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Increasing Community College Basic Skills English Instructors' Use of Autonomy Supportive Instruction to Impact Students' Perceptions of Autonomy and Engagement

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INCREASING COMMUNITY COLLEGE BASIC SKILLS ENGLISH INSTRUCTORS' USE OF AUTONOMY SUPPORTIVE INSTRUCTION TO IMPACT STUDENTS' PERCEPTIONS OF AUTONOMY AND ENGAGEMENT

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Dissertation Abstract

INCREASING COMMUNITY COLLEGE BASIC SKILLS ENGLISH INSTRUCTORS' USE OF AUTONOMY SUPPORTIVE INSTRUCTION TO IMPACT STUDENTS' PERCEPTIONS OF AUTONOMY AND ENGAGEMENT

There is concern in California community colleges about student success because persistence rates have decreased and graduation rates have declined. Basic skills students are underserved and underprepared, and their success rates are lower than traditional students. Nine California Community College Student Success Task Force recommendations were designed to increase basic skills student success.

In this quasi-experimental study three basic skills English instructors were trained on two of the six autonomy-supportive instruction strategies. The training design was based on characteristics of effective ASI interventions and addressed recommendations to improve community college basic skills instruction with professional development on research-based pedagogies. The purpose of this study was to describe the impact of instructors' use of autonomy supportive statements that nurtured students' inner motivational resources and that provided informational feedback on their students' perceived autonomy and engagement.

Instructors attended a training session and two coaching sessions facilitated using ASI strategies. Data to measure instructors' autonomy orientation were collected using a slightly modified *Problems in Schools* questionnaire and transcriptions of instructors comments during classroom instruction, that were coded on the *ASI Observation Coding Guide*, a new instrument based on the literature. Student autonomy and engagement was measured with a new instrument, the *Student Learning Survey* that combined autonomy items from the *Learning Climate Questionnaire* and classroom engagement items from the *National Survey of Student Engagement*. Results were compared between groups and across measurement times for control and treatment groups.

Results showed that treatment instructors increased use of autonomy supportive statements and decreased use of controlling statements. Students reported higher perceived autonomy and increased engagement immediately following treatment, compared to pretest, but perceptions returned to pretest levels at the maintenance measure 3 weeks after posttest. Limitations were related the small population of instructors and a small student sample with missing data due to inconsistent classroom attendance. Suggestions for future research include replicating this study with a larger sample, providing scaffolds for faculty to sustain their provision of autonomy during maintenance, and providing an internet-based student survey available over a short amount of time to reduce the amount of missing student data.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements of the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

Dionne J. Clabaugh	May 8, 2014
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Dissertation Committee

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DEDICATION

This dissertation is dedicated to my husband, René, and our children, Scott and Allison, in deep gratitude for their agreement to and encouragement of my success. During these 6 doctoral years we together traversed middle school, high school, middle college, university, job changes, and participation in marching band, jazz band, scouts, Vanguard, theater, and international music performance tours to Japan, France and Switzerland, to Portugal and Spain, and to Ireland. Through it all, you reminded me that family is most important.

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INTRODUCTION

The Community College League of California (CCLC) has expressed concerns about national declines in student success rates in the last decade, evidenced by decreasing graduation and transfer rates (as of 2010). In one study, student success was measured by persistence, defined as enrollment in a subsequent term or year of college beyond the term currently in progress (McClenney & Marti, 2006). In California community colleges, approximately 2.6 million students enroll in programs for transfer, certificate, and vocational education.

In 2009, 28% of all students who enrolled in community colleges graduated with an AA degree (Center for Community College Student Engagement [CCCSE], 2010), while 54% transferred to a university. According to the Lumina Foundation for Education, if current completion rates continue to decline, by 2025 fewer than 50% of Americans will have persisted through a program of study to earn a college degree (CCLC, 2010). Such a decline is predicted to have a negative impact on our ability to compete economically and educationally on a global scale (Carnavale, Smith, & Strole, 2010).

In 2011, California community college faculty, administrators, and policy stakeholders came together as a task force to participate in a statewide dialogue to identify the best strategies for student success and addressing student needs. The

hypothesis was that more engaged basic skills students might be more academically successful than less engaged students. In the report that resulted from this dialogue, community colleges were encouraged to find ways to improve student engagement and to help students achieve higher rates of persistence. This report, by the Community Colleges Student Success Task Force (CCSSTF), proposed nine recommendations to improve students' ability to succeed (California Chancellor's Office, 2012). Colleges have autonomy in implementing these nine recommendations, but will be held accountable for ensuring and documenting student success. The recommendations rely on institutional change in the form of increased student access to courses and resources, increased student readiness for college, and incentives, services, and scheduling that contribute to student success. The nine recommendations are:

1. Increase student readiness for college
2. Strengthen support for entering students
3. Incentivize successful student behaviors
4. Align course offerings to meet student needs
5. Improve the education of basic skills students
6. Revitalize and re-envision professional development
7. Enable efficient statewide leadership and increase coordination among colleges
8. Align resources with student success recommendations
9. Review outcomes-based funding

Recommendations 5 and 6 relate to improved classroom instruction. Recommendation 5: *Improve the education of basic skills students*, suggests that instructors must build or hone their teaching skills in order to deliver effective

instruction, use research-based pedagogies, and be thoughtful, consistent, and productive teachers. Further, financial and campus resources must be allocated to support successful professional development interventions in order to fulfill this recommendation. These interventions should be provided in all California community colleges. In order for Recommendation 6, *Revitalize and re-envision professional development*, to be fulfilled, effective professional development activities for instructors should be sustained, designed for continuous improvement, assessment-based, and focused primarily on increasing student success.

