

MEETING STUDENTS WHERE THEY ARE: A GUIDE FOR CREATING AND IMPLEMENTING A
SUPPLEMENTAL INSTRUCTION PROGRAM AT A COMMUNITY COLLEGE

by

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ABSTRACT

Higher education has undergone significant transformation over the last several decades. Not being immune to this transformation, community colleges have drastically shifted their missions from being primarily focused on access to missions that balance access and success. To put their new missions into practice, community colleges have implemented programs aimed at increasing student success, retention, persistence, and completion. This evolution of the community college mission has also coincided with a major shift in the way in which community colleges are funded. The previous funding model being enrollment based is quickly disappearing and making way for the new funding model focused on outcomes and performance. These changes have caused community colleges to implement programs that produce results while also requiring either a minimal investment of resources, produce a high return on investment, or both.

One such program, one that has proven to be a best practice since its inception in the 1970s is Supplemental Instruction. Supplemental Instruction has proven to be a best practice that can have positive impacts on student's success, retention, persistence, and completion. Additionally, Supplemental Instruction may also have a high return on investment, if implemented with growth in mind.

This dissertation will present a step-by-step practical guide for how a community college can implement a successful and sustainable Supplemental Instruction program. The approach offered in the guide was developed as a result of testing two previous versions of Supplemental Instruction at a community college in Ohio. These two different approaches, the subsequent lessons learned, and the data that was gathered, will be presented prior to the guide as a means of providing the reader with context around how the steps in the guide were chosen.

Keywords: Supplemental Instruction, Community College, Student Success, and Supplemental Instruction Implementation Guide

DEDICATION

This dissertation is dedicated to my family; without whom this would not have been possible. My mother, being a first-generation community college graduate who completed her degree while putting two kids through high school and working full time, showed me how dedication to a goal can have an impact on far more than oneself. To my father, who has always supported me and showed me how to appreciate the finer things in life, thank you for helping me get here. Additionally, to my sister, who supported me alongside my parents and always showed her pride as I achieved each of my educational goals and provided me with plenty of meals, this would not have been possible without you, either. Without the support, encouragement, and love of my family, this would not have been possible, and no amount of words can ever repay what I owe.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER ONE: INTRODUCTION	1
Introduction and Background	1
Supplemental Instruction Framework.....	2
Statement of the Problem	2
Project Purpose.....	3
Organization of the Dissertation	4
Conclusion	4
CHAPTER TWO: LITERATURE REVIEW	5
Introduction	5
History and Overview of Supplemental Instruction	5
Aspect One: Scope	8
Aspect Two: Curriculum and Instructional Approach	8
Aspects Three and Four: Learner Activities and Materials.....	8
Aspect Five: Staff Activities and Staffing Patterns	9
Aspect Six: Staff Development.....	9
Aspect Seven: Management Activities	9
Supplemental Instruction and Student Success.....	11
Supplemental Instruction and Institutional Effectiveness	16
Conclusion	17
CHAPTER THREE: HISTORY AND EVOLUTION OF SUPPLEMENTAL INSTRUCTION AT THE COLLEGE	18
Introduction and Organization of the Chapter	18
The First Version of Supplemental Instruction	18
Second Version of the Supplemental Instruction Program	22
Selecting SI Courses	22
Training SI Leaders	25
Assessing the SI Program.....	26
Student Development Outcomes	29
Conclusion	30
CHAPTER FOUR: THE SUPPLEMENTAL INSTRUCTION PROGRAM.....	31
Introduction and Organization of the Chapter	31
CHAPTER FIVE: CONCLUSION AND IMPLICATIONS	73
Introduction and Organization of the Chapter	73
Review of the Study	73
Recommendations for Implementing the Guide.....	74
Recommendation One: Design to Expand	74

Recommendation Two: Assess Success	75
Recommendation Three: Will Students “Do” Optional?	75
Recommendations for Future Research	75
Recommendation One: Today’s Community College Student	75
Recommendation Two: Longitudinal Data	76
Recommendation Three: Effect of Online Delivery	76
Recommendation Four: ROI	76
Recommendation Five: Application to Four-year Institutions	76
Recommendation Six: Retaining SI Leaders.....	76
Conclusion	77
REFERENCES.....	78

LIST OF TABLES

	Page
Table 1: Grade Distributions for Students Enrolled in Courses with Supplemental Instruction Compared Against Students Enrolled in Courses without Supplemental Instruction	21
Table 2: Course Enrollment and Average Completion Rate	23
Table 3: Supplemental Instruction Student Pre- and Post-Survey Response Data	27
Table 4: Student Supplemental Instruction Pre- and Post-Survey Additional Question Response Results	28
Table 5: Course Completion Rates by Supplemental Instruction User Type	28
Table 6: End of Term GPA for Courses with Supplemental Instruction by User Type	29

LIST OF FIGURES

	Page
Figure 1: GPA Comparison by Course Type.....	11
Figure 2: D, F, W Rate Across Various Institution Types.....	12

CHAPTER ONE: INTRODUCTION

Introduction and Background

Community colleges in the United States are at a crossroads. Since their inception, community colleges in the United States have been focused on access, yet there are numerous factors that are pushing them to shift that focus from access to success. While the impetus for this crossroads can be traced back to numerous events and time periods, this author believes it came to a head during the Obama administration. During the Obama administration, in addition to the spotlight the administration was shining on community colleges (Chen, 2009), the industry also faced increased pressure in the areas of completion. Community colleges throughout the nation, pushed by both a self-realized desire to improve outcomes, as well as State legislatures imposing performance-based funding, had to take a hard, self-reflective look at their operations and in particular, what they were doing to change their mindset from one of open enrollment and access to a more balanced focus including student success. This era has caused community colleges examine and assess what practices are being used to better aid students, especially under-prepared students, in their collegiate journey. Ultimately, this meant that community colleges had to begin investing resources into programs that could improve student outcomes. According to a 2011 study by the Community College Research Center at the Columbia University Teachers College, performance funding creates an “immediate impact” (Dougherty & Reddy, 2011, p. 2) in the form of forcing community colleges to enact institutional changes in areas such as the use of data to inform decisions and in policies and practices surrounding academic and student services.

As the shift towards balancing access with success, colleges have been forced to overhaul existing student support structures and make way for entirely new approaches to enrollment and success. Traditional support services such as academic advising, student life, and tutoring have begun to be looked at from a structural perspective to address just how they are meeting the needs of the current

student population. These types of changes are going on simultaneously while major structural changes are being introduced through initiatives like guided pathways (Jenkins et al., 2018).

While community college leaders are looking to the future to address the needs of students, one promising program that has been around for several decades has the ability to offer colleges another tool in the toolbox leading to improved student success. Supplemental Instruction, while traditionally used heavily in universities, has the ability to have a major impact on the student success mission of community colleges. The purpose of this product dissertation will be to provide a guide for any community college on how to create and implement their own Supplemental Instruction program.

Supplemental Instruction Framework

The creation of Supplemental Instruction can be traced back to the early 1970s. The institution that created SI was the University of Missouri Kansas City (UKMC). The International Center for Supplemental Instruction at UKMC defines SI as:

A non-remedial approach to learning that supports students toward academic success by integrating “what to learn” with “how to learn.” SI consists of regularly scheduled, out-of-class group study sessions driven by students’ needs. Sessions are facilitated by trained peer leaders who utilize collaborative activities to ensure peer-to-peer interaction in small groups. SI is implemented in high-risk courses in consultation with academic staff and is supported and evaluated by a trained supervisor.

UKMC created SI to serve three purposes: (1) To increase retention within targeted historically difficult courses (2) to improve student grades in targeted historically difficult courses, and (3) to increase the graduation rates of students (International Center for Supplemental Instruction, n.d.)

The traditional model of SI embeds a student tutor or Supplemental Instruction Leader (SIL) into a classroom. During class time, the SIL acts as if he or she were a model student, engaging in class discussions, taking notes, and participating in classroom activities. After class time is over, the SIL then leads a one-hour session that focuses on reinforcing course content as well as building necessary student skills such as study skills, test preparation, note taking, and time management.

Statement of the Problem

As Chapter Two will demonstrate, a great deal of literature exists on the effectiveness of Supplemental Instruction and its ability to improve student success, persistence, completion, and graduation. However, very little literature addresses how a college might go about designing and

implementing a Supplemental Instruction program. This lack of a comprehensive and practical guide to implementing Supplemental Instruction at a community college represents a major gap in the body of work surrounding this proven program.

Project Purpose

The purpose of this dissertation was to present such a guide on how a community college can design and implement a Supplemental Instruction program. It covered areas including the evolution of the Supplemental Instruction program at the college, the impetus for development and implementation of a new model, how that model was developed and implemented, and how it was assessed to determine its efficacy.

As the next chapter will demonstrate, a great deal of research has been conducted on Supplemental Instruction demonstrating its ability to serve as a method of improving student success, retention, and completion. However, very little research has been conducted relating to Supplemental Instruction and its impact on students enrolled at community colleges. In the age of ever-shrinking budgets, increases in costs such as healthcare and textbooks, and performance-based funding coupled with an increased national focus on more people obtaining more education, it is vital community colleges begin to invest heavily in programs with proven track records to create better outcomes for students. This dissertation demonstrates that Supplemental Instruction can create better outcomes for students and subsequently better outcomes for colleges.

The types of data one should collect in order to make data-informed decisions about which courses to add or eliminate to the program from will be presented. Additionally, topics such as return on investment and logistical elements that demonstrate the success of this program will be explored. Insights will be provided into how to embed Supplemental Instruction offerings into the class schedule system and the partnerships that must exist among all stakeholders to ensure the long-term success and viability of the program. Ultimately, the purpose of this dissertation was to provide an implementation guide, presented in linear fashion that can be easily adaptable to any community college. Finally, much of the information will be presented within the context of a community college; therefore, the implementation guide will also be presented within the context of a community college. However, the guide is able to be adapted to meet the needs of a four-year institution.

Organization of the Dissertation

This dissertation will be organized into the following chapters. Chapter Two will provide the reader with a thorough review of the literature written about, and research conducted on, Supplemental Instruction. This literature was categorized into three major themes with subthemes supporting each. The three major themes the literature review addressed are student success, institutional effectiveness, and Supplemental Instruction. Chapter Three presents the development and implementation of Supplemental Instruction at the college. Insights and data collected will be shared in Chapter Three for the purpose of providing the reader with context into the implementation guide, which is to be presented in Chapter Four. Chapter Four will be presented as a step-by-step guide on how a community college can design and implement a successful Supplemental Instruction program. The guide in this chapter will be presented in a linear format. However, each step in the guide as well as the guide itself can be adapted to fit the specific needs of any community college. Chapter Five discusses the results, implications for future research, and overall recommendations.

Conclusion

For nearly its entire history, community colleges have placed great emphasis on access. Recently, there has been an increased emphasis on student success. Changes in the way community colleges are funded will necessitate a reassessment of resources that have traditionally focused on enrollment and shift the focus of these resources towards student success. This will take a major shift in thinking, culture, and some leaps of faith. Investing in programs that produce results, such as Supplemental Instruction, community colleges may not only see positive outcomes for students, but also for the college as well. This dissertation sought to demonstrate how Supplemental Instruction was developed and implemented at a community college and in doing so provide a model that any college may implement.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The following literature review is organized into three sections: Supplemental Instruction history and model, Supplemental Instruction as it relates to student success, and Supplemental Instruction as it relates to institutional effectiveness. This literature review provides the reader with an understanding of Supplemental Instruction, its history and evolution, and how the model has become a strategy to increase student success. The reader will gain an understanding of how Supplemental Instruction has been used as a means to increase institutional effectiveness, when colleges have to be more intentional about how they use their resources to ensure they are serving as many students as possible during a period of shrinking financial support.

History and Overview of Supplemental Instruction

Supplemental Instruction origins date back to the early 1970s when the University of Missouri at Kansas City began developed a new model of tutoring, embedding peer tutors into classrooms (Arendale, 2002). The University of Missouri Kansas City developed the model to address the high rate of attrition among students enrolled in their professional schools (Arendale, 2002). According to Hurley, Jacobs, and Martin (2006), Supplemental Instruction was designed around an assortment of learning, cognitive development, social interdependence, and interpretive/critical principles. These theories and principles centered around pushing the student to take ownership over his or her learning through attending Supplemental Instruction sessions, mastering complex material through dissecting into smaller components, and assimilating new information and experiences (Hurley, Jacobs, & Martin, 2006).

Stone and Jacobs (2008) discussed how Piaget's views on intelligence as a developmental process guided the early formation of Supplemental Instruction. Piaget's theory of cognitive development illustrates how humans acquire knowledge over time, and then construct and use that knowledge (Wadsworth, 2003). Using Piaget's theory, Supplemental Instruction Leaders help students assimilate

new information by constructing it on top of existing beliefs. Using small group discussion and questioning of new information in the Supplemental Instruction sessions allowed for “new knowledge to emerge, and equilibrium (the absence of mental discomfort) to be restored” (Stone & Jacobs, 2008, p. 23).

Stone and Jacobs (2008) discussed how Piaget’s Constructivist Theory informs the development of Supplemental Instruction as a means of improving students’ mastery of course content. Stone and Jacobs (2008) explained that Supplemental Instruction leaders concentrated on more difficult material and created activities that allowed students to collaborate. This collaboration allowed students to use the “combined wisdom of the group” to “examine their own ideas” and “mutual experiences” to help them assimilate new information (Stone & Jacobs, 2008, p. 24).

Social Interdependence and Critical theories also contributed to the creation of Supplemental Instruction (Stone & Jacobs, 2008). Social Interdependence Theory discusses how students who work together in groups form common goals and begin to believe that achievement of said goal is only possible when every member of the group achieves the goal (Stone & Jacobs, 2008). Stone and Jacobs (2008) went on to explain Critical Theory is where thoughtful dialogue between students can serve as an effective method to education and empower learners to take ownership of their own education. Stone and Jacobs (2008) explained that Supplemental Instruction used carefully crafted group activities to create an environment of “interdependence” among peer learners which allowed students with low-level material mastery to both assimilate new material through more exposure and challenged students with higher-level mastery to further master the material through assisting lower-level students (p. 25). Critical Theory enables the development of Supplemental Instruction as a means to increase the success of disadvantaged students (Stone & Jacobs, 2008). Critical Theory, as Stone and Jacobs (2008) discussed, was originally born out of a desire to demonstrate oppression of disadvantaged people and by doing so, lift them out of said oppression. Critical Theory was applied to elevate underprepared students out of their academic unpreparedness and increase their mastery of the subject matter, thus leading to increased retention and success, (Stone & Jacobs, 2008).

According to Arendale (1997), Supplemental Instruction had three goals: improved student course grades, reduced attrition rates in historically difficult courses, and increased student persistence towards graduation. Furthermore, according to Arendale (1997) Supplemental Instruction made three

claims. One, Supplemental Instruction claimed that students participating in it would earn a higher grade than students who did not participate in Supplemental Instruction in the same course (Arendale, 1997). This claim was validated by Lindsay et al. in their 2017 study of Supplemental Instruction at a medium-sized women's university. In their study, Lindsay et al. (2017) found that students who participated in courses with Supplemental Instruction and completed the required number of Supplemental Instruction sessions were about twice as likely to succeed when compared against the control courses that had no Supplemental Instruction.

The next claim as Arendale (1997) explained was that, regardless of factors such as ethnicity and prior academic achievement, students who participated in Supplemental Instruction succeeded at a higher rate overall, success being defined as earning a grade higher than a D, F, or withdraw (Arendale, 1997). Yue et al. validated this claim in their 2018 study on the effect of Supplemental Instruction with disadvantaged students. In this study, Yue et al. (2018) studied the effect of Supplemental Instruction on what they defined as disadvantaged students. According to Yue et al. (2018), this population included students who identified as minority, first-generation, Pell grant eligible, or as needing mathematics and or English remediation. In this study, Yue et al. (2018) demonstrated that students who identified in these populations and participated in Supplemental Instruction recognized a much larger performance improvement than students who participated in Supplemental Instruction but did not identify with one of the disadvantaged populations.

The third claim, as Arendale (1997) explained, was that students who participated in Supplemental Instruction had a higher rate of persistence towards graduation than students who did not participate in it (Arendale, 1997). These claims were also confirmed by the United States Department of Education in 1981 when the Department declared Supplemental Instruction as an "exemplary educational practice" (Stone & Jacobs, 2008, p. 13).

Arendale (1997) discussed three components that addressed the purpose of and need for Supplemental Instruction. First, Supplemental Instruction targeted what were referred to as high-risk courses. According to Arendale (1997), high-risk courses were defined as those with a D, F, W rate of at least 30%. Second, Arendale (1997) discussed that the person leading the Supplemental Instruction sessions, referred to as the Supplemental Instruction Leader, was a facilitator; not as Arendale (1997)

called a “mini-professor” (p. 2). The Supplemental Instruction Leader’s role was not to repeat the lecture, but to reinforce course content by focusing on the process of learning as well as the course content (Arendale, 1997). Finally, Supplemental Instruction focused on process and content introducing learning strategies that were integrated into the course content such as note-taking, time management, and test preparation (Arendale, 1997).

Arendale (1997) laid out seven aspects of a successful Supplemental Instruction program. These seven aspects, which will be discussed further, were: (1) scope, (2) a curriculum and instructional approach, (3) learner activities, (4) learning materials, (5) staff activities and staffing patterns, (6) staff development activities, and (7) management activities.

Aspect One: Scope

As Arendale (1997) explained, the scope of a successful Supplemental Instruction program dealt with which courses were targeted. Traditionally, these courses included one or more of the following characteristics: high enrollment, lecture-based, and gateway courses or courses that led to more advanced courses within the same subject area (Arendale, 1997).

Aspect Two: Curriculum and Instructional Approach

Next, a successful Supplemental Instruction program focused on a “curriculum and instructional approach” (Arendale, 1997, p. 5). This meant that a Supplemental Instruction Leader never retaught the material nor was new material introduced. Rather, the focus was on guiding students towards a better understanding and mastery of the material using the students’ own notes as well as guided, often hands-on activities (Arendale, 1997).

Aspects Three and Four: Learner Activities and Materials

As Arendale (1997) explained, “learner activities” were often interactive, allowing the students more opportunity to actively engage with the course material by using their own materials, such as textbooks, notes, and course handouts (p. 5). The first four aspects of a successful Supplemental Instruction program, discussed previously, focused on the programmatic aspects of Supplemental

Instruction. Arendale's remaining aspects focused more on logistical needs such as staffing, staff development, and management activities.

Aspect Five: Staff Activities and Staffing Patterns

The first of these logistical aspects focused on who was leading the Supplemental Instruction sessions, referred to as the Supplemental Instruction Leader. Arendale (1997) explained that the Supplemental Instruction Leader was an experienced student who had completed the course successfully and completed the course with that same instructor. This ensured that the Supplemental Instruction Leaders had not just mastered the course material, but also met the expectations of the person teaching the course. The next component that Arendale (1997) discussed was the activities of the Supplemental Instruction leader as well as staffing patterns. During lecture time, the Supplemental Instruction Leader served no official purpose other than to behave as a model student. During lecture time the Supplemental Instruction Leader took notes, engaged in classroom discussions, and demonstrated model-student behavior (Arendale, 1997). After successfully completing the course, the Supplemental Instruction Leader then participated in numerous hours of training and observation under the direction of the person leading the Supplemental Instruction program (Arendale, 1997).

Aspect Six: Staff Development

Arendale (1997) then continued further to cover what kind of staff development activities the Supplemental Instruction Leader participated in so that he or she could effectively lead the Supplemental Instruction sessions. This development included various workshops on areas that allowed the Supplemental Instruction Leader to facilitate sessions.

Aspect Seven: Management Activities

Finally, Arendale (1997) discussed the management activities necessary for a successful Supplemental Instruction program. These activities included the collection of data for the targeted courses, observation of the Supplemental Instruction sessions and leaders, and continuous professional development of Supplemental Instruction Leaders (Arendale, 1997).

The original model for Supplemental Instruction has remained relatively consistent since its conception; however, there have been two notable variations to the model. One such variation was created in the early 1990s at the International Center for Supplemental Instruction at the University of Missouri Kansas City (Martin & Blanc, 1994). This variation, called Video Supplemental Instruction or VSI was developed to provide assistance to what were considered “academically underprepared students” (Martin & Blanc, 1994, p. 83). VSI, as Martin and Blanc (1994) explained, created videotaped lectures which allowed students to have control over the flow of information and to replay the information as many times as needed to ensure the student had absorbed the new information. Analysis of this method demonstrated that students who participated in VSI earned a higher percentage of grades of A or B and a lower percentage of grades of D or F when compared against students who did not participate in VSI (Martin & Blanc, 1994).

The second major variation to the Supplemental Instruction model, also developed in the early 1990s at Georgia State University, was called the Adjunct Course Model (Commander & Smith, 1995). This model, which appeared very similar to the modern-day co-requisite model where a developmental course is paired with a college-level content course, such as a social or physical science course. The adjunct course would focus on increasing the reading comprehension and learning skills of students in the content course, contextualizing the material in the adjunct course to the material in the content course (Commander & Smith, 1995). Reported results indicated that 75% of the students who participated in the program earned a grade of C or better (Commander & Smith, 1995).

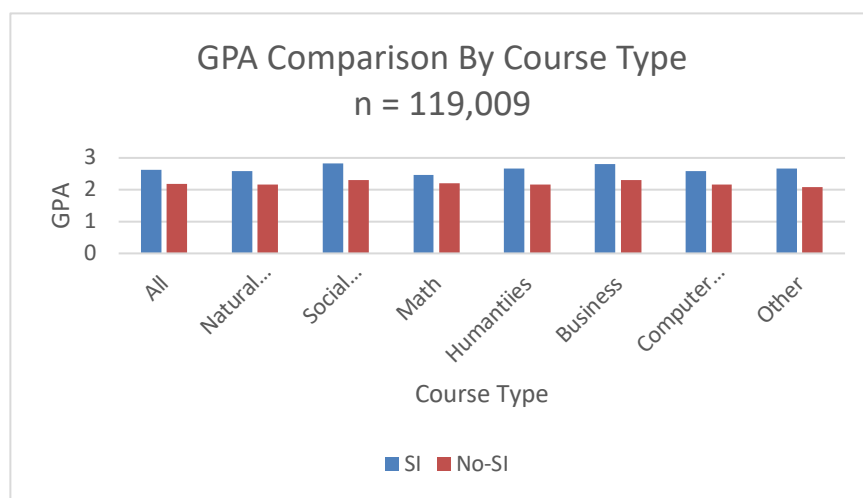
After over 20 years of use and study, Supplemental Instruction was designated by the United States Department of Education as an “Exemplary Educational Program” (Arendale, 1997, p. 1). This designation allowed for the dissemination of federal funds to increase the use of Supplemental Instruction nationwide (Arendale, 1997). Supplemental Instruction, as of 1997, became an international model, which was used in numerous countries around the world including Australia, Canada, Denmark, Egypt, the South Africa, the United Kingdom (Arendale, 1997). Since the late 1990s, a number of research studies have been conducted that validate Supplemental Instruction’s ability to serve as a successful approach to improving student’s retention, success, persistence, and completion.

Supplemental Instruction and Student Success

Since its inception, Supplemental Instruction has proven itself as a model program for decreasing student attrition and increasing student success and related outcomes. This section will summarize and discuss research findings related to these outcomes.

The University of Missouri–Kansas City conducted a comprehensive assessment on the impact Supplemental Instruction had on student success. This study, which included over 119,000 students, enrolled in over one thousand courses at 27 universities showed that there was a significant impact on final course grades for students who participated in Supplemental instruction versus students enrolled in similar courses without Supplemental Instruction (Stone & Jacobs, 2008). The study demonstrated that students who enrolled in courses with Supplemental Instruction had a higher rate of grades of A, B, and C versus those without Supplemental Instruction. Students also had lower rates of D, F, and W grades in course with Supplemental Instruction (Stone & Jacobs, 2008) when compared to students enrolled in courses without Supplemental Instruction. Additionally, an earlier study by Kochenour et al. (1997) confirmed these findings. Students participating in Supplemental Instruction had much lower rates of withdrawing from a course when compared to students who did not participate in Supplemental Instruction.

Figure 1: GPA Comparison by Course Type



The above chart illustrates the GPA in different courses for students who had Supplemental Instruction versus students who did not receive it. As illustrated above, students who participated in Supplemental Instruction, on average, earned a higher GPA in the course compared to students who did not participate in Supplemental Instruction (Stone and Jacobs, 2008). This finding was across all course types.

Figure 2: D, F, W Rate Across Various Institution Types

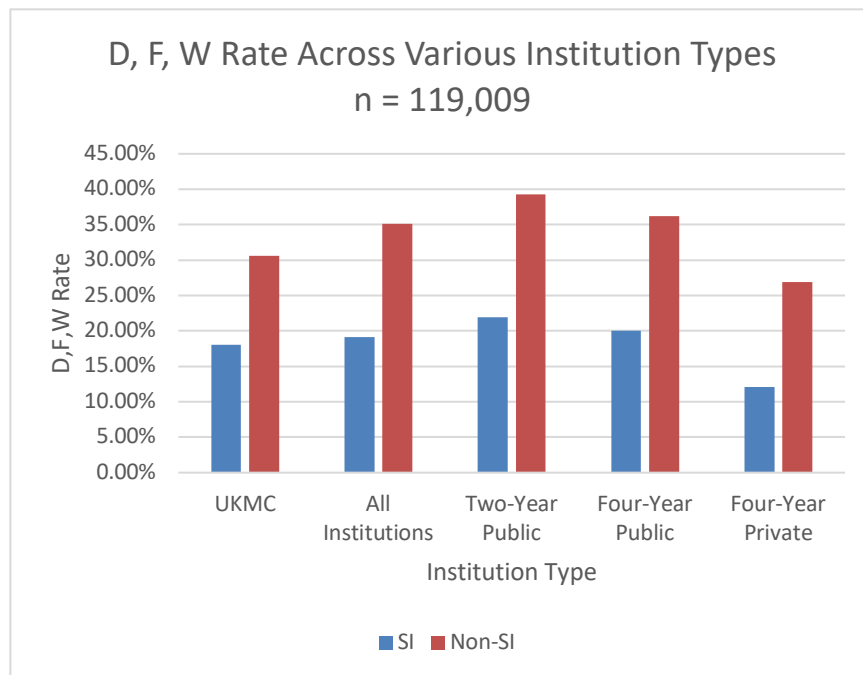


Figure 2 illustrates rates of D, F, and W grades for students receiving Supplemental Instruction at various types of institutions including the University of Missouri–Kansas City. Students who did not participate in Supplemental Instruction had higher rates of earning a grade of D, F, or W when compared to students who participated in Supplemental Instruction. The above chart represents 119,009 students spread across 1,003 courses at 37 different institutions (Stone & Jacobs, 2008). This result was true for all institution types.

As demonstrated above, Supplemental Instruction had a positive impact on student success, including the success of students enrolled in community colleges. In a related study by Zaritsky and Toce (2006), LaGuardia Community College began a pilot Supplemental Instruction program with three

courses in 1993. By the 2002-03 academic year, LaGuardia had expanded the program to cover 100 courses. According to Zaritsky and Toce (2006), LaGuardia's data showed that students who participated in Supplemental Instruction were less likely to drop the course and more likely to persist to completion. Since its inception at LaGuardia, the program has served over 12,000 students with an average increase of at least one letter grade or better for students participating in Supplemental Instruction when compared to those who did not participate in Supplemental Instruction (Zaritsky & Toce, 2006).

Hensen and Shelly (2003) corroborated the positive impact of Supplemental Instruction at a large Midwestern university. This study focused on the effect of Supplemental Instruction on student success in entry-level chemistry, biology, math, and physics courses. In this study, students who participated in Supplemental Instruction had a much higher rate of earning final grades of As and Bs and a much lower rate of earning grades of Ds and Fs when compared against their peers who did not participate in Supplemental Instruction (Hensen & Shelly, 2003). Similar findings by Congos and Schoeps (1997) validated this by demonstrating that 82.25% of students who participated in Supplemental Instruction earned grades of A, B, or C, while only 65.24% not participating in Supplemental Instruction earned the same grades. Conversely, 17.75% of the Supplemental Instruction participants earned grades of D, F, or W while 34.76% of non-Supplemental Instruction participants earned D, F, or W grades (Congos & Schoeps, 1997).

One of the aims of Supplemental Instruction is to increase student success in high-risk courses, an argument could also be made that another aim is to increase the success of high-risk students. Ogden, Thompson, Russell, and Simons (2003) conducted a study where they evaluated the impact of Supplemental Instruction on students who were conditionally admitted. Ogden et al. (2003) discovered a relationship between success for conditionally admitted students and their participation in Supplemental Instruction. In their 2003 study, Ogden et al. discovered that students who were conditionally admitted and participated in Supplemental Instruction not only had significantly better short- and long-term outcomes related to success but were also more likely to be reenroll in the following semester when compared against their conditionally admitted peers who did not participate in Supplemental Instruction.

One population of students who traditionally struggle is those enrolled in remedial courses. Dias, Cunningham, and Porte (2016) observed that two-thirds of the students who participated in Supplemental

Instruction passed a final exam in their corresponding remedial mathematics course where only approximately 50% of students who did not participate in Supplemental Instruction passed the final exam. In the (2019) study on the effect of Supplemental Instruction on students enrolled in remedial mathematics courses, On-Thai demonstrated a significant increase in the retention rate of students participating in a remedial mathematics course with Supplemental Instruction when compared against students who enrolled in a remedial mathematics course without Supplemental Instruction. Another study, conducted by Ramirez (1997) showed that conditionally admitted students who participated in Supplemental Instruction had the highest persistence rates of any population of students including traditionally admitted students. In their 2016 study, Mitra and Goldstein were able to demonstrate that attendance in Supplemental Instruction sessions led to positive outcomes for what they deemed to be at-risk students. For this population, Mitra and Goldstein (2016) explained that attending Supplemental Instruction sessions led to “significantly higher improvements in the probabilities of passing for students who are identified as at-risk” (p. 99).

Numerous studies have also been conducted on course-specific outcomes for student participation in Supplemental Instruction. One such study, conducted by Gattis (2000) studied both the short- and long-term grade improvements for students enrolled in chemistry courses who participated in Supplemental Instruction. In the study, Gattis (2000) tracked students who enrolled in Chemistry 1 in the fall semester and then enrolled in Chemistry 2 the following spring semester. Gattis (2000) was able to demonstrate a relationship between higher end-of-course grades in Chemistry 2 for students who had participated in Supplemental Instruction in Chemistry 1 versus students who had not participated in Supplemental Instruction in Chemistry 1. In their study on the impact of Supplemental Instruction participation for students enrolled in a first-year calculus course, Fayiwski and MacMillan (2008) observed that students who participated in Supplemental Instruction were 2.7 times more likely to succeed in the course when compared against students who did not participate in Supplemental Instruction.

Additionally, Supplemental Instruction may also lead to positive results in non-STEM (Science, Technology, Engineering, and Mathematics) courses such as a first-year composition course. At Point Loma College, Supplemental Instruction was embedded into a first-year composition course (Hafer, 2001). After two years of running the program, students who participated in Supplemental Instruction

were, on average, more likely to see an increase of at least half a letter grade when compared against students who did not participate in Supplemental Instruction (Hafer, 2001).

In a 2012 study, Oja looked at a cohort of 2,005 students enrolled at a large community college. Students were enrolled in 30 course sections in which Supplemental Instruction was optional (Oja, 2012). One measure of success Oja (2012) studied at was term GPA. Oja (2012) wished to determine whether or not there was a relationship between the amount of time spent in Supplemental Instruction and term GPA. Oja (2012) was able to show a relationship between higher grades, higher end of term GPA, and number of hours spent in Supplemental Instruction. Oja (2012) demonstrated that the higher the number of hours students spent in Supplemental Instruction, the higher the grade and term GPA. In their 2015 study, Rabitoy, Hoffman, and Person corroborated these findings demonstrating a correlation between attendance at Supplemental Instruction sessions and higher final grades. In a 2015 study, Rabitoy, Hoffman, and Person found that the correlation between attendance at supplemental instruction sessions and final grades in science, technology, engineering, and mathematics, or STEM courses. In a 2019 study, Grizzard further corroborated the relationship between time spent in Supplemental Instruction sessions and student success. Grizzard (2019) found that students who attend Supplemental Instruction no more than four times earned an average GPA of 1.87, students who attended Supplemental Instruction between five and nine times earned an average GPA of 2.07, and students who attended ten or more times had an average end of term GPA of 2.2.

In a 2010 study, Ning and Downing hypothesized that Supplemental Instruction had a positive impact on learning competence and academic performance. They studied a group of 430 first-year undergraduate students enrolled in business courses at Hong Kong University. Students were enrolled in courses that had Supplemental Instruction which was not mandatory (Ning & Downing, 2010). Students were separated into two groups: those who voluntarily registered for the courses (n = 109) with Supplemental Instruction, and those who did not attend any Supplemental Instruction sessions (n = 321). Ning and Downing (2010) were able to demonstrate a correlation between participating in Supplemental Instruction and increases in areas such as information processing, motivation, and grade. They discovered that students who participated in Supplemental Instruction had higher levels of information processing, motivation, and grades than students who did not participate in Supplemental Instruction.

Another measure of student success is persistence and graduation or degree completion. In a 2018 study, Skoglund, Wall, and Kiene were able to demonstrate that participation in Supplemental Instruction led to higher rates of retention and persistence into the second year of college for freshmen. This study also showed that the effects on retention and persistence were greater for students who had lower high school GPAs when compared against their peers who had higher high school GPAs. In a related study, Blanc, DeBuhr, and Martin (1983) observed that students who participated in Supplemental Instruction were more likely to be enrolled for two subsequent semesters than students who had not participated in Supplemental Instruction.

Bowles, McCoy, and Bates (2008) studied a group of 2,905 freshman students at a large land-grant university in the western United States who had enrolled in courses offering Supplemental Instruction. Bowles, McCoy, and Bates tracked these students for four years and discovered that students who had participated in Supplemental Instruction during their freshman year ($n = 1,084$) were nearly 11% more likely to graduate within four years than their peers who had not participated in Supplemental Instruction ($n = 2,821$). In a later related study, Grillo and Leist (2013) were able to validate the hypothesis that more time spent using academic support services, such as Supplemental Instruction, led to an increase in persistence to graduation.

Supplemental Instruction and Institutional Effectiveness

According to the Society for College and University Planning (2020), institutional effectiveness can help institutions improve student retention as well as identify efficiencies and improve processes. As has been discussed above, Supplemental Instruction has been shown to increase student success as defined as improvement in course completion, GPA, and persistence to graduation. Each of these have a relationship to institutional effectiveness. In a February 2019 article, Bichelmeyer discussed return on investment for the Supplemental Instruction program at the University of Missouri Kansas City. Bichelmeyer (2019) explained that the university annually sees a return on its investment of \$600,000 with a potential to see a larger return on investment by simply encouraging students to attend at least three sessions per semester. Additionally, Bichelmeyer (2019) explained that the University of Missouri Kansas City experienced a 7.8% increase in persistence rates for students who attended at least three Supplemental Instruction sessions per semester.

Colleges may also realize benefit for faculty through the use of Supplemental Instruction. In a 2006 publication, McGuire explained that faculty who participated in Supplemental Instruction reported that Supplemental Instruction allowed them to give more feedback to their students, allowing the faculty to make adjustments to teaching style and instructional and assessment methods to better engage their students. Zerger, Clark-Unite, and Smith (2006) supported this finding indicating that course faculty receiving weekly feedback from their Supplemental Instruction Leaders on what material the students are struggling with allowed the faculty to adjust their instructional style and teaching methods to better match the needs of the student. Zerger, Clark-Unite, and Smith (2006) also discussed how faculty who participated in training for Supplemental Instruction leaders received up-to-date training and information in areas such as pedagogy, active learning, and collaboration.

In a 2006 publication, Zerger, Clark-Unite, and Smith discussed the benefits Supplemental Instruction could have on administrative expenses and the institution as a whole. For instance, they reported that the cost for Supplemental Instruction is less than traditional models of academic support as in Supplemental Instruction the Leader is working with numerous students as opposed to the more traditional one-on-one models such as tutoring (Zerger, Clark-Unite, & Smith, 2006).

Conclusion

Much research has been conducted on Supplemental Instruction and its impact on students and institutions. Supplemental Instruction is a valid approach to improving student retention, success, persistence, and completion. While the above research is of use when designing a Supplemental Instruction program, there still exists a lack of work demonstrating how to implement one, particularly on at a community college. The following chapters will illustrate how a community college used this research to inform its decisions on the design of a Supplemental Instruction program and how the lessons learned from two iterations of the program helped inform the guide presented in Chapter Four.

CHAPTER THREE: HISTORY AND EVOLUTION OF SUPPLEMENTAL INSTRUCTION AT THE COLLEGE

Introduction and Organization of the Chapter

The following chapter provides a detailed view of how Supplemental Instruction was implemented at a community college in Ohio. This chapter will be divided into two sections. First, the design and implementation of the first version of Supplemental Instruction including data related to the outcomes on its implementation. The second section will cover the second iteration of Supplemental Instruction followed by a review of outcomes. It is important to note that this second version is what evolved to become the model used in producing the guide presented in Chapter Four. Additionally, this chapter includes areas such as a review of the original model implemented at the college, impetus for the evolution of the model, key personnel, funding, selection of courses, selection and training of Supplemental Instruction Leaders and associated faculty, monitoring of the program, and decisions on what data to be collected.

The First Version of Supplemental Instruction

The first version of Supplemental Instruction at the community college was based largely on the model created by the University of Missouri Kansas City in the early 1970s. A key group of personnel, designated by the Dean of Student Affairs, became the Supplemental Instruction Leadership Team. The purpose of this team was to develop and implement the program. This team included the Dean of Student Affairs, an academic advisor, and staff who oversaw academic support services at the college. Additionally, as this program was to operate on two campuses, two individuals assumed the role of being Supplemental Instruction Campus Coordinators. The Leadership Team decided that in order to expedite the implementation of the Supplemental Instruction program, they would focus on collaborating with faculty who would be inclined to support the program by implementing it in their courses. A key distinction for this version of the Supplemental Instruction program at the college was that instead of targeting

specific courses, the Supplemental Instruction Leadership Team first targeted specific faculty. The Supplemental Instruction Leadership Team approached faculty who would buy-in to the success of the program and be advocates to their faculty peers to expand the program. Furthermore, faculty who were targeted were teaching classes that the Supplemental Instruction Leadership Team believed would have the greatest impact in terms of improving student success. These classes consisted of two remedial mathematics courses, a remedial composition course, and an introductory college-level composition course.

Once classes were selected and faculty agreed to utilize Supplemental Instruction to augment their classes, the Supplemental Instruction Team began selecting students to serve as Supplemental Instruction Leaders. The Supplemental Instruction Leadership Team used the following criteria to select students to serve as Supplemental Instruction Leaders:

1. Have completed the course, with the same instructor who would be teaching the course with Supplemental Instruction
2. Completed the course with at least a grade of B, or in the case of remedial courses, the candidate must have completed a college-level course, in the same subject with the same instructor
3. Have a minimum cumulative grade point average of 3.0
4. Have served for at least two semesters as a peer tutor
5. Be recommended and approved by the instructor
6. Demonstrate leadership skills above and beyond the average student
7. Successfully complete the Supplemental Instruction Leader training.

The Supplemental Instruction Leadership Team then recruited Supplemental Instruction Leaders from an existing pool of peer tutors. The Supplemental Instruction Leadership Team decided to use the existing pool of peer tutors, as these students were already experienced in helping students achieve a better understanding of the course material and were familiar with additional academic support resources. Once a pool of potential Supplemental Instruction Leaders was identified, the Campus Coordinators held one-on-one interviews with the candidates to explain the program and determine whether the candidate was interested in participating as a Supplemental Instruction Leader. At this time, peer tutors were paid at a rate of \$8.50 per hour. Due to the increased responsibility of the Supplemental Instruction program and

in order to highlight the importance of the program, the Supplemental Instruction Leadership Team chose to compensate Supplemental Instruction Leaders at a rate of \$10.00 per hour.

Once faculty, classes, and Supplemental Instruction Leaders were identified, the Supplemental Instruction Leadership Team designed and conducted the first Supplemental Instruction Leader training. The Supplemental Instruction Leadership Team decided that training would consist of sessions for both the Supplemental Instruction Leaders and the faculty teaching course where Supplemental Instruction would occur. The Supplemental Instruction Leadership Team chose to utilize *A Training Guide for College Tutors and Peer Educators*, by Sally A. Lipsky (2011), as a guide. Several chapters utilized from the book covered subjects such as active learning, collaborative learning, assessing students' learning, and diversity. For the faculty portion of the training, instructors were exposed to the Supplemental Instruction program including its history, the reason for the college implementing it, and logistics of implementing it in their classroom. They were also given time to strategize with Supplemental Instruction Leaders on how the program would be integrated into the classroom. Both Supplemental Instruction Leaders and their associated instructors were provided with manuals that outlined the program, its purpose, and the administration of the program.

One key aspect of this version of the Supplemental Instruction program was that participation in the program was voluntary for students. To schedule the Supplemental Instruction sessions, the Supplemental Instruction leader would distribute a survey during the first week of the course. The survey allowed students to indicate which days and times were best to hold the Supplemental Instruction session. After determining which days and times worked best for the most students, the Supplemental Instruction Leader would schedule two 50-minute sessions each week in which for the students to participate.

To assess the effectiveness of the first version of the Supplemental Instruction program the Supplemental Instruction Leadership Team chose to compare the student grades from the courses that had Supplemental Instruction against the same course taught without the use of Supplemental Instruction. What follows are the grade distributions for students enrolled in courses with Supplemental Instructions compared against those not enrolled in the course with Supplemental Instruction.

Table 1: Grade Distributions for Students Enrolled in Courses with Supplemental Instruction Compared Against Students Enrolled in Courses without Supplemental Instruction

GRADE/COURSE	REMEDIAL MATH ONE		REMEDIAL MATH TWO		REMEDIAL MATH THREE		REMEDIAL COMPOSITION	
	NUMBER WITH SI	NUMBER W/O SI	NUMBER WITH SI	NUMBER W/O SI	NUMBER WITH SI	NUMBER W/O SI	NUMBER WITH SI	NUMBER W/O SI
A	6	5	3	2	2	2	6	8
B	5	6	4	1	0	3	2	3
C	4	0	7	7	6	5	4	1
D	1	2	3	0	4	1	0	1
F	8	6	8	8	8	7	3	0
UW	9	12	10	6	5	10	3	8
Totals	33	31	35	24	25	28	18	21
Success Rate (% of students with C or better)	45.45%	35.48%	40.00%	41.67%	32.00%	35.71%	66.67%	57.14%

The data in the above table shows the grade distribution of the students who participated in Supplemental Instruction compared with a similar class taught in a traditional modality. A grade of C was chosen as the cutoff for a successful grade, as this was the grade the student must earn in order to matriculate from a remedial course to either the next level of remedial course or into the subsequent college-level course. Additionally, a grade of C in the remedial course demonstrated the student had the necessary mastery of the material to be successful in the next course. A grade of UW or “unofficial withdraw” indicated the student stopped attending the class without officially withdrawing from the course. As the above data suggested, students who participated in Supplemental Instruction had a higher rate of grades of C or better when compared to students who did not participate in Supplemental Instruction in Remedial Math One (45.45 versus 35.48) and the Remedial Composition (66.67 versus 57.14). The difference in the success rates for Remedial Math Two and Remedial Math Three was negligible. This pilot Supplemental Instruction program operated for two academic years before a more formal Supplemental Instruction program was developed.

Second Version of the Supplemental Instruction Program

After running the first version for several terms, the Leadership Team set about designing a new version, using the data from the first version as a foundation for the new design. The impetus for a new design was also a result of institutional actions including the college hiring a new president who led the college in the design and implementation of a new strategic plan. The Strategic Plan was to address the new performance-based funding model being implemented by the State. The performance-based funding model called for community colleges to increase their efforts in the area of student success and retention. As a result, Supplemental Instruction would play a key role in the college's efforts to increase student success.

In order to design the new model of Supplemental Instruction, the Leadership Team expanded its membership. Given the importance of Supplemental Instruction in the college's new Strategic Plan, the Leadership Team grew to include the three academic deans at the college. This allowed for their perspectives in determining which courses would be targeted to embed Supplemental Instruction. Additionally, a representative from the college's Office of Institutional Research joined the team as to support a more data-informed decision-making model. This representative provided input as to where Supplemental Instruction could be targeted to potentially produce greatest impact on student success.

Selecting SI Courses

With the new Supplemental Instruction Leadership Team in place, the team embarked on deciding which classes would be chosen. To assist in the process, the Office of Institutional Research provided data showing the college's course completion rates. This data was then compared against the college's overall completion rate, which was used as a benchmark. The Leadership Team decided that in order to achieve both the highest potential impact and highest return on investment, they would target classes that had high enrollment but a completion rate lower than the college's overall average completion rate. The team's belief was that if these types of classes were targeted and the overall completion rate for these specific courses increased, there would then be a ripple effect on the college's overall completion rate. Furthermore, the Leadership Team wanted to target courses that were considered gateway courses in the three academic divisions, Arts and Sciences, Health, Human, and

Public Services, and Business and Applied Technologies. The team defined a gateway course as a course that most, if not all students in those divisions were required to take in their specific majors. With these criteria in place, high enrollment-low completion gateway courses, the team set about selecting the courses that would utilize Supplemental Instruction. Additionally, the Leadership Team decided not to target courses where other success strategies were either being tested or implemented, so as not to have an impact on the data that was collected.

The courses selected for Supplemental Instruction were an Introductory Biology and Chemistry course (Arts and Sciences), Introductory Medical Biology, Dosage Calculation, and Anatomy and Physiology (Health, Human, and Public Services), and Introduction to Accounting and an introductory computer course (Business and Applied Technologies). These courses replaced the courses from the first version of Supplemental Instruction, which were primarily remedial math and introductory composition courses. For reasons that will be discussed later, the dosage calculation course was later eliminated from the Supplemental Instruction program after the first academic year. This new model included several additional courses that were new for the program which meant an increase to the amount of funding necessary to expand the program. To accomplish this, the college used a combination of increased funding and a reallocation of money from a Perkins Grant. Table 2 illustrates which courses were selected and their enrollment and completion rates. The college's overall average completion rate at the time was 76%.

Table 2: Course Enrollment and Average Completion Rate

COURSE	% ENROLLMENT (IN FTE)	% COMPLETION RATE (D OR BETTER)
Intro to Accounting	50	72
Intro to Biology	65.1	74
Intro to Anatomy and Physiology	45.1	75
General Chemistry	43.1	69
Anatomy & Physiology I	57.3	68
Intro to Computers	48.6	56
Intro to Psychology	142	70
Statistics I	40.1	89
Dosage Calculations	20.3	82

The above table, produced by the college's Office of Institutional Research, shows the courses that were selected, their enrollment in full time enrollment or equivalents, and their overall completion rate. FTE, or full-time equivalent, is the equivalent of one student, enrolled in a full-time schedule (minimum of 12 credit hours) for the semester. It should be noted that after the first year of version two of Supplemental Instruction, the Leadership Team removed Supplemental Instruction from the following courses: Introduction to Psychology, Statistics I, and Dosage Calculations. Supplemental Instruction was removed from Statistics I due to faculty adding a lab to the course that took the place of Supplemental Instruction. Supplemental Instruction was removed from Dosage Calculations, which already had a high completion rate but was requested to be included in the program by the faculty because of its large enrollment. The course was removed from the program after one academic year because the faculty increased the level of math required prior to a student being permitted to enroll in the course, which raised the completion rate even higher. The reason for removing Supplemental Instruction from Introduction to Psychology will be discussed later in this chapter.

During the first version of Supplemental Instruction, the Leadership Team discovered a relationship between the number of sessions a student attended and an increase in success. Upon further analysis of the data, the Leadership Team found that if a student attended a minimum of five sessions during the semester, in most cases, the results demonstrated an increase in both overall completion and course GPA. Therefore, the Leadership Team decided that in the second version, Supplemental Instruction would be made mandatory, or as close as possible, for every student for the entire semester. The Leadership Team allowed individual faculty members to make exceptions for students who were high performing. This exception will be discussed in more detail later. To accomplish making the program mandatory, the Leadership Team embedded the Supplemental Instruction into the master course schedule so that a student could not schedule another class on top of the Supplemental Instruction session; when the student signed up for the course, he or she simultaneously registered for the Supplemental Instruction session. To accomplish this, the Leadership Team worked with the college's registrar to create an add-on to the courses/sections that included Supplemental Instruction, similar to how a class that had both a lecture and a lab might be scheduled. This allowed for the student to know in advance that he or she would sign up for a class section that also included Supplemental Instruction.

Additionally, this allowed academic advisors to identify courses with Supplemental Instruction and to potentially target students they felt would most benefit from the program.

Training SI Leaders

After the above logistics were implemented, the Leadership Team redesigned the training for new Supplemental Instruction Leaders. First, the training was expanded from one day to two days. The Leadership Team decided to maintain the use of the textbook *A Training Guide for College Tutors and Peer Educators*, by Sally A. Lipsky (2011), as the content was still deemed necessary. However, the training delivery method was altered from a lecture model to a lecture-and-engage model, where Supplemental Instruction Leaders were exposed to the topic through a brief lecture followed by hands-on learning exercises where they applied their new knowledge. For instance, a lecture on learning styles and their impact on students in the classroom was followed by Supplemental Instruction Leaders being divided into small working groups where they were provided with a case scenario and designed a learning activity for a student based on the student's learning style. This lecture-and-engage model was designed to allow the Supplemental Instruction Leaders to better grasp and master the material.

As the Leadership Team embarked on a new model of Supplemental Instruction, a decision was made that all Supplemental Instruction Leaders, new and returning, would participate in a new full two-day training. In moving forward, the decision was also made that returning Supplemental Instruction Leaders would only be required to participate in the second day of training so as not to repeat material that had already been covered. New Supplemental Instruction Leaders would participate in the full two-day training.

The Leadership Team also recognized the necessity for continuing professional development for Supplemental Instruction Leaders. This was accomplished in two ways: a supplemental full day of training to reinforce the material from the initial training, and monthly meetings for the Supplemental Instruction Campus Coordinators and the Supplemental Instruction Leaders. These coordinators were individuals who were tasked with implementation of the Supplemental Instruction program at their respective campus. At this monthly meeting, a professional development module was added to every agenda. Monthly meetings will be discussed in greater detail later.

Assessing the SI Program

The Leadership Team recognized the necessity to monitor the Supplemental Instruction program to ensure for quality. Several mechanisms were developed and implemented to accomplish this. First, Supplemental Instruction Leaders were required to develop a Supplemental Instruction Session Plan. The Session Plan was a form the Supplemental Instruction Leaders were required to submit weekly along with their attendance. The Session Plan allowed the Leader to plan out each session in detail. The Session Plan also allowed the faculty member to see what was being covered in each session and allowed the Campus Coordinators to ensure the Leader was utilizing the knowledge gained during the training. Additionally, Campus Coordinators used Session Plans when conducting session observations, which were the next monitoring piece the Leadership Team put into practice. Campus Coordinators would make one announced and one unannounced visit to each session within the first month of the semester.

During the observation, the Campus Coordinator would ask the Leader for his or her Session Plan, then observe how the Leader was putting the plan into practice. Additionally, the Campus Coordinator would observe how the Leader facilitated the session; watching to ensure the Leader used active learning strategies, as well as using delivery methods that accounted for various learning styles. After the session was over, the Campus Coordinator would facilitate a brief discussion with the Leader on what was observed. The discussion would include what the Campus Coordinator felt were areas of strength for the Leader and reviewed any challenges or areas for improvement he or she felt had been observed. Both the Session Plan and Session Observation forms may be found in the guide presented in Chapter Four. The final method for monitoring was monthly meetings. At the monthly meetings, the Campus Coordinator would facilitate a discussion with the Supplemental Instruction Leaders on what was working well for their sessions and what challenges they were experiencing. The group would then engage in group problem solving related to the challenges to collectively help each other overcome them. Finally, the Campus Coordinator would lead a short professional development session to reinforce the material that was covered in the earlier training.

The final monitoring activities involved the collection of data. A pre- and post-survey was created and given to students. The purpose of the survey was to establish a baseline for the student's current knowledge and comfort level with the subject material and with taking exams, as well as to determine

whether or not students believed that Supplemental Instruction had assisted in their success in the course.

Table 3: Supplemental Instruction Student Pre- and Post-Survey Response Data

QUESTION	PRE-SURVEY (%)					POST-SURVEY (%)				
	1	2	3	4	5	1	2	3	4	5
Please rate your knowledge of the subject material in this class	10.8	31.8	36.5	14.8	5.7	.75	6.8	19.6	45.4	27.2
Please rate your comfort level with the subject material in this class	4.6	24.9	38.9	19.1	12.2	3	4.5	24.2	43.1	25
How confident are you that you will earn a grade of C or better in this class	0	3.4	22.3	36.3	37.8	1.5	5.3	15.9	21.2	56
Please rate your level of confidence in taking tests	4.7	16	37.9	28.8	12.4	3.8	9.9	18.3	41.9	25.9

As the above table demonstrates, a majority of the students surveyed (using a Likert scale, with 1 being low and 5 being high) expressed an increase in their knowledge and comfort level with the course material at the end of the semester, with 20.5% indicating a knowledge of 4 or 5 on the pre-survey and 72.6% indicated those knowledge levels on the post-survey. Additionally, students also expressed an increase in their confidence level that they would earn a grade of at least a C (74.1% level 4 or 5 pre-survey versus 77.2% post-survey) as well as their confidence level in taking tests (41.2% score of 4 or 5 pre-survey versus 67.8% score of 4 or 5 post-survey). The pre-survey was administered during the first session of the semester and the post-survey was administered the week prior to the final exam.

In the second portion of the survey, students were asked whether or not they believed Supplemental Instruction would help them or had helped them. Table 4 reports the students indicated that they felt Supplemental Instruction would help or had helped them succeed in the class. Additionally, there

was a small increase in the number of students reporting they had utilized tutoring services, indicating a possible increase in the awareness of these services as a result of the program.

Table 4: Student Supplemental Instruction Pre- and Post-Survey Additional Question Response Results

QUESTION	PRE-SURVEY (%)			POST-SURVEY (%)		
	YES	NO	UNSURE	YES	NO	UNSURE
Do you feel supplemental instruction will help/did help you succeed in this class	72.7	1.1	26.1	75.7	13.6	10.6
Have you previously taken a class with supplemental instruction/Would you recommend supplemental instruction to another student	12.1	87.8	0	86.3	13.6	0

In addition, data collected during the first version of Supplemental Instruction was expanded. This data was collected so as to help inform the decisions related to the continuing evolution and refinement of the model. The Leadership Team chose not to test the efficacy of the data as the model was still in the development stages of this process. With the first version of Supplemental Instruction, completion rates for the courses with Supplemental Instruction were compared against the same course without Supplemental Instruction. Data regarding the completion rates for courses under the new model, collected by the college’s Office of Institutional Research, are presented and discussed in Tables 5 and 6.

Table 5: Course Completion Rates by Supplemental Instruction User Type

USER GROUP	YEAR 1 COMPLETION RATE (%)	YEAR 2 COMPLETION RATE (%)
Non-Users	74	61
Occasional User	56	51
Repetitive User	87	72

As the above chart illustrates, students who were members of the repetitive user groups saw a high rate of course completion (87% in Year 1; 72% in Year 2). Interestingly, students who were defined as occasional users saw a lower completion rate than students who were defined as non-users. This data included both the completion rate and GPA for three user groups. These three groups were non-users, occasional users, and repetitive users. Non-users were students enrolled in courses with Supplemental

Instruction who never attended a Supplemental Instruction session. Occasional users were defined as students who attended up to four sessions. Repetitive users were defined as students who attended at least five sessions. The table below (Table 6) illustrates the completion rates for these user groups over the first two years of the second version of the Supplemental Instruction program.

Table 6 depicts the average GPA for the three user groups: non-users, occasional users, and repetitive users.

Table 6: End of Term GPA for Courses with Supplemental Instruction by User Type

USER GROUP	YEAR 1 GPA	YEAR 2 GPA
Non-Users	2.23	1.73
Occasional User	1.65	1.43
Repetitive User	2.65	2.06

As this chart illustrates, students who were members of the repetitive user group saw a larger end-of-course GPA when compared against non-users and occasional users. Additionally, students who were occasional users saw a lower end-of-course GPA than students who were defined as non-users, supporting the previous completion data.

Student Development Outcomes

The final element in the evolution from version one to version two of the Supplemental Instruction program was the development of four Student Development Outcomes. Given that the first version of Supplemental Instruction was a pilot and the Leadership Team wanted to develop a foundation for how the program would evolve at the college, these outcomes were not implemented in the first version of Supplemental Instruction. The Leadership Team recognized that Supplemental Instruction was a program that was, not only designed to reinforce course content, but also to provide a holistic approach to academic support where student's skills were also developed. To accomplish the latter, The Leadership Team identified the following Student Development Outcomes: notetaking, test preparation and test taking, classroom engagement, and how to read a college textbook. Interactive workshops were developed to help students improve in these areas and the Supplemental Instruction Leaders were trained in the delivery of these workshops. The Supplemental Instruction Leaders then delivered these

workshops at key points in the semester based upon the content of the workshop. For example, topics such as classroom engagement and note taking were delivered at the beginning of the semester, and topics such as test preparation and test taking were delivered later, when many courses administer early tests. The Leadership Team did not collect data on these workshops.

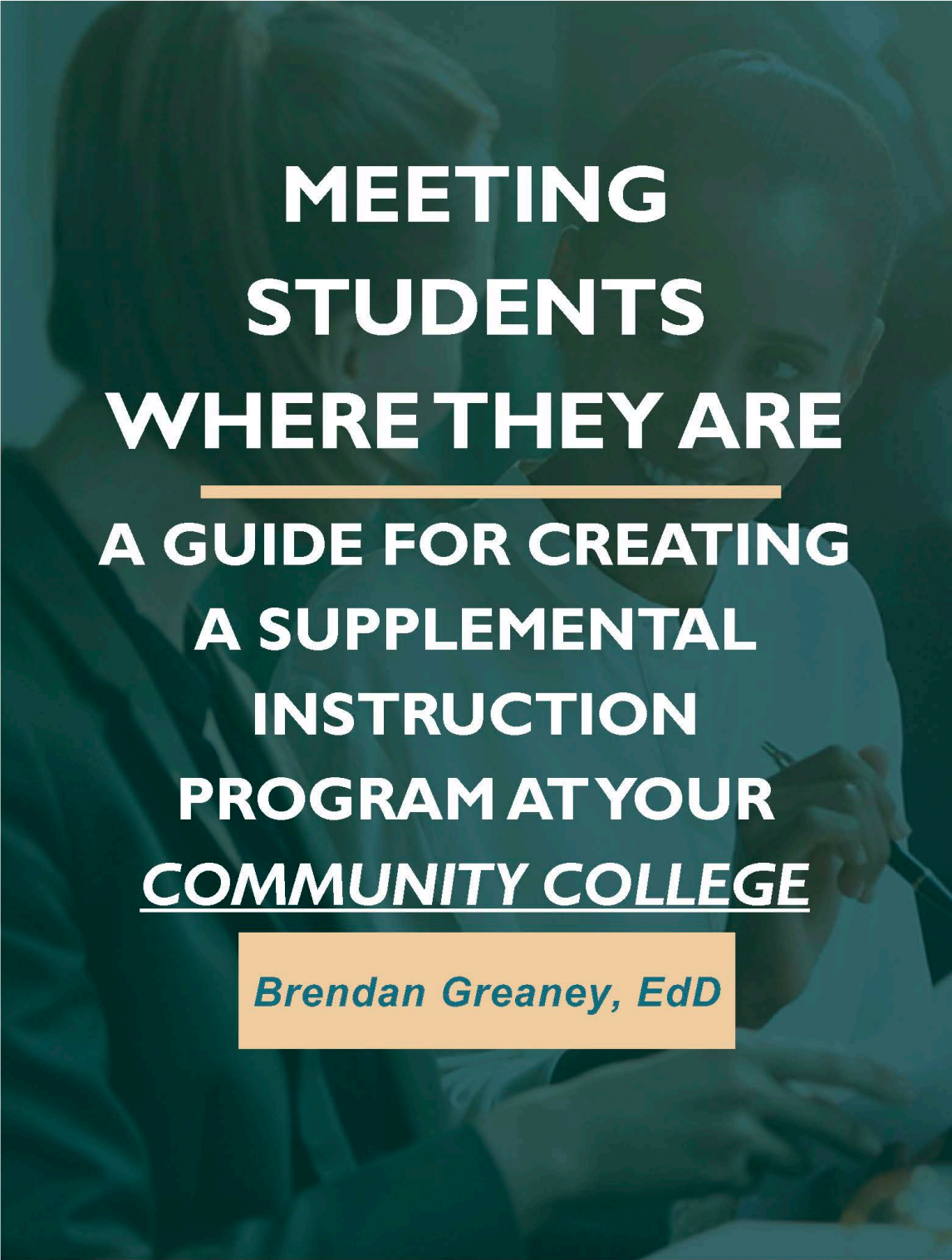
Conclusion

The purpose of this chapter was to provide the reader with a detailed history of the first two versions of Supplemental Instruction at the college. This included the impetus for their creation, the reason for the evolution from one model to the next, and the data that was collected. It is important to emphasize that surveys developed and administered, as well as data collected and analyzed, were used to inform decisions the Leadership Team made concerning the evolution and refinement of the model. Results of the surveys and the data collected led to what will be presented in Chapter Four.

CHAPTER FOUR: THE SUPPLEMENTAL INSTRUCTION PROGRAM

Introduction and Organization of the Chapter

The following chapter is presented in the form of a guide to implement a Supplemental Instruction program. This guide was developed using the literature reviewed in Chapter Two and the lessons learned from the two versions of Supplemental Instruction presented in Chapter Three. The guide is designed in a liner step-by-step format with example materials. The guide has been designed to be adaptable to suite the unique needs of any college or university.



**MEETING
STUDENTS
WHERE THEY ARE**

**A GUIDE FOR CREATING
A SUPPLEMENTAL
INSTRUCTION
PROGRAM AT YOUR
COMMUNITY COLLEGE**

Brendan Greaney, EdD

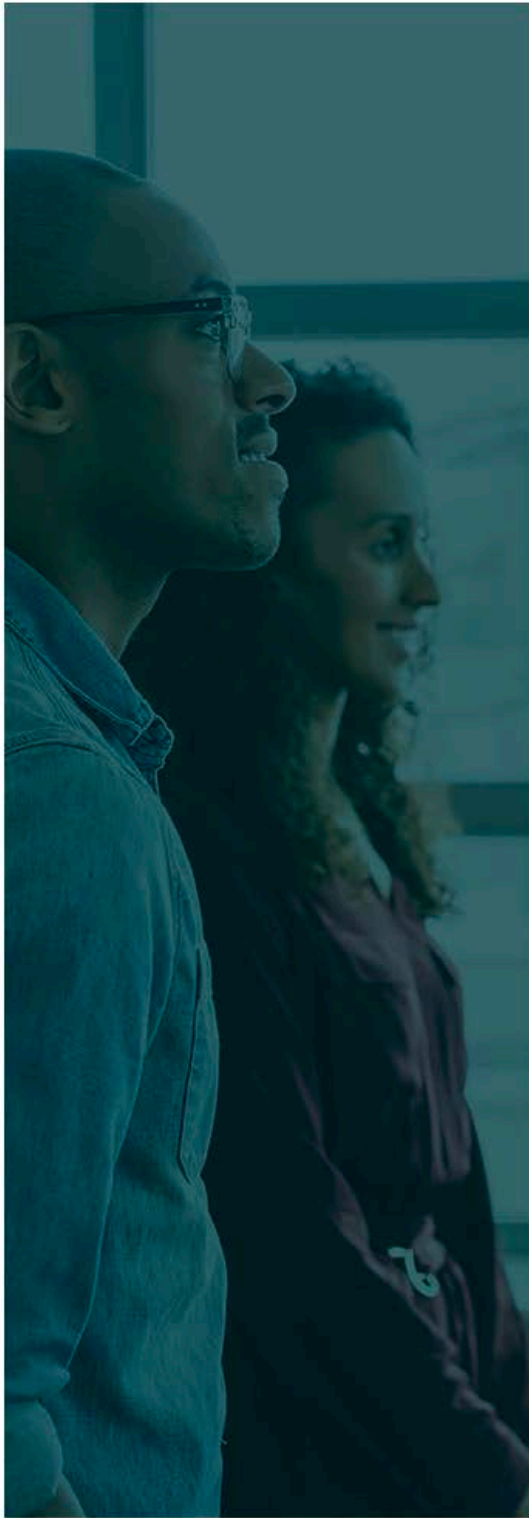


TABLE OF CONTENTS

Introduction	3
Planning & Design	4
Building Your Team	4
Choosing Courses	6
Scheduling Your Sessions	6
Building a Budget	8
Recruiting SI Leaders	9
Training & Professional Development	20
Implementation	26
Assessment & Improvement	39
Conclusion	41

Greetings Colleague:

This guide was developed as part of a dissertation for the Ferris State University Doctorate in Community College Leadership program. It is the result of many years of research and testing and is presented to you as a step-by-step guide to develop your own Supplemental Instruction program. The information contained within is designed to be adaptable to your program. As someone who has dedicated a great deal of time to Supplemental Instruction, I fully believe in its ability to not just improve student success but, if done right, transform a college's culture around student success.

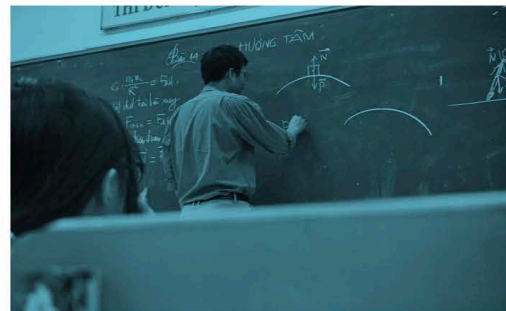
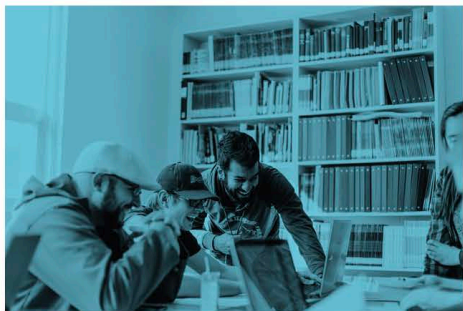
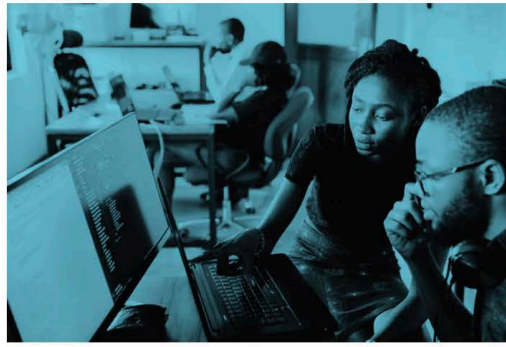
Brendan Greaney, EdD

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

INTRODUCTION

This guide will illustrate a method for implementing Supplemental Instruction at a Community College. The method will be presented in a chronological order that a Community College could take to fully implement a sustainable Supplemental Instruction program. This was developed using lessons learned from two different approaches to Supplemental Instruction at a Community College. The knowledge gained from two distinct approaches resulted in structural improvements to the method being presented. The method to be presented will be broken down into three phases: planning and design, implementation, and assessment and continuous improvement. Each section of this guide will also include supplemental materials such as training agendas, planning forms, and manuals. These are presented as examples and can be adapted to fit the needs and culture of your Supplemental Instruction program and college.



Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

PHASE I | PLANNING & DESIGN

The planning and design phase requires the most steps out of the three phases and the most people. The people involved are the key to the program's success and sustainability. It is vital to the success of the program that people chosen to lead the program demonstrate an institution-wide commitment to student success as well as to Supplemental Instruction.

□ Step 1 | Build Your Team

The Supplemental Instruction Leadership Team should consist of representatives from various divisions and departments within the college including Student Affairs, Academic Affairs, and Institutional Research. What follows is a table which lists the individuals inside the college who should be represented in the Leadership Team, their position, role within the college, and responsibilities within the Leadership Team. Regardless of the makeup of your team, the membership should represent a broad constituency of stakeholders across the college. Optional positions to be considered have also been included given the nature and culture of the college.



Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction Leadership Team

Team Position	Role Within College	Responsibilities
Team Co-Chair	Senior level administrator in Student Affairs.	Provide strategic vision, sustainability, and overall oversight over program.
Team Co-Chair	Senior level administrator in Academic Affairs, preferably a dean of an instructional division.	In addition to the above, this position will also ensure full buy-in of Academic Affairs, provide top-level academic vision for Leadership Team.
Program Coordinator	Supplemental Instruction Leader or Director/Coordinator, Academic Support	Provide day-to-day oversight of program including supervision of Supplemental Instruction Leaders. Oversee communication related to the program.
Faculty Representatives	One full-time faculty representative from each academic division.	Serve as SI faculty champion for their division, as well as insight into how program can be implemented in classrooms. Help identify additional faculty who will be committed to participation in the program.
Assessment & Continuous Improvement Lead	Institutional Research Representative	Work with the Leadership Team to help identify courses to target as well as assessment & continuous improvement plan.
Academic Advising Representative	Senior Academic Advisor or Director/Coordinator of Advising	Serve as liaison between the Leadership Team and Academic Advising.
Secretary	Administrative Assistant	Distribute agenda prior to meetings, take and distribute meeting minutes.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

In addition to the above individuals, there may be additional areas you wish to be represented on your Leadership Team. Possible areas to consider include; TRIO programs, adjunct faculty, Disability Support Services, New Student Orientation coordinators, and a representative from the Records or Registrar's office. The Records/Registrar Representative can provide valuable insight into how the Supplemental Instructions sessions could be integrated into the course or curriculum management systems to ensure the supplemental instruction session and its associated course are tied together for registration purposes. Depending on your College's structure, many of your courses may be taught by adjunct faculty. Having these faculty members represented on leadership team could provide unique perspectives from a part-time employee of the college. Communication will be vital to the success of the program. It will fall on every member of the Leadership Team to ensure they are communicating with their respective colleagues about the program to ensure the campus is aware of this important initiative. The Leadership Team may want to develop a communication plan to announce the program and its details to the campus.

□ Step 2 | Choose Your Courses

Once the leadership team has been constituted, designing the foundations of your Supplemental Instruction program including which courses you will target with your program can begin. Supplemental Instruction being a significant investment of resources including personnel, time, and money means many colleges may need to focus the program on just a few courses then scale up as resources become available. Therefore, it is important colleges are strategic when deciding on which courses to embed the program in. That being said, Supplemental Instruction has proven to have a measurable positive impact on student success.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

When establishing your criteria for which courses will be targeted, your Supplemental Instruction Leadership Team will need to assemble course completion and student retention data to make a decision. The representative from your Institutional Research department should be responsible for collecting and analyzing the data needed to identify courses that meet your established criteria. The Leadership Team may wish to identify courses at the college which are problematic. This could be one starting point for selecting courses to target with Supplemental Instruction. For purposes of this guide, the following criteria for course selection have been suggested:

- Gateway course, defined as an introductory course that leads to an advanced course
 - Developmental courses
 - A gateway course which could make it possible to increase the success and retention rate of their second level courses which would then have an effect on the overall completion and success rate for the whole college
- High enrollment, meaning courses which have an enrollment higher than your college's average course enrollment
- Low completion, defined as courses that have completion rates lower than the overall completion rate for the college

Choosing courses for Supplemental Instruction that meet one or more of the above criteria increases the likelihood that overall course completion rates and overall completion and/or success rates of the college may increase.

In addition to course completion and/or success data, other factors may be considered. These factors could include the college's culture around academic support and the degree to which faculty are supportive of academic support services such as tutoring. In choosing faculty

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

who have a record of supporting supplemental instruction, it is these faculty who may be open to partnering to offer this service in their classroom. Additionally, during initial implementation; faculty support to participate in supplemental instruction will be important. This may become less of a factor as the program progresses and faculty become more comfortable with and support Supplemental Instruction. Finally, operational factors such as funding, class schedule, and classroom availability must be considered. As previously stated you may not be able to run Supplemental Instruction for every course. However, a goal may be to scale up the program as the college realizes its benefits. Therefore, using your funding wisely and targeting courses where you are likely to have a high probability of success is a wise course of action.

□ Step 3 | *Schedule Your Sessions*

The standard practice in scheduling a Supplemental Instruction session is to schedule it immediately following the lecture time, for one hour, and preferably in the same classroom. Following this practice may help increase participation as students do not have to physically relocate to another area. This step necessitates the need for an individual from your Registrar's office serving on your leadership team as they will be able to provide valuable insights into how to schedule your sessions. In order to ensure students and advisors understand that sessions are mandatory, inputting the sessions into the class schedule system, so that they appear on the student's class schedule is essential. Depending on the system your college uses to manage classes, this may be as simple as adding a Supplemental Instruction session to the system just as you would add a laboratory section.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

□ Step 4 | Build Your Budget

The next step in creating the Supplemental Instruction program will be creating a budget. Many factors must be considered when planning your budget. Below you will find some of the activities to address as you construct the budget.

Possible Budget Considerations

Budget Activity	Budget Considerations
Personnel	<ul style="list-style-type: none">• Are you going to hire a coordinator and will that be a full time or part time position?• Supplemental Instruction Leaders<ul style="list-style-type: none">○ Pre-semester training○ Meetings and follow-up training during the semester○ Weekly Supplemental Instruction Sessions○ Will you pay them while they are observing their classes?○ Will you be able to hire federal and/or college work study students?• If you have faculty, particularly part-time faculty participating in training, do you have to compensate them or provide them with release time?• Number of Supplemental Instruction Leaders needed.• Hourly rates for part-time student employees, as well as associated taxes.
Supplies	<ul style="list-style-type: none">• Will you supply your Supplemental Leaders with textbooks for their Supplemental Instruction classes?• Activity supplies for Supplemental Instruction Leaders.• Supplies for your training activities.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Return on Investment: Building a Program That Pays for Itself

It will be important that as you begin to design the program you plan for the future.

Ideally, a successful Supplemental Instruction program will have the means to not only pay for itself but justify its expansion as the program provides positive results. To accomplish this, it will be important to calculate a return on investment (ROI). One effective means to calculate ROI is to collaborate with the Institutional Research representative on the Leadership Team to create a return on investment strategy. Data to be considered with creating a strategy could include such items as course completion rates, course enrollments, subsidy for courses, and course credits. Educause¹ has developed a thorough tool that can be used to fully breakdown program costs versus rewards and truly calculate a return on investment.

¹<https://www.educause.edu/ipass-grant-challenge/return-on-investment-toolkit>

□ Step 5 | Recruiting & Hiring Your Supplemental Instruction Leaders

The Leadership Team will need to determine the qualifications, job description, and a recruitment and selection plan for supplemental instruction leaders. It is recommended that students serve as your Supplemental Instruction Leaders. Many colleges have existing student academic support services such as a peer tutor program. This type of program can provide a natural pool of talented academic support personnel to serve as Supplemental Instruction Leaders. Serving as a Supplemental Instruction Leader is unlike serving as a peer tutor and requires a higher level of maturity, experience, and responsibility. A suggested job description with qualifications as well as a sample recruitment plan are located below.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction Leader Position Description

Supplemental Instruction (SI) leaders facilitate student learning and help students better understand concepts or applications of course content. Each SI Leader is assigned one course each semester. The SI Leader attends each session and provides weekly small group sessions covering the course content as well as essential student skills (i.e. study skills, test taking, note taking, etc).

The SI Leaders support students and assist them in gaining effective study skills, and maximize their potential for academic success. While attending the course, SI Leaders gather insight into the course content and the instruction methods in use. SI Leaders also maintain ongoing contact with course instructors and their immediate supervisor.

Qualifications

- Earned grade of B or higher in the selected course.
- Prior enrollment in the selected course highly desirable.
- Faculty recommendation (content competency is required).
- Capacity to work with students with diverse backgrounds.
- Commitment to work the time promised.
- Attend a paid mandatory training prior to the fall or spring semester.

Responsibilities

- Follow all procedures and policies set by their immediate supervisor.
- Attend all class meetings of the selected course, take accurate notes, and understand all homework/reading assignments and projects.
- Facilitate several small group study sessions throughout the semester.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

- Provide additional SI sessions as necessary (e.g. prior to quizzes and exams). – Supervisor approval required.
- Meet with the course faculty and campus supervisor periodically.
- Report immediately to their supervisor when critical issue(s) arises.
- Attend and participate in SI Leader group meetings as scheduled.
- Be familiar with campus resources available to students.
- Submit SI attendance report weekly to their supervisor.

Time Commitment

- Attend and participate in SI Leader group meetings in order to report and discuss any issues, concerns, and study strategies with campus coordinator and other SI Leaders.
- Attend mandatory SI Leader training on prior to the beginning of semester.

Compensation

- SI Leaders will earn \$XX per hour, including during training.

Expectations

- Act in a professional manner, and be sensitive to and respectful of the student's needs.
- Be prepared and be on time for each SI session.
- Keep all information on students you work with confidential.
- Support and care about student success.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction Leader Recruitment Plan

At this stage you will need to designate a team to lead your recruitment efforts. Depending on the size of your college, recruiting your Supplemental Instruction Leaders may prove to be difficult; therefore, it will be vital for the success of your program that you have a robust recruitment plan in place well in advance of the start of your program. What follows is a sample recruitment plan that can be modified to meet your needs. The purpose of the recruitment plan is to ensure you're meeting essential benchmarks so you do not experience any disruption in your program due to lack of appropriate staffing.

Sample Recruitment Plan

Time Frame	Activity	Responsible	Resources Needed
6 Months Prior To Start Of Semester	Position description developed and placed on appropriate venues (e.g. student employment job board, Human Resources job board, etc...), faculty referral request disseminated	SI Program Coordinator	<ul style="list-style-type: none">• Campus student employment coordinator• Human Resources department• Job description• Faculty referral request
5 Months Prior to Start of Semester	Hiring team selected	SI Program Coordinator	Recommended Members for hiring team: <ul style="list-style-type: none">• SI Program Coordinator (Chair)• At least one faculty member, involved in SI program• Student affairs representative

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

4 Months Prior To Start of Semester	Initial pool of applicants selected for first screening process	SI Program Coordinator and hiring team	
3 Months Prior to Start of Semester	First round applicants participate in initial interview	SI Program Coordinator and hiring team	1 st Round Interview Process (located below)
2 Months Prior to Start of Semester	Final round of applicants selected from first round pool and interviewed	SI Program Coordinator and hiring team	Final Interview Process (located below)
1 Month Prior to Start of Semester	Finalists selected and offered position	SI Program Coordinator and hiring team	<ul style="list-style-type: none"> • Position offer & welcome letter

Faculty Referral Form

One source of potential candidates will be the college's faculty. What follows is a form that can be adapted and disseminated to the faculty to recommend potential candidates for the Supplemental Instruction Program.

Dear Faculty Member:

We are in the process of recruiting candidates to serve as Supplemental Instruction Leaders for the upcoming semester. In order to serve as a Leader, a student must have earned at least a B in your course and demonstrate leadership skills above and beyond the average student. We ask that you take a few moments to consider the students you are working with this semester and determine whether you think they would be a good candidate for our program. If you have any students you feel would make a good candidate, we ask that you complete the attached form and return to us at your earliest convenience. Once we receive the form, we will contact the student.

Thank you for your commitment to our students.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Name of Student: _____ Student ID: _____

Phone: _____ Email: _____

Course you're referring this student for: _____ Your Name: _____

Your Phone Number: _____ Email: _____

Please take a few moments to provide us with some insight into the student's abilities in the specific subject area. Please rate the student on each of the following areas of competence. (check the appropriate box)

Grasps fundamental ideas & concepts

Above average Average Below average N/A

Integrates complex information

Above average Average Below average N/A

Completes assignments on time

Above average Average Below average N/A

Accepts constructive criticism

Above average Average Below average N/A

Has good work habits, is disciplined

Above average Average Below average N/A

Shows potential for more advanced study

Above average Average Below average N/A

Has good interpersonal skills

Above average Average Below average N/A

Demonstrates good communication skills

Above average Average Below average N/A

Demonstrates leadership abilities

Above average Average Below average N/A

Please check one: I highly recommend this student to be an SI Leader

I recommend this student to be an SI Leader

I do not recommend this student to be an SI Leader

Faculty statement: (please use this space to tell us anything else you feel would be relevant in our decision)

Signature of Instructor

Date

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

1st Round Interview Process

The purpose of the initial interview is to determine whether the candidate meets the minimum qualifications and if they will be a good fit for the program. This interview should last approximately 30 minutes and is designed to select candidates for the final interview. What follows is a sample initial candidate screening form:

Supplemental Instruction Leader | Candidate Screening Form

Candidate's Name: _____ Interview Date: _____

Question	Response Notes	Rating Scale 1(low) – 5 (high)
Tell us why you're interested in this position and how it aligns with either your major or career goals.		
Since you have reviewed the position description, what do you think the top three qualities are that a SI Leader should have?		
If a student were to ask you why they should attend your SI session, what would your response be?		

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

If a student in one of your SI sessions came to you complaining about their professor, what would your response be?		
When you hear the term "student leadership," what comes to mind?		
Do you have any questions for us?		
Total Score		
Reviewer's Comments		
Do you recommend this candidate to advance to a final interview? <input type="checkbox"/> Yes <input type="checkbox"/> No		

Final Interview Process

The purpose of the final interview will be to select which candidates to be offered a position as a Supplemental Instruction Leader. The interview should be designed to determine whether the candidate possess the necessary academic, leadership, and social skills necessary for serving as a Supplemental Instruction Leader. Given the nature of the position it will be important to determine if the candidate has the ability to lead an activity for their students. Therefore, having the candidate design and lead a short activity with the hiring team will help in determining whether they have the ability to plan and lead an engaging learning activity. However, it will be important to remember that as they are a student the activity they lead with the hiring team may be a little "rough around the edges". The "roughness" of the activity will be

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

acceptable for the interview process, the hiring team will need to determine whether with proper training, can the candidate improve enough to lead such an activity with their students. Possible scenarios for their activities could be:

- During the first week of class you will be responsible for helping students become acquainted with one another. Lead an icebreaker that will help your students learn a little about their classmates.
- On last week's test covering (select a subject specific to the subject this candidate may be leading) a majority of your students struggle with (select basic topic specific to candidate's class). Design a quick and engaging activity to help your students gain a better understanding of this concept.

What follows is a sample agenda for an interview as well as a candidate ranking form.

Supplemental Instruction Leader | Candidate Final Interview Agenda

- 1) Welcome candidate & introduce hiring team
- 2) Overview of interview agenda
- 3) Candidate activity/presentation
- 4) Candidate interview
- 5) Wrap up and inform candidate of next steps in process

Supplemental Instruction Leader | Candidate Final Screening Form

Candidate's Name: _____ Interview Date: _____

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Activity Review	Notes	Rating Scale 1(low) – 5 (high)
Level to which activity accounted for multiple learning styles.		
Level to which candidate was knowledgeable of content.		
Level to which candidate kept students engaged.		
Overall rating of candidate's activity.		

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Questions	Response Notes	Rating Scale 1(low) – 5 (high)
Please walk the interview team through the process you used to design today's activity.		
If you are hired as an SI Leader, you will have students with different learning styles. How might you adapt today's activity for a student with a different learning style?		
Tell us about a time you struggled academically. How did you overcome the struggle? If one of your students came to you with a similar problem, how might you guide them through it?		
If a student came to you and informed you they were planning to drop the class, how would you handle the situation?		
Total Score		
Reviewer's Comments		
Do you recommend this candidate for hire as an SI Leader? <input type="checkbox"/> Yes <input type="checkbox"/> No		

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

□ Step 6 | Training & Professional Development

You have now hired a team of Supplemental Instruction Leaders. Many resources exist to help build an ideal training experience. The International Center for Supplemental Instruction located at the University of Missouri-Kansas City offers an onsite training that ranges in price from \$3,500 to \$6,400, depending on whether you choose to offer a one-day or two-day training. While widely known as the premier training for Supplemental Instruction Leaders you may find this cost problematic. Another, more affordable option could be to design your own training. Higher Education scholar Sally A. Lipsky developed the resource “A Training Guide for College Tutors and Peer Educators”. This guide contains several chapters you may find applicable to fostering the types of skills you want in your Supplemental Instruction Leaders including:

- The Role of the Peer Educator
- Facilitating Learning
- Strategies for Improving Time Management
- Setting Goals
- Promoting Active Learning
- Incorporating Critical Thinking and Questioning Skills
- Assessing Student’s Learning
- Valuing Diversity Among Students
- And much, much more.

Lipsky’s guide, costing less than \$40, is an affordable and adaptable alternative method to training your Supplemental Instruction Leaders. Given the nature of the program and the role of Supplemental Instruction Leaders, it is recommended you design your training to last at least

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

two days. What follows is a sample agenda for a two day training using the guide developed by Lipsky as the primary training document.

Supplemental Instruction Leader Training | Day 1 Agenda

Time	Topic	Presenter(s)	Notes
9:00 – 9:15	Welcome and Introductions		
9:15 – 10:30	Ice Breakers and Team Building		
10:30 – 11:00	Introduction to SI		<ul style="list-style-type: none">• Impetus of the program<ul style="list-style-type: none">○ Strategic plan and completion plan connection• Expectations (Job Duties and Responsibilities)• Learning Outcomes• Data share

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

11:00-12:00	The Power of Peers: Your Role as a Peer Educator		<ul style="list-style-type: none"> • Chapter 1
12:00-12:45	Break		
12:45 – 2:00	Promoting Active Learning		<ul style="list-style-type: none"> • Chapter 2
2:00-3:00	Incorporating Critical Thinking and Questioning Skills		<ul style="list-style-type: none"> • Chapter 3
3:00-3:15	Break		
3:15-4:00	Diversity Training		<ul style="list-style-type: none"> • Diversity Uncovered on Two-Year Campuses
3:30-4:00	New Faculty Training		<ul style="list-style-type: none"> • How to integrate program into the classroom • Data share
4:00-5:00	Faculty and SI collaboration		<ul style="list-style-type: none"> • Icebreaker • Syllabus Review • Blackboard • SI Leader Questions • Collaboration Time

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction Leader Training | Day 2 Agenda

Time	Topic	Presenter(s)	Notes
9:00-10:00	Assessing Students Learning		<ul style="list-style-type: none">Chapter 4
10:00-11:30	Customer Service Training		
11:30-12:30	Break		
12:30-2:30	<ul style="list-style-type: none">Collaborative Learning and Group WorkSI Do's and Don'ts		<ol style="list-style-type: none">Chapter 5ScenariosBlackboard Course ShellAttendance
2:30-3:00	Wrap Up		<ul style="list-style-type: none">Last minute questions, comments, concerns

Evaluating Your Training

For the purpose of continuous improvement, it will be important to determine whether your Supplemental Instruction Leaders felt the training was helpful for their development as peer educators. What follows is a sample survey that can be administered to Supplemental Instruction Leaders:

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction Leader Training | Leader Evaluation of Training

Please rate the following training sessions on how helpful you feel they were for you:

Training	Low				High
	1	2	3	4	5
Ice Breaker & Team Building					
Intro to SI					
The Power of Peers: Your Role as a Peer Educator					
Promoting Active Learning					
Incorporating Critical Thinking and Questioning Skills					
Diversity Training					
Faculty Interaction					
Assessing Student's Learning					
Customer Service					
Collaborative Learning/Group Work					
SI Do's & Don'ts					

Out of the above sessions, what activities were the least helpful?

Of the above sessions, what activities were the most helpful?

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

What should we have covered that we didn't

Is there anything we should eliminate?

Final thoughts?

Additional Training Considerations

In addition to training your Supplemental Instruction Leaders, additional groups to train will include your faculty and academic advisors. The above agendas included time for your faculty to train with their Supplemental Instruction Leaders. You will also need to consider what kind of messaging to deliver to your academic advisors as they will most likely be dealing with questions from students about Supplemental Instruction. Academic advisors will need to be able to explain what Supplemental Instruction is as well as what the benefits are for students, especially if the student is concerned with the additional time required for the class. It will be vital that the academic advising representative on the leadership team play an active role in the design and implementation of the program and communicate information about the program to their colleagues.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

PHASE 2 | IMPLEMENTATION

□ Step 7 | Implementation

Having completed all of the above tasks it is now time to begin designing what the Supplemental Instruction program will look and feel like for students and Supplemental Instruction Leaders. This section will be divided into six subsections:

- Step 7.1 | Designing & Planning Sessions
- Step 7.2 | First Impressions; Planning 1st Week Sessions
- Step 7.3 | Program Coordinator Observation of Sessions
- Step 7.4 | Ongoing Support and Professional Development for Leaders
- Step 7.5 | Planning for Next Semester
- Step 7.6 | Closing out the Semester

□ Step 7.1 | Designing and Planning Sessions

Designing and planning sessions will be vital to the success of the program and helping your Supplemental Instructors design their sessions will be just as vital, especially considering that they are students themselves. To achieve this, it will be important to develop resources that the Supplemental Instruction Leaders can use to plan their sessions to ensure they are designing sessions that will keep their students engaged while also ensuring the session helps students better master one of the desired learning outcomes of their class. Below is a simple form that can be adapted to help Supplemental Instruction Leaders plan a session. This form, in

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

addition to being a tool for your Leaders to plan their sessions will also prove to be an excellent discussion point when meeting with your leaders after you observe their sessions.

Supplemental Instruction | Session Plan

SI Leader	Course	Date of Session	Time of Session

I. Pre-Session: This Section Must Be Filled Out Before Section Begins

Create session objectives and agenda using material from lecture, readings, and homework that you think should be emphasized.

What key concepts, formulas, details, rules, study skills, etc...do students need to be made aware of in this section: _____

What Will You Cover? (quadratic equation, bill of rights, osmosis, icebreaker, etc...)	How Will You Deliver the Content? (mock exam, game, worksheet, discussion, etc...)	How Will You Organize Students? (pairs./groups, on the board, sit in circle, individual, etc...)	Which Course Outcome(s) Will This Activity Address? (Pull directly from syllabus)
Attendance & announcements Activity Length: 5 Minutes			

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Activity Length:			
Activity Length:			
Activity Length:			

II. Session Checklist: Refer to this during your session.

Beginning	During	End (last 5 minutes)
<ul style="list-style-type: none"> <input type="checkbox"/> Put agenda on board. <input type="checkbox"/> Have attendance sheet out for students to sign. <input type="checkbox"/> Ask students what they want to cover. 	<ul style="list-style-type: none"> <input type="checkbox"/> Relax, remain flexible, and have fun! <input type="checkbox"/> Check that the attendance sheet is filled out completely and legible. 	<ul style="list-style-type: none"> <input type="checkbox"/> Remind students of next session. <input type="checkbox"/> Put classroom back in order. <input type="checkbox"/> Wipe the boards clean. <input type="checkbox"/> Pick up any trash and food items. <input type="checkbox"/> Remind students that additional help is available through tutoring.

III. Post-Session Comments: This section is filled out after session ends.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Student Evaluation (Students' response to session, deviations from original plan, student's level of engagement)	Self-Analysis (How do you feel you did?)	Adjustments for Next Session (What improvements will you make for the next session?)

Tips for Planning A Successful Session

- **Running a successful session requires careful planning.**
 - Never go into session intending to “play it by ear” or “answer questions.” Asking students, “What do you guys want to do?” is not the correct way to start a session.
- **Personally invite students to the sessions.**
 - Don't act insulted if they offer an excuse for not coming.
 - Highlight the benefits of attending
- **Be direct with your students.**
 - Maintain eye contact. Call students by their names.
 - A “change of plans” may occur frequently.
- **Don't feel tied to keeping up with the content.**
 - You don't have to “do something” with every bit of content provided by the instructor and text. It may be more beneficial to focus on one or two of the most important concepts instead.
 - If you need additional help with planning your session remember to use the SI group in Blackboard or your college's LMS.
- **Model how successful students learn.**
 - It is more effective to model how to learn than it is to “tell” students what they need to know.
- **Use the class's vocabulary.**
 - Make use of the language of the course and instructor.
- **Waiting for students to volunteer a well-developed answer takes time.**
 - If you are uncomfortable waiting for 15 seconds, join students in looking through notes or text.
- **If students are unable to answer the question, ask for the source of information.**
 - Ask for the date of the lecture that contained the information and search for the answer together. Avoid taking on the responsibility of always providing answers.
- **Encourage students to summarize the major concepts of the lectures.**

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

- Let others fine-tune the responses. If information is incorrect, ask students to find specific references in the text or notes that will clarify the correct answers.
- **Avoid interrupting student answers.**
 - SI should provide a comfortable environment for students to ask questions or attempt answers.
- **Refer to the syllabus regularly.**
 - Check that students understand the requirements and dates of assignments, projects, and tests.
- **If your session has 8 or more students, divide into groups.**
 - Move from group to group, participating from time to time, reassuring the group that you are still there for them. Remember, SI helps them learn how to study effectively in groups.
- **Communicate student's issues to the instructor.**
 - If you notice students are struggling with a particular area inform the instructor.
 - If students approach you with issues in the class encourage them to inform the instructor.

□ Step 7.2 | First Impressions: Planning 1st Week Sessions

One never receives a second chance at a first impression. With that in mind, it will be important for Supplemental Instruction Leaders to plan their sessions the first week of classes carefully. Supplemental Instruction Leaders will want to plan sessions that accomplish two simple goals:

- 1) Explain the benefits of Supplemental Instruction to students
- 2) Immediately engage students in both the course and the Supplemental Instruction program

To accomplish these two goals Supplemental Instruction leaders must lead activities that allow students to both gain an understanding of Supplemental Instruction but that also contextualizes it to how it will be able to help them succeed in that particular course, this can be accomplished by conducting and explaining the Supplemental Instruction Student Pre-Survey

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

and explaining that the goal of the program will be to help students not only increase their knowledge with the subject area but improve their student skills. Finally, Supplemental Instruction Leaders should lead an activity that allows students to get to know each other and begin to build a community. A sample agenda for the first day of class is below, this agenda could easily be adapted to be entered into the above session planning form:

Supplemental Instruction | Day 1 Agenda

- Welcome & Introduce Yourself
- Icebreaker Activity
- Administer Pre-Survey
- Explain Pre-Survey, Benefits of Supplemental Instruction Program
- What's Coming This Semester

During the first session, the Supplemental Instruction Leader should administer the pre-survey. This survey will assist them in explaining the benefits of the program but also serve as a vital piece of the Program Continuous Improvement Plan to be discussed later. A sample survey that could be adapted is below:

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction | Semester Student Pre-Survey

Please rate the following items:					
Area	Low				High
	1	2	3	4	5
Your knowledge of the subject material in this class					
Your comfort level with the subject material in this class					
How confident are you that you will earn a C or better					
Your level of confidence in doing well on tests					
Please Answer the Following Questions					
Do you feel supplemental instruction will help you succeed in this class?					
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unsure					
Have you previously taken a class with Supplemental Instruction?					
<input type="checkbox"/> Yes <input type="checkbox"/> No					
Have you used tutoring services before?					
<input type="checkbox"/> Yes <input type="checkbox"/> No					

Step 7.3 | Program Coordinator Observation of Sessions

As a method of quality control and in the interest of continuous improvement, it will be important to observe the Supplemental Instruction Leaders as they lead their sessions. There are a few different methods of accomplishing this including announced visits, unannounced visits, or a mixed approach. Regardless of which method is chosen, it will be important to have an objective method to observe the sessions then discuss the observation with the

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction Leader immediately, or as close to immediate as possible, after the session to help them reflect on the session and improve their approach. To accomplish this, a sample observation form is below. The program coordinator should complete this form during the observation then schedule a one-on-one meeting with the Supplemental Instruction Leader afterwards to discuss the observations.

Supplemental Instruction Session Observation Form			
Class		Days/Times/Location	
	SI Leader		Instructor
Session Observations			
Positives			
Improvements			

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

What do you feel is working well with the SI sessions?	
What do you feel needs to be improved with the SI sessions?	
How do you feel the students are responding to the sessions?	
What further training or information would you want to have in order to improve SI for the next session?	
Do you plan to return next semester?	<input type="checkbox"/> YES <input type="checkbox"/> NO

Step 7.4 | Ongoing Support & Professional Development for Leaders

Throughout the semester it will be important to continue to support and develop the Supplemental Instruction Leaders. Doing this will help ensure that the program is continuing to function effectively, and that Supplemental Instruction Leaders continue to be trained. There are two activities that can be used to accomplish this: 1) regular meetings with all Supplemental Instruction Leaders and 2) regular one-on-one meetings between the program coordinator and

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

the Supplemental Instruction Leader. It is recommended that regular group meetings be scheduled prior to the semester and be made mandatory. These mandatory meetings should be considered when building the budget. Regular meetings should provide an opportunity for Supplemental Instruction Leaders to share challenges they have experienced in their classes, successful strategies they have implemented, and training. The frequency and length of these meetings should also be considered when creating the program's budget. For the purposes of this guide, the agenda below assumes a biweekly meeting frequency and a meeting length of 90 minutes.

Supplemental Instruction | Group Meeting Agenda

- Welcome & Updates from Coordinator | 10 minutes
- Pair & Share | 30 minutes
Leaders will pair up with each other and share one challenge they experienced from the previous two weeks and how they addressed it OR they will share one activity they successfully implemented then report back to the group
- Professional Development | 40 minutes
- Final discussion, reminders, and adjourn | 10 minutes

In addition to biweekly meetings, holding one on one meetings with the Supplemental Instruction Leaders can also be a valuable tool for quality assurance and continuous improvement. These meetings do not need to be as frequent as the group meetings and should ideally be scheduled immediately after the coordinator has conducted a session observation. Individual meetings should be designed as an opportunity for the program coordinator to provide feedback to the Leader on their sessions but also provide an opportunity for the Leader to seek advice on how to improve. A sample agenda for these meetings is below:

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction | One on One Agenda

- Status Check
How is it going so far? What are your concerns/challenges? What are your successes? How is your partnership with your instructor?
- Review Observation Form and Provide Feedback, Strengths, areas for improvement, resources moving forward.
- Start, Stop, Continue
After reflecting on what we've discussed, what will you start doing that is new, what will you stop doing that isn't working, and what will you continue to do that worked well?
- Final Thoughts & Burning Issues

Step 7.5 | Planning for Next Semester

As the semester is progressing it will be important to begin planning for the following semester. Considerations such as which Leaders will be returning, planning any training and development activities, and whether new faculty will be introduced will all need to come into play as plans are being developed. Once returning Leaders have been identified it will be important to begin recruiting for any open positions. Following the recruitment plan and hiring process discussed earlier in this guide can help with this step. If new Leaders and faculty will be brought into the program training will need to be provided to bring these individuals up to speed while providing additional development opportunities for returning Leaders. The training agenda discussed earlier can be adapted to ensure new Leaders receive all of the training the experienced Leaders have received while ensuring experienced Leaders do not repeat training activities.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

□ Step 7.6 | Closing Out the Semester

Sessions offered during the last one or two weeks of the semester should be designed as test prep sessions to help students prepare for their final exams. Supplemental Instruction Leaders can lead interactive activities to help students prepare. If faculty have provided study guides, Leaders can adapt these guides into fun and engaging activities. Ideally, a minimum of final exam preparation activities should be held. The first activity can provide a sort of baseline to the Leader to help determine which topics their students seem to be struggling with the most. The Leader can then adapt the next activity to address the students' areas where they are struggling the most. Finally, the Leader should have students complete the Supplemental Instruction Student Post-Survey as part of the program's continuous improvement plan and to determine whether the program assisted students in their growth. The post-survey is simply adapted from the pre-survey. A sample post-survey is below:

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

Supplemental Instruction | Semester Student Post-Survey

Please rate the following items:		Low		High		
Area		1	2	3	4	5
Your knowledge of the subject material in this class						
Your comfort level with the subject material in this class						
How confident are you that you will earn a C or better						
Your level of confidence in doing well on tests						
Please Answer the Following Questions						
Do you feel supplemental instruction helped you succeed in this class?						
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unsure						
Would you recommend Supplemental Instruction to another student?						
<input type="checkbox"/> Yes <input type="checkbox"/> No						
Have you used tutoring services outside of Supplemental Instruction this semester?						
<input type="checkbox"/> Yes <input type="checkbox"/> No						

PHASE 3 | ASSESSMENT

Step 8 | Assessment and Continuous Improvement

As with all programs it will be essential to assess whether the program is working, to what extent it is working, and what improvements need to be made to improve and/or expand the program. To accomplish this, the Supplemental Instruction Leadership Team should develop a robust Assessment and Continuous Improvement Plan. This plan, should be utilized throughout the life of the program and adjusted as the program evolves and grows. Below is a

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

sample Assessment and Continuous Improvement Plan that can be adapted to fit the needs of any program.

Supplemental Instruction | Assessment and Continuous Improvement Plan

Data	Compared Against	Desired Outcome	Possible Interventions If Outcome Not Achieved
Student Pre-Surveys	Post-Surveys	<ol style="list-style-type: none"> 1. Students expressed increases in knowledge of and comfort level with material. 2. Students indicated increased belief that SI played role in success. 3. Students indicated increase in use of ancillary tutoring services. 	<ol style="list-style-type: none"> 1. Alter sessions to ensure Leaders are spending more time on content and administering mini-assessments to determine student knowledge gaps. 2. Ensure SI leaders do better job of contextualizing SI to class. 3. Ensure Leaders are communicating availability of tutoring services.
End of semester course completion data	Completion data from previous semesters	<ol style="list-style-type: none"> 1. Increase in the number of students completing course. 2. Increase student persistence rate into following semester. 	<ol style="list-style-type: none"> 1. Strengthen training for Leaders on learning styles and designing activities. 2. Create/implement plan to involve academic advising into SI sessions.
Return On Investment	Other academic support programs; i.e. tutoring.	<ol style="list-style-type: none"> 1. Validate the program's capacity to pay for itself. 2. Demonstrate the program's ability to expand. 	<ol style="list-style-type: none"> 1. Evaluate which courses are selected to determine if a shift is needed. 2. Evaluate budget to determine if adjustments are needed.

Meeting Students Where They Are

A Guide for Creating a Supplemental Instruction Program on Your Community College Campus

The above data and questions will be important in the continuous improvement of the program, but they merely serve as a starting point. In addition to the above, it will also be important to determine where Supplemental Instruction had the greatest impact, where it might have had a negative impact, and why. These areas may assist in determining which courses to concentrate on and which courses to remove from the Supplemental Instruction program. To accomplish this, it will be vital to ensure the lines of communication are open between all parties: the Leadership Team, the faculty, Leaders, and administration, as the success of any Supplemental Instruction program is a shared responsibility amongst all these parties.

Conclusion

Supplemental Instruction has the ability to make significant positive impacts on student success. However, in order for any Supplemental Instruction program to be successful, it also requires successful investment of resources. These resources will take the form of time, for staff, faculty, and administration, treasure, in the form of budget dollars, and talent, in the form of those leading the program and those charged with implementing the program, your Supplemental Instruction Leaders. If a college is willing to make the investments necessary, the return on these investments can have a major impact not just on the college's completion data but on the college's culture as it pertains to student success. The bottom line is that if done well, Supplemental Instruction is worth the investment.

CHAPTER FIVE: CONCLUSION AND IMPLICATIONS

Introduction and Organization of the Chapter

The purpose of this dissertation was to provide a step-by-step guide describing how a community college could design and implement a Supplemental Instruction program. Chapter Two provided a look into the literature on supplemental instruction as well as the research that has been conducted on its effectiveness. Chapter Three used knowledge gained design two versions of a Supplemental Instruction program. In addition, the lessons learned from those versions informed the improvements and redesign for the implementation guide presented in Chapter Four.

This chapter summarizes the key points made in the previous four chapters as well as provide recommendations on where more work is needed to improve Supplemental Instruction. This chapter is organized into seven subsections that provide a conclusion and summarize the previous chapters, provide recommendations on the implementation guide presented in Chapter Four, recommendations for future work, and a final conclusion.

Review of the Study

The purpose of Chapter One was twofold: (1) explain the context for the importance of Supplemental Instruction to community colleges and its evolving mission and (2) provide the framework for the guide presented in Chapter Four. Community colleges have recently undergone a large transformation resulting in more equal focus on both access and success. This transformation has occurred almost simultaneously alongside changes in the way in which many community colleges are funded. Many states have shifted from a funding model based on solely on headcount to one based on outcomes such as success, retention, and completion. These two shifts have brought about a necessity for colleges to improve academic support programs, such as Supplemental Instruction, that can increase student success and produce a return on investment.

Chapter Two provided a review of literature relevant to Supplemental Instruction. This research demonstrated the viability of Supplemental Instruction as a program that can have a positive impact on areas such as student success, retention, persistence, and completion. Chapter Two also provided a framework for how Supplemental Instruction can be used as a tool for institutional effectiveness, creating an environment in which faculty adapt their teaching to better facilitate student learning through the faculty member's participation in Supplemental Instruction. Researchers reported data that Supplemental Instruction was a more cost-effective approach than tutoring. This chapter provided the reader with data supporting Supplemental Instruction as a proven model for increasing student success.

Chapter Three traced the evolution of the Supplemental Instruction model at a community college. Decisions made and lessons learned in the development and implementation of two approaches to Supplemental Instruction at a community college were discussed. Data was collected and analyzed to inform the evolution of one approach to the second approach that led to the implementation guide in Chapter Four. The process followed in Chapter Three provided the context for implementation guide presented in Chapter Four.

Chapter Four was presented in the form of a guide on how to implement Supplemental Instruction as an implementation guide that would allow the reader to implement a Supplemental Instruction program at their college. The information and samples provided in this chapter were meant to serve as examples the reader could adapt to fit the needs and culture of any college.

Recommendations for Implementing the Guide

When utilizing the guide in Chapter Four to design and implement a Supplemental Instruction program, the reader should consider several key recommendations.

Recommendation One: Design to Expand

Any Supplemental Instruction program should be designed to be scaled up. Implemented correctly, a Supplemental Instruction program will quickly prove its worth and demonstrate its return on investment. It will become necessary to consider how to scale up the program not only to include more classes, but to expand into additional types of classes. Planning for increasing this success will be vital to

ensure the sustainability of the program. This planning should include resources such as personnel and budget to ensure the program has the proper resources to survive growth.

Recommendation Two: Assess Success

Involvement of Institutional Research from the beginning will be key to ensure there is not only an adequate assessment and continuous improvement plan, but that there is a systematic collection and analysis of data for the purposes of program justification. Creating a strategy to calculate the return on investment will be vital to ensuring the long-term viability of the program.

Recommendation Three: Will Students “Do” Optional?

One possible reason for the success of the second version of the program presented in Chapter Three was that the program was made mandatory for students and included in their class schedule. When designing a new Supplemental Instruction program, it will be important to decide whether or not to make the program voluntary or mandatory for students. As discussed in Chapter Three, students who were identified as occasional users and therefore did not regularly attend performed worse than the regular user group. It seems that a correlation exists between mandatory attendance and improved outcomes. This relationship should be further investigated.

Recommendations for Future Research

This author identified several major areas where additional work and/or research on Supplemental Instruction is suggested.

Recommendation One: Today’s Community College Student

First, little research has been conducted into certain aspects of Supplemental Instruction particularly as it pertains to the effect of Supplemental Instruction at a community college. As student populations evolve with the change from one generation to the next, the research should keep pace with these changes to ensure the continued viability of these programs for the current generation. Furthermore, this type of research, when paired with research into the needs of current generations, can be used to adapt Supplemental Instruction to fit the needs of the current generation of community college students.

Recommendation Two: Longitudinal Data

The next area for more research centers on the cornerstone of the approaches outlined in Chapters Three and Four and whether to make the program mandatory or voluntary. In order to help inform the decisions of future Supplemental Instruction leaders, longitudinal research is needed to demonstrate the effectiveness of making programs mandatory when compared against programs that are voluntary.

Recommendation Three: Effect of Online Delivery

One significant area not addressed in most research is the involvement of Supplemental Instruction with online education. As online education continues to grow, so too does the need to provide online students with the same level and types of support as on-campus students. Further research is necessary to explore how Supplemental Instruction can be adapted to provide academic support for online students.

Recommendation Four: ROI

Additional research is needed to determine the return on investment for Supplemental Instruction, particularly for community colleges. As more states shift to a performance-based funding model, it is increasingly important for community college leaders to understand which programs they can invest in to help ensure a high return on investment, especially given a scarcity of resources.

Recommendation Five: Application to Four-year Institutions

As discussed in previous chapters, the implementation guide and the previous versions which led to its creation were all developed within the context of a community college. However, this approach does not have to be restricted to use in a community college and could be adapted to meet the needs of a four-year institution. Further work could be conducted on how the implementation guide could be adapted to meet these needs.

Recommendation Six: Retaining SI Leaders

Chapter Two presented literature that discussed the history of Supplemental Instruction as well as its impact on student success and institutional effectiveness. Little research has been conducted on

the effect of Supplemental Instruction on the Supplemental Instruction leaders. Additional research should be conducted into the impact Supplemental Instruction has on the retention and completion rates of Supplemental Instruction Leaders.

Conclusion

Through initiatives such as outcomes-based funding, colleges and universities are under increased pressure to show evidence that academic support and student success initiatives are making a difference. The research from the past 30 years indicates that a Supplemental Instruction program can have a positive impact on student success outcomes. What is needed going forward is not more studies on the effectiveness of Supplemental Instruction, but practical guidance on how community colleges can implement a successful program, especially those institutions with limited resources. Supplemental Instruction has the ability to have a positive impact on students and colleges. There exists a great deal of literature on this impact. However, there lacks a practical and adaptable approach to how a community college could implement Supplemental Instruction. It is hoped that the creation of this step-by-step implementation guide will motivate other institutions to develop or evolve their own approaches to Supplemental Instruction. Furthermore, institutions may find ways to adapt the guide to fit their needs, which in turn could serve to validate the approach presented in the guide. It is worth repeating that Supplemental Instruction can become a viable option for colleges to have a positive impact on student success, retention, persistence, and completion. This potential impact becomes even more important as many community colleges are forced to evolve to ensure their revenue streams not only remain steady but grow, particularly in an environment in which more and more colleges are funded on performance. After implementing this guide in Chapter Four at my home institution and analyzing the results, it would be this researcher's goal to present the guide on a larger scale at student success meetings and conferences.

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