In Phase 1, five teachers rated the provision of different starting and finishing points as neither successful nor unsuccessful, but teachers did not provide explanations to support these ratings. There were no reports for unsuccessful or completely unsuccessful for this item in Phase 1 or in Phase 2.

In Phase 1, eight out of 10 teachers reported successful implementation in the provision of opportunities to students for self-direction (one completely successful and seven successful). In Phase 2, all 10 teachers reported successful implementation of this item in their targeted lessons (four completely successful and six successful). One teacher of a primary class explained why a completely successful rating was not given for these targeted lessons in Phase 1: “It is important to consider the level of independence for younger children. Much teacher modeling is imperative to increase the success of future self-discovery-type learning.” In a junior Language class, students were provided choice in the manner in which they wished to retell their novel chapter or to show understanding of the chapter read. Student products included diary entries by one of the main characters and comic strips summarizing their chapter. The teacher noted that “this was very well
received by the students and well done, as they chose their activity to complete based on their strengths and preferences.” In Phase 1, one teacher rated this item as neither successful nor unsuccessful. There were no ratings in the unsuccessful or completely unsuccessful categories in either Phase 1 or Phase 2.

The final item that was rated by teachers concerned their overall implementation of Curriculum Modification Techniques. In Phase 1, eight teachers reported successful overall implementation of Curriculum Modification Techniques, and in Phase 2, two teachers rated their targeted lessons as completely successful and three as successful. Therefore, eight out of 10 participating teachers in Phase 1 and five out of 10 participating teachers in Phase 2 perceived their overall implementation of Curriculum Modification Techniques as successful.

Ratings in the category neither successful nor unsuccessful were provided by two teachers in Phase 1 and by five teachers in Phase 2. One teacher, in explaining the struggle between meeting all of the academic needs as well as the behavioural needs at the same time, explains, “I try to accommodate, but it is not always successful due to the personalities in the classroom.” There were no ratings in the unsuccessful or completely unsuccessful categories for this item in either Phase 1 or Phase 2.

4.6.4 Summary for teacher surveys—Curriculum Modification Techniques and triangulation of the data. Results from the teacher surveys show the extent to which Curriculum Modification Techniques were being successfully implemented within the classrooms over time, from the teachers’ perspective, at Glenwood Academy.

Teacher survey results show that overall, 74% of the teacher responses in Phase 1 (14% completely successful and 60% successful) and 84% of the teacher responses in Phase 2 (32% completely successful and 52% successful) indicate successful implementation of the Curriculum Modification Techniques items in their targeted
lessons. Classroom observation results show that Curriculum Modification Techniques items were observed in 43% the same lessons in Phase 1 and 65% in Phase 2.

Teacher survey results show that nine out of 10 participating teachers perceived that differentiation for individual and group differences was implemented successfully (three completely successful and six successful) in Phase 1 and eight out of 10 teachers perceived successful implementation in Phase 2 (three completely successful and five successful). This Curriculum Modification Techniques item received the only unsuccessful rating (in Phase 2). However, the classroom observation results indicate some challenges in the implementation of Curriculum Modification Techniques, particularly differentiation for groups and for individual students. Classroom observation results show that differentiation for groups of students was observed in only 30% of the lessons in Phase 1 and 60% of the lessons in Phase 2. Differentiation for individuals was observed in 57% of the lessons in Phase 1 and 73% of the lessons in Phase 2. So although teachers reported successful implementation of the accommodation of individual and group differences, the researcher reported low to moderate ratings in the grouping of students for differentiation and in the differentiation of tasks for individual students.

Teacher surveys show an overall increase in teachers’ perceptions of their successful implementation of Curriculum Modification Techniques, as there were 18% more completely successful teacher responses in Phase 2 than in Phase 1. The researcher also reported an overall implementation increase of Curriculum Modification Techniques from Phase 1 to Phase 2 in the classroom observations (a 22% increase).

4.6.5 Enrichment Learning and Teaching. Table 19 describes the teachers’ perception of the extent to which the items of Enrichment Learning and Teaching were successfully implemented in the classrooms in Phase 1 and in Phase 2.
<table>
<thead>
<tr>
<th>Table 19</th>
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<tbody>
<tr>
<td><strong>Teacher Surveys for Enrichment Learning and Teaching</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
</tr>
<tr>
<td>I provided Type I enrichment or was building</td>
<td>2 (20%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>upon a Type I lesson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I provided Type II enrichment or was building</td>
<td>1 (10%)</td>
<td>6 (60%)</td>
</tr>
<tr>
<td>upon these taught skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I provided Type III enrichment for high</td>
<td>1 (10%)</td>
<td>5 (50%)</td>
</tr>
<tr>
<td>achievers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content was challenging for all</td>
<td>2 (20%)</td>
<td>5 (50%)</td>
</tr>
<tr>
<td>Strategies to promote higher order thinking</td>
<td>1 (10%)</td>
<td>8 (80%)</td>
</tr>
<tr>
<td>My overall implementation of the EL&amp;T</td>
<td>1 (10%)</td>
<td>9 (90%)</td>
</tr>
<tr>
<td>Average Responses</td>
<td>13%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

In Phase 1, 71% of teacher responses concerning their targeted lessons indicate successful implementation of Enrichment Learning and Teaching items (13% **completely successful** and 58% **successful**). In Phase 2, 77% of the teacher responses indicate they perceived successful implementation of Enrichment Learning and Teaching (20% **completely successful** and 57% **successful**).
Three items show particularly high teacher perceptions of successful implementation. Implementation success for strategies that promote higher order thinking was reported successful by nine teachers (one completely successful and eight successful) in Phase 1 and by 10 teachers (two completely successful and eight successful) in Phase 2. All of the teachers reported their overall implementation of Enrichment Learning and Teaching in Phase 1 as successful (one completely successful and nine successful). As well, all of the teachers provided successful implementation ratings for the provision of challenging content for all students (three completely successful and seven successful) in Phase 2.

Teacher survey results show some perceptions of unsuccessful implementation. Strategies to promote higher order thinking received the only rating in the completely unsuccessful category (one teacher in Phase 1) and the provision of Type II enrichment or the building upon these taught skills was the only item that received more than one rating in the unsuccessful category (two unsuccessful ratings in Phase 1).

Successful implementation increased across the phases for three of the six Enrichment Learning and Teaching items on the teacher survey. In noting the completely successful ratings, the highest increase in teachers’ perception of successful implementation is seen for the provision of Type II enrichment or the building upon these skills (an increase of two teacher ratings). Three items, the provision of Type I enrichment, the provision of Type III enrichment, and the overall implementation of Enrichment Learning and Teaching show the same number of ratings in the completely successful category in Phase 1 as in Phase 2.

In Phase 1, four out of 10 teachers rated their implementation of Type I enrichment or the provision of lessons that were building upon these Type I activities as successful (two completely successful and two successful). In Phase 2, six out of 10 teachers reported successful implementation of this item (two completely successful and
four *successful*). In Phase 1, five teachers rated their lessons as *neither successful nor unsuccessful*, and 4 teachers provided this rating in Phase 2. It is important to note that Type I enrichment happens only at key times of a teaching schedule, not as often as many of the other characteristics that have been rated throughout this study. In Phase 1, one teacher provided a rating in the *unsuccessful* category. Some teachers reported that they needed to be more intentional, to plan for Type I events as these lessons require more planning (arranging dates for guest speakers, finding video clips, or creating an interest centre in the classroom) than other lessons may.

Teachers provided examples in their surveys of a variety of creative Type I enrichment experiences in their classrooms. A science teacher’s introduction to a unit on ecosystems involved taking the students outdoors where they were to mark off a one-metre square plot of land and study all biotic and abiotic elements within that plot. A primary teacher’s method of capturing her students’ interest in a nutrition unit was to begin the unit with a vegetable tasting lesson—introducing vegetables that represent roots, leaves, stems, seeds, tubers, and flowers. A junior class invited the mayor of the town to come and introduce the concept of municipal government to students. Another teacher presented a slide show to introduce students to various Master artists in an attempt to create an interest in one particular artist or one style of art, in preparation for a forthcoming independent study. An early years teacher used a “make believe” or dramatic play centre as a hook for an upcoming theme she was going to introduce to her class.

Teachers also rated their success in implementing Type II enrichment—explicit training to promote skills in areas of research, thinking, data collection, affective domains, communication, or the building upon these taught skills. In Phase 1, seven out of 10 teacher participants reported a perception of successful implementation of this item in their targeted lessons (one *completely successful* and six *successful*). In Phase 2, seven
out of 10 teachers reported successful implementation of this item (three completely successful and four successful).

In Phase 1, one teacher reported neither successful nor unsuccessful for the implementation of Type II enrichment in their targeted lessons, and three teachers provided this neutral rating in Phase 2. In Phase 1, two teachers provided ratings in the unsuccessful category. In the teachers’ description of their practice they reported successful implementation of the Independent Investigation Method (IIM), a step-by-step process teaching students competent research skills, preparing them for independent or full-class research opportunities. One primary teacher explicitly taught the skill of interviewing in preparation for a social studies homework assignment where students were to conduct an interview with an adult and present it in written form. In a second language class, students were building on the skill of writing narrative and dialogue—Type II skills that had been previously taught and were being implemented in the form of independent projects.

The teacher survey also required teachers to rate their provision of Type III enrichment activities for high-achieving students in their classrooms. In Phase 1 and in Phase 2, six of the 10 participating teachers reported successful implementation of this item (one completely successful and five successful). In Phase 1 and in Phase 2, four of the teachers reported neither successful nor unsuccessful. An early years teacher shared, “as students gain confidence and build stable routines in class, I feel students will take Type III opportunities as they are presented to them, but at this time of year [during the first Phase of the study] they are lacking initiative in this area. This is obviously a goal by the end of the year.” One teacher clarified that she did not target particular lessons for the researcher to observe: “I just invited you to see random lessons.” Type III enrichment opportunities (which, similarly to Type I enrichment, happen occasionally in classrooms), in cases such as this, may have been missed by the researcher.
In Phase 1 and in Phase 2 there were no ratings in the *unsuccessful* or *completely unsuccessful* categories for Type III enrichment.

Another Enrichment Learning and Teaching item that was rated by teachers was for their provision of content that was challenging for all students in the class. In Phase 1, seven out of 10 participating teachers reported successful implementation of this item in their targeted lessons (two *completely successful* and five *successful*). In Phase 2, all of the participating teachers reported successful implementation of this item (three *completely successful* and seven *successful*). Teachers did not provide comments in their surveys to address this particular item. In Phase 1, two teachers rated their lessons as *neither successful nor unsuccessful*, and one teacher rated the targeted lessons as *unsuccessful*.

Teachers also reflected on the three targeted lessons for each phase and rated their success on the inclusion of instructional strategies to promote higher order thinking. In Phase 1, nine out of 10 teachers reported success in their implementation of this item in their targeted lessons (one *completely successful* and 8 *successful*). In Phase 2, all of the teachers reported successful implementation (two *completely successful* and eight *successful*). A primary teacher reported that higher order thinking strategies were successfully provided in her Language program as students regularly implemented the SEM bookmarks that are found on the Renzulli Learning System. These bookmarks included questions that encouraged students to think broadly and deeply about the literature that they were reading, avoiding simple comprehension and knowledge-type questions. In Phase 1, one teacher rated the targeted lessons *completely unsuccessful*.

The final item on the teacher survey protocol prompted teachers to describe their overall success in implementing Enrichment Learning and Teaching. In Phase 1, all of the teachers reported successful implementation of Enrichment Learning and Teaching (one *completely successful* and nine *successful*). In Phase 2, seven teachers reported
successful implementation of Enrichment Learning and Teaching (one completely successful and six successful). One teacher, who rated her lessons as successful in Phase 1 but neither successful nor unsuccessful in Phase 2, described herself as “far from a pro at this.” She provided further explanation: “I feel that I am getting started and am on my way to a more thorough implementation. It is still a mission in progress. I hit some marks, but others are still needing to be met.”

In Phase 2, two teachers provided neither successful nor unsuccessful ratings. In Phase 2, one teacher provided an unsuccessful rating. A teacher expressed her desire for higher implementation: “I would like to have more Type I and Type II in my classroom” but she was not yet able to accomplish that at this stage of the SEM implementation at the school. Another teacher described her implementation as “lots of room for improvement, sometimes I do some of these things without realizing it, I need to be more intentional and plan for it.”

4.6.6 Summary for teacher surveys—Enrichment Learning and Teaching

and triangulation of the data. Results from the teacher surveys show the extent to which Enrichment Learning and Teaching was being successfully implemented within the classrooms over time, from the teachers’ perspective, at Glenwood Academy.

Teacher survey results show that three of the Enrichment Learning and Teaching items were perceived by the teachers to be implemented with success (completely successful and successful ratings). Strategies to promote higher order thinking (nine teachers in Phase 1 and 10 teachers in Phase 2), overall Enrichment Learning and Teaching implementation (10 teachers in Phase 1), and challenging content for all students (10 teachers in Phase 2) all show perceptions of successful implementation. These three survey items correspond closely with the five classroom observation items which address higher order thinking skills, challenge, and student engagement.

Classroom observation results show high implementation levels for all five Enrichment
Learning and Teaching items—with an average of 91% implementation in Phase 1 and 96% in Phase 2.

The three lower rated items on the teacher survey concern Type I, Type II, and Type III enrichment. These items were not specifically addressed in the classroom observation protocol.

Overall, ratings in the completely successful categories of teacher surveys show increased perceptions of successful implementation of Enrichment Learning and Teaching items from phase to phase (a 6% response increase). Overall, ratings for implementation of the Enrichment Learning and Teaching items in the classroom observations increased by 5% from Phase 1 to Phase 2.

4.7 Summary of Teacher Surveys and Triangulation of the Data

Results of the teacher surveys address the first research question, To what extent are the specific pedagogical practices associated with the SEM being implemented with fidelity within the classrooms at Glenwood Academy? and the research subquestions, What are the teachers’ perspectives concerning their own delivery of the core pedagogical practices associated with SEM and do these change over time? and What are the teachers’ perspectives concerning the presence or absence of the key pedagogical components of the SEM in the school over time? as follows:

- Overall, teacher responses on the teacher survey indicate a range of successful implementation (completely successful plus successful) of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching (68%–84%). Areas still with some room to grow at the end of the study (after Phase 2) are: taking student inventories into account in lesson planning and the provision of Type I enrichment and Type III enrichment.

- Overall, there was perceived increase in successful implementation by the teachers from Phase 1 to Phase 2, suggesting greater practice fidelity over time,
of the Total Talent Portfolio, Curriculum Modification Techniques, and
Enrichment Learning and Teaching. This increase in implementation is consistent
with the classroom observation findings.

- All individual teachers reported successful implementation of some components
  of SEM.

### 4.8 Student Interviews

The following section describes the results of the student interviews, a third
method used to address the research questions concerning practice fidelity in this study.
The intent of the interviews was to investigate the perceptions of the students concerning
the existence of the pedagogical components, and then the level of success that each of
these components had on the students’ learning experience in their classrooms. Students
were interviewed after the classroom observations and the teacher surveys took place in
Phase 1 and then again in Phase 2. Student interview questions were not limited to the
three targeted lessons of the classroom observations and the teacher surveys, but rather
encompassed all lessons experienced with the designated teacher for the present school
year but prior to the interview date. There were good reasons for this approach. The
researcher was the sole interviewer for this study and was conducting all observations
and interviews throughout the course of regular workdays. Because of time constraints,
the researcher could not manage all 40 students at the close of each of the three-round
observation periods. As well, some protocol items required students to reflect on
teaching and learning strategies that they may have experienced only occasionally in
their classrooms (for example curriculum compacting or Type III enrichment).
Therefore, a longer time frame was needed so that students could speak knowingly about
each component.
This section begins with the students’ perspective on the overall existence of the three pedagogical components of the SEM in their classrooms. The existence of each item falling under the three pedagogical components is then described. Students’ overall ratings of the successful implementation of the three components are then presented, followed by their ratings of each of the items, the key characteristics of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching. Finally, a summary is provided triangulating results of the students’ interviews and teacher surveys with the results of the classroom observations.

Student interview protocols consist of two parts. Each part includes six items—six characteristics that fall within the three pedagogical components of the SEM—Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching (see Appendix C). In Part 1, students were asked to judge whether the characteristics existed in their class (the class that was taught by one specific/designated participating teacher) all of the time (A), sometimes (S), or never (N). In Part 2, students were asked to rate the success that the implementation of these characteristics had on their learning experience using completely successful (CS), successful (S), neutral – not sure (N), unsuccessful (U), or completely unsuccessful (CU). Qualitative data were also collected, as students were invited to share their overall feelings and thoughts about the SEM and to add any additional information that the researcher may have overlooked.

Table 20 describes students’ overall ratings of the existence of the three pedagogical components of the SEM in their classrooms as reported on the Student Interview—Part 1 protocol, using all of the time, sometimes, or never. The all of the time rating indicates that the student reported the item occurred on a regular ongoing basis in the class taught by the one designated participating teacher. Sometimes indicates that the item occurred more than once and less than three times in the class taught by that one designated participating teacher, and the never choice indicates that the student had not
experienced the particular item in their classroom. While Table 20 shows percentages representing the overall presence of the three main pedagogical components, Table 21 shows the percentages representing each item that falls within the three core pedagogical components of the SEM.

Table 20
Student Interviews—Part 1—Overall Existence of Three Pedagogical Components of SEM

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th></th>
<th>Phase 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All of the time (A)</td>
<td>Sometimes (S)</td>
<td>Never (N)</td>
<td>All of the time (A)</td>
<td>Sometimes (S)</td>
<td>Never (N)</td>
</tr>
<tr>
<td>Total Talent Portfolio</td>
<td>85%</td>
<td>0%</td>
<td>15%</td>
<td>90%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Curriculum Modification Techniques</td>
<td>63%</td>
<td>38%</td>
<td>0%</td>
<td>63%</td>
<td>38%</td>
<td>0%</td>
</tr>
<tr>
<td>Enrichment Learning/Teaching (average of 4 ETL questions)</td>
<td>34%</td>
<td>55%</td>
<td>11%</td>
<td>52%</td>
<td>42%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

Table 20 describes the three main findings in relation to the research questions from the students’ perspective—the extent to which the three components of the SEM were implemented in classrooms, the variability of implementation from component to component, and how this implementation of SEM changed over time.

Of the three core pedagogical components, the Total Talent Portfolio was viewed by the most students to have a high presence in the classrooms. In Phase 1, 85% of the students reported the items of the Total Talent Portfolio to be evident in their classrooms all of the time, and in Phase 2, 90% of the students responded with all of the time. Fifteen
percent of the students in Phase 1 and 10% in Phase 2 responded with never for Total Talent Portfolio implementation in their classrooms, and 11% in Phase 1 responded with never for Enrichment Learning and Teaching.

Implementation increases over time are shown in two of the three pedagogical components. Percentage of student responses for the Total Talent Portfolio implementation (all of the time) increased by 5%, and Enrichment Learning and Teaching (all of the time) responses increased by 18% from Phase 1 to Phase 2. Curriculum Modification Techniques shows the same percentage of student responses across the phases.

Table 21 describes the extent to which the students perceived the characteristics of the SEM to be present in their classrooms. The Student Interview — Part 1 protocol yielded survey like responses from the students and provided quantitative results only.
### Table 21
**Student Interview—Part 1**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>S</td>
</tr>
<tr>
<td>My teacher has given me interest,</td>
<td>85%</td>
<td>0%</td>
</tr>
<tr>
<td>talent, and/or learning style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inventories…</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Total Talent Portfolio)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My teacher helps each student to</td>
<td>63%</td>
<td>38%</td>
</tr>
<tr>
<td>learn—different ways, paces…</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Curriculum Modification Techniques)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My teacher helps me stretch my</td>
<td>35%</td>
<td>53%</td>
</tr>
<tr>
<td>thinking, reach high in learning…</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Enrichment Learning and Teaching)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have experienced Type I enrichment</td>
<td>18%</td>
<td>63%</td>
</tr>
<tr>
<td>get interested in new topics…</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Enrichment Learning and Teaching—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type I)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My teacher teaches me new skills I</td>
<td>63%</td>
<td>38%</td>
</tr>
<tr>
<td>need to do each assignment (Type II)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Enrichment Learning and Teaching—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type II)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have had the opportunity to do</td>
<td>20%</td>
<td>68%</td>
</tr>
<tr>
<td>research that is of special interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to me (Type III)…</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Enrichment Learning and Teaching—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>47%</td>
<td>43%</td>
</tr>
</tbody>
</table>

**Note.** Due to rounding of numbers, not all sets of ratings add to 100

The Total Talent Portfolio and Curriculum Modification Techniques are represented by one question each on the Student Interview—Part 1 protocol. Enrichment Learning and Teaching is represented by four questions. The first question concerning Enrichment Learning and Teaching addresses the component in a broad sense, asking students whether their thinking is stretched in their classroom and if they are encouraged to reach high in their learning. Type I, Type II, and Type III enrichment are then addressed in the following three Enrichment Learning and Teaching questions.
The Total Talent Portfolio question received the most *all of the time* responses from the students. When asked about the use of interest, talent, and/or learning style inventories in their classrooms, 85% of the students in Phase 1 and 90% of the students in Phase 2 responded with *all of the time*. This is a significantly higher response rate than all of the other items on this protocol. Type I enrichment received the highest number of *never* responses from the students, 20% in both phases, with 18% of the students responding with *all of the time* in Phase 1 and in Phase 2.

Student-perceived implementation increases from Phase 1 to Phase 2 are evident in four of the items. One Enrichment Learning and Teaching item (my teacher helps me to stretch my thinking and reach high in my learning) shows a 20% student response increase of *all of the time*, and the fourth Enrichment Learning and Teaching question (Type III enrichment—I have had the opportunity to do research that is of special interest to me) shows an 18% student response increase of *all of the time* ratings. Two of the items (my teacher helps each student to learn at different paces and in different ways and I have experienced Type I enrichment— that have helped me get excited about new topics) received the same number of *all of the time* student responses from Phase 1 to Phase 2.

Overall, the percentage of student *all of the time* responses increased from Phase 1 to Phase 2 (47% to 56%), and student *never* responses decreased (10% to 6%) from Phase 1 to Phase 2, showing increased implementation of the SEM components in classrooms over time.

Table 22 describes the overall percentage of student ratings concerning the aforementioned SEM protocol items. Students rated the items as *completely successful* (CS), *successful* (S), *neutral—not sure* (N), *unsuccessful* (U), or *completely unsuccessful* (CU). Students assigned the *completely successful* (CS) rating for items they felt to be significant and frequent characteristics of their teaching and learning experiences in the
classroom with the designated classroom teacher. Students assigned the *successful* rating for items recognized to be frequent components of their teaching and learning experience in the classroom and occurred more often than once in the classroom prior to the time of the interview. Students assigned the *neutral—not sure* rating when they found themselves not being able to rate the characteristic as *successful*, nor to be able to rate it as *unsuccessful*. Students assigned the rating *unsuccessful* for protocol items that they felt had not been significant components of their classroom teaching and learning experience. They employed the *completely unsuccessful* rating when they felt that the particular SEM item did not occur in their classroom and therefore could not have a successful impact on their teaching and learning experience. Table 22 describes implementation percentages according to the three main pedagogical components, and Table 23 describes implementation percentages according to each item of the Student Interview Protocol—Part 2.

<table>
<thead>
<tr>
<th>Table 22</th>
<th>Student Interview—Part 2—Overall Rating of Three Pedagogical Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phase 1</td>
</tr>
<tr>
<td></td>
<td>CS</td>
</tr>
<tr>
<td>Total Talent Portfolio</td>
<td>23%</td>
</tr>
<tr>
<td>Curriculum Modification Techniques</td>
<td>38%</td>
</tr>
<tr>
<td>Enrichment Learning and Teaching (average of 4 ELT questions)</td>
<td>44%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.
Table 22 shows that overall, students perceived that there was successful implementation (a combination of *completely successful* and *successful* ratings) of the SEM across the phases. Successful implementation, from the students’ perspective, relates to their own experiences in the classroom: whether the implementation of the SEM components affected their own learning experiences successfully. Students rated the use of Curriculum Modification Techniques as the most successful. In Phase 1, 88% of students reported Curriculum Modification Techniques in their classrooms to be successful (38% *completely successful* and 50% *successful*) and 95% (50% *completely successful* and 45% *successful*) in Phase 2. Students rated the use of Enrichment Learning and Teaching as the least successful, 76% in Phase 1 (44% *completely successful* and 32% *successful*) and 79% (45% *completely successful* and 34% *successful*) in Phase 2.

Student responses indicate that two of the three pedagogical components increased in successful implementation across the phases. Curriculum Modification Techniques increased in successful implementation by 7% and Enrichment Learning and Teaching by 3%. Successful implementation of the Total Talent Portfolio decreased by 5% from Phase 1 to Phase 2, from the students’ perspective.

The following section describes students’ perspectives of the practice fidelity of the SEM in their classrooms by breaking down student interview data according to each pedagogical component—Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching, across the two phases of the study.

Table 23 describes the extent to which the items of the Total Talent Portfolio were successfully implemented in the classrooms throughout Phase 1 and Phase 2, according to student reports.
Table 23  
\textit{Student Interview—Part 2} 

<table>
<thead>
<tr>
<th>Rate the use of learning style inventories… (Total Talent Portfolio)</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS 23%</td>
<td>CS 38%</td>
</tr>
<tr>
<td></td>
<td>S 63%</td>
<td>S 43%</td>
</tr>
<tr>
<td></td>
<td>N 13%</td>
<td>N 20%</td>
</tr>
<tr>
<td></td>
<td>U 0%</td>
<td>U 0%</td>
</tr>
<tr>
<td></td>
<td>CU 0%</td>
<td>CU 0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Students learning at different paces and different ways – how is it working for me?... (Curriculum Modification Techniques)</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How well is your thinking being stretched?... (Enrichment Learning and Teaching)</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>38%</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>3%</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Success of Type I enrichment for me?... (Enrichment Learning and Teaching – Type I)</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>30%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>28%</td>
<td>28%</td>
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<tr>
<td></td>
<td>8%</td>
<td>8%</td>
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<tr>
<td></td>
<td>5%</td>
<td>8%</td>
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<tr>
<td></td>
<td>5%</td>
<td>8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The success of the teacher in teaching me new skills to complete a task?...(Type II) (Enrichment Learning and Teaching – Type II)</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>53%</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>3%</td>
<td>10%</td>
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<tr>
<td></td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How do I rate Type III opportunities?... (Enrichment Learning and Teaching – Type III)</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60%</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td>28%</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>16%</td>
<td>16%</td>
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<tr>
<td></td>
<td>3%</td>
<td>3%</td>
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<tr>
<td></td>
<td>2%</td>
<td>2%</td>
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<tr>
<td></td>
<td>45%</td>
<td>45%</td>
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<td></td>
<td>37%</td>
<td>37%</td>
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<tr>
<td></td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

\textbf{4.8.1 Total Talent Portfolio.} One question concerning the Total Talent Portfolio was included in the Student Interview—Part 2 protocol. In Phase 1, 85% of students noted that the use of the Total Talent Portfolio, specifically the use of the inventories in
their classrooms, was successful (23% completely successful and 63% successful). One intermediate student shared that the Total Talent Portfolio has helped him, even outside of the classroom, “for instance, preparing for exams and tests. I apply SEM concepts knowing [my] learning styles and how I best learn and study.” A student from the junior division expressed the advantages that the Total Talent Portfolio brings to his learning and how knowing himself better has improved schooling for him in general: “I like drawing and being creative, next to gym. I’m liking basketball because I’m good at it.” This student has had the opportunity to choose clusters that suited his natural gifts and abilities and has completed classroom assignments that have emphasized his strengths rather than his weaknesses. Previous to SEM implementation, classroom academics have proven to be more difficult, frustrating, and often unsuccessful for him. Another junior student said that yes, her teacher knows her well as a result of the Total Talent Portfolio. In fact, the teacher sometimes “knows my question before I ask?”

In Phase 2, 81% of students indicated that the use of the Total Talent Portfolio was successful for them (38% completely successful and 43% successful). One student noted, “my teacher knows I can handle some harder questions in the textbook [math] and makes sure I get them!” Another student provided an example of a project-based class in which Total Talent Portfolios are key, for both the teacher and the students, in order to experience optimum learning: “We have lots of choices in our projects, as long as we follow the steps we can be as creative as we wish. Right now we are doing a restaurant project—creating our own menu—any kind of restaurant we want as long as we have menu categories—drinks, salad, dessert, main entrée. We can show our learning in any way we want, just as long as we follow the basic guidelines. I love projects that have choice. So many students express in different ways—some are artsy, some [are the] PowerPoint types, we can get a good grade no matter what we choose. I am very imaginative and like to be able to use this in my learning and my projects.”
One student reported unsuccessful implementation of the Total Talent Portfolio in their classroom (3% in Phase 1). In Phase 1, 13% of students rated the use of Total Talent Portfolios in their class as neutral, and 20% reported this same item as neutral in Phase 2.

4.8.2 Curriculum Modification Techniques. One question concerning Curriculum Modification Techniques was included in the Student Interview—Part 2. In Phase 1, 88% of students reported that the implementation of Curriculum Modification Techniques, specifically the implementation of differentiated teaching and learning techniques was successful (38% completely successful and 50% successful). In Phase 2, 95% of students indicated that the use of differentiated teaching and learning techniques was successful (50% completely successful and 45% successful). Many students shared qualitatively about the various levels of instruction that were provided in their classrooms. One high-achieving student reported that this form of instruction worked well for him: “I love it because, let’s say five people already know something but the rest don’t, those five go to another level otherwise the advanced students go over it again and again and again and get bored.” Curriculum Modification Techniques are seen to work well for struggling students as well; for example, one student commented, “if you are slow in math they help you to catch up and understand it better. It’s good because we have different things to help people learn—like in class someone might not be good at a skill so the teacher lets them do it a different way. Sometimes the teacher gives a different activity or just helps the student who needs more help.”

Few students found Curriculum Modification Techniques implementation to be unsuccessful in their classrooms. In Phase 1, 13% of students reported the use of Curriculum Modification Techniques in their class as neutral, and 3% reported this same rating in Phase 2. One intermediate student shared that she would rather not take part in the modification provided, specifically enrichment, by completing a diagnostic at the
beginning of the unit and compacting out. She felt that at this stage of her education she would rather be sure she knows the subject area well and therefore chose to sit through all of the grade-level, mainstream lessons. In Phase 2, 3% of the students provided an unsuccessful rating. An intermediate student shared that “one problem with students learning at different paces is the teacher can’t always focus on each group [and] doesn’t always get to each student.”

4.8.3 Enrichment Learning and Teaching. Four questions concerning Enrichment Learning and Teaching were included in the Student Interview—Part 2 protocol. In Phase 1, 73% of students reported that their thinking was being stretched to some degree in their class (35% completely successful and 38% successful). A junior student stated, “The school [made] a good choice in picking SEM. It stretches thinking?” A primary student commented more specifically, “math stretches me—our group of M^3 is really hard sometimes. Sometimes regular math is too easy. I already know it. We will start times tables soon and I am learning fractions outside of school now.” In comparing an SEM environment to a previous learning environment which did not implement SEM, one student adds, “at my other school I didn’t really [understand] French, but in this school, I get it. In my old school . . . we just copied things off the board.”

In Phase 2, 78% of students indicated that their thinking was being stretched in their class (43% completely successful and 35% successful). A primary student said, “I am most stretched on social studies, I like to ask questions and then do projects on them. The way I like to learn is by researching —Anishinabe research this year —about canoes and how they survived. I also researched how to make a strong structure and how to make a base strong [in science].”

In Phase 1, 20% of the students, and in Phase 2, 18% of the students rated this item of Enrichment Learning and Teaching in their class as neutral. In Phase 1, 3% of the participating students rated stretched thinking in their class as unsuccessful and in
Phase 2, 5% reported an *unsuccessful* rating. One junior student, for example, found he was stretched, but not consistently; “in math [I am] usually stretched more, spelling not so much.” A primary student commented, “learning is OK, but my brain isn’t always stretched.” In Phase 1, 5% rated this component of Enrichment Learning and Teaching as *completely unsuccessful*.

In Phase 1, 60% of students reported that Type I enrichment activities (such as guest speakers, interest centres, videos, field trips) were successfully implemented and had a successful impact on the students’ learning (30% *completely successful* and 30% *successful*). In Phase 2, 58% of students reported that Type I enrichment implementation was successful (20% *completely successful* and 38% *successful*). A junior student shared a positive aspect to having SEM, Type I at the school: “It gives students a chance to get interested in new topics and they have the ability to learn new things.”

In both Phase 1 and Phase 2, 28% of students rated Type I enrichment in their classes as *neutral*. In both Phase 1 and Phase 2, 8% of the participating students rated Type I enrichment in their classes as *unsuccessful*. In Phase 1, 5% rated this component of Enrichment Learning and Teaching as *completely unsuccessful* and 8% reported a *completely unsuccessful* rating in Phase 2. These students shared that they did not experience Type I enrichment in their classes at all.

In Phase 1, 85% of students reported that Type II enrichment was successfully implemented in their class (53% *completely successful* and 33% *successful*). In Phase 2, 85% of students indicated that Type II enrichment was successful (55% *completely successful* and 30% *successful*). When commenting on learning Type II skills that prepare students for research, a junior student shared, “It is a good way to learn – students learn how not to plagiarize [and they] learn new skills.”

In Phase 1, 13% of the students and in Phase 2, 10% of the students reported the successful implementation of Type II enrichment in their class as *neutral*. In Phase 1, 3%
rated Type II in their class as unsuccessful and in Phase 2, 5% of participating students provided an unsuccessful rating. Students did not provide explanations for these ratings.

In Phase 1, 88% of students reported that Type III enrichment opportunities (clusters or any other Type III project that they have had a chance to be involved in) were successful (60% completely successful and 28% successful). An intermediate student shared that his clusters were “a great Type III —mostly fun, but still learning.”

In Phase 2, 96% of students indicated that Type III implementation was successful in their classes (63% completely successful and 33% successful). Several students shared that the opportunity to study independently, the self-direction, and the hands-on learning are all positive aspects of Type III enrichment. A first grade student excitedly reported on several Type III opportunities he had engaged in: “[In the junior architects cluster] I learned about the statue of liberty. I might be an architect someday. I [also] did a knight project [this year] because I really like medieval times. I got books from the library and wrote things about it and made a big castle in my free time.” A junior student noted, “I like clusters and projects, you feel like you are more involved with your own learning when you can do it yourself.”

In Phase 1, 13% and in Phase 2, 3% of participating students rated this item of Enrichment Learning and Teaching in their class as neutral. In Phase 2, 3% of students provided an unsuccessful rating but did not provide explanation for this rating.

4.9 Summary for Student Interviews and Triangulation of the Data

Results from the student interviews show, from the students’ perspective, the extent to which the three pedagogical components of the SEM were implemented in the classrooms at Glenwood Academy as well as the level of success that the implementation of these components had on the students’ learning experience.

Overall, student interview results show a strong presence of the SEM pedagogical components in their classrooms (all of the time plus sometimes indicate that students are
experiencing the implementation of the items in their classrooms). In Phase 1, 85% of the students responded with *all of the time* and in Phase 2, 90% responded with *all of the time* for the implementation of the Total Talent Portfolio. In Phase 1 and Phase 2, 100% of the students (63% *all of the time* and 38% *sometimes*) reported that Curriculum Modification Techniques were being implemented in their classrooms. In Phase 1, 89% of the students (34% *all of the time* and 55% *sometimes*) and in Phase 2, 94% of the students (52% *all of the time* and 42% *sometimes*) reported that Enrichment Learning and Teaching items were being implemented in their classrooms. In the classroom observation results, the researcher reported a wide range of implementation (*observed*) of the SEM components in the classrooms: Total Talent Portfolio (66% in Phase 1 and 82% in Phase 2), Curriculum Modification Techniques (43% in Phase 1 and 65% in Phase 2), and Enrichment Learning and Teaching (91% in Phase 1 and 96% in Phase 2).

Classroom observation results are for three targeted lessons in Phase 1 and three targeted lessons in Phase 2, whereas student ratings are for a broader range of lessons throughout the phase of the study. The students reported a high presence of all three components in the classrooms. The researcher reported a high presence of Enrichment Learning and Teaching but low to moderate percentages for the Total Talent Portfolio and Curriculum Modification Techniques characteristics.

The data from both the students and the researcher show an increase over time in the existence of the three pedagogical components in the classrooms at Glenwood Academy.

Overall levels of implementation of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching are reported for both student interviews and teacher surveys, both using the same scale to measure the level of implementation success. Highest successful implementation rates (*completely successful* plus *successful*) were shown for Curriculum Modification Techniques by 84% of the
teacher responses in Phase 2 and for Curriculum Modification Techniques by 95% of the students in Phase 2.

4.9.1 Total Talent Portfolio. Both classroom observations and student interviews show the extent to which Total Talent Portfolio items were reported as existing in the classrooms at Glenwood Academy. Most students reported that their teachers had given them interest, talent, and/or learning style inventories all the time (85% in Phase 1 and 90% in Phase 2). The researcher reported that in 70% of the lesson observations in Phase 1 and in 60% of the observations in Phase 2 there was evidence of these inventories displayed in the classrooms. These student and researcher reports of the Total Talent Portfolio inventory use corroborate with the qualitative data from the teacher surveys. Teachers reported a high level of implementation of Total Talent Portfolio inventories, but they also reported a gap between this knowledge of their students and its effect on the way that they teach in classrooms. The researcher reported low to moderate observation scores for the accommodation of learning styles (67%), talents and interests (47%), and expression styles (40%) in Phase 1 and moderate to high scores for the same items in Phase 2 (83%, 87%, and 70% respectively).

In Phase 1, 23% of students reported the Total Talent Portfolio (rating the use of learning style inventories in their classroom and the effect of the inventories on their learning process) to be completely successful and 63% to be successful. These ratings increased in Phase 2 to 38% completely successful and 43% successful. A lower percentage of teacher responses show overall Total Talent Portfolio success in their classrooms (8% completely successful and 60% successful in Phase 1, increasing to 18% completely successful and 58% successful in Phase 2).

A high percentage of students reported successful implementation on the effect of learning style inventories in their classrooms, 85% in Phase 1 (23% completely successful and 63% successful) and 81% in Phase 2 (38% completely successful and 43% successful).
Teachers reported lower success ratings for the influence of student inventories on their lesson planning and delivery—4 out of 10 teachers in Phase 1 (one completely successful and three successful) and five out of 10 teachers in Phase 2 (one completely successful and four successful).

4.9.2 Curriculum Modification Techniques. Data from the students’ interviews and the classroom observations show the overall presence of Curriculum Modification Techniques in the classrooms of Glenwood Academy. Students rated this component as existing in their classrooms all of the time (63% in Phase 1 and in Phase 2) and sometimes (38% in Phase 1 and in Phase 2). The researcher reported observing Curriculum Modification Techniques in 43% of the lessons in Phase 1 and in 65% of the lessons in Phase 2. The researcher reported an increased presence of this component across the phases (an increase of 22%), and student perceptions of Curriculum Modification Techniques existence in the classrooms remained the same from Phase 1 to Phase 2.

In rating the successful implementation of Curriculum Modification Techniques, all students acknowledged that their teacher helped each student to learn in different ways and at different paces (either all of the time or sometimes), but when asked to rate the level of success for themselves personally, 38% said differentiated instruction was completely successful and 50% said it successful in Phase 1. In Phase 2, 50% of the students said differentiated instruction was completely successful and 45% said it was successful. This shows an increase in student perceptions of successful implementation of differentiated instruction from Phase 1 to Phase 2. These reports are similar to the teachers’ perspectives of their successful implementation of differentiated instruction. In the accommodation of individual and group differences, three teachers said their implementation was completely successful and six teachers reported successful implementation in the first phase. In the second phase these ratings did not increase but
remained high as three teachers reported that they were completely successful in accommodating for these differences in their students and five teachers reported successful implementation. In Phase 1, the provision of different starting and finishing points for students was reported as completely successful by one teacher and successful by four teachers. In the second phase an increase in success is evident as four teachers reported this item completely successful and six teachers provided successful ratings.

A high percentage of students reported successful implementation of Curriculum Modification Techniques, 88% in Phase 1 (38% completely successful and 50% successful) and 95% in Phase 2 (50% completely successful and 45% successful). Response percentages in the teacher survey for overall successful implementation of Curriculum Modification Techniques items show 74% in Phase 1 (14% completely successful and 60% successful) and 84% in Phase 2 (32% completely successful and 52% successful).

4.9.3 Enrichment Learning and Teaching. Data from the students’ interviews and the classroom observations indicate the overall presence of Enrichment Learning and Teaching in the classrooms of Glenwood Academy from the students’ perspective and from the researcher’s perspective. Students rated this component as existing in their classrooms all of the time (34% in Phase 1 and 52% in Phase 2) and sometimes (55% in Phase 1 and 42% in Phase 2). The researcher reported observing Enrichment Learning and Teaching in 91% of the lessons in Phase 1 and in 96% of the lessons in Phase 2. Students reported an increased presence across the phases of Enrichment Learning and Teaching, as did the researcher.

In the rating of successful implementation, in Phase 1, 35% of students said their thinking was being stretched throughout their lessons, (completely successful) and 38% provided a rating in the successful category. In Phase 2, 43% of the students said that the implementation of this item was completely successful and 35% said it was successful.
Teachers were asked to rate two similar items on their surveys. In the first phase, two teachers reported that their provision of challenging content for all students was completely successful and five teachers reported successful. In the second phase these ratings did increase, as three teachers reported completely successful and seven teachers reported successful. In Phase 1, one teacher perceived the implementation of instructional strategies to promote higher order thinking as completely successful and eight teachers perceived the implementation of this item as successful. In Phase 2, two teachers provided completely successful ratings and eight teachers provided successful ratings for the implementation of instructional strategies to promote higher order thinking.

Type I, Type II, and Type III enrichment, although vital to SEM implementation, are items that occur more occasionally in classrooms than the other rated items. Few students reported unsuccessful and completely unsuccessful ratings (0%–8%) across the two phases for the three enrichment types. Type I and Type II enrichment did receive unsuccessful ratings by the teachers (10% unsuccessful for Type I in Phase 1 and 20% unsuccessful for Type II in Phase 1).

Results of Student Interviews address the research question, To what extent are the specific pedagogical practices associated with the SEM being implemented with fidelity within the classrooms at Glenwood Academy? and the research subquestion, What are the students’ perspectives concerning the delivery of the core pedagogical practices that are associated with the SEM, and does this change over time? in the following ways:

- Overall, student responses from student interviews indicate a strong presence of all SEM components in the classrooms (all of the time plus sometimes ratings), a range of 85%–100%.
• Overall, there was perceived increase in the presence of SEM components by the students from Phase 1 to Phase 2, suggesting greater practice fidelity over time. This is consistent with the classroom observation and teacher survey findings.

• Overall, student responses indicate successful implementation of all SEM components in their classrooms (completely successful plus successful), a range of 76%–95%. The implementation of Type I enrichment is seen as an area of growth, after Phase 2.

4.10 Sustainability

The following section reports the teachers’ views concerning the sustainability of the SEM as a reform model at Glenwood Academy, based on eight sustainability characteristics that were identified in the literature.

Results of teacher interviews concerning eight sustainability factors and their relationship to the three main pedagogical components of the SEM are analyzed in order to address the following research questions:

*How does this practice fidelity, or lack thereof, relate to the sustainability of SEM at Glenwood Academy?*

• Throughout the reform process, how do teachers rate the success of the eight sustainability factors as indicated in the review of the literature (professional development, accessibility to needed resources, positive teacher attitudes and perceptions, collaboration of staff, strong and supportive leadership, comprehensiveness of the reform, attention given to time issues, and growth in student achievement)?

• How do teachers see these factors impacting the core pedagogical practices that are associated with SEM, both schoolwide and in their personal practice?
The same format used in the previous section will be followed, beginning with a report on the response frequencies across the phases. Then data from teacher interviews are provided, reporting on the rating of the eight sustainability factors as indicated from a review of the literature (Bain, 2007; Datnow, 2002; Desimone, 2002; Elsworth et al., 2004; Fullan, 2007; Levin, 2007; Meiers et al., 2006; Ridley & Kendall, 2005) and their impact on the implementation of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching. The eight factors were all noted within the literature as factors that, when present, could have a positive effect on the sustainability of school reforms. When these factors are not present, reform models can be prevented from embedding or lasting in schools. The data for Phase 1 and for Phase 2 of the collection stages are provided. This section ends with a comprehensive summary, triangulating data from the classroom observations, teacher surveys, student interviews (practice fidelity), and teacher interviews (sustainability), in determining a relationship between the practice fidelity and the sustainability of the Schoolwide Enrichment Model at Glenwood Academy followed by a summary and triangulation of the data for Classroom Observations, Teacher Surveys, Student Interviews, and Teacher Interviews as they relate to the SOS principles.

4.11 Response Frequencies Across the Phases

To determine the teacher’s perceptions of the sustainability of the SEM teaching components over time, the same two-phase approach to data collection took place, as described previously. The data for the two phases are presented in a Phase 1 column on the left side and a Phase 2 column on the right of the corresponding tables. The same 10 teachers that participated in the classroom observations and teacher surveys took part in the teacher interview portion of this study. Data for the sustainability portion of this study were collected after the classroom observations and teacher surveys in each phase.
4.12 Sustainability Factors Overall

The teacher interview protocol includes 50 questions (see Appendix D). Sustainability factors that have been derived from the literature form the framework of this protocol. There is a page for each sustainability factor, and the same five questions appear on each page. Teachers were first invited to share their overall rating of the success of a particular sustainability factor as it relates to the SEM in the school, for example, What is your overall rating of the professional development of SEM and differentiation in our school since we began the implementation of the SEM? Then teachers were invited to rate the impact of the sustainability factor—on the Total Talent Portfolio, on Curriculum Modification Techniques, and then on Enrichment Learning and Teaching in the school. Finally, teachers were invited to share (qualitatively only) the impact of this sustainability factor on their personal implementation of the SEM. Table 24 describes the distribution of teacher responses for each sustainability factor using the following format: completely successful (CS), successful (S), neither successful nor unsuccessful (N), unsuccessful (U), or completely unsuccessful (CU). These figures represent the average responses for each category, for example, 11 out of 40 (28%) responses were completely successful for the Professional Development items on the Teacher Interview protocol (there were 10 teachers and there were four questions relating to Professional Development that required a quantitative response). Percentage breakdowns for each question falling within the eight sustainability factors are provided in a subsequent section.
Table 24

*Sustainability Factors Overall*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Phase 1</th>
<th></th>
<th></th>
<th></th>
<th>Phase 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
<td>CU</td>
<td>CS</td>
<td>S</td>
<td>N</td>
</tr>
<tr>
<td>Professional Development</td>
<td>28%</td>
<td>60%</td>
<td>10%</td>
<td>3%</td>
<td>0%</td>
<td>23%</td>
<td>63%</td>
<td>15%</td>
</tr>
<tr>
<td>Accessibility to Needed Resources</td>
<td>18%</td>
<td>65%</td>
<td>15%</td>
<td>3%</td>
<td>0%</td>
<td>15%</td>
<td>70%</td>
<td>5%</td>
</tr>
<tr>
<td>Positive Teacher Attitudes and Perceptions</td>
<td>3%</td>
<td>78%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>23%</td>
<td>70%</td>
<td>8%</td>
</tr>
<tr>
<td>Collaboration Of Staff</td>
<td>23%</td>
<td>65%</td>
<td>10%</td>
<td>3%</td>
<td>0%</td>
<td>35%</td>
<td>48%</td>
<td>18%</td>
</tr>
<tr>
<td>Strong and Supportive Leadership</td>
<td>20%</td>
<td>68%</td>
<td>13%</td>
<td>0%</td>
<td>0%</td>
<td>38%</td>
<td>58%</td>
<td>5%</td>
</tr>
<tr>
<td>Comp. of Reform Model</td>
<td>13%</td>
<td>55%</td>
<td>33%</td>
<td>0%</td>
<td>0%</td>
<td>18%</td>
<td>80%</td>
<td>3%</td>
</tr>
<tr>
<td>Attention Given to Time Issues</td>
<td>10%</td>
<td>23%</td>
<td>48%</td>
<td>18%</td>
<td>0%</td>
<td>13%</td>
<td>58%</td>
<td>15%</td>
</tr>
<tr>
<td>Student Achievement</td>
<td>20%</td>
<td>73%</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>38%</td>
<td>60%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

In order to ascertain whether the eight factors are indeed present in Glenwood Academy, teachers’ ratings of *completely successful* (CS) and *successful* (C) are both considered. These ratings indicate that teachers have reported the factors to be successful within the school as they relate to the implementation of the SEM. The combined
percentages provide a tool by which to compare the perceived success of each factor and to measure growth of the factors from Phase 1 to Phase 2.

Student Achievement (the extent to which the SEM results in improved achievement) received the most positive response from the teachers in Phase 1 (20% completely successful and 73% successful) and in Phase 2 (38% completely successful and 60% successful). Attention Given to Time Issues received the least positive response from the teachers across the phases. This factor received the most unsuccessful ratings—18% in Phase 1 and 15% in Phase 2. Attention Given to Time Issues also received the most neither successful nor unsuccessful ratings (48% in Phase 1 and 15% in Phase 2). There were no responses of completely unsuccessful for any of the sustainability factors in this study.

There was an increase in the percentage of successful ratings (completely successful and successful combined) from Phase 1 to Phase 2 of all sustainability factors except Professional Development (a decrease of 2%) and Collaboration of Staff (a decrease of 5%). The greatest increase in percentage of successful responses is seen for the sustainability factor, Attention Given to Time Issues, an increase of 38% from Phase 1 to Phase 2.

The following sections describe the participating teachers’ ratings of each protocol question for each sustainability factor. It should be noted that due to the small population size of teacher participants, the following teacher interview tables present the actual number of teachers. Percentages are also provided in order to provide consistency in the reporting of the findings of the study.

4.13 Professional Development

Table 25 describes the teacher ratings of the impact of Professional Development on the implementation of the SEM at Glenwood Academy.
Table 25
Professional Development

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th>Phase 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
</tr>
<tr>
<td>What is your overall rating of the professional development of SEM and differentiation in our school since we began the implementation of SEM?</td>
<td>4 (40%)</td>
<td>6 (60%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of this professional development on the use of the total talent portfolio?</td>
<td>2 (20%)</td>
<td>4 (40%)</td>
<td>3 (30%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>How do you rate the impact of this professional development on curriculum modification techniques?</td>
<td>2 (20%)</td>
<td>7 (70%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of this professional development on enrichment learning and teaching practices?</td>
<td>3 (30%)</td>
<td>7 (70%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Average Responses
28% 60% 10% 3% 0% 23% 63% 15% 0% 0%

Note. Due to rounding of numbers, not all sets of ratings add to 100.
Overall, Professional Development had a successful impact on SEM implementation in both Phase 1 and Phase 2 according to all teacher participants (four completely successful and six successful) in the school since the beginning of SEM implementation. Teachers reported that both on-site Professional Development days and Confratute (an annual SEM conference held at the University of Connecticut) are key components to their implementation of SEM. The Professional Development provided all the theory and practical advice to implement the SEM successfully from the teachers’ perspective. However, it takes time and effort to apply what is learned. Teachers reported that the learning provided through Professional Development is moving at a good pace—not too fast, so that there is time to understand and practice the theory and to retain what has been learned. Teachers’ overall rating of the Professional Development as it relates to SEM implementation is higher than their ratings of each of the three components, Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching.

4.13.1 Total Talent Portfolio. Successful impact of Professional Development on the use of the Total Talent Portfolio was reported by six teachers in both phases (two completely successful and four successful in Phase 1; one completely successful and 5 successful in Phase 2). Neither successful nor unsuccessful ratings were particularly high for this question (3 teacher responses in Phase 1 and 4 teacher responses in Phase 2). Teachers reported that Professional Development has provided the tools needed and the theory concerning the use of the Total Talent Portfolios, but there is a gap between this theory and classroom practices; “most of us still don’t know how to apply this. We know how to assess the students, but how do we really carry this out to affect students and their learning?” Teachers reported that they would like to see their daily lesson planning affected more by the Total Talent Portfolios. More collaboration, from the teachers’ perspective, is needed to help further their implementation of the Total Talent Portfolio,
and this can take place during on-site Professional Development days as well as continued attendance at Confratute, as one teacher noted, “because of PD we all know how, we need to confer more with each other on how to use it more.”

4.13.2 Curriculum Modification Techniques. Nine out of 10 participating teachers in both phases (two completely successful and seven successful) reported Professional Development as having a successful impact on their implementation of Curriculum Modification Techniques. Although it was perceived by teachers that there was room for ongoing and more concentrated training in this area, teachers were experiencing more success in curriculum compacting using the Renzulli Learning System (a Web-based resource for profiling students and then providing differentiated activities to match student interests, talents, learning styles, and expression styles) and the modification of daily lessons to meet students where they were. Teachers reported that ongoing Professional Development has given them confidence to differentiate more often and more effectively. Professional development provided them with the know-how as well as the support and guidance needed to move ahead in their differentiated instruction.

4.13.3 Enrichment Learning and Teaching. All participating teachers in Phase 1 (three completely successful and seven successful) and nine out of 10 teachers in Phase 2 (two completely successful and seven successful) considered the impact of Professional Development on their implementation of Enrichment Learning and Teaching to be successful. There were no unsuccessful ratings for this question.

Teachers reported that Professional Development on clusters (multiage groups of students who become firsthand investigators of topics of particular interest to them) was successful, “Our brainstorming PD on clusters was very helpful [for] learning to academicize our clusters” (academicizing is a term used to refer to the infusing of scholarly material along with the knowledge of what professionals or experts in that field
of study know and what they do). From the teachers’ perspective, clusters had been a success for the past 2 years because of the Professional Development they received, first in learning how to implement clusters, then how to maintain and improve on their practice. Collaboration that happens during Professional Development was reported to be a key component to teachers’ success in implementing clusters these last 2 years.

One teacher reported, “We couldn’t do it any better.” Another teacher explains, “We have gone from theory to practice. Confratute has happened for five groups of people. They in turn give PD, and it affects our practice—lots of practical application—then it results in enrichment learning in the classrooms. Teachers feel more confident [as a result of Professional Development].” Teachers shared that the camaraderie they have experienced as a result of learning together has increased their implementation; as one teacher reported, “The more we know others are doing it [and] the more we share, the more intentional we become.”

4.13.4 The impact of Professional Development on SEM implementation.

Teachers reported Professional Development, both the on-site, as well as the off-site Confratute experience, to be a key motivational factor to their own implementation of SEM with reports that included, “I’d be questioning everything if I didn’t have the PD,” “I am on board with it [SEM] because of PD,” and “It has directed it [SEM implementation] and motivated me to do it.”

Some found on-site SEM professional development to be affirming of what they already believed teaching to be. One teacher explained: “A framework is provided by which I hang my theory on. I need to know why I do [what I do] and how it is all connected. I am an ideas person, I need practical boundaries and guidelines . . . PD helps me know where everything fits and gives it all worth.” Other teachers shared that new ideas are learned and implemented as a result of the Professional Development. One teacher reported, “After each PD day or Confratute, I have been able to add a new
enrichment activity, curriculum modification technique or teaching strategy to help different learners.”

4.14 Accessibility to Needed Resources

Table 26 describes the teacher ratings of the impact of Accessibility to Needed Resources on the implementation of the SEM at Glenwood Academy.
### Table 26

**Accessibility to Needed Resources**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
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<th>Phase 2</th>
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<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
<td>CU</td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
<td>CU</td>
</tr>
<tr>
<td>What is your overall rating of needed resources for SEM in our school since we began the process?</td>
<td>2 (20%)</td>
<td>7 (70%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>8 (80%)</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of this accessibility to needed resources on the use of the total talent portfolio?</td>
<td>2 (20%)</td>
<td>5 (50%)</td>
<td>3 (30%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (20%)</td>
<td>6 (60%)</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of this accessibility to needed resources on curriculum modification techniques?</td>
<td>1 (10%)</td>
<td>6 (60%)</td>
<td>2 (20%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td>8 (80%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of this accessibility to needed resources on enrichment learning and teaching practices?</td>
<td>2 (20%)</td>
<td>8 (80%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (30%)</td>
<td>6 (60%)</td>
<td>0 (0%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Average Responses</td>
<td>18%</td>
<td>65%</td>
<td>15%</td>
<td>3%</td>
<td>0%</td>
<td>15%</td>
<td>70%</td>
<td>5%</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Note. Due to rounding of numbers, not all sets of ratings add to 100.*
Overall, the majority of teachers in Phase 1 (two *completely successful* and seven *successful*) and in Phase 2 (eight *successful*) reported positive ratings for Accessibility to Needed Resources and the impact this has had on their implementation of the SEM. They reported that resources, in the form of books, Renzulli Learning System, money for Type I enrichment, and money for cluster implementation, have been readily accessed, and this has had positive impacts on their implementation of the SEM. The primary resource needs, from the teachers’ perspective, were resources for high-achieving students, particularly when they have been compacted out of a unit or lesson.

### 4.14.1 Total Talent Portfolio

Seven out of 10 teachers in Phase 1 (two *completely successful* and five *successful*) and eight out of 10 teachers in Phase 2 (two *completely successful* and six *successful*) reported that their growth in the implementation of the Total Talent Portfolio at this stage of SEM implementation in the school is not dependent on resources. Accessibility to Needed Resources is not a key factor in teachers’ implementation of the Total Talent Portfolio. Teachers reported having many inventory tools to use in discovering students’ talents, abilities, interests, expression styles, and learning styles. The only hindrance to the implementation of the Total Talent Portfolio was the application of this information to their lessons. Several teachers reported their appreciation for access to the Renzulli Learning System and for many how-to books provided by the school to aid in their Total Talent Portfolio implementation.

### 4.14.2 Curriculum Modification Techniques

Seven out of 10 teachers in Phase 1 (one *completely successful* and six *successful*) and nine out of 10 teachers in Phase 2 (one *completely successful* and eight *successful*) reported Accessibility to Needed Resources as having a successful impact on their implementation of Curriculum Modification Techniques. These teachers reported using the Renzulli Learning System or
the Internet to find differentiation materials that supplement the resources they already had in their classrooms.

Some specific needs expressed by the teachers were for resources that could be used for students who have been compacted out of the regular curriculum (provided with alternate enrichment activities in order to avoid repetition of previously mastered skills) as well as resources that would help with the day-to-day differentiation, similar to their already implemented tiered assignment, R.A.F.T., and Alphabox templates.

The majority of teachers reported that curriculum compacting resources was not their main concern. It was the time to find the right resources for specific students and for specific teaching occasions. These teachers expressed a desire for a staff member who would be granted the time to research resources for specific needs in each classroom.

4.14.3 Enrichment Learning and Teaching. All of the teachers in Phase 1 (two completely successful and eight successful) and nine out of 10 teachers in Phase 2 (three completely successful and six successful) responded positively to the impact that Accessibility to Needed Resources had on their implementation of Enrichment Learning and Teaching. Resources obtained through Confratute (including the Type II information books), the Renzulli Learning System, the school library, resources obtained through Professional Development, and the Internet were all utilized by teachers to provide enrichment in their classrooms. Accessibility to these resources was not an issue, according to the teachers, but the time to find the needed resources throughout the school year is the teachers’ most frequently reported concern.

4.14.4 The impact of accessibility to needed resources on SEM implementation. Teachers reported that implementation of the SEM in the school requires a constant change of resources in the classrooms as student needs and interests change from year to year. Teachers were satisfied with the provision of resources by the
school, and this has furthered their implementation of the SEM, but the responsibility of accessing the specific needed resources in order to carry out the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching in their classrooms is perceived to lie with teachers. Much information is at their fingertips with the Internet, but some teachers reported this to be very time-consuming. Teacher perception was that the implementation of the SEM would be enhanced if they had more time to access resources to meet the many specific needs on a day-to-day basis.

Two possible solutions to this issue, suggested by the teachers, were personnel to assist with accessing resources and more time during on-site professional development days to collaborate with fellow teachers to share and access needed resources.

4.15 Positive Teacher Attitudes and Perceptions

Table 27 describes the teacher perceptions of the impact of Positive Teacher Attitudes and Perceptions on the implementation of the SEM at Glenwood Academy.
Table 27
Positive Teacher Attitudes and Perceptions

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>S</td>
</tr>
<tr>
<td>What is your overall rating of positive teacher attitudes and perceptions towards the SEM in the school since implementation of the process?</td>
<td>0</td>
</tr>
<tr>
<td>(0%)</td>
<td>(90%)</td>
</tr>
<tr>
<td>How have teacher attitudes and perceptions impacted on implementation of the total talent portfolio?</td>
<td>1</td>
</tr>
<tr>
<td>(10%)</td>
<td>(70%)</td>
</tr>
<tr>
<td>How have teacher attitudes and perceptions impacted on implementation of curriculum modification techniques?</td>
<td>0</td>
</tr>
<tr>
<td>(0%)</td>
<td>(60%)</td>
</tr>
<tr>
<td>How have teacher attitudes and perceptions impacted on the implementation of enrichment learning and teaching practices?</td>
<td>0</td>
</tr>
<tr>
<td>(0%)</td>
<td>(90%)</td>
</tr>
<tr>
<td>Average Responses</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.
Overall, the majority of teachers in Phase 1 (nine successful) and in Phase 2, (three completely successful and seven successful) provided positive ratings for Positive Teacher Attitudes and Perceptions and the impact this factor has had on their implementation of the SEM. Teachers reported several hindrances to having positive attitudes, including their fear of the unknown and change: “We have a fear of change, a fear of the unknown,” “at first it was unknown and we were scared of it.” Teachers reported the extra work and time required to carry out SEM had potential to promote negative attitudes: “There are a few that have a little bit of an attitude towards it—only because they don’t have the time to do it right.” As well, some teachers reported that the extra effort required to implement SEM could affect teachers’ positive attitudes, “It is draining physically especially for primary teachers.”

Some factors that have helped teachers to overcome negative attitudes in spite of these hindrances are seeing students excited about learning: “Clusters is always extra work for teachers but when kids get excited, it makes it worth it,” and their desire for academic success in students: “I want to prevent underachievement in students.” Teachers reported Professional Development, experiencing support and guidance from the leadership, and a strong belief that SEM works all as factors that promoted positive attitudes in teachers.

Teachers reported that, over time, attitudes were improving as they felt more comfortable with the model and there were fewer unknowns: “It is even more positive this year than last. There is more confidence so there is less grumbling. It could get even better.” Another factor that contributed to positive attitudes was witnessing the success of their colleagues’ implementation and knowing the value that their colleagues attributed to SEM. When others around them were on board and experiencing success, it was motivating to work hard to implement the model, as one teacher shared: “Everyone
on staff is trying to meet the students when they can. They are all doing their best. The attitudes are positive, and if they were bad it would pull it down.”

4.15.1 Total Talent Portfolio. Eight out of 10 participating teachers in Phase 1 and in Phase 2 (one completely successful and seven successful) reported that Teacher Attitudes and Perceptions had a successful impact on the implementation of the Total Talent Portfolio. Teachers commented that the Total Talent Portfolio was not a component of SEM that people tend to complain about. There was excitement about using it because teachers saw the benefit of knowing their students better as a result of it. One teacher shared that she felt no pressure (as she did with Curriculum Modification Techniques or Enrichment Learning and Teaching) as students are not graded on it, but the Total Talent Portfolio provides a wonderful focus for the school, especially at the beginning of the year. Two teachers provided neither successful nor unsuccessful ratings for this question. They commented that they are not sure how Attitudes and Perceptions of teachers are impacting on the Total Talent Portfolio implementation.

4.15.2 Curriculum Modification Techniques. Six teachers in Phase 1 (six successful) and nine teachers in Phase 2 (two completely successful and seven successful) reported Positive Teacher Attitudes and Perceptions as having a successful impact on their implementation of Curriculum Modification Techniques. Though there were no unsuccessful ratings for Positive Teacher Attitudes and Perceptions, four teachers in Phase 1 and one teacher in Phase 2 rated this question as neither successful nor unsuccessful. Teachers acknowledged that Curriculum Modification Techniques took much time and effort on each teacher’s part to successfully implement in the classroom. Some teachers perceived that there was a divide amongst teachers—the veteran teachers struggling to make the change and to implement Curriculum Modification Techniques with the younger, newer teachers experiencing fewer barriers and more positive attitudes as a result.
Collaboration with other staff members, student achievement, student excitement, a strong belief in differentiation, and the success of other colleagues were all reported factors that helped teachers to maintain positive attitudes towards Curriculum Modification Techniques.

Teachers reported that Phase 1 was more overwhelming, but once Curriculum Modification Techniques strategies became habit, fear of change eroded and attitudes improved. Teachers reported that improved attitudes meant more successful implementation of Curriculum Modification Techniques in their classrooms. This is reflected in the data as well as six teachers perceived Attitudes and Perceptions to impact successfully on Curriculum Modification Techniques in Phase 1, and this increased to nine teachers in Phase 2.

4.15.3 Enrichment Learning and Teaching. Nine out of 10 teachers in Phase 1 (nine successful) and all participating teachers in Phase 2 (three completely successful and seven successful) reported that Attitudes and Perceptions successfully impacted on the implementation of Enrichment Learning and Teaching. As with Curriculum Modification Techniques, teachers reported Enrichment Learning and Teaching to require more effort and time in lesson planning—more than when the school was not implementing SEM. The impact on student learning and on student engagement made it all worthwhile for some teachers. From the teachers’ perspective, there was a direct correlation between teacher attitudes and student attitudes. The more excited teachers were about SEM, the more excited students became. The excitement and achievement of the students promoted positive teacher attitudes. One teacher reported, “There is a buzz due to clusters,” and the momentum that results is great for the morale of the school.

Teachers reported that attitudes had improved as their confidence in implementing Enrichment Learning and Teaching had risen. It was perceived by some teachers that new, young teachers had helped to promote positive attitudes amongst the
staff, as they came to the school with fresh confidence in implementing new and unknown (to the experienced teachers) methods.

One teacher reported that her attitude towards change towards SEM was a conscious choice: “I feel it is here to stay, so you fight it and you make it difficult, or you go with the flow.” Two experienced teachers shared that there had been many innovations introduced to the school in past, many have come and gone; however the amount of time and effort that has been dedicated to the SEM implementation is far greater than any past innovations.

4.15.4 The impact of Positive Teacher Attitudes and Perceptions on SEM implementation. When asked how Teacher Attitudes and Perceptions impacted on the implementation of Enrichment Learning and Teaching practices, four teachers shared that much of the SEM philosophy and practice was part of their own personal philosophy and practice before Glenwood ever began to implement SEM. Schoolwide implementation, however, has provided a sense of affirmation that “it is the right thing to do.” So because many concepts are not new, the model fits well with their own beliefs, and there is much support and collaboration, attitudes of these teachers towards SEM implementation were generally positive.

Teachers reported that when they are doing something that they love, they cannot help but have positive attitudes. One teacher reported that she loved clusters because she initiated and facilitated clusters surrounding topics that were of great interest to her. Another teacher reported that because he taught in disciplines that are areas of passion for him or facilitated clusters that are also of great interest to him, he had a more positive attitude towards SEM implementation.

Four of the five Positive Attitudes and Perceptions questions did not receive any ratings for completely successful. One teacher explains, “completely successful just would seem we’ve arrived—that is the only reason I don’t give it this rating. We always
have room to grow. Generally, I think teachers are on board with positive attitudes.”

Teachers often interpreted the *completely successful* rating to mean perfection, and in most cases they reported that the school is in the early stages of SEM implementation and will only become more effective in its implementation in the future.

**4.16 Collaboration of Staff**

Table 28 describes the teacher ratings of the impact of Collaboration of Staff on the implementation of the SEM at Glenwood Academy.
Table 28
Collaboration of Staff

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th>Phase 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
</tr>
<tr>
<td>What is your overall rating of the collaboration of the staff in our school since we began implementing the SEM?</td>
<td>6 (60%)</td>
<td>4 (40%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of staff collaboration on the use of the total talent portfolio?</td>
<td>0 (0%)</td>
<td>6 (60%)</td>
<td>3 (30%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>How do you rate the impact of staff collaboration on curriculum modification techniques?</td>
<td>1 (10%)</td>
<td>8 (80%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of staff collaboration on enrichment learning and teaching practices?</td>
<td>2 (20%)</td>
<td>8 (80%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Average Responses</td>
<td>23%</td>
<td>65%</td>
<td>10%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

Overall, Collaboration of Staff was seen to be an important successful factor in the implementation of SEM at Glenwood Academy by all teachers in Phase 1.
completely successful and four successful) and in Phase 2 (five completely successful and five successful). Various collaborative scenarios were perceived by the teachers to move the implementation of SEM forward in the school, including division groups, professional development groupings, and informal pairs or triads working through specific issues. Some teachers have been attributed “expert” status on various aspects of SEM implementation by their peers; for example there is an expert on IIM, an expert on Type I, and an expert on Total Talent Portfolio. Teachers reported feeling free to approach these experts when they needed help.

Some teachers recognized the importance of resisting isolation, finding that collaboration “pushes SEM further, but [we] still struggle being islands. There is more discussion taking place now than before. There used to be very little overlap between divisions.”

**4.16.1 Total Talent Portfolio.** Six out of 10 participating teachers in Phase 1 (six successful) and five teacher in Phase 2 (two completely successful and three successful) reported that Collaboration of Staff impacted on the implementation of the Total Talent Portfolio with success. In Phase 1, three teachers and in Phase 2, five teachers rated this question as neither successful nor unsuccessful. Teachers reported limited sharing of Total Talent Portfolio information with rotary teachers. And although Total Talent Portfolio inventory tools and ideas are shared among teachers, they have not spent time collaborating on ways that they can apply the concepts to improve teaching and learning in their classrooms.

**4.16.2 Curriculum Modification Techniques.** Nine out of 10 teachers in Phase 1 (one completely successful and eight successful) and nine out of 10 teachers in Phase 2 (three completely successful and six successful) reported that Collaboration of Staff impacted successfully on their implementation of Curriculum Modification Techniques. Teachers reported collaborating with one another on differentiation methods, curriculum
compacting, and the Independent Investigation Method—with teacher partners, divisions, and with various staff members during Professional Development days.

One teacher reported the need for teachers to share using the pattern language of SEM. She felt that the use of SEM language is necessary when collaborating with each other, and it furthers the language so that eventually students and the rest of the Glenwood Academy community will be using it as well.

One teacher in Phase 1 and one teacher in Phase 2 provided a neither successful nor unsuccessful rating for this item. Teachers explained some limitations to their collaboration. Even though there is a recognition that all teachers are willing to share, “we are sometimes in a place where we need to create it ourselves because it is grade and unit specific. But [I realize] I could make it more successful if I reach out more.”

4.16.3 Enrichment Learning and Teaching. All participating teachers in Phase 1 (two completely successful and eight successful) and nine out of 10 teachers in Phase 2 (four completely successful and five successful) reported that Collaboration of Staff impacted on the implementation of Enrichment Learning and Teaching with success. Teachers reported much collaboration, specifically surrounding the topics of Type I enrichment and clusters. Learning to implement something brand new presented a need to band together, as one teacher commented, “Clusters have helped us to really pull together.” The on-site Professional Development days provided the time for much-needed collaboration and as a result, “enrichment has skyrocketed in our classes. It is a central component to our teaching and learning now.”

4.16.4 The impact of Collaboration of Staff on SEM implementation. When asked how Collaboration with Staff impacted on the implementation of SEM, it was reported that Glenwood Academy used to be a school where there was little teamwork and much more isolated, independent work. The implementation of the SEM has helped to improve that, as one teacher shared, “SEM has brought teachers together and taught us
to share with each other.” Teachers reported that much of this sharing happened during on-site Professional Development days.

Teachers reported feeling motivated by each other to succeed, learning from others through talking and sharing resources. Collaboration directly affected the implementation of SEM, as one teacher commented, “it is a ‘we’, not an ‘I’ and it keeps me accountable. I don’t want to let my team down.” Another teacher reported, “I think of us as a team all with a different vantage point. From practical to cerebral contributions—I need other team members for parts of my implementation. We balance each other out. Doing it on my own, without collaboration, may be more painful.”

A key, motivating factor for collaboration, as reported by teachers, was the benefit it brought to students. One teacher shared that she needed to collaborate with teachers who shared the same students (rotary teachers), and she needed to collaborate with teachers of the previous grade, and of the next grade in order to discover how they as a team could best meet the needs of these students.

Collaboration was seen as a positive influence on SEM implementation, but many teachers still refrained from using the rating completely successful. One teacher explained, “I don’t choose completely successful because I don’t think we’ve reached the potential.” There is still plenty of room for growth.

4.17 Strong and Supportive Leadership

Table 29 describes the teacher ratings of the impact of Strong and Supportive Leadership on the implementation of the SEM at Glenwood Academy.
Table 29

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your overall rating of strong and supportive leadership in the school since the implementation of the SEM?</td>
<td>2 (20%) 8 (80%) 0 (0%) 0 (0%) 0 (0%) 7 (70%)</td>
<td>3 (30%) 0 (0%) 0 (0%) 0 (0%) 0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of the leadership on the use of the total talent portfolio?</td>
<td>0 (0%) 7 (70%) 3 (30%) 0 (0%) 0 (0%) 1 (10%)</td>
<td>7 (70%) 2 (20%) 0 (0%) 0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of the leadership on curriculum modification techniques?</td>
<td>1 (10%) 7 (70%) 2 (20%) 0 (0%) 0 (0%) 1 (10%)</td>
<td>9 (90%) 0 (0%) 0 (0%) 0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of the leadership on enrichment learning and teaching practices?</td>
<td>5 (50%) 5 (50%) 0 (0%) 0 (0%) 6 (60%)</td>
<td>4 (40%) 0 (0%) 0 (0%) 0 (0%)</td>
</tr>
<tr>
<td>Average Responses</td>
<td>20%     68%</td>
<td>13%     0%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

Overall, Strong and Supportive Leadership was seen to be an important and positive factor in the successful implementation of SEM at Glenwood Academy by all the teachers in Phase 1 (two completely successful and eight successful) and in Phase 2, (seven completely successful and three successful). Teachers reported feeling “fully supported” and allowed to “grow into it,” receiving suitable Professional Development
all along. Leadership was reported as “not in your face, but there when we need it.” One teacher reported, “SEM is in the forefront and [the leadership] are interested in the details without micromanaging.”

The majority of teachers reported that from their perspective, the leadership of the SEM was provided by the Curriculum Coordinator, the Academic and Admissions Committee, and the SEM Team. Teachers also reported that their division heads were knowledgeable and could provide SEM feedback, and much feedback and leadership came from peers. One teacher commented that this dispersed leadership, leadership on these many levels, was “a wise move.” From one teacher’s perspective, it felt more like “a peer encouraging you, not a boss enforcing you.” The governing board of the school was perceived as being supportive of the SEM but not necessarily involved in leading in the implementation of it. Teachers’ expectations of the two principals were reported as “not high,” as they perceived the principals as still learning the SEM, still in progress. Because of that, one teacher said that her ratings were “close to completely successful.”

4.17.1 Total Talent Portfolio. Seven out of 10 participating teachers in Phase 1 (seven successful) and eight out of 10 teachers in Phase 2 (one completely successful and seven successful) reported that Strong and Supportive Leadership impacted positively on their implementation of the Total Talent Portfolio. In Phase 1, three teachers and in Phase 2, two teachers rated this question neither successful nor unsuccessful. Some teachers reported that the leadership has done their job of providing Professional Development, the resources, and the support, and teachers’ lack of implementation of the Total Talent Portfolio is not due to leadership.

Some teachers reported that some accountability to leadership was necessary for successful implementation; “if we weren’t made to do it, we might not.” One teacher noted that accountability is key to implementation, because he himself is not yet convinced that the Total Talent Portfolio is that applicable in teaching.
The degree of accountability has been positive for some teachers; “it is part of our evaluation as teachers, it is well known that we are to do it, but it is not enforced or checked up on [on a daily basis].” One teacher reported, “The expectation at the school is to implement it at your speed, level, whatever that might be. No judgment or condemnation at all. Just try to do it.”

4.17.2 Curriculum Modification Techniques. In Phase 1, 8 out of 10 teachers (one completely successful and seven successful) and in Phase 2 all of the teachers (one completely successful and nine successful) reported Strong and Supportive Leadership as having a positive impact on their implementation of Curriculum Modification Techniques. Teachers reported that school leadership provided the Professional Development, the funds and other resources when needed, the motivation, the accountability, and the support to implement Curriculum Modification Techniques. Since all of these things have been provided, one teacher reported that even without accountability she would still implement Curriculum Modification Techniques; “we just do it, we compact because we need to and the child needs it—we know it is best for the kids.”

The division heads and the Curriculum Coordinator were seen as the leaders who were most concerned about the day-to-day implementation of Curriculum Modification Techniques. If guidance or advice is needed, teachers reported that they know where to find it. One teacher commented, “I would anticipate [in the future] that all I need to make this happen would be provided.”

In Phase 1, two teachers responded with neither successful nor unsuccessful but explanations for their ratings were not provided.

4.17.3 Enrichment Learning and Teaching. All of the participating teachers reported that Strong and Supportive Leadership had a significant impact on their implementation of Enrichment Learning and Teaching (five completely successful and
five *successful* in Phase 1; six *completely successful* and four *successful* in Phase 2). One teacher reported, “we wouldn’t do clusters or purposeful Type II without leadership forcing it. Another teacher commented, “we are forced to do it, mandated, but we don’t mind because we believe in it.”

Enrichment is seen by many teachers as part of the private school expectation; “[it is] part of our culture and the parent community, a private school expectation.” Enrichment Learning and Teaching is encouraged on many fronts—not just by leadership.

Because Enrichment Learning and Teaching is part of the school culture, teachers reported that it seemed natural to implement it, to be a part of it. Some leadership have taken an active role in providing enrichment: “Everyone is doing some aspect of that with clusters. Even board members have given representation on clusters. When leadership experiences it they get a better feel for the challenges in the implementation of it and the positive results too. We are all equal there.”

### 4.17.4 The impact of Strong and Supportive Leadership on SEM implementation

When asked how Strong and Supportive Leadership impacted on the implementation of SEM, teachers reported that it was important, especially at the beginning of the implementation: “Having someone lead, pave the way has been important.” Teachers explained that there has been a balance between leadership mandating SEM implementation and the teachers implementing it because they believe it is the best way to teach. “There is encouragement, resources, and accountability sometimes”; “strong leadership is given, approachable and not judgmental. It allows me to be vulnerable and to admit where I still need help.”

One teacher reported that because it has been a whole school change, it would not be successful without Strong and Supportive Leadership. It was considered to be important by many teachers that the leaders themselves took part in the implementing of
SEM. “It is fully supported and not a passing thing. Leaders also participate in SEM, for example clusters, and taking part in PD.” Teachers reported this as necessary, communicating that if SEM is going to be successful, we must all get involved.

4.18 Comprehensiveness of Reform Model

Table 30 describes the teacher ratings of the impact of Comprehensiveness of Reform Model on the implementation of the SEM at Glenwood Academy.
Table 30

*Comprehensiveness of Reform Model*

<table>
<thead>
<tr>
<th>What is your overall rating of the comprehensiveness of SEM as a reform model in the school since the implementation of the process?</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
</tr>
<tr>
<td>3 (30%)</td>
<td>4 (40%)</td>
<td>3 (30%)</td>
</tr>
</tbody>
</table>

How do you rate the impact of comprehensiveness of the SEM on the use of the total talent portfolio? | 0 (0%) | 6 (60%) | 4 (40%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 9 (90%) | 1 (10%) | 0 (0%) | 0 (0%) |

How do you rate the impact of the comprehensiveness of the SEM on curriculum modification techniques? | 1 (10%) | 5 (50%) | 4 (40%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (10%) | 9 (90%) | 0 (0%) | 0 (0%) | 0 (0%) |

How do you rate the impact of the comprehensiveness of the SEM on enrichment learning and teaching practices? | 1 (10%) | 7 (70%) | 2 (20%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 3 (30%) | 7 (70%) | 0 (0%) | 0 (0%) | 0 (0%) |

**Average Responses** | 13% | 55% | 33% | 0% | 0% | 18% | 80% | 3% | 0% | 0% |

*Note. Due to rounding of numbers, not all sets of ratings add to 100.*

Overall, Comprehensiveness of the Reform Model was reported by the teachers as a contributing factor to the successful implementation of SEM by seven out of 10 teachers in Phase 1 (three *completely successful* and four *successful*) and by all participating teachers in Phase 2 (three *completely successful* and seven *successful*). One teacher reported, “[SEM] blankets everything, it is injected into everything.” Teachers
reported that the Comprehensiveness of the Reform Model is seen in the involvement of so many people. The Admissions Director attended Confratute. The Admissions Director and the Business Director attend on-site Professional Development. Our front office staff, the property manager, a board member, various parents, and the Finance Director have all facilitated clusters. The language of SEM is permeating throughout, a sign that SEM has far-reaching effects. Each year the SEM is implemented, it becomes more widespread; as one teacher shared, “every year we become more comprehensive, it all takes time.”

In Phase 1, three teachers rated Comprehensiveness of the Reform Model as *neither successful nor unsuccessful*. Teachers shared that there are some areas where SEM could become more comprehensive, particularly within the parent community, “It is starting more than ever with parents, it will take them a while to fully understand.” Teachers reported parent involvement to be a next step in the implementation process. One teacher noted that although teachers and administrators have learned about many of the SEM aspects, the next steps are to put them all into practice, “go deeper and implement them with consistency.”

In Phase 2 teachers provided only *completely successful* and *successful* ratings for this sustainability factor.

**4.18.1 Total Talent Portfolio.** Six out of 10 participating teachers in Phase 1 and nine teachers in Phase 2 reported that Comprehensiveness of the Reform Model impacted on the implementation of the Total Talent Portfolio with success (six *successful* in Phase 1; nine *successful* in Phase 2). In Phase 1, four teachers and in Phase 2, one teacher rated this question with *neither successful nor successful*, and there were no *completely successful* ratings in either Phase 1 or Phase 2. Teachers reported that although most homeroom teachers are implementing student inventories, not every teacher is allowing the Total Talent Portfolio to inform their teaching on a regular basis.
At this point, most rotary teachers are not regularly implementing the Total Talent Portfolio.

Some teachers commented that there is growing evidence of Total Talent Portfolio implementation in the school, “more than before that is for sure. You don’t see the same kinds of projects around the school—where they all look the same with the same requirements. We are seeing more presentation types, rather than cookie-cutter projects.” Other teachers reported that the Total Talent Portfolio reflects the Christian philosophy of the school—one that was present before the implementation of the SEM—that all students are unique. From one teacher’s perspective, it is just a matter of time before the implementation of the Total Talent Portfolio is comprehensive throughout the school. Even the extracurricular activities fall under this SEM belief; “there are such a variety of activities offered—the arts, sports—all talents and interests are considered. And teachers and parents can all get involved.”

4.18.2 Curriculum Modification Techniques. Six teachers in Phase 1 (one completely successful and five successful) and all participating teachers in Phase 2 (one completely successful and nine successful) reported Comprehensiveness of the Reform Model as having a successful impact on their implementation of Curriculum Modification Techniques. Teachers reported that because SEM implementation is comprehensive, because so many teachers are involved in this practice, it makes it easier to implement it; “it is giving us confidence to make the decision to compact and differentiate because everyone is doing it.” Differentiation is becoming common at Glenwood Academy. The language of Curriculum Modification Techniques is becoming more widely used, so that parents and students are understanding the terminology.

In Phase 1, four teachers rated the impact of the comprehensiveness of SEM on Curriculum Modification Techniques as neither successful nor unsuccessful. Teachers expressed that because Curriculum Modification Techniques is a broad component, it
encompasses so many aspects of teaching, there is much more to learn and implement; as one teacher reported, “I feel frustrated in that area still.” From some teachers’ perspective there is a need to continually collaborate in order to increase the impact of Curriculum Modification Techniques schoolwide, “People don’t talk about it readily such as ‘I’m compacting out so and so.’” In Phase 2, teachers provided only completely successful and successful ratings for this sustainability factor and its impact on Curriculum Modification Techniques.

4.18.3 Enrichment Learning and Teaching. Teachers reported that Comprehensiveness of the Reform Model impacted on the implementation of Enrichment Learning and Teaching with success—8 out of 10 teachers in Phase 1 (one completely successful and seven successful) and all participating teachers in Phase 2 (three completely successful and seven successful). As with Curriculum Modification Techniques, teachers reported that the comprehensiveness of Enrichment Learning and Teaching improved their personal implementation. One teacher reported, “I want to know I’m on the same level as other teachers—I don’t want to be the one not doing enrichment, so the fact that others are all believing it and practicing it, makes me do it as well.”

Teachers reported some Enrichment Learning and Teaching characteristics to be more comprehensive than others. Type I enrichment, Type II enrichment, and clusters are perceived to be practiced schoolwide. The Renzulli Learning System, however, is perceived to be implemented by only a few. The involvement of teachers, support staff, administrators, students, and parents is perceived to add to the comprehensiveness of Enrichment Learning and Teaching and increase the level of implementation throughout the school.
4.18.4 The impact of the Comprehensiveness of the Reform Model on SEM implementation. When asked how the Comprehensiveness of the Reform Model impacted on the implementation of SEM, it was reported that the comprehensiveness of SEM in the school is what keeps the momentum going; “it is easier when we are all going in the same direction.” If only one person or one team were implementing it, the model would not last. It is the comprehensiveness of the model that fuels the implementation; as one teacher said, “the comprehensiveness adds to the energy of [SEM]. We feed off of each other’s energy.”

The constant Professional Development surrounding SEM implementation was reported by teachers to have improved the Comprehensiveness of the Reform Model. “If we had instruction for only a year, SEM would die. We focused on one thing for so long, so it lives on. Unlike some other endeavors we have tried at this school.”

SEM is also perceived by teachers to have become more comprehensive through the spreading of SEM language. This is done not only verbally but through weekly classroom communication to parents, called the Week-at-a-Glance, and the weekly schoolwide newsletters.

Teachers agree that the Comprehensiveness of the Reform Model is not completely successful. There is so much more to be learned about SEM, so many areas that need to be revisited. There is some variability of implementation and knowledge among teachers, administrators, parents, and students, so there is more growth to happen before it is fully ingrained in all areas of the school. Two teachers reported that there is also variability of SEM implementation from subject to subject. Math and Language are perceived to be taught with more SEM influence than other subjects.

4.19 Attention Given to Time Issues

Table 31 describes the teacher ratings of the impact of Attention Given to Time Issues on the implementation of the SEM at Glenwood Academy.
### Table 31

**Attention Given to Time Issues**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
</tr>
<tr>
<td>What is your overall rating of the attention given to time issues by our school since we began the implementation of SEM?</td>
<td>0 (0%)</td>
<td>3 (30%)</td>
</tr>
<tr>
<td>How do you rate the impact of the attention given to time issues on the use of the total talent portfolio?</td>
<td>2 (20%)</td>
<td>4 (40%)</td>
</tr>
<tr>
<td>How do you rate the impact of the attention given to time issues on curriculum modification techniques?</td>
<td>1 (10%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>How do you rate the impact of the attention given to time issues on enrichment learning and teaching practices?</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Average Responses</td>
<td>10%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Note. Due to rounding of numbers, not all sets of ratings add to 100.

Overall, there seemed to be insufficient Attention Given to Time Issues in regards to the implementation of SEM at Glenwood Academy by the teachers in Phase 1 (three successful) and in Phase 2 (two completely successful and five successful). Many
teachers reported that SEM implementation required more planning time. “The workload has increased, but planning time has not.” They are grateful for reorganization in the structure of Professional Development that has allowed for some planning time, but many teachers felt that this is not enough. In Phase 1, seven teachers rated Attention Given to Time Issues as *neither successful nor unsuccessful*, and two teachers provided this rating in Phase 2.

Two teachers reported that time was not an issue for them at all. One of those teachers felt that more planning time would not change anything; “clusters do not take that much more time—it is just an extra lesson that week. If we are doing it properly, it is not even a lesson [teachers should just be facilitating].” The other teacher commented, “I am also an efficient person when it comes to getting tasks done—I’m also not high-stressed about being busy like some [other teachers] are.”

Two teachers reported the Attention Given to Time Issues as having a positive impact on SEM implementation, as the schedules of some teachers have been modified to allow them to fulfill SEM leadership roles; as one teacher noted, “I am given time to be on the SEM and AAC.” These provisions of time are seen by teachers to be vital if SEM implementation is to progress.

### 4.19.1 Total Talent Portfolio.

Participating teachers reported that Attention Given to Time Issues had less impact on the implementation of the Total Talent Portfolio than any of the other SEM components. In the first phase, two of the teachers rated this factor *completely successful* and four *successful*, and in the second phase, one teacher gave a *completely successful* and eight gave a *successful* rating. In Phase 1, one teacher provided an *unsuccessful* rating, but there were no *unsuccessful* ratings in Phase 2.

In Phase 1, three teachers and in Phase 2, one teacher rated the impact of time issues on the Total Talent Portfolio use as *neither successful nor successful*. These ratings indicate that teachers did not believe time to be a factor in their implementation.
of the Total Talent Portfolio; “more time in the schedule is not needed, this is not a time issue, it is not a largely consuming task.” They reported that administering the surveys to students at the beginning of the year was a very successful way to get to know the students, and seemed very productive: “It takes no time at all—done the first week of school,” “using that time at the beginning of the year is a positive way to use the time.” Although teachers felt this process should require more intentional effort and time in the future, it was not perceived as an issue so far.

4.19.2 Curriculum Modification Techniques. Three teachers out of 10 in Phase 1 (one completely successful and two successful) and five out of 10 teachers in Phase 2 (five successful) reported a successful impact of time issues on their implementation of Curriculum Modification Techniques. In Phase 1, four teachers provided neither successful nor unsuccessful ratings, and in Phase 2, two teachers provided this neutral rating. In Phase 1 and in Phase 2, three teachers rated this item as unsuccessful. One teacher commented, “The heaviest time demands are in this area.” Curriculum compacting and differentiation to meet various needs in their classrooms sometimes required planning two or three variations of lessons. Planning, for example, tiered assignments is much more demanding time-wise than a one-size-fits-all lesson: “I don’t feel I’ll ever have enough time for this—both preparing for needy and high achieving students. There is no time built in for this. It has to be extra which may impact on how SEM is being done.” Searching for resources to support various levels and learning styles was also reported to take extra time; “sometimes it is a scramble to find the right activities. Sometimes differentiation (compacting more specifically) goes by the wayside so I can do other necessities.” Teachers reported that the extra time required for this planning is not provided by the administration; therefore it requires prolonged work days for the teachers; “it’s not that anyone gives me more time, I just take more of my own time at home.”
Two teachers shared that time is not an issue for them in implementing Curriculum Modification Techniques—it is simply what is required of teaching; “you should be doing it anyway because it is your job as a teacher. If I had a special needs child, I’d make the extra lesson plan, I am just meeting the needs of the students I have.” Another teacher noted that differentiation is “all part of teaching anyway.”

Several teachers reported that they were grateful to have extra time built into the Professional Development days: “It is very appreciated to have extra time in PD days to work on SEM material to work on SEM implementation.” One teacher shared that she just needs to become more efficient in her use of time.

4.19.3 Enrichment Learning and Teaching. In Phase 1, two out of 10 teachers (one completely successful and one successful) and in Phase 2, seven teachers (two completely successful and five successful, reported Attention Given to Time Issues impacted successfully on their implementation of Enrichment Learning and Teaching. As with Curriculum Modification Techniques, many teachers felt that they were really stretched in this area (five neither successful nor unsuccessful in Phase 1, one neither successful nor unsuccessful in Phase 2, three unsuccessful in Phase 1, and two unsuccessful in Phase 2). All but three teachers reported qualitatively that Enrichment Learning and Teaching requires an extensive time commitment on their parts, particularly in their planning and facilitating of clusters: “Clusters is very time consuming—more planning than I thought. Sometimes it balances out for example, I’ll have a Type I speaker so there is a lesson I do not have to plan for.” Another teacher commented, “clusters are such an increase of workload—weekly for a period of time. PD time given was not appropriate as I don’t need a 4 hour period of time in an afternoon, but 40 minutes once a week.” Teachers require more time to research and create teaching activities for high achievers: “I’d like time to research and create parallel units for the whole year for enrichment—go broader on all of the same topics as the regular stream.”
One teacher reported that Enrichment Learning and Teaching, and specifically clusters, did not present a time issue for her; “clusters doesn’t change my time issues at all. Instead of planning lessons for those periods, I plan a cluster.” Another teacher felt similarly; “there is not as much work for me here, but for the student there is, as compared to curriculum modification techniques."

One teacher reported appreciating the time to collaborate with other teachers. Relying on one another, brainstorming, “feeding off of one another” has proven for some to be a time-saving activity in the end.

4.19.4 The impact of Attention Given to Time Issues on SEM implementation. When asked how Attention Given to Time Issues impacted on the implementation of SEM, the majority of teachers reported that SEM implementation is costly when it comes to time, but many added that from their perspective, there are benefits to their sacrifice of time: “It is all worth the extra time—the enrichment goes beyond the basic and it is so worth it!” “It changes my approach to the average child’s education for me, and I see the difference.” “School reform is so time consuming, yet it is worth it.”

Several teachers acknowledged that they never seem to have enough time and they are not sure if they ever will. It is an issue of the teaching profession: “SEM does not [necessarily] put that on us, but in general, we don’t tend to say no. But that is because it is our job.” Though some acknowledged time to be a factor in SEM implementation, it has not kept them from implementing the SEM in their classrooms. Teachers experienced fewer time issues in the second phase of the study. As some teachers became more knowledgeable and implementation became more familiar, they were able to execute SEM strategies more efficiently. Some reported that it helps to feel supported by the leadership; “there is more understanding and sensitivity to time issues,
for example PD days provide more time for teachers to get work done—however time issues do not go away.”

Two teachers reported that SEM implementation has caused them to change how they manage their time; one teacher shared, “it jives well with my multitasking personality. Differentiation works well with my centres-style teaching. My planning time therefore is less because I do cross-curricular activity centres to make room for differentiation. SEM implementation causes me to change how I manage my time.” Another teacher commented, “I just use the time differently now—not a matter of how much time, just how I use it.”

4.20 Student Achievement

Table 32 describes the teacher ratings of the impact of Student Achievement on the implementation of the SEM at Glenwood Academy.
Table 32

**Student Achievement**

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th></th>
<th></th>
<th></th>
<th>Phase 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
<td>CS</td>
<td>S</td>
<td>N</td>
<td>U</td>
</tr>
<tr>
<td>What is your overall rating of growth in student achievement in our school since we began the SEM?</td>
<td>2 (20%)</td>
<td>7 (70%)</td>
<td>1 (10%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (20%)</td>
<td>7 (70%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>How do you rate the impact of the total talent portfolio on student achievement?</td>
<td>0 (0%)</td>
<td>8 (80%)</td>
<td>2 (20%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (20%)</td>
<td>8 (80%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of curriculum modification techniques on student achievement?</td>
<td>2 (20%)</td>
<td>8 (80%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4 (40%)</td>
<td>6 (60%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>How do you rate the impact of enrichment learning and teaching on student achievement?</td>
<td>4 (40%)</td>
<td>6 (60%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>7 (70%)</td>
<td>3 (30%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

**Average Responses**

|                      | 20% | 73% | 8% | 0% | 0% | 38% | 60% | 3% | 0% | 0% |

Note. Due to rounding of numbers, not all sets of ratings add to 100.

Overall, increased Student Achievement was seen to be a motivating factor in the implementation of SEM at Glenwood Academy by the teachers. In Phase 1 and in Phase 2, nine out of 10 teachers (two completely successful and seven successful) reported high levels of achievement; “students are achieving higher and higher as SEM progresses. I’m excited to see where it goes.” Some teachers reported that although there has been no
standardized testing, no official measurement of academic growth in students to compare pre-SEM achievement with post-SEM achievement, there is clear evidence of increased student achievement within the classes of Glenwood; “it is not officially measured, but I see the growth. We are preparing students for collaborative learning and thinking in different ways. This kind of achievement is hard to measure.”

From the teachers’ perspective, enjoyment of learning is high since the implementation of SEM. Students show great enjoyment in their independent enrichment activities, clusters, Type I experiences, and their independent investigations. One teacher reported, “students have choice in how they show their learning. They are happy about it and so their achievement is high. They are excited about the learning and they really know what they know because they are interested in it.” Another teacher reported, “kids take more chances, especially in the younger grades where [SEM] is all they’ve known. Kids are asking to act out, create, etc. that is how they know learning. Students are more empowered when they research.”

Increased Student Achievement was reported by teachers for both high-achieving students and for struggling students, “Struggling kids are rising in their achievement” and “higher level students are finally getting their needs met.” Students who were compacted out are not sitting and listening to material that they had previously mastered. That alone is seen as improvement. Those students are now given the opportunity to learn new things, to achieve, where there may have been little of that before SEM. The acknowledgement that some students need more and that there has been an attempt to provide this through SEM implementation is seen by the teachers as progress. Struggling students as well are given the opportunity to succeed through a focus on their strengths. They feel successful, and they enjoy learning.

One teacher reported on achievement in terms of the spiritual, emotional, and social growth of the students, “Leadership potential and growth is evident as well as
confidence. I don’t know about academic achievement, as we don’t have test scores. The achievement is not necessarily stuff that is put on a report card. Even work ethic is growing."

Because of this perceived whole-child growth and achievement, teachers are willing to put extra time and effort into implementing the SEM at Glenwood Academy because, as one teacher commented, “everyone is getting their needs met, and it makes it all worthwhile.”

One teacher shared her apprehension: “I have a fear that some kids will miss foundational things because we are getting creative in our teaching—there has to be a balance between creativity and teaching the basics.” The basics of writing and math, from her perspective, are what bring solid achievement, and less structure might lead to missing the instruction of some skills that students will need later in life.

4.20.1 Total Talent Portfolio. Eight of the 10 participating teachers in Phase 1 (eight successful) and all of the participating teachers in Phase 2 (two completely successful and eight successful) reported that Student Achievement impacted on the implementation of the Total Talent Portfolio with success. One teacher reported an increase in student reflection since implementing the Total Talent Portfolio. Other teachers reported students becoming more responsible for their learning, owning their learning, which results in higher achievement, “Students are aware of their strengths,” and they are making choices based on these. Students are demonstrating that they know themselves better as a result of implementing the Total Talent Portfolio. Teachers know the students better as a result of the Total Talent Portfolio, “It has to play a key part—teaching to student strengths—just showing awareness on the teacher’s part alone is so positive.”

In Phase 1, two teachers rated this question with neither successful nor unsuccessful. One teacher explained, “I don’t take it into account as much as I need to.”
Another teacher noticed that while “students do wrestle with information instead of producing what they are told to produce,” he wonders whether students might determine their strengths and weaknesses too soon, “Students are excited to do what they love to do, but are some shutting doors on opportunities to try new things?”

4.20.2 Curriculum Modification Techniques. All of the participating teachers in Phase 1 (two completely successful and eight successful) and in Phase 2 (four completely successful and six successful) reported increased Student Achievement as having a successful impact on their implementation of Curriculum Modification Techniques. Because students are learning at paces and levels that accommodate their needs, achievement is evident, as reported by many teachers. One teacher provided an example of a student who struggles in all subject areas. He feels he is successful, that he is achieving, “he doesn’t know that he isn’t doing everything others are.” Another teacher shared an example of another student who has had many struggles with traditional forms of learning; “he started to do things ‘differently’ a couple of years ago and now he is so much more confident. The way he expresses his learning is different and now he experiences success.” Another teacher shared that some high-achieving students in the intermediate division have been able to go on and do high school math. Differentiation has given them the opportunity to achieve as high as they can.

One teacher reported that the implementation of Curriculum Modification Techniques has taken some stress away from learning for some students, “It has helped children relax and learn at their own level. Stress is lower, which makes me relax. It has allowed me to put less pressure on the students. They are at least reaching for it.”

One teacher reported that when she does modify, it is successful and student achievement is evident, but she does not feel she has done this enough.

4.20.3 Enrichment Learning and Teaching. All participating teachers reported that Student Achievement impacted on the implementation of Enrichment Learning and
Teaching with success in Phase 1 (four *completely successful* and six *successful*) and in Phase 2 (seven *completely successful* and three *successful*). There were no negative ratings for this question by the teachers. Teachers reported that Type I enrichment and clusters in particular, sparked attention and excitement within the students. Because of the enjoyment and engagement, there has been a great impact on student achievement, from the teachers’ perspective. High student achievement has fostered momentum for further implementation of Enrichment Learning and Teaching.

From the teachers’ perspective, Enrichment Learning and Teaching increased Student Achievement, and this increased Student Achievement motivated teachers to continue to implement the SEM. One teacher explains, “The whole thing I am seeing now is that it isn’t just for two kids, it is the whole classroom. Every child feels good about their learning. They are so happy—using their own strengths.” Another teacher explained that the opportunities given to students to study topics beyond grade-level curricular requirements has been a positive learning experience, “It is so great to see little kids excited about learning technology, for example, in my cluster. Where else would they learn this?”

**4.20.4 The impact of Student Achievement on SEM implementation.** When asked to report on how implementation of the SEM at the school has impacted on their own views of student achievement, teachers provided a variety of testimonials that reflected their personal journeys since their implementation of SEM at the school.

I look at achievement differently. Open-ended projects with any creative application – that brings about achievement. If the expectation was exactly the same for each child in the class, so many of these kids would not have received a level 4 on our latest class project because they were able to choose their creative component to suit their own learning and expression styles. They did amazing work!

My perception of what a student in my classroom is capable of has expanded.

We no longer look at what a student cannot do, but rather what they can do—what their gifts and abilities are. [We] emphasize their strengths vs. their weaknesses.
The biggest difference for me is looking at the average child and giving them opportunities to stretch. They are achieving more now.

Definitely impacted! Without SEM I wouldn’t differentiate my lessons. It’s changed my teaching. This has for sure changed students’ achievement. The lower students feel successful when we teach this way and higher achievers are being challenged so they are achieving more as well. I teach so each is achieving. I am so less rigid in my teaching now that I differentiate. I used to think each child must do the same as everyone in the class.

One teacher noted, “I used to determine student achievement based on marks only.” Now, he measures achievement based on a variety of things. Student mentoring and leadership have all resulted from SEM: “My students teach their art projects to other younger students. Growth results from experiencing the teaching of other students. Students do more work and learn more when they have to teach a lesson.”

Some teachers reported that they see growth in student achievement as the result of SEM implementation but would like to find a measuring tool that would validate this—something that would measure higher order thinking and qualitative data from the students. Teachers are not so much interested in implementing standardized testing which would seem to be too much of a “a finite set of benchmarks and achievements.”

4.21 Summary for Teacher Interviews—Sustainability Factors and Triangulation of the Data

Previous research (Bain, 2007; Datnow, 2002; Desimone, 2002; Elsworth et al., 2004; Fullan, 2007; Levin, 2007; Meirs et al., 2006; Ridley & Kendall, 2005) suggests that these eight sustainability factors can have a positive effect on the sustainability of the innovation, but when these factors are not present, teachers’ ability or motivation to implement innovations in their classrooms are hampered and innovations can be prevented from embedding or lasting in schools. Results of the classroom observations (from the researcher’s perspective), teacher surveys (from the teachers’ perspective), and student interviews (from the students’ perspective) show overall increases in fidelity of the core pedagogical components of the SEM in classrooms at Glenwood Academy.
Teacher perceptions concerning the eight sustainability factors and their impact on the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching were positive. Teacher responses for the successful impact of each sustainability factor were 81% or higher (completely successful plus successful ratings) except for Comprehensiveness of the Reform Model in Phase 1 (68%) and Attention Given to Time Issues in Phase 1 (33%) and in Phase 2 (71%). Attention Given to Time Issues was also the factor that evidenced the greatest increase in success from the teachers’ perspective from Phase 1 to Phase 2. Teachers did not report completely unsuccessful ratings for any of the sustainability factors in this study.

Low ratings are seen for Attention Given to Time Issues and its successful impact on the implementation of Curriculum Modification Techniques (three unsuccessful in Phase 1 and three unsuccessful in Phase 2) and Enrichment Learning and Teaching (three unsuccessful in Phase 1 and two unsuccessful in Phase 2). Only one teacher (in Phase 1) rated Attention Given to Time Issues and its impact on the Total Talent Portfolio as unsuccessful.

Low ratings on this factor might account for teachers’ unsuccessful or neutral perceptions of their implementation of Curriculum Modification Techniques and Enrichment Learning and Teaching. Teachers’ low ratings of Attention Given to Time Issues could also have impacted the Classroom Observations that show Curriculum Modification Techniques as not observed in 57% of the observed lessons in Phase 1 and 32% of the lessons in Phase 2. In Phase 1, 9% and in Phase 2, 4% of the observed lessons did not evidence Enrichment Learning and Teaching items. However, all of the students reported Curriculum Modification Techniques as existing in their classrooms either all of the time or sometimes in both Phases. In Phase 1, 11% of the students reported Enrichment Learning and Teaching as never and 6% of the students gave this rating in Phase 2. More students reported a nonexistence of the Total Talent Portfolio
(15% in Phase 1 and 10% in Phase 2) than for Curriculum Modification Techniques or Enrichment Learning and Teaching.

According to teachers’ qualitative data from the teacher surveys, their low ratings of Attention to Time Issues may not have directly affected their implementation of Curriculum Modification Techniques and Enrichment Learning and Teaching. Some have coped by using their time differently. Some are resigned to the fact that it is just going to cost more time; as one teacher shared, “[this] school reform is so time consuming—yet so worth it. I don’t know what the solution might be.” Some believe that they would have issues with time even if SEM were not being implemented, “We will never have enough time though.” Other teachers reported that, though the components are being implemented, more time would benefit the outcomes: “Time would provide a higher quality of implementation.”

Some teachers perceived years of teaching experience to be an influencing factor on Positive Teacher Attitudes and Perceptions and Attention Given to Time Issues. While considering Positive Teacher Attitudes and Perceptions concerning Curriculum Modification Techniques, one teacher commented, “I sense a real divide. The older teachers are less willing and I feel the younger teachers are much more willing. Long time teachers are further away from prepping lesson plans that are differentiated in nature. The more on-board people see others [to be], the more they change themselves. Younger teachers set the bar . . . for instance [in the use of] the Smart Board.”

Less experienced teachers may have received significantly different instruction in teacher’s college (than the veteran teachers did) which may have been more similar to SEM philosophy. This would make the transition to SEM implementation easier; as one less experienced teacher shared, “I was just looking over a few of my teacher college lessons and reflections the other day and I was pleasantly surprised to see a lot of SEM language in those pieces.”
When reporting on the impact that Attention Given to Time Issues had on teachers’ implementation of SEM, three teachers shared that time was not an issue in their implementation. These three teachers were the only teachers that had practiced for 5 years or less. Classroom observations do show these three teachers as having the highest overall mean implementation (82%, 86%, and 85%). However, Student Interviews (Part 1 showing the existence of the three pedagogical components in the classrooms all of the time) show that from the students’ perspectives, these teachers do indeed show high levels of implementation of the pedagogical components of the SEM, but so did two other teachers, one falling in the 6–10 year range and the other with over 20 years of teaching experience. Individual results of teacher surveys show the most successful implementation (an average of completely successful and successful ratings for all three core pedagogical components) in Phase 2, for example, was for one less experienced teacher (100%) and one teacher with 11–20 of experience (93%) and a teacher with over 20 years of teaching experience (92%).

Teacher interviews show high ratings for all items concerning Student Achievement. Teachers admitted their responses to be subjective, not supported by statistical test scores, yet they were convinced that increased student achievement occurred as a result of SEM implementation. Student interview results support teacher findings. When rating the successful impact that SEM implementation had on students’ learning experience, student responses were very positive (completely successful and successful ratings combined). In Phase 1, 86% (Total Talent Portfolio), 88% (Curriculum Modification Techniques), and 76% (Enrichment Learning and Teaching) of students provided successful ratings for SEM implementation and its impact on their learning experience. In Phase 2, 81% (Total Talent Portfolio), 95% (Curriculum Modification Techniques), and 79% (Enrichment Learning and Teaching) of students provided successful ratings.
Results of the Teacher Interviews address the second research question, *How does this practice fidelity, or the lack thereof, relate to the sustainability of the SEM at Glenwood Academy?* and the research subquestions, *How do teachers rate the success of the eight sustainability factors as indicated in the review of the literature and How do teachers see these factors impacting the core pedagogical practices that are associated with the SEM, both school-wide and in their personal practice?* as follows:

- Results of the classroom observations (from the researcher’s perspective), teacher surveys (from the teachers’ perspective), and student interviews (from the students’ perspective) show overall increases in fidelity of the core pedagogical components of the SEM in classrooms at Glenwood Academy. Teacher perceptions concerning the eight sustainability factors and their impact on the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching were very positive. Teachers perceived each sustainability factor as crucial to their successful implementation of the SEM.

- Teacher responses for the overall successful impact of each sustainability factor were 81% or higher (*completely successful* plus *successful* ratings) except for Comprehensiveness of the Reform Model in Phase 1 (68%) and Attention Given to Time Issues in Phase 1 (33%) and in Phase 2 (71%).

- Low ratings are seen for Attention Given to Time Issues and its successful impact on the implementation of Curriculum Modification Techniques and Enrichment Learning and Teaching. One teacher (in Phase 1) rated Attention Given to Time Issues and its impact on the Total Talent Portfolio as *unsuccessful.*
4.22 Summary and Triangulation of the Data for Classroom Observations, Teacher Surveys, Student Interviews, and Teacher Interviews—SOS Principles

When viewed together, the results from the classroom observations, teacher surveys, student interviews, and teacher interviews also address the third research question that pertains to the SOS theory: To what extent are the theoretical principles associated with the SOS theory reflected in the implementation of the SEM at Glenwood Academy? The study was designed to identify the continuities and discontinuities necessary to indicate the presence or absence of the theoretical principles. In addition to the aforementioned data gathering, the presence of the SOS principles was also determined by direct questioning using the administrator protocol.

4.22.1 Simple rules.

- Qualitative and quantitative responses to the classroom observations, teacher surveys, student interviews, and teacher interviews reflected a knowledge and a commitment to the SEM teaching and learning approaches (the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching) and the rules that underpin those practices and their adoption. All stakeholders and methods reported similar results and showed moderate to high practice fidelity and increased fidelity over time. The similarity in these reports reflected shared assumptions about SEM practice and a consistency amongst the various levels of members—the researcher, teachers, and the students. The rules were seen to drive the way teaching and learning took place in the classrooms—evidencing the use of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching.

- The three pedagogical components of the SEM that were the focus of each method in this study reflected the simple rules of the school.
• The simple rules were articulated through many lesson-planning tools shared among teachers as they collaborated during the professional development days and division meetings (for example student inventory tools, various differentiated instruction tools, lesson plan outlines that included SEM differentiation).

• A set of beliefs and values of the SEM was articulated through off-site (Confratute) and on-site professional development.

4.22.2 Embedded design.

• Embedded design means that the simple rules are embedded in the school’s design. The teachers reported that the pedagogical framework of the SEM was becoming foundational to their teaching before the study occurred and would continue to be the focus after the study was completed. Teachers repeatedly referred to the on-site professional development and the off-site professional development (Confratute) as the means by which SEM is learned, practiced, and embedded into the design of the school. These professional development programs were part of the school’s design.

• Discussions concerning the implementation of the pedagogical components of the SEM occurred at various groups employed to implement the school’s curriculum—the AAC, the SEM team, division head meetings, division meetings, and full-staff professional development days. This ongoing engagement with the teaching approaches helped to embed SEM practice into the day-to-day design and practice of the school.

• The simple rules became embedded further into the school design as teacher positions were created in order to increase SEM implementation. This included the SEM team (which consisted of a Type I coordinator, a Type II coordinator, and a Type III coordinator) who became the SEM representatives on the AAC, a committee that oversaw all academic and admissions matters in the school.
• There were also some indications from teacher interviews that showed the SEM may not be fully embedded and that the schema may not yet be fully evolved. The teacher ratings for Attention Given to Time Issues was one. However, as emergent feedback took place throughout Phase 1, teacher responses concerning the success of Attention Given to Time Issues increased from 33% in Phase 1 to 71% in Phase 2 (combined ratings of completely successful and successful).

Teachers also reported a lack of comprehensiveness in various components of SEM, for example, although Type I enrichment, Type II enrichment, and clusters were perceived to be schoolwide, the use of the Renzulli Learning System was not perceived to be comprehensive.

4.22.3 Similarity at scale.

• The study gathered data at different levels of the school community—student, teachers, and administrators. These groups reported a common picture of what was occurring in the school regarding implementation of the SEM. The responses to the items on the data collection instruments were similar for students, teachers, and the researcher as all components of the SEM were shown to increase in practice fidelity over time.

• A pattern language that supported the schema was used by the teachers and by the students in their written and verbal responses throughout the various methods. They showed understanding of many SEM-related words and phrases, for example, “curriculum compacting,” “IIM,” “interest inventory,” “learning styles,” “Total Talent Portfolio,” and “Type I enrichment.”

• The high ratings for the sustainability factor Comprehensiveness of the Reform Model (98% of teachers in Phase 2 reported that its impact on the SEM was completely successful or successful) was evidence of similarity at scale.
• Programs intended to embed the SEM existed at multiple levels of the school’s design. For example, the Renzulli Learning System was utilized by students and teachers, tailoring teaching and learning to meet the specific needs of students; both on-site and off-site professional development was designed to explicitly embed SEM research-based practices into all levels of the school; multiage clusters (involving students, teachers, administrators, and parents) were implemented to allow students the opportunities to investigate real-world problems, providing high-end learning experiences for all students.

• Similarity at scale was also evident in the use of Total Talent Portfolios. Not only were various talent and interest inventories used with students (directing their learning in class, in clusters, or their skills in extracurricular activities), but they were also implemented with teachers during a professional development activity. Plans were also in place to use a talent and interest survey for parents so that they can offer volunteer services in ways that suit their giftedness best.

4.22.4 Common pattern language.

• A common pattern language was used by the researcher, teachers, and students, which supported the schema. Teachers and students showed knowledge of the key features of the lexicon of the SEM and were able to use it throughout interviews and in professional conversation. Teachers also reported that parents were able to converse using some SEM words and phrases. Pattern language was not perceived to be fluent, however, amongst participants. Less fluency in student participants (also noted for parents) indicated an opportunity for further embedding of SEM at all levels. As a result of emergent feedback during Phase 2 of the study, an SEM glossary was developed and distributed to teachers, administrators, students, and parents because “when all members of a school community know and apply these terms, they possess the prerequisite knowledge
and language to not only share in the use of those practices but also benefit from their achievement effects” (Bain, 2007, p. 46).

- Teachers reported that a common pattern language was promoted through Professional Development and the Collaboration of Staff. This common pattern language was perceived by teachers to increase the comprehensiveness of SEM in the school.

4.22.5 Emergent feedback.

- Feedback concerning the implementation of the SEM pedagogical components was gathered continually, and next steps decisions were made as a result. For example, after the first phase of data collection, only 17% of the observations showed that teachers’ lesson plans evidenced SEM differentiation. Through this feedback, that emerged directly from the implementation process, a plan of action was decided upon during a professional development day, and a lesson plan tool was developed. In the second phase of the study, 80% of the observations evidenced SEM differentiation in the teachers’ lesson plans. Various tools have been developed as a result of such feedback (curriculum compacting forms, cluster evaluation surveys, differentiated instructional activity plans, learning style inventory tools) to promote ongoing implementation of the SEM at Glenwood Academy.

- Division meeting and professional development day agendas required teachers to provide ongoing feedback regarding their implementation of the SEM components in their classrooms. Action plans resulted from these collaborative meetings.

- Emergent feedback was also evident as the classroom observation protocol items were integrated into the school’s teacher evaluation process.
• Feedback from the students concerning their experience after each session of clusters helped the SEM team decide how to run the next session of clusters and what disciplines of study students were interested in engaging in. This feedback was instrumental in increasing the success level of clusters, not only throughout the phases of study but also subsequent to the phases of study.

• A routine practice of acquiring student feedback (by implementing various items from the student interview protocol) through one-on-one interviews was integrated into the design of the school as a result of this study.

4.22.6 Dispersed control and bottom-up leadership.

• The school’s commitment to adopting SEM provided new leadership opportunities (for example teachers serving as SEM team leaders, teachers attending Confratute and specializing in various areas of SEM practice, then leading the staff in professional development) that allowed the previous leadership to share responsibility for the initiative, to disperse control. These teacher-leaders in turn dispersed control to other teachers who extended dispersal of control to students. For example, teacher-leaders taught other teachers how to organize and facilitate clusters. Teachers then taught students what a cluster was, how clusters fit into the SEM framework, and how students can be self-directed in their learning, within a cluster context.

• SEM implementation enabled students to become change agents in unique ways. For example, clusters were driven by students, not taught by teachers. The Independent Investigation Method (IIM), a Type II activity taught throughout all grade levels, allowed students to become experts in various research fields and to share their expertise with fellow students.

• The sustainability factor Strong and Supportive Leadership was reported by the teachers as necessary, but SEM was perceived as empowering all teachers to lead
and to help move SEM forward in the school. When reporting on the sustainability factor Student Achievement, teachers noted that bottom-up leadership was evident. Students have become more aware of their strengths, have made choices based on these strengths, and have become experts in various areas of study. They were beginning to drive their own learning and to propel SEM forward as a result.

4.22.7 School-level schema.

• Evidence of all of the SOS principles was indicative of a school-level schema. A school schema was also evident, as there was an embedding of a common pattern language of some members in the school.

• There was a consistency and regularity of responses of agents (researcher, teachers, students) due to a common framework.

• Even the students demonstrated an understanding of the SEM pedagogical components and their impact on their teaching and learning experience at Glenwood Academy.

• Shared language, embedded design, and emergent feedback suggest a shared schema and also note how it can be developed.

4.23 Self-organizing School Principles—Administrators’ Perspectives

A fourth perspective for this study was sought from the administrators of Glenwood Academy. Administrators were not directly involved in the day-to-day implementation of the SEM pedagogical components (except for the Vice Principal whose additional responsibility to administrative duties included teaching some classes). The Self-organizing Schools (SOS) principles were used as a framework to gain administrator perspectives for this study. SOS principles provide a theoretical lens by which a deeper understanding of school reform implementation at Glenwood Academy
can be gained. It is useful for this study particularly because as it has been shown to predict and explain both practice fidelity and sustainability (Bain, 2007). The SOS principles are detected in the form of direct questioning within the administrator protocol. The SOS principles are also detected through their representation in the data and methods of the study. Finally, the SOS principles are identified through evidence of performance in terms of sustainability and practice fidelity whereby the sustained levels of implementation are used in collaboration with the other evidence sources to infer evidence of the theory.

Data from face-to-face interviews with each administrator (Finance Director, Admissions Director, Vice Principal, and Principal) were used to determine the existence of the SOS principles at Glenwood Academy. Previous to the data collection phase of this study, a seminar was provided for the staff of the school to inform them of the nature of the study, which included an explanation of the SOS principles. Administrator participants were offered additional explanation in print at this time, regarding the theoretical framework. Administrators did not have, nor were they expected to have, a deep understanding of the SOS principles before participating in the study. At the time of the interviews, verbal discussion as well as written explanation concerning the SOS principles were offered to each administrator. Administrators were provided with a print copy of the interview questions. Each question commenced with a written explanation of each principle. The researcher and the administrators had the opportunity to discuss each of these questions verbally as well (both in Phase 1 and then again in Phase 2). The results did not necessarily yield a comprehensive understanding of the theory. Each administrator answered the questions as they understood the principles.

The Administrator Interview Protocol (see Appendix E) was used to conduct the one-on-one interviews with each administrator, once in Phase 1 and once in Phase 2. The purpose of these interviews was to address the following research questions:
To what extent are the theoretical principles associated with the SOS theory reflected in the implementation of the SEM at Glenwood Academy?

- Are the assumptions or the “simple rules” of the SEM widely held and understood?
- Is the SEM embedded in the broader design of the school, creating similarity at scale?
- Do members of the school community share a common pattern language in relation to the pedagogical features of the SEM?
- Is there evidence of emergent feedback?
- Does the SEM disperse control of the SEM practices and procedures across the school?
- Is there evidence of bottom-up self-organization as a product of the use of the SEM?
- Is there evidence of a school schema for the SEM?

The following section describes the data regarding the SOS principles with interview responses from Phase 1 and Phase 2 combined into one narrative. Data from both phases are combined for this section, as administrator responses did not necessarily change from Phase 1 to Phase 2, but administrators expanded on their first set of responses with more informed information later in the school year. This section addresses the SOS principles, first simple rules, followed by similarity at scale and embedded design, emergent feedback, dispersed control and bottom-up leadership, and finally school-level schema and pattern language. This section ends with a summary of the interview results and of the SOS principles as they relate to SEM implementation at Glenwood Academy.

4.23.1 Simple rules. Administrators agreed that Glenwood Academy has assigned value on a few specific things and are committed to pouring energy into those
few things. The simple rules of the SEM, that are widely held and understood by the staff of Glenwood Academy, according to the administrators are as follows: Learning involves developing the whole child, everyone deserves the chance to be engaged in learning, and one size does not fit all.

Seeing each child as a whole, rather than an academic vessel to be filled, was noted by administrators in Phase 1 and in Phase 2 as a simple rule of SEM at Glenwood Academy. One administrator commented, “Private education often talks only of academics but I see it as not being balanced if we don’t take the whole child into account—we don’t only look at one aspect.” The physical, social, spiritual, and intellectual are all components of a child that are considered, and the Total Talent Portfolio is one way of speaking into this simple rule. It was also noted that this simple rule applies to teachers. Professional Development of the staff is of key importance, and administration explicitly addresses all four components of teachers’ growth at each on-site Professional Development day as well as in an annual teacher goal-setting process. Teachers also demonstrated a value in this simple rule, specifically as they demonstrated the implementation of the Total Talent Portfolios in classroom observations and teacher surveys.

A second simple rule understood by the administrators in both Phase 1 and Phase 2 of the study was that engaged learning is for each child, whether they be a struggling learner, an average student, or a high achiever. Engagement in learning for high achievers was seen as particularly difficult, and underachievement is often the result. Many parents seek private education for their children because the children were not being challenged elsewhere. Therefore, the school is comprised of many high-achieving students. Administrators expressed a desire for these students to be engaged, not sitting in the back of the classrooms, bored. Teaching practices need to change in order to be able to meet these various academic needs, all at once, all in one classroom. Enrichment
needs to be offered to all students so each one can strive to reach his or her full potential, “Going beyond the basic requirements of the Ministry guidelines, giving students that opportunity to take it to another level.” Curriculum Modification Techniques and Enrichment Learning and Teaching (Type I, Type II, and Type III) were all seen by administrators as addressing these issues of learning at Glenwood Academy.

Engagement of students was also seen to be essential from a business point of view, “In order for an elementary private school to be effective you need the parent community behind you. They need to know their children are engaged.” High practice fidelity was seen on classroom observations and teacher surveys for Enrichment Learning and Teaching, demonstrating a practical application in the classrooms of Glenwood Academy concerning this shared simple rule.

The third simple rule acknowledged by the administrators, both in Phase 1 and in Phase 2, was that effective teaching is differentiated by nature. It is essential that the school offers clusters (often beyond the Ministry requirements), offers choice (even within the Ministry requirements), and allows students to compact out of learning expectations that they have previously achieved. Differentiation needs to happen, not only according to academic ability but according to talents, interests, strengths, and gifts as well. Differentiation is seen by the administrators as something that is valued and is happening in the school, “I see different kids doing different math projects, not everyone doing the same thing. Lots of time and energy goes into preparing these lessons, teachers spend lots of energy researching.”

The researcher reported low levels of Curriculum Modification Techniques in Phase 1 of the study and moderate levels in Phase 2 of the study. Teachers provided moderate to high ratings of successful implementation of Curriculum Modification Techniques in their classrooms, demonstrating that the administrators’ understanding of differentiated instruction as a simple rule is widely held in the school.
The qualitative and quantitative responses to the classroom observations, teacher surveys, student interviews, and teacher interviews reflected a knowledge and a commitment to the SEM teaching and learning approaches (the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching). These approaches reflect the simple rules as articulated by the administrators. The similar results of all stakeholders, showing moderate to high practice fidelity and increased fidelity over time, show a commitment to these simple rules.

4.23.2 Similarity at scale and embedded design. Similarity at scale can happen when the key features of the SEM are embedded at all levels of the school, bringing a practical day-to-day meaning to the simple rules of the model. Administrators of Glenwood Academy saw evidence of the impact of the SEM at multiple levels of the school, both in Phase 1 of the study and in Phase 2. The uniqueness of each individual student— their interests, talents, abilities, and gifts, is taken into consideration as teachers design and carry out lessons in the classrooms, employing student Total Talent Portfolios. This celebration of the uniqueness of each person is carried out beyond the classroom, as one administrator noted. Students are empowered to use their strengths and giftedness in a variety of ways—leadership in sports, leadership with younger students in the school, student council, service council, clusters, and schoolwide arts performances. Opportunities within the school to facilitate the uniqueness of students are growing as a result of teachers and administrators becoming more mindful of SEM theory.

Teachers are also celebrated for their gifts and passions as they take leadership in various areas of the school. Professional development days have been a good example of this, a “shared task—everyone can play a part,” as one administrator reported. Teachers are perceived to be “experts” in areas of SEM. They have both formally and informally shared their knowledge and skills concerning SEM implementation with other teachers. Much of the on-site professional development has included teachers teaching teachers.
Teachers are becoming more aware of their own talents and interests and how these can be used to further SEM in the school. Teachers began the present school year taking personality inventories themselves (creating their own Total Talent Portfolio), prompting them to become more aware of their uniqueness and how this affects the collaborative process of day-to-day life at the school. Many teachers teach subjects that they are passionate about, for example music, drama, visual art, or math. There are plans as well to involve parents in this process, giving them the opportunity to take part in talent inventories and streaming their volunteer energy into the school in a more intentional fashion.

A factor that was reported by the administrators to be evidence of similarity at scale is the range of people that are involved, not only in the practice but in the theory of SEM. SEM belief and practice are not left to the teaching faculty of the school alone. Administrators pointed out that the school invested in Professional Development at Confratute for the Admissions Director as well. As well, the Admissions Director and the Finance Director both attend monthly on-site PD days so that they can be better informed of the teaching practices in the school. Cluster facilitation over the past 2 years has been carried out by parents, board members, school maintenance personnel, office administrators, and community volunteers. They are offered SEM training on how to facilitate clusters, by one of the SEM Team members, before proceeding with the clusters. This illustrates the SOS principle, similarity at scale. The schema is represented in the roles of all agents at different levels of the school.

The administrators reported that the SEM is embedded within key areas of the school. On-site and off-site professional development has focused on the implementation of the pedagogical components of the SEM for the past 5 years. This focus was seen, not only by the administrators but also by the teachers in their surveys and in their interviews, as a key factor in the sustainability of the SEM so far. As a result of the
effective professional development, the implementation of the three pedagogical components of the SEM is evident in classroom practice, as seen in the classroom observation results, and has increased from Phase 1 to Phase 2.

There is room for growth in this area for sure. One administrator voiced a need for the pattern language to be become more familiar so that the simple rules, the school-level schema will be promoted further, embedding and extending the influence of SEM in the school. Another administrator commented, “I would like to see more SEM in our administration organization—in our job responsibilities in administration. We could do a better job of having people serve in their gifts. One is good at mentoring other teachers, then their time should be spent at that.”

4.23.3 Pattern language. An important feature of a school-level schema is a common language shared among members, one that is necessary for collaboration. All participating administrators agreed, both in Phase 1 and in Phase 2, that Glenwood Academy shares a pattern language. Words or phrases that are related to SEM and are shared amongst members of the community include SEM, differentiation, clusters, enrichment, Type I, Type II, Type III, curriculum compacting, strengths and gifts, Total Talent Portfolio, educating the whole child, Independent Investigation Method (IIM), authentic learning, and meeting the needs of all students.

This language is shared, not only by teachers but by students, parents, board members, substitute teachers, and support staff as well. But the language is not equally shared among members. In Phase 1 it was noted by one administrator that the language is a “broken language.” For example, teachers who have attended Confratute are much more fluent in the language than those who have not. It was noted in Phase 1 that parents might not know the language as well as the teachers or students. But in Phase 2, after an annual parent survey was conducted (an opportunity for parents to have a voice in all
aspect of the school), it was evident to school administrators that many parents were familiar with the language of SEM.

Sharing a common language was deemed very valuable by Glenwood Academy’s administration, in order to propel the implementation of SEM forward, “I need to hear the language to do my job . . . I need to know it is happening out there so I think I am sensitive to hearing it. I would like to hear more—such as Total Talent Portfolio because I really want to know that people are tapping into interests.” From one administrator’s perspective, the pattern language needs much development: “Language evolves and we are in the early evolutionary stage . . . people are getting to the point where we are starting to get comfortable using it.” At the end of Phase 2, an SEM glossary of words and phrases was created and will be made available to parents, students, board members, and teachers alike, in order to enhance the fluency of this pattern language among members.

4.23.4 Emergent feedback. When asked if there is evidence of emergent feedback at Glenwood Academy—a constant exchange among individuals and groups—the administrators agreed, both in Phase 1 and in Phase 2, that this feedback is apparent, both formally and informally and between groups and individuals.

One administrator suggested that this emergent feedback is particularly evident this year, in part due to this SEM study that is taking place in the school. There was much ongoing feedback which determined the decisions concerning future implementation of SEM for teachers, the administrators, and for the SEM leadership team. As administrators understood emergent feedback, they reported that teachers were feeling more accountable due to the study, there was more SEM talk because of the study, and teachers were probably more successful in their SEM implementation because of that. The study could have put tremendous pressure on the teachers, but due to the fact that the implementation process was introduced slowly and strategically, providing
ample time for adjustment and development, it has been successful. She stated, “There is a fine line between being pushed and being nurtured,” and with the steady revising and changing, constant feedback has been needed in order to move forward. Teachers, students, and administrators were involved in constant feedback with each other and with the researcher in regards to SEM implementation in the classrooms through the process of classroom observations, teacher surveys, student interviews, teacher interviews, and administrator interviews, and collaboratively, this feedback provided the direction needed to set SEM goals for future implementation, for example, how to more effectively implement the Total Talent Portfolio in classrooms, how to best evidence SEM implementation in teachers’ lesson planning, and how to manipulate schedules and planning time so that the sustainability factor Attention Given to Time Issues would not become a hindrance to future increases in the practice fidelity of SEM pedagogical components.

One administrator noted that each time members returned from Confratute, there was a time of valuable feedback and that was very helpful to the rest of the members. Much collaboration aided in moving the entire school to a new level of SEM implementation.

One administrator commented that emergent feedback concerning SEM implementation happens formally and it happens informally at Glenwood Academy. Sometimes this feedback takes place at full-staff professional development days, and sometimes in small teacher groups at the division level. Administrators noted that the level of feedback has increased since the implementation of SEM, and the results have been positive: “Brainstorming has increased the SEM implementation. In the past everything was left to individual teachers, now they share. As well they are held accountable—expected to be part of something bigger. I think teachers feel respected when they share (for example PD days).” Emergent feedback also happens formally as
individual teachers set annual teaching goals. They provide and receive feedback from each other concerning their goals throughout the year as well as provide and receive feedback from the principal at the end of the year. Other examples of formal feedback noted by this same administrator occur when students and facilitators of clusters are asked to evaluate a particular session of clusters. The SEM team takes this evaluation into consideration for planning their next steps. Teacher evaluations also include SEM components, and feedback is formally provided concerning the implementation of the three pedagogical components of the SEM in their classrooms.

Emergent feedback occurs informally as well throughout the year. One administrator suggested that to teachers, emergent feedback comes naturally. Teachers are used to providing ongoing feedback to students all the time. They use this same skill to give and receive feedback from each other. “There are happenstance events as a result of teachers’ enthusiasm, for instance at lunch,” although, this administrator warns teachers still need to fight the temptation to try to function as individuals.

All four administrators agreed that emergent feedback also occurs from group to group. The academic and admissions committee (AAC) made up of parents, board members, administrators, and teachers, are in constant feedback with the SEM team and the division leaders. This system encompasses interconnection among parents, teachers, students, administrators, board members, and various committee members, a system where feedback is required if ongoing implementation of SEM is going to take place. The administrators saw a shared responsibility for the success of SEM: “It is a shared task—everyone can play a part.”

Administrator perspectives were consistent with teacher perspectives. Teachers also reported that feedback, particularly through collaboration with leadership and with each other as well as through professional development, has increased their own practice fidelity of all SEM components. It is through this feedback that decisions are made to
move SEM forward, increasing the embedding of the model further into the school culture.

4.23.5 Dispersed control and bottom-up leadership. Bottom-up self-organization requires collaboration throughout the organization. Administrators were asked if the implementation of SEM dispersed control of SEM practices across the school and if there were networks in place that would help to disperse that control.

Administrators responded positively both in Phase 1 and in Phase 2. All four administrators suggested that communication of SEM practices and procedures was promoted by an efficient and interconnected network structure that involved several key groups. Leaders of each division group of teachers meet twice a month with the academic administrators. They represent the teachers in their divisions at these meetings. They in turn meet with their teachers once a month and represent administration to their teachers. Connections are built among administrators, division heads, teachers, and the students. There are two other key leadership groups, noted by the administrators that are interconnected with the division leaders. The SEM team is comprised of one academic administrator and three teachers who hold specific portfolios (Type I, Type II, and Type III). This team oversees all SEM implementation in the school, and one administrator noted that “providing [these] leadership opportunities has helped to disperse control.” The members of the SEM team are also part of the AAC, who oversee all matters concerning academics and admissions in the school. This furthers the dispersing of SEM practices and procedures to the parent community and to the governing board of the school. “This adds to the ownership of SEM in the school.” As a result of this described network, one administrator pointed out that SEM is a topic of discussion on all committees, even those made up primarily of community volunteers, for example finance, property, and technology committees.
All administrators reported that there was a healthy balance between top-down and bottom-up leadership. One administrator noted that teachers tend to fight change, so without accountability and someone to “turn the key, bring the leadership,” provide the vision, SEM reform is not likely to take place. Teacher interview results corroborate these administrator views. Teachers also reported that SEM provided more opportunities for leadership, but a need for Strong and Supportive Leadership of administration was acknowledged as well. Administrators noted that because a large percentage of the teachers have a leadership role, there is less chance of unhealthy top-down control. One administrator advised that the school must remain committed to rotating the leadership opportunities (division leaders, SEM team, AAC members) in order to further the dispersing of control in future years, “or even change the grades teachers teach. Rotate who leads staff meetings etc. It takes the burden off of a few leaders.”

Another administrator suggested that the addition of new, inexperienced teachers has aided in the dispersing of control. These teachers arrive on the job without established habits and seem to have found it easier to implement SEM practices and to provide leadership in this area. “Having new teachers without a history of teaching, a narrative already written about teaching, has been huge at implementing [SEM].” Another administrator recommended that because teacher leadership is so prevalent in the school, the hiring process must ensure that a willingness to undertake SEM training and implementation is a key component to upcoming contracts.

Administrators saw the responsibility of SEM as shared among members, most of whom see themselves as change agents in the process. One administrator shared, “I see SEM as something we are doing together as a school, not something we are doing to the school.” The “burden” of SEM does not rest on any one person or any one group. SEM has indeed furthered the dispersing of control for Glenwood Academy. However, one administrator cautions that it has not permeated into all levels such as the PTA (parent–
teacher association) or the governing board as much as it should. There is definitely room for growth.

**4.23.6 School-level schema.** The four administrators of the school believed that there was indeed a common belief and practice about teaching and learning that was represented at Glenwood Academy, understood and valued by its members, and informed by SEM research. In both Phase 1 and Phase 2, administrators defined this common school-level schema as the belief that all students are unique. They have unique personalities, gifts, talents, and interests, and these all need to be addressed in their learning environment. Students also have differing academic needs, and each should be afforded the opportunity to reach as high as they possibly can in their learning. In Phase 2, the Admissions Director explained this schema to be a reason why some families are transferring their children to Glenwood Academy:

> It is interesting to me because in the last several tours I’ve done, they’ve all been professional teachers. They are seeing our school through their own children’s education perspective. The public system is limiting in their perspective. The ability to blossom and grow is stifled. When I tell them about what we are doing here, [it is clear that] this [belief/practice] is unique to this area, to Ontario. One woman taught in several countries in the International Baccalaureate program. She wants to tap into her kids’ interests. She compares us to these experiences of hers.

Although the previous responses from the administrators reflect more of a value than a schema, they did provide the following responses that include more SOS schema-like evidence. Because of the obvious variance in the academic needs of students, all four administrators spoke about differentiated education and the school’s belief that an academic program cannot look exactly the same for each student. Enrichment has taken on a new meaning since the implementation of SEM at Glenwood Academy, as it is offered to all students. One administrator noted, “when we previously had an enrichment push, [it] was for top-end students and for [the purpose of] getting great scores on national testing or doing well in academic subjects. Each child is special—this was
valued before but it is now part of our academics—now success is defined in so many other ways.” Another administrator commented that “being smart at this school is cool—it is not frowned upon amongst peers. We’ve tapped into higher academics and a love for learning. To be better!” The high practice fidelity levels of Enrichment Learning and Teaching in classroom observations and teacher survey results support these administrators’ responses.

The belief that all are unique—in talents, interests, and abilities reaches to the teachers, as one administrator pointed out, the school is committed to enhancing the teacher’s lives as well as the students’, particularly through professional development.

Caring and compassion are seen as vital components of the school-level schema, from the administrators’ perspective. Teachers are committed to student achievement and they develop relationships with the students and their parents to enhance this process. They go out of their way to meet students’ needs. One administrator noted, “This care spills over to me even, and compassion, as I went through a rough time in life. It would have turned out differently if I had not been at this school.”

Two of the administrators, both in Phase 1 and Phase 2, commented that though the school schema is evident, “our teachers have a common belief . . . that students need to be reaching high for something, striving forward, whatever that means for that child,” but there may be a predominance of teacher schema over school schema in some instances, in the way this schema is carried out in the classroom. One administrator perceived that most teachers have embraced the change and really believe it and practice it, though it is harder for teachers who have been practicing their craft for many years to buy in.
4.24 Summary for Administrator Interviews—SOS Principles and Triangulation of the Data

The six principles within the context of self-organizing schools have been shown in the past to predict practice fidelity and sustainability of an innovation (Bain, 2007). A recognition of the existence or the absence of these principles throughout the implementation of SEM at Glenwood Academy will help reformers to understand the system as it is and to create a plan for next steps in the implementation process.

Results of administrator interviews surrounding the self-organizing principles echo many of the same concerns, ideas, or themes that were reported in the classroom observations, teachers survey, and student interviews concerning the practice fidelity of the SEM as well as the teacher interviews concerning the sustainability of the SEM as a reform model.

The administrators repeatedly reported that the recognition of the uniqueness of each student is key to the implementation of SEM. All students, whether high achievers or those struggling academically, must be supported in using their gifts, talents, interests, strengths, and skills to reach their full potential. Administrators recognized the Total Talent Portfolio as the component that is building and will continue to build the foundation in achieving this goal. This recognition extends to all Glenwood Academy community members—the teachers, the support staff, the administrators, and the parents. The uniqueness of each child was recognized as a school-level schema and the development of the whole person, not just the intellect, as a simple rule of Glenwood Academy. Celebrating the uniqueness is done at all levels, and by all members in the school (similarity at scale and embedded design). Curriculum Modification Techniques and Enrichment Teaching and Learning strategies provide the means by which teachers turn this value into day-to-day practice in the classrooms.
Administrators identified emergent feedback as critical to embedding the SEM, as key to its sustainability. Emergent feedback is practiced in the school through much Collaboration of Staff and Professional Development. Feedback is noted by administrators as a crucial component of Strong and Effective Leadership in that it helps to disperse control. As shared by both the administrators and the teachers, emergent feedback is happening at all levels of leadership, with many members taking ownership of the model and sharing in the leadership of it. It was noted that there needs to be a balance of healthy accountability and nurturing.

Attention Given to Time issues, one of the sustainability factors rated low by the teachers, was also perceived by the administrators as critical to SEM development. It is essential that leadership provide the time for adjustment and development of the various aspects of SEM, slowly and strategically, if it is to be embedded in the school.

One administrator reported observing a teacher-level schema in the school at times as opposed to a school-level schema. He said that some teachers, although they know and understand SEM theory, struggle to change their practices and implement all characteristics of the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching in their classrooms. Not unlike some of the teacher interview responses, two administrators reported that new and young teachers, because they have developed few teaching habits already, find the implementation of SEM to be less arduous. This variability of SEM implementation reported by administrators corroborates the results of classroom observations, teacher surveys, and student interviews that show inconsistent implementation from teacher to teacher.

Administrator reports, supported by teacher perceptions, indicate an existence of the SOS principles, albeit some of them at only a developing stage. Administrators acknowledged that the school is only in year four of SEM implementation, and they
anticipate constant and consistent presence of the six principles upon further SEM implementation.

These six principles can be seen to underlie practice fidelity and sustainability (Bain, 2007). Classroom observation results, supported by teacher survey and student interview results, show that the key pedagogical components of the SEM were being implemented in the classrooms of Glenwood Academy and this observable change in the classrooms increased over time, providing site-based evidence of practice fidelity. Teacher interviews show moderate to high levels of success of all sustainability factors (except for Attention Given to Time Issues), indicating that with continued implementation this reform model may become embedded into the existing structure and culture of the school, built in, lasting, and no longer thought of as a new project.

### 4.25 Focus Group Interviews

Focus group interviews were used to collect shared understanding from the teacher participants of the study regarding practice fidelity, sustainability, and the SOS principles. Teachers were divided into two focus groups, and discussions took place once at the end of Phase 2 of the study. The researcher implemented the Focus Group Interview protocol (see Appendix F) to guide the conversation. The questions emerged from the classroom observations, teacher surveys, student interviews, teacher interviews, and administrator interviews. The discussion was facilitated by the researcher, using the protocol as a guideline, but leaving room for teachers to share what was important to them about the implementation of the SEM, practice fidelity, sustainability, and Self-organizing School principles. The discussions presented here represent a culminating summary of the rich data presented so far in this results section.

Focus group conversations corroborated many of the findings from the researcher (classroom observations), the teachers (teacher survey and teacher interviews), the
students (student interviews), and the administrators (administrator interviews) concerning practice fidelity, sustainability, and the self-organizing school principles.

4.25.1 Successes and challenges. Teachers shared examples of their greatest successes in SEM implementation as well as their greatest challenges. Perceived successes and challenges varied from teacher to teacher. Several teachers reported that their greatest implementation success was in the Total Talent Portfolio implementation, specifically in students choosing their topics and their modes of expression. One teacher noted, concerning recent science projects in her classroom, “Typically they are done quite well, because they have had choices and have enjoyed what they are doing. I am always excited afresh and I think that is the reason for their success of the projects—they have chosen what they feel their strengths are.” Several teachers reported that their greatest implementation successes were in Curriculum Modification Techniques, “being able to curriculum compact students out . . . they keep asking for it, so not only are they doing it but they really want to do it.” Another teacher commented, “I love the differentiation, your class is buzzing, kids are all doing different things and they are all involved in things at different levels.” Other teachers reported that their greatest implementation successes came out of Enrichment Learning and Teaching, specifically the higher order thinking, the curiosity in students, and seeing students just love learning.

Challenges or barriers to SEM implementation that were expressed by the teachers included the motivation of students to want to make choices and to reach high in their learning. Teachers noted that there are some students that do not necessarily want to do enrichment or independent learning activities, but would rather be directed by their teachers.

Another challenge expressed by several teachers was in trying to find the time to properly implement differentiation and enrichment. “You want to modify the curriculum but you have to gather, find things for them to do, and if you had all the time in the world
you could make an amazing program.” Some primary and junior teachers shared that having an extra adult in the room solved many implementation problems, particularly an Education Assistant who could look after one group of learners while the teacher looked after another.

**4.25.2 Implementation increases over time.** Although teachers have experienced challenges to implementing SEM, there were still increases in implementation levels from Phase 1 to Phase 2 of the study. Teachers attributed this implementation increase, in spite of their challenges, to the four following factors: time of year (fall vs. spring or winter), teacher buy-in to SEM philosophy, Professional Development, and the SEM study. Several teachers felt that implementation was lower in the fall (Phase 1) because this is the time of year where they are just getting to know their students, and as well, teachers are focusing on setting routines and procedures at this time. For some teachers, only the most obvious exceptionalities in the class, the ones that really stand out, receive differentiation in the first few weeks of school. This is not a time that some teachers feel they can be most creative with their students. Some teachers expressed that had there been a third phase to the study in the same school year, implementation would increase yet again, because of their familiarity with the students. As well, teachers reported that as they experience success with various components of SEM, they build on those successes and upon their confidence in implementation.

Several teachers reported that although there were challenges to implementing a new model in the school, they were able to overcome the challenges because they believe strongly in the SEM and have seen the results in student learning and achievement. Student success was a great motivating factor noted by many teachers that attributed to their successful implementation of the SEM, for the increased implementation over time.
Professional Development throughout the year of the study was also seen as a motivating factor in successful implementation of SEM components in spite of the challenges teachers faced. Challenges were addressed collaboratively through Professional Development throughout the school year, which attributed to increased implementation in Phase 2.

Some teachers believed that their implementation was influenced by the fact that the SEM study was being conducted in the school. The study brought about increased awareness of SEM and, as a result, increased implementation. As well, by Phase 2 of the study, teachers were more familiar with the protocols for the classroom observations and the teacher surveys, resulting in increased implementation from Phase 1. One teacher attributed the reflective aspect of the study to being a cause for successful implementation, “As teachers more and more we are reflective and that affects our practice. It’s got to. As we were involved with this study and we sat with you . . . those questions are deep . . . ”

4.25.3 Continued implementation increases. In order to experience continued success in implementing the SEM at Glenwood, teachers suggested that various factors should be considered. Some teachers saw more time to plan, meet with other teachers, or to put together effective lessons, plan clusters, explore Renzulli Learning, and explore other SEM resources would be one beneficial change. More Professional Development on the Total Talent Portfolio was also seen to be important—not in collecting the inventory information, but in putting it together into a useful portfolio that will impact their teaching. Teachers hoped that continued practical Professional Development takes place, Professional Development that involves time for much collaboration, as this would affect ongoing practice fidelity of the SEM.

Teachers would also like to have a pooling of resources that are organized in such a way so as to cut down on teachers’ time in looking for “just the right resources” to
carry out their differentiated lessons. Another suggestion, an “ideal” would be to have an extra staff member that could work with resources or be that extra set of hands in the classrooms.

4.25.4 Critical sustainability factors. Teachers agreed that the eight sustainability factors were critical to SEM implementation at Glenwood Academy. Teacher interviews show that most sustainability factors were perceived by the teachers as having a positive impact on SEM implementation and on the pedagogical components of the SEM. When the factors are present in the school, implementing SEM is easier, but an absence of the factors presents challenges to implementation. However, teachers agree that the eight factors will not continue to have a positive impact on SEM implementation unless they are continually recognized and intentionally nurtured. As Desimone (2002) also found, teachers prefer professional development that is tailored to their specific needs in meeting the model in their classrooms. Teachers at Glenwood reported professional development that was specific and practical. The Professional Development was undertaken by all staff, which sent a clear message to the teachers that the SEM is valued and that the administrators are serious about school change. One component of Professional Development that was valued the most by teachers was the opportunity for collaboration, and this supports previous school reform studies (Elsworth et al., 2004).

Teachers at Glenwood Academy reported that leadership is a key factor in their implementation of the SEM. When administrators are seen as committed to the model or innovation, this affects the rest of the staff in their implementation (Elsworth et al., 2004; Meirs et al., 2006). The development of teacher leaders was also noted in previous literature as contributing factor to sustainability (Elsworth et al. 2004; Ridley & Kendall, 2005).
4.25.5 Teachers and change. There was a perceived difference throughout the study in the responses of the students and teachers. Students did not hesitate to respond to the questions on the student interview protocol. They responded directly to the questions. They communicated that either they experienced the components in their classrooms, or they did not. They responded that the components were successful to their own learning experience or they were not. Teachers however, approached the study with a personal perspective. They demonstrated a technical aspect along with a sense of self. Teachers were hardest on themselves and were very conscious of the progress of others. If others succeeded around them, they felt they were more likely to succeed as well. Collaboration was seen as key to their success.

Teachers expressed a fear of change and a fear of not “getting it right.” When they experienced successful implementation of an item once, such as clusters or curriculum compacting in Phase 1, they reported a sense of relief and confidence that they could experience this success again in Phase 2. The second application of a new component took much less time and effort. Teachers reported taking time to build comfort and understanding of new methods. Repetition in Professional Development was seen as essential, and the slow pace of SEM implementation was seen as necessary. Bodilly (1998) found that teachers might take years of implementing a reform before they fully understand what the design entails.

Teachers saw opportunities throughout Phase 1 and Phase 2 to increase their implementation through emergent feedback in their division meetings, informal collaboration, and Professional Development times. They became more aware of the classroom observation protocols and the teacher survey protocols, and by Phase 2 they intentionally addressed them.
Time was teachers’ greatest reported challenge. Meiers et al. (2006) also report that lack of time for collaboration was a top hindering factor in implementing the Literacy and Numeracy Strategy.

4.26 Summary—Focus Group Interviews

Results from the Focus Group Interviews supported the findings from the classroom observations, teacher surveys, teacher interviews, student interviews, and administrator interviews. Specifically, they shed some light on the moderate to high levels of practice fidelity, the increases in implementation of SEM pedagogical components from Phase 1 to Phase 2, and the variability from teacher to teacher in the school. Teachers explain that because their personal philosophies of education match closely with those of the SEM and because they see positive results in student learning, they are able to overcome the high demands that implementing a new site-based reform model bring.

4.27 Conclusion

This chapter has described the findings of this study. Results from classroom observations, teacher surveys, student interviews, administrator interviews, and focus group interviews concerning practice fidelity, sustainability, and the SOS theory were presented, discussed, summarized, and triangulated. The following chapter provides the discussion and conclusion of this study,
Chapter Five: Discussion and Conclusion

The purpose of this case study was to look deeply into the experience of one school to determine whether it is possible to sustain a site-based school reform over time and to examine the factors that contribute to practice fidelity and sustainability. The literature informs us that school reforms are seldom sustained and that their impact on schools is minimal (Bain, 2007; Datnow, 2002, 2005; Elmore, 1996; Hargreaves & Goodson, 2006; Tyack & Cuban, 1995). The findings in this study are not so bleak. The longevity, the embedding of a reform model may be possible when the practice fidelity and its relationship to sustainability are addressed. Additionally, approaching this site-based reform study with a theory provides further insight into the school’s response to the changes brought about by the implementation of the reform model, providing more indication as to whether the school is able, contrary to the literature, to sustain the site-based reform model and indeed be positively impacted by it.

5.1 Practice Fidelity and Sustainability in School Reform

School reforms in the past have seldom met their desired outcomes, and the literature presents four major issues related to this: limited data on practice fidelity; fading implementation over time; high variance from teacher to teacher within schools; and difficulty in sustaining reforms and their impact on schools.

All three perspectives in this study—the teachers’, students’, and the researcher’s—show higher existence and higher success ratings of the three pedagogical components of the SEM in the second phase of the study than in the first phase. These findings contrast previous studies of site-based reforms which show little indication of high implementation levels over time and which also tend to rely on indirect forms of data collection, as opposed to this study where direct classroom observations were used (Bain, 2007; Datnow, 2003; O’Donnell, 2008). The results of this study show that it is possible to sustain the implementation of the core pedagogical components of a model.
with practice fidelity over time. This goes against many previous findings (Berends, Bodilly et al., 2002; Cook et al., 1999; Datnow, 2003) that show lack of implementation over time.

Previous studies on school reform indicate high levels of variation from classroom to classroom (Berends et al., 2002; Cook et al., 1999; Datnow, 2003; Zhang et al., 2005). The results of this study show that the majority of teachers achieved moderate to high levels of practice fidelity, and each of the 10 teachers’ mean implementation level increased from Phase 1 to Phase 2. Practice fidelity did vary from teacher to teacher; variability however, reduced slightly over time.

5.2 Beyond a List of Sustainability Factors

This study was designed to identify the presence or absence of the six theoretical principles of the SOS. These principles were identified through evidence of performance in terms of sustainability and practice fidelity. The principles were also detected in the form of direct questioning within the administrator protocol and through their representation in the data and methods of the study.

The moderate to high levels of practice fidelity covary with the responses of the participants in relation to the sustainability of the SEM at the school. By Phase 2 of the study, teacher perspectives indicated high levels of success of each sustainability factor (drawn from reports on site-based and large-scale initiatives) and their impact on the Total Talent Portfolio, Curriculum Modification Techniques, and Enrichment Learning and Teaching. Teacher responses for the successful impact of each sustainability factor were 81% or higher (completely successful plus successful ratings) except for Attention Given to Issues (71%). Overall, these eight sustainability factors were seen to impact all pedagogical components of the SEM in a positive manner, to influence the previously noted levels of practice fidelity. Low ratings were reported for Attention Given to Time Issues and its successful impact on the implementation of Curriculum Modification
Techniques (30% in Phase 1 and 50% in Phase 2) and Enrichment Learning and Teaching (20% in Phase 1). This confirms previous site-based school reform literature which shows a list of deficits as a common problem in site-based reform, but setting out only to meet the deficits has not proven to be successful in sustaining or scaling reforms (Bain, 2007).

In previously cited literature, these eight factors were claimed, were reported on, but were not studied as they were in this investigation. In this study, seven of the eight sustainability factors were perceived to have become embedded into the design of the school. Embedded design is “ensuring that the key features and content of the design are embedded in all of its parts” (Bain, 2007, p. 243). Teachers’ reports on the Comprehensiveness of the Reform Model indicated that the SEM scaled up to all levels of the school (overall, 98% of teachers perceived Comprehensiveness of Reform Model to be \textit{completely successful} or \textit{successful} in Phase 2). This similarity at scale was evident as the key features of the design were embedded in all its parts and the schema looked similar at all levels. The content of the design was embedded in all parts—Total Talent Portfolio, Curriculum Modification Techniques, Enrichment Learning and Teaching were perceived to be promoted through Collaboration of Staff, Professional Development, and Strong and Supportive Leadership, the results of which were also evidenced in the high ratings for Student Achievement (overall ratings show that 98% of teachers perceived Student Achievement to be either \textit{completely successful} or \textit{successful}). A pattern language was implemented by the members of the school community, and the key features of the design were perceived to be generated through Professional Development and Collaboration of Staff, then passed on to students through the implementation of three pedagogical components in the classrooms. The language was evident in the use of SEM terminology by teachers, students, and administrators in their responses to the interviews and surveys. Data concerning Strong and Supportive
Leadership indicated that bottom-up leadership was evident as members at all levels saw themselves as part of the change in the school. Practice fidelity was sustained and improved over the two phases of study, and during this time the implementation of the SEM provided opportunities for leadership for both teachers and students, generating a change from the once top-down leadership to a bottom-up team approach.

Teachers all reported similar results concerning the eight sustainability factors, except on the issues of Attention Given to Time Issues, where a divide was noted. While low ratings by some teachers were apparent, others reported that time was not a factor in their practice fidelity levels of the SEM. This may indicate that the SEM is not fully embedded, that the schema may not yet be fully evolved.

Evidence of self-organizing school characteristics was also detected through direct questioning of the administrators. Administrator interview questions focused on the presence of the SOS principles within Glenwood Academy. All four administrators perceived that there was a presence of all SOS principles in the school at these early stages of SEM implementation. There was room for growth and development of all of these principles, according to the administrators, but their existence was evident. This existence was corroborated by results from teacher surveys, teacher interviews, and teachers’ focus group discussions.

An indication of self-organizing behaviour was also evident as the six principles were detected in the data and the methods of the study. The simple rules of the SEM were evident as all stakeholders demonstrated an understanding and commitment to the SEM approaches and to the foundational rules that they support. These simple rules were represented in all of the methods of the study, embedding them further into all levels—the teachers, students, and administrators—and into the design of the school including professional development, committees, teams, organizational structure, and teaching and learning tools. This resulted in the ongoing engagement with the approaches, embedding
SEM practice into the day-to-day life of the school. Similarity at scale was evident, as there were multiple participants at different levels who provided similar responses concerning practice fidelity and sustainability, showing all components of the SEM to be implemented with fidelity, and this implementation was reported by all participants to increase over time. The data showed a common picture of what was occurring in the school regarding the implementation of the SEM. A shared pattern language used by the researcher, the teachers, the students, and the administrators was also detected, which supported an existence of school schema. Emergent feedback was possible because the teachers, students, and administrators had a shared understanding. The self-organizing characteristics of this system allowed consistent feedback to guide next-step decision-making that was done through a variety of collaborative meetings including division head, SEM team, AAC, divisions, and professional development days. Feedback was also provided through the surveying of students and facilitators after each cluster session. As well, teachers set annual SEM implementation goals and receive feedback from their peers and their principal throughout the year concerning their action plans and their results. Dispersed control was evident in the way responsibility for the initiative was shared among teachers, students, and administrators. The initiative provided new opportunities for bottom-up leadership and for teachers and students to become “experts” in various areas of study. Evidence of all of these SOS principles was indicative of a school-level schema. The consistency of responses from students, teachers, and administrators shows a common knowledge and understanding amongst the members of the community. The feedback from agents at all levels and the embedding of the pattern language can all be seen as supporting a school schema.

5.3 Self-Organizing Characteristics at Glenwood Academy

The use of a theory in this study represented a way to go beyond addressing the list of sustainability factors (Bain, 2007; Tyack & Cuban, 1995), a way to explain the
process more clearly. A recognition of the existence or absence of these principles throughout the application of the SEM at Glenwood Academy can help reformers understand the system as is, and create a plan for next steps in the implementation of the reform. A focus on the adaptive capability within schools helps systems to deal with the ever-changing circumstances that schools are in through a bottom-up, not the traditionally top-down, fashion. This is done as agents within the system pool their intelligence to transcend individual capacities (Bain, 2007).

If a school increases its capacity for self-organization, emergent behaviour occurs, and it can move towards implementing a reform with fidelity (Bain, 2007). The reform model that generates bottom-up, self-organizing behaviour will be responsive to the change that occurs in schools all the time and will recognize that there is no beginning or end in adopting change, but rather it is a constant process of adapting.

The existence of these principles is another indication of future sustainability of the SEM and positive impact of the reform model on teaching and learning at Glenwood Academy, as one past study indicates, “when applied interactively, the six principles of self-organization articulate and scale up the schema and design, thus creating the potential for next-generation school-level efforts” (Bain, 2007, p. 56).

5.4 Limitations

The generalizing of the findings of this study is limited by its focus on just one school. Broader implications could be made if multiple schools were studied; however the smaller scale allowed for the examination of detailed classroom practice as well as detailed teacher, student, and administrator perspectives. This small scale allowed for the establishment of practice fidelity, which needs to be accomplished first, before strengths and issues of reform models are examined. The difficulties in sustaining and scaling site-based reforms indicate that it may be necessary to look in more detail at smaller scale efforts.
One researcher conducted all classroom observations for this study. Multiple observers (for example administrators or peers) would provide broader perspective on the practice fidelity of the core pedagogical components. However, teacher ratings of their own implementation and student ratings of their classroom experience do bring multiple perspectives to this study.

The addition of a fourth perspective, that of the parent community, would provide valuable insight to this study on the existence and the impact of the pedagogical components of the SEM at Glenwood Academy. Parents may not see firsthand the teaching and learning that happen in the classroom, but they do see the effects of this learning and the impact that it has on their child’s attitude towards school and towards learning.

The researcher was also a faculty member of the school being studied. Insider status presents some issues of concern such as blurred boundaries, biases, prejudices, preunderstandings, or assumption. Strategies were implemented to protect against these challenges of insider status, such as member checking, a clear defining of the researcher’s role throughout the duration of the study, clear communication throughout the study, and a reflexive research approach. Insider status was seen as an advantage to this study in that trust with the participants had been established prior to the investigation. Student participants had the advantage of familiarity with the researcher, which enhanced the interview process, reducing possible tensions that could arise with an outside researcher (Coy, 2006). Familiarity with the situation and the participants was seen as an advantage for this investigation in that conversation was meaningful and rapport with participants was enhanced. Next-step decisions for Glenwood Academy and the implementation of the SEM can be made collaboratively with the researcher and the participants (Coy, 2006; Foster, 2009).

A limitation of case study design is the amount of time and resources needed to
collect and analyze multiple sources of data in order to gain the in-depth understanding of the phenomenon (Yin, 2009). As a single researcher who would collect and analyze all of the data, this limitation was considered, but it was determined that in order to understand the practice fidelity and sustainability of the SEM, multiple types of data from multiple sources were necessary in order to provide the in-depth perspective that is needed. As well, multiple phases of study were necessary in order to answer the “over time” component of the research questions.

This study addressed the implementation of the SEM over time in order to determine practice fidelity and sustainability. It took place in the fourth year of the implementation of the SEM at Glenwood Academy. Therefore, teachers had been learning and practicing SEM characteristics for 3 years prior to the present study. However, data “over time” is determined over a 7-month period only. A longer period of data collection - another phase, an additional school year, or even more—could strengthen the claims in this study. In the focus group interviews some teachers predicted that another phase of study would show increases in SEM implementation, as the study brought about focus, awareness, and more reflective behaviour concerning the implementation of the SEM pedagogical components.

5.5 Recommendations for Future Research

Another phase of implementation could strengthen the claims in this study. An additional school year of data collection including two more phases of study would help determine how the SEM would continue to evolve. Would this result in higher levels of practice fidelity and further embed the SEM into Glenwood Academy? As well, versions of some feedback tools implemented in this study have become part of the school’s design (classroom observation protocol items, student interview questions). Given that, further study could provide information regarding the longitudinal progress of the SEM.
Research in one school setting showed that practice fidelity is possible and that it has a positive impact on the sustainability of a reform. This opens the door to research beyond Glenwood Academy. Could similar implementation methods of the SEM scale to other school settings? As well, could a study with similar focus sustain a site-based reform model, other than SEM, into other school settings?

This study employed the SOS theory as theoretical lens. Previous studies have applied these six principles and examined the application of the principles as a means of driving school improvement (Bain, 2007; Bain, Walker, & Chan, 2011). A closer look at the SOS theory, an application of the theory, or an integration of the theory into the school’s vision and goals may give the leadership of Glenwood Academy a more comprehensive view of the change process that the school is experiencing, or might result in further embedding of the SEM into the culture of the school.

A final recommendation for further research addresses the role technology might play in the embedding of an innovation into a school. This would involve creating an IT project that allows teachers and administrators to submit and access SEM-related materials, for example, lessons, exemplars, templates, cluster descriptions, compacting forms, cluster surveys, Total Talent Portfolio inventories, teacher evaluation tools, or student interview tools. Would building a shared and accessible collection of effective, practical applications of the SEM approach further embed, or continue to embed, the model into the day-to-day experience of the school?

**5.6 Conclusion**

The existing literature on school reform is “dominated by basic concerns related to the sustainability and ultimate viability of those reforms” (Bain, 2007, p. 255). This study addresses those concerns, but also goes beyond. Overall, the data reported in the results chapter show moderate to high levels of practice fidelity that was sustained and improved over a 7-month period of time. This includes classroom observations, teacher
surveys, teacher interviews, student interviews, administrator interviews, and focus group interviews. The results contrast with the literature which shows fading implementation over time and increased variability from teacher to teacher (Cook et al., 1999; Datnow, 2003).

At the time of this study, the implementation of the SEM at Glenwood had occurred over a span of four years. The study occurred over a 7-month period in the fourth year of implementation. Though definitive claims cannot be made about what happened outside of the 7-month investigation period about the practice fidelity or sustainability, it can be noted that the status of SEM implementation at Glenwood after four years continued to be encouraging. SEM implementation continued after the 7-month period of time, which goes against the trend of school reform implementation.

The covariance of increased practice fidelity and increased success of the impact the sustainability factors were having on the pedagogical components, along with evidence of self-organizing characteristics within the school, all contribute to the sustainability of SEM at Glenwood Academy and are also positive predictors of continued practice fidelity of the SEM.
References