Statement of the Problem

Recently, the number of basic skills students enrolling in California community colleges has increased (CCLC, 2010). About 25% of students entering community college basic skills courses tested into the lowest of the four levels of basic skills English or math courses, while 46% of these students scored high enough for enrollment into the highest of the four levels (Academic Senate for California Community Colleges, 2010). Students must complete their basic skills series of courses before entering the transfer-level English and math courses required for most transfer degrees and certificate programs.

Approximately 60% of California's community college students are at the basic skills level (Academic Senate for California Community Colleges, 2010), and are classified as underprepared and historically underserved. Basic skills students are underprepared because they typically have less experience with academic persistence and school success (Kuh et al., 2007). Basic skills students therefore require guidance to maneuver through course sequence planning and understanding requirements because

they have no history of positive academic progress. They typically have delicate financial situations and complex family systems; this background does not easily support academic achievement (Academic Senate for CA Community Colleges, 2010). They are underserved because they typically are first-generation college students from ethnic minorities and low-income families (Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007) or are students with English as a Second Language (ESL). Virtually all ESL students take basic skills courses as evidenced by the fact that 90% of ESL students test into the second lowest of the four levels of basic skills English courses offered at the college level (Basic Skills Ad Hoc Committee, 2000). These students also lack college readiness skills, such as effective study habits and critical thinking experiences that enable them to succeed in college-level English and math coursework. In some cases, basic skills students have never been exposed to English and math content at levels sufficient to succeed at the college level (Basic Skills Ad Hoc Committee, 2000).

Unfortunately, basic skills students traditionally do not have the skills or the conditions to persist in their studies and enroll in the next term. Thus, they are at risk of not completing the series of remedial courses required to enter collegiate level English or math to earn a certificate or degree. These students typically drop out without a vocational pathway to enter the work force.

The California community college system has actively sought to research and describe the conditions in which basic skills students can succeed. National and state research into student success has focused on students' classroom engagement and the impact of that engagement on persistence. *Engagement* describes a student's quality of emotion and behavioral intensity during a learning task (Reeve, Jang, Carrell, Jeon, &

Barch, 2004). It includes the energy and time students invest in "educationally purposeful activities" (Kuh et al. 2007, p. 2).

In Recommendations 5 and 6 of the CCSSTF, theoretical frameworks and practical suggestions to increase engagement were not provided. Although student engagement has been associated with persistence, very little research focuses on how community college instructors can teach using theoretically-based pedagogical strategies to increase engagement of basic skills students. According to the Academic Senate Basic Skills report (2010), more pedagogy-based research is required in order to determine ways to increase basic skills and ensure student success. Kuh (2010) documented a set of ten high-impact strategies considered to increase engagement, but did not provide evidence for the success of these strategies. Further, no professional development topics to improve instruction for basic skills students were suggested. Instead, faculty members were asked in Recommendation 5 to "support the development of alternatives to traditional basic skills curriculum" (p. 45) and in Recommendation 6, "to direct professional development resources toward improving basic skills instruction" (p. 52) in ways that could be sustained and continuously improved (California Chancellor's Office, 2012).

Autonomy supportive instruction (ASI) is a pedagogical strategy in which specific teacher behaviors and classroom structures are used to encourage student autonomy, which has been shown to increase engagement (Jang, Reeve & Deci, 2010). Such engagement then enables students to persist through a program of study. Teaching orientation can be described as either autonomy-supportive or controlling, based on whether the chosen teaching strategies encourage or undermine students' intrinsic

motivation (Ryan & Deci, 2002). Studies have shown that when teachers continued to support student autonomy, students were more engaged (Reeve, Jang, Carrell, Jeon, & Barch, 2004). In contrast, controlling teachers relied on external motivators such as rewards, enforced compliance, or pressuring statements, which reduced students' volition and engagement. A controlling orientation to instruction was found to hinder engagement because controlling teachers rely on external motivators (such as extra credit points) and pressure (such as comments that working harder leads to better grades), to control student behavior (Vansteenkiste & Simons, 2005).

No literature was found on ASI training interventions for community college instructors, although these instructors may benefit from knowing how to support student autonomy. ASI leads students to have faith in their own competence and increases their intrinsic motivation to reach their goals and objectives, thereby increasing their engagement. Because community college instructors have been charged with implementing instruction that increases student success, it may be important that community college basic skills instructors learn how and why to support their students' autonomy. ASI may help basic skills students persist through the leveled series of basic skills courses, through transfer, and toward "completion of the baccalaureate degree" (p. 22) as outlined by Kuh (2008).

Purpose of the Study

The purpose of this quasi-experimental mixed methods study was to implement an ASI training intervention to find out whether basic skills English instructors could learn to implement ASI and to identify and describe changes in their students' perceived

autonomy and engagement. Six English 250 instructors participated in the study: three in control and three in the treatment group.

The training intervention included a group training session, two individual coaching sessions, and three classroom observations. Treatment and control group students were surveyed using a pre- and post-test instrument to measure their perceived autonomy and engagement. This instrument included six items from the Learning Climate Questionnaire (Williams & Deci, 1996) and seven items modified from the NSSE. Treatment and control group instructors completed a modified version of the Problems in School (PIS) questionnaire (Deci, Schwartz, Sheinman, & Ryan, 1981) for measurement of self-reported autonomy. Treatment group instructors were observed three times, after which their use of two ASI strategies was observed, measured, and described. Results were compared between control and treatment groups and across multiple measures to answer three research questions regarding instructors' use of ASI and their students' perceptions of autonomy and engagement before and after the training.

Significance of the Study

This study is important because it offers an instructional strategy, autonomy supportive instruction, which may aid instructors' ability to carry out two recommendations suggested by the Chancellor's Office: to improve instruction for basic skills students and to revitalize professional development. The intended outcome of these recommendations is to increase the success of California basic skills students attending community colleges. ASI is a framework that prescribes words and actions for teachers to use during instruction that support student autonomy and intend to increase student engagement (Jang, Reeve & Deci, 2010; Reeve & Jang, 2006). ASI has been well

researched. In K-12 and university settings, teachers have been successfully trained in this strategy to increase autonomy support during instruction by replacing controlling strategies with autonomy-supportive strategies (Su & Reeve, 2010).

Kuh et al. (2007) and Kuh (2008) suggested that active learning strategies be utilized in community college basic skills classrooms to increase student engagement. Examples of active learning strategies include verbal encouragement to participate during learning activities, clear expression of expectations for student participation and performance, assessment-based instruction, opportunities for feedback, and early warning systems. Not only do ASI strategies have similar elements as active learning strategies, but also ASI has been empirically tested in both laboratory and authentic settings. In addition, the ASI classroom must be perceived as a success-oriented environment. In the community college setting, practical strategies, such as examples of what instructors can say or do during instruction to increase student engagement, must be communicated to instructors. Although ASI has been shown to increase student engagement in other settings, it may not have been tested with basic skills students in community colleges, as no studies were found that reported ASI interventions in community college settings.

The current study tested the viability of ASI as a strategy to increase the engagement of basic skills students by training a small group of English 250 instructors to use two ASI strategies during instruction. In addition, students' engagement and autonomy before and after training were measured in control and treatment groups, and the extent to which their instructors increased their use of the two ASI strategies after training was also determined.

Theoretical Framework

The theory on which the training intervention was based is autonomy supportive instruction, a sub-theory of Self-Determination Theory. Self-Determination Theory (SDT) describes the relationship between a person's type of motivation, type of regulation, and quality of determination, as evidenced by behavior. According to the Self-Determination Theory website, "To be self-determined is to endorse one's actions at the highest level of reflection. When self-determined, people experience a sense of freedom to do what is interesting, personally important, and vitalizing" (Deci & Ryan, np). SDT in education describes the effect teachers have on the quality of students' motivation to learn relative to how well the learning environment meets the learner's need for autonomy, competence, and relatedness (Reeve, 2002). These constructs are defined as follows:

> Autonomy is the degree to which individuals feel volitional and responsible for the initiation of their behavior. Competence concerns the degree to which they feel able to achieve their goals and desired outcomes. Relatedness is defined as the extent to which they feel connected to others in a warm, positive, interpersonal manner. (Deci & Ryan, 2004, p. 235)

Satisfaction of students' psychological needs for competence, autonomy, and relatedness increased students' use of intrinsic motivation to engage in learning activities (Deci, Vallerand, Pelletier, & Ryan, 1991; Niemiec et al., 2005; Niemiec & Ryan, 2009; Reeve & Halusic, 2009; Ryan & Niemiec, 2009). Thus, students became more self-determined because their psychological needs were met (Ryan & Deci, 2002).

In SDT, three types of motivation (amotivation, extrinsic motivation, and intrinsic

motivation) are paired with two forms of regulation (external regulation and internal regulation) to describe the quality of a person's self-determination. The quality of an individual's self-determination is indicated by the combination of the type of motivation and the form of regulation, both of which can be influenced by a teacher's motivating style. Overall, the more intrinsically motivated and self-regulated a person is, the more engaged and persistent a person is for reasons of volition and personal satisfaction.

Extensive research conducted using SDT concluded that self-determined people are self-regulated and use intrinsic motivation to engage in activities because they find personal utility in doing so (Deci & Ryan, 2002). When self-determined students perceived activities as less interesting, yet necessary for developing particular skills or reaching academic goals, they chose to sustain their engagement during instruction, even in the absence of pressure or external rewards. In this way, self-determined students used intrinsic motivation to maintain their classroom engagement. Higher levels of student engagement predicted higher levels of academic success and persistence (McClenney & Marti, 2006). Self-determined, engaged students had greater persistence than students who applied amotivation or extrinsic motivation (Vansteenkiste, Lens, & Deci, 2006).

ASI is a theory-based strategy that guides instructors to provide an affirming learning environment, foster skill development, improve academic achievement, and support student perceptions of competence. Students whose psychological needs for competence, autonomy, and relatedness are satisfied are more positive emotionally, are more engaged, and tend to feel they can meet challenges because they experience a sense of mastery (Reeve, 2004).

ASI describes specific instructional strategies teachers use to increase intrinsic

motivation, and thus self-determination, by intentionally supporting students' autonomy. Autonomy support in education is defined as "nurturing inner motivational resources, providing explanatory rationales, relying on non-controlling language, displaying patience to allow students the time they need for self-paced learning to occur, and acknowledging and accepting expressions of negative effect [affect]" (pg. 3, Su &Reeve, 2010).

ASI teacher behaviors and classroom structures support student autonomy in a learning environment where expectations are consistent and feedback is informative and skill-building (Jang, Reeve & Deci, 2010). In one study of an active ASI classroom, student autonomy was positively correlated with student engagement, and students were volitionally engaged in learning behaviors of their choice (Reeve & Jang, 2006). Autonomy-supportive teachers provide autonomy support and classroom structures to foster students' intrinsic motivation (Niemiec & Ryan, 2009). Teachers' ASI-specific behaviors and language during instruction gave students opportunities to take initiative for their learning (Reeve & Halusic, 2009). Students' inner motivational resources were engaged when teachers provided feedback that built up students' perceptions of their own competence. The intended outcome was for students to act as agents in their own learning.

Research on the benefits of ASI has been conducted in the contexts of clinical medicine, sports, business, parenting, and K-12 and university education (Reeve, 2006), but not in community colleges. Benefits of ASI include increased overall satisfaction with learning, reduced dependence on external forms of motivation to maintain engagement, and facilitated self-determination (Reeve, 2006). Intrinsic motivation for

engagement seemed to increase because needs for competence, autonomy, and relatedness were satisfied (Deci & Ryan, 2004; Niemiec & Ryan, 2009).

Autonomy-supportive teacher behaviors are contrasted with controlling behaviors (Reeve, 2006, 2009). Controlling behaviors thwart autonomy because teachers use a teacher-centered agenda (Reeve & Jang, 2006) to influence and motivate students using external motivators, such as points, pressure, or demands, to encourage engagement. The effects of controlling instruction included undermining students' intrinsic motivation (Niemiec & Ryan, 2009), providing less time for students to talk during class (McLaughlan & Hagger, 2010) and using praise as a contingent reward (Reeve & Jang, 2006).

Sierens, Vansteenkiste, Goossens, Soenens, and Dochy (2009) and Jang, Reeve, and Deci (2010) posited that ASI was composed of two constructs: teacher behaviors and classroom structures. Both constructs support autonomy (Jang, Reeve, & Deci, 2010; Reeve, 2004; Sierens & Vansteenskiste, 2009) in different ways. ASI teacher behaviors were defined as things that teachers said and did (Jang, Reeve, & Deci, 2010; Reeve & Jang, 2006) to nurture students' interests and values (Reeve, 2006). Classroom structures were defined as provisions made by teachers to develop students' internal locus of control and to develop students' perceptions of control and competence (Jang, Reeve, & Deci, 2010; Reeve, 2004; Sierens & Vansteenskiste, 2009). When both constructs were used during instruction, engagement was greater than when only one construct was used (Jang, Reeve, & Deci, 2010).

Three ASI studies described the impact of ASI teacher behaviors (Assor, Kaplan, & Roth, 2002; Reeve et al., 2004) and ASI classroom structures (Jang, Reeve & Deci,

2010) on changes in student engagement. Table 1 provides the type of instrument used and its reliability (Chronbach's alpha), and the general results for each study. In these studies, engagement was measured in different ways with different populations: a 6-item self-report survey was administered to fifth- through eighth-grade students (Assor, Kaplan, & Roth, 2002), a rating sheet was used to observe high school students (Reeve et al., 2004), and a 4-item self-report survey was administered to high school students, who were also observed using a rating sheet (Jang, Reeve, & Deci, 2010).

Table 1

Measures of Engagement and Results in ASI Studies

Researchers	Instrument Type and Reliability	Results
Assor, Kaplan, & Roth (2002)	Self-report survey: (α = 0.72) 3 behavioral engagement items 3 cognitive engagement items	Correlations between autonomy-supportive teacher behaviors and students' engagement: r^2 = 0.15 (third to fifth graders) r^2 = 0.19 (sixth to eighth graders)
Reeve et al. (2004)	Observation rating sheet: 3 items for task involvement (α = 0.89) 2 items for influence attempts (α = not given)	Engagement and autonomy support: Time 1: *(p* = 0.45) Time 2: *(p* = 0.74*) Time 3: *(p* = 0.69*) (*significant at 0.1)
Jang, Reeve, & Deci, 2010	4 self-report engagement items (α = 0.88)	Teacher autonomy and self-report engagement (p = 0.36**) Teacher structure and self-report engagement (p = 0.30**) (**significant at 0.01)
	6 observed engagement items (α = 0.92)	Teacher autonomy and observed engagement (p = 0.70**) Teacher structure and observed engagement (p = 0.76**) (**significant at 0.001)

There are three ASI teacher behaviors and three ASI three classroom structures (Jang, Reeve, & Deci, 2010; Reeve et al., 2004). Teacher behaviors are a core element of ASI. Teacher behaviors indicate to students that the teacher values and understands their

perspectives (Reeve, 2004). An example of informational language is "This essay is much better now because you found relevant supporting details for your thesis statement." An example of accepting students' negative affect is "I appreciate knowing that you found the project challenging because there were several pieces to the assignment." The three autonomy supportive (vs. controlling) teacher behaviors are presented in Table 2 and are followed by their operational definitions.

Table 2

ASI Teacher Behaviors and Classroom Structures with Operational Definitions

Autonomy Supportive (vs. Controlling) Teacher Behaviors	Autonomy Supportive (vs. Controlling) Classroom Structures
Nurtures inner (vs. extrinsic) motivational resources: Teachers show interest in students, provide challenges, create opportunities for students to take initiative, and support student needs and interests.	Provides clear (vs. ambiguous) directions: Instructions are understandable, clear and detailed.
Uses informational (vs. pressuring) language: Teachers provide information and choices, are flexible, identify and promote the value and benefits of learning activities, and explain to students why they are making progress.	Provides strong (vs. non-goal-oriented) guidance and leadership: The teacher has an action plan and provides hints that help student control their work.
Accepts (vs. blocks) students' negative affect: Teachers listen openly and carefully to students, accepting students' negative comments by responding with validating reactions.	Provides informational (skill-building vs. vague) feedback: Affirming, skill-building comments that provide relevant information on competence.

Classroom structures provide clear information about expectations, how to succeed academically (Jang, Reeve, & Deci, 2010), and consistent guidance during learning so that students may make effective associations between their behavior and academic outcomes (Reeve & Halusic, 2009). An example of the ASI classroom structure behavior, *provides clear directions*, is an email suggesting that students complete assigned readings before each class session so they can have information to contribute to the class discussions. This structure-related behavior provides a way for students to

succeed academically (Jang, Reeve, & Deci, 2010). An example of the classroom structure behavior *provides informational feedback* would be underlining and labeling each grammatical error in an essay, such as, "fragment," and then writing the URL for an online grammar resource on the paper to encourage the student to learn about fragment sentences and correct the error. In this way, the student receives guidance on a writing skill to improve the quality of his or her writing.

Despite the potential of ASI to affected engagement and persistence positively for students in general, the extent to which it may affect perceived autonomy and engagement of historically underserved and underprepared basic skills students taking community college courses remains unknown.

Background and Need

The following three points provide the background for this study. First, no ASI intervention studies have been carried out in community college settings or with basic skills students; all available studies were conducted in K-12 or university settings. Second, recommendations have been made at the state level to improve the success of community college basic skills students. These recommendations included suggestions to train instructors to use theoretically-based, pedagogical strategies to increase student engagement (California Chancellor's Office, 2012). Third, suggestions for future research on SDT in education (Eisenman, 2007; Reeve et al., 2002), and one suggestion for future ASI training interventions (Su & Reeve, 2010) was to identify learning aids to help students regulate their efforts during uninteresting activities and boost their intrinsic motivation Reeve et al. (2002). Another suggestion was to design school completion interventions that build on students' strengths to improve the fit between students and

classrooms (Eisenman, 2007). Su and Reeve (2010) suggested that future ASI interventions should use characteristics associated with stronger effects.

Recommendations to Increase Student Engagement

In this section, recommendations from ASI studies found in the literature use to inform the ASI training intervention design are described, and then a rationale is provided for the specific ASI strategies that were taught in the training.

Community college instructors of basic skills courses may benefit from knowing how to use ASI strategies. ASI provides a viable framework to increase student autonomy and engagement, but the extent to which historically underserved and underprepared students will benefit from increased autonomy support and engagement is unclear. In the literature, a relationship between ASI and student engagement seems to be emerging. In one study, employment of student engagement strategies was a predictor of student self-reported measures of engagement (Assor, Kaplan, & Roth, 2002). In another study, student engagement correlated positively with ASI teacher behaviors and ASI classroom structures (Reeve et al., 2004). Research also showed that students reported feeling higher interest, enjoyment, and enthusiasm (Reeve & Halusic, 2009) and lower anxiety and anger when their teachers supported autonomy in the classroom (Assor, Kaplan & Roth, 2002). These positive emotions are similar to those associated with behavioral engagement (Jang, Reeve, & Deci, 2010; Reeve et al., 2004).

Prior to 2002, research on ASI found that when teachers supported students' autonomy, students' need for competence was satisfied and engagement increased. Research conducted after 2002 identified two ASI constructs that impacted student engagement: teacher behaviors and classroom structures. When these two autonomy-

supportive constructs were used together during instruction, student engagement increased more than when only one of these constructs was used (Jang, Reeve, & Deci, 2010).

The impact of ASI on student engagement may be important for community college faculty and administrators. ASI provides a theoretical framework and specific teaching strategies associated with increased engagement during instruction (Reeve & Jang, 2006). A teacher's motivational style can either thwart or support students' autonomy (Reeve, 2006). Teachers can learn to be autonomy-supportive (Reeve, 1998; Reeve et al., 2004; Su & Reeve, 2010). Students who learn in ASI classrooms have demonstrated higher persistence and engagement than students who learn in traditional classrooms (Jang, Reeve, & Deci, 2010).

Remedial-level college students may have not had many positive learning experiences during the course of their education. Basic skills community college students have developmental needs in English, reading, and math. Previous negative experiences for these students may include skills testing at or below high school level. Remedial students seem to lack the preparation for and knowledge of how to succeed. They may believe that school success is out of reach; this belief erodes their academic achievement and future in the work force. Basic skills students may benefit from guidance with regard to ways to approach classroom learning. They may benefit from teachers' expertise and nurturing of their attempts to complete community college courses (Academic Senate for California Community Colleges, 2010). ASI strategies may contribute to a positive learning experience, satisfying psychological needs for remedial students and encouraging them to engage and persist to the next term of study. This study evaluates

the efficacy of ASI strategies in providing the kind of learning environment to prepare these remedial students to succeed at the college level.

Recommendations for Future Research on Self-Determination Theory in Education

Reeve (2002) conducted a literature review to describe how SDT has been applied in educational settings. Four conclusions were presented regarding autonomy and teaching style. He found that "autonomously motivated students thrive in educational settings" (p. 183); "students benefit when teachers support their autonomy" (p. 183); "a teacher's style of motivating students is malleable" (p. 190); and "the theoretical concept of autonomy support informs classroom practice" (p. 190). These conclusions indicated that autonomy-supportive environments are important to student motivation and academic success, and that teachers can change their pedagogy to include this support and improve their classroom practice.

Reeve (2002) suggested several key areas for further research that address common concerns from teachers and administrators about motivation and student success. Teachers and administrators wanted to know how to facilitate student engagement and how to motivate students during uninteresting tasks. They wanted to identify students' experiences of self-determination and what they could do to support student autonomy. The key area suggested by Reeve that was addressed in this study was the effect of ASI strategies on the perceptions of autonomy and engagement of underserved and underprepared students at community college taking basic skills courses. Their instructors were trained to use two ASI strategies: *nurturing inner motivational resources* and *providing informational feedback*.

Recommendations for Future ASI Training Interventions

Su and Reeve (2010) suggested that future ASI interventions should incorporate conditions and characteristics of effective ASI interventions. The proposed research incorporates several of these characteristics. Two ASI strategies were selected as training content for theoretical and practical reasons: one teacher behavior (nurtures inner motivational resources) and one classroom structure (provides informational feedback). Research on SDT found that when students' need for autonomy was satisfied, they acted as agents of their learning and displayed increased engagement. Nelson et al. (2006) said that engaging pedagogies required students to invest time and effort and required faculty to provide feedback. One of the components of ASI is providing informational feedback. The CCCSE (2010) suggested that students persist more when they have opportunities for successful learning. In terms of practical applications of ASI, providing feedback is one way to help students monitor their progress.

Five ASI intervention studies with high effect scores (Su & Reeve, 2010) were used to inform the proposed intervention design are provided in Table 3. These studies describe in various ways how teachers were trained and describe the instruments that wer eused to measure student autonomy and engagement. The first two studies provided the student variables and measure of teacher autonomy utilized in this study. The latter three studies informed the proposed training design and content and will be described in Chapter Three. Criteria for effective ASI training interventions (Su & Reeve, 2010) came from Study 1 (Reeve et al., 2004) and guidelines for using ASI teacher observation sheets came from Study 2 (Jang, Reeve, & Deci, 2010).

Table 3

Five Studies Used to Inform the ASI Training Intervention

Researchers	Effect	Variables	Instrument
Reeve, Jang, Carrell, Jeon, & Barch, 2004	$d = 1.94$	Student engagement (task involvement & influence attempts)	Observation rating sheet
Jang, Reeve, & Deci, 2010	$r = 0.60$	3 ASI teacher behaviors 3 ASI classroom structures Observed behavioral engagement	Observation rating sheet
	$r = 0.70$	Autonomy support and observed engagement	Observation rating sheet
	$r = 0.36$	Autonomy support and self-reported engagement	Self-report survey (Fredricks et al., 2004)
Chatzisarantis & Hager, 2009	$d = 1.56$	Student intention to do physical education during leisure time	3 items (Ajzen & Fishbein, 1980)
		Teacher autonomy support	Learning Climate Questionnaire
Tessier, Sarrazin, & Ntoumanis, 2008	$d = 0.89$	Self-determination (intrinsic motivation) for PE	Academic Motivation Scale (Vallerand et al., 1992)
McLachlan & Hagger, 2010	$d = 5.35$	Primary ASI teacher behaviors	Checklist of 21 ASI teacher behaviors (6 are primary, 8 are secondary)
	$d = 3.28$	Secondary ASI teacher behaviors	

Reeve et al. (2004) attempted to demonstrate the connection between autonomy support and enhanced engagement because previous literature did not provide a clear picture of this connection. A 10-week ASI intervention (Reeve et al., 2004) was conducted with 20 high school teachers who attended a 30-minute introduction to the research intervention. Ten teachers in the experimental group attended a one-hour training session that covered four topics: Introduction to SDT theory and research on benefits to students; ASI strategies and classroom examples; group discussion on the viability, applicability, criticism, and obstacles of implementing ASI; and an introduction to a post-training website and independent study tools.

Trained observers used a four-section rating sheet to make five 10–15 minute observations during each class period on (a) four measures of teacher autonomy support, (b) four measures of teacher classroom structure, (c) four measures of teacher involvement, and (d) five measures of collective engagement on the part of students. Collective engagement included focused attention; active, quick, or intense effort; verbal participation; use of effort over time; and positive emotional tone, such as showing enjoyment. The engagement measures were organized into two types of engagement: task involvement (active engagement during instruction) and influence attempts (students taking initiative and responsibility for their learning). Observation data on classroom structures was recorded in such a way as to mask the study's purpose and validate the four measures of classroom structure.

A multiple regression analysis showed that students' observed engagement increased significantly on task involvement and influence attempts. Engagement correlated positively with teacher autonomy support, and teacher autonomy support predicted task involvement ($p = 0.59$) and influence attempts ($p = 0.59$) better than when student autonomy wasn't supported (task involvement $p = 0.22$ and influence attempts $p = 0.30$). Researchers found that autonomy support correlated with both measures of engagement ($p = 0.45$, $p = 0.74$*, $p = 0.69$*). Thus, when teachers provided autonomy support, students reported and were observed as being engaged during class.

Jang, Reeve, and Deci's (2010) study extended Reeve et al.'s (2004) findings by revising a four-section observer rating sheet into a two-page sheet, with three measures of teacher autonomy support on one sheet and three measures of teacher classroom structure on the other. In this study, 133 high school teachers' instructional styles were observed

and correlated to students' observed engagement behaviors and to self-reported engagement behaviors. Results indicated that 93% of the between-class differences in student engagement were explained by the teachers' use of ASI teacher behaviors and classroom strategies. Autonomy support and classroom structure were significantly and positively correlated ($r = 0.60$). Observations of student engagement correlated more positively with autonomy support ($r = 0.70$) and classroom structure ($r = 0.76$) than did correlations between student self-reports of engagement with autonomy support ($r = 0.36$) and classroom structure ($r = 0.30$). This researcher revised Jang, Reeve and Deci's (2010) data collection sheet and then used it with a new population, trained and coached a new population of instructors to use two ASI strategies, and measured their students' self-reported changes in autonomy and engagement.

Summary

Basic skills students who are underprepared and historically underserved lack the academic skills and educational experience to succeed in community college, so they are typically less successful academically than other types of students. This lack of success has a negative impact on their preparation for the workforce and on the overall education of our population. Community colleges have been assigned the task of intentionally increasing student success. Kuh (2008) reviewed large-scale student engagement studies and concluded that increased engagement leads to higher student success. However, no pedagogies were described or recommended.

Results of studies to measure the effects of ASI on engagement in elementary and high school students demonstrated that teachers learned to support autonomy and that student engagement increased based on self-reported and observational data. The

elementary and high school students in these studies were not described as remedial, so the effect of ASI as a potential strategy to increase engagement of remedial students has yet to be determined. No ASI research found has been conducted with remedial or basic skills college students or their instructors in a community college setting, indicating a gap in the research. The proposed study attempts to fill this gap by measuring basic skills community college students' response to ASI teacher behaviors and classroom structures as described by changes in their perceptions of autonomy and engagement.

Research Questions

Three research questions addressed by this study were

1. How autonomy-supportive were English 250 instructors before and after treatment, compared to a control group, as measured by scores on the *Problems in Schools* questionnaire and by the percentage of instructor statements categorized as autonomy supportive for two ASI strategies: *nurtures inner motivational resources* and *provides informational feedback*?
2. To what extent has perceived autonomy changed for English 250 students in the treatment group during and after their instructor's participation in the ASI training intervention compared to the control group?
3. To what extent has perceived engagement changed for English 250 students in the treatment group during and after their instructor's participation in the ASI training intervention compared to the control group?

Definition of Terms

Autonomy: The volition and responsibility students feel for their behavior in the classroom (Deci & Ryan, 2004).

Autonomy Support: Nurturing inner motivational resources, providing explanatory rationales, relying on noncontrolling language, displaying patience to give students the time needed for self-paced learning to occur, and acknowledging and accepting expressions of negative effect [affect] (Reeve, 2009).

Autonomy supportive instruction: A teacher using teacher behaviors and classroom structures to increase his or her students' autonomy intentionally (Jang, Reeve, & Deci, 2010).

Autonomy-Supportive Teacher Behaviors: Things that teachers can say and do to support their students' autonomy intentionally (Jang, Reeve, & Deci, 2010; Reeve & Jang, 2006).

Autonomy-Supportive Classroom Structures: Provisions made by teachers to support student autonomy by developing students' internal locus of control, increasing their perceptions of control and competence, providing clear expectations, and showing students how to succeed academically (Jang, Reeve, & Deci, 2010).

Basic Skills: "Those foundation skills in reading, writing, mathematics, and English as a Second Language, as well as learning skills and study skills, which are necessary for students to succeed in college-level work" (Basic Skills Initiative, 2010,).

Basic Skills Courses: Courses that "foster effective practices and activities which support the academic development of students … validated by research and literature sources to ensure that students are authentically acquiring skills and that each student's learning experience is optimized" (CCLC, 2010).

Competence: The perception that a student has the knowledge and skills to reach their desired goals and outcomes (Deci & Ryan, 2004).

Controlling Instruction: Instruction in which pressuring language ("you should", "you have to") results in reduced student engagement and persistence, causing students to have feelings of guilt, shame, and anxiety (Ryan & Deci, 2000b).

Engagement: A student's quality of emotion and behavioral intensity during a learning task (Reeve, Jang, Carrell, Jeon, & Barch, 2004) and the effort and time students put into their educational activities (Kuh et al., 2007).

Nurtures Inner Motivational Resources: The vitalization of another's interest, enjoyment, psychological need satisfaction (autonomy, competence, and relatedness), and sense of challenge or curiosity during engagement in a requested activity (Su & Reeve, 2010. based on Reeve et al., 2004).

Provides Informational Feedback: Teacher-provided statements that encourage and affirm student effort and provide resources to support student progress toward mastery or a goal (MacLachlan & Haggar, 2010; Reeve & Jang, 2006).

Persistence: Students re-enrolling in a subsequent term or year of college beyond the term in which they are currently enrolled (McClenney & Marti, 2006).

Relatedness: Occurs in a positive and interactive environment and refers to how connected a student feels to others in that environment (Deci & Ryan, 2004).

Retention: Students finish a course due to a desire to complete a college degree or program of study (Kuh et al., 2007).

Self-Determination Theory: Describes the effects of particular teacher behaviors on students' motivation to learn relative to how well the environment meets the learner's need for autonomy, competence, and relatedness (Reeve, 2002), the three major components of this theory.

CHAPTER TWO

REVIEW OF THE LITERATURE

There are six sections in this literature review. The first section describes relevant research and findings on California community college basic skills student success. The second section describes Self-Determination Theory (SDT). The third section describes Autonomy Supportive Instruction (ASI), and is followed by the fourth section that reviews current studies on training teachers to use ASI and the impact of ASI on students' autonomy and engagement. The fifth section describes the literature used to inform the proposed training intervention structure and content. This chapter concludes with a sixth section that summarizes the main findings in this review.

Community College Student Success

This section describes relevant findings on California community college student success, followed by researchers' recommendations to increase student success. Findings and recommendations related to ASI and to student engagement will be provided.

Student success has been measured as students who persist from one semester or quarter to the next to earn the credits required for completion of a desired certificate, program, or degree (Kuh, 2009). Community college student success is defined as students who re-enroll for a successive term to complete a certificate, program, or associate's degree, or who persist to transfer from community colleges to 4-year institutions to earn baccalaureate degrees (CCCSE, 2010). Kuh et al. (2007) conducted an analysis of National

Survey of Student Engagement (NSSE) results to review instructional practices that were more likely to support student success. At the classroom level, some researchers investigated links between engagement, persistence, and educationally purposeful activities. These activities "require students to take responsibility for activities that require daily decisions and tasks [so that students] become invested in the activity and more committed to the college and their studies" (p. 38). Engagement was defined as time and effort students used during learning activities, and persistence was defined as students enrolling in another term of study in the same institution (Kuh et al. 2007).

The initiative launched by the National Survey of Student Engagement (NSSE), the CCCSE, and the California Community College Commission on the Future (CCCCF) found that students who were less engaged during instruction were less successful and more likely to drop out (CCCSE, 2010). In community colleges, low student engagement is common among basic skills students (CCCSE, 2010). However, increased engagement has been shown to have a moderate effect on grades that mitigated students' tendency not to enroll the next semester (Kuh et al. 2007). More highly engaged students were therefore more successful and persistent.

Next, researchers used NSSE student data, transcript data, and entrance test data, to see whether prior academic success predicted college persistence. Three important results were identified. First, students enrolled in honors classes before college had a college average GPA of .01 point higher per honors course taken. Second, all college students seemed to benefit when they learned via educationally purposeful activities. Students' whose engagement level was one standard deviation below average persistence to the second year (0.88 probability) was less probable than for students whose engagement level was one

standard deviation above the average (0.91 probability) (Kuh et al. 2007). When all other variables were controlled for, college students' GPA for those learning via educationally purposeful activities was one standard deviation higher than students who were not learning via educationally purposeful activities. Third, historically underserved college students benefited even more from engagement during educationally purposeful activities, as evidenced by GPA increases of .04 for students with ACT scores of 24 (lower skilled students), compared to GPA increases of .02 for students entering with ACT scores of 28 (higher skilled students). These results (Kuh, et al. 2007) appear to indicate that when instructors taught in ways that promoted students' engagement in classroom learning, and when classroom climates encouraged success, students' engagement seemed to predict an increased chance of persistence. Further, when teachers taught in ways that engaged students, such as when using educationally purposeful activities, and when institutions provided support for instructors to teach in engaging ways (such as with effective professional development) community college students seemed more likely to persist to the second year of college.

Goldrick-Rab (2010) wrote a position paper on community college student success based on her review of student success literature. The intent of the review was to describe challenges faced by community college instructors that inhibited their students' success. These challenges were:

1. Students have a myriad of reasons for attending community college.
2. Typical class groups have 25% underserved, underprepared, or basic skills students.
3. Some students need developmental education to teach them how and what to learn.

4. Professional development workshops were often not effective or incentivized.

Goldrick-Rab (2010) concluded that instructors did not seem to respond effectively to these challenges because they did not have the knowledge or the skills to differentiate instruction for students who had high school levels of academic skill and content knowledge, enrolled in the same classroom as students who had collegiate levels of academic skill and were capable of college level work. Faculty were not prepared often because they either did not attend training or they did not receive training that was useful for addressing these classroom challenges.

Several sets of recommendations have been made to improve California community college student success. These often were related to promoting better classroom interactions and learning experiences for students. National survey data (such as the NSSE, the Community College Survey of Student Engagement, and the Survey of Entering Student Engagement), have helped clarify the instructional conditions that support students' success, which suggested various instructional practices may increase student engagement to thus increase persistence (CCCSE, 2010). Some conditions found to support student success were pre-college success and during-college enrollment in educationally purposeful activities (Kuh et al. 2007). Kuh et al. found that basic skills students (underachieving and underserved students) benefited from increased engagement and persistence more than did students not designated as basic skills students. Data from national engagement surveys and research on instruction for basic skills students to increase engagement was used to provide recommendations for community college instructional practices that may increase student success.

Kuh (2008) then identified 10 educationally purposeful activities and labeled them

High-impact practices. This set of ten practices intended to support student persistence and help students improve academically. High-impact practices included learning communities (a cohort of students enrolled in linked courses from different disciplines, such as history linked with science or English linked with teacher education), service learning (classroom instruction combined with field experiences that link course content with solving real-life problems), and collaborative learning experiences (instruction provides opportunities to work in teams to solve problems and to collaborate on projects). Such practices were linked with positive educational outcomes such as intellectual skills (inquiry, analysis, critical thinking, communication, teamwork, and problem solving) and integrative learning (synthesizing content across various areas of study).

According to Kuh (2008), High-impact practices sustained engagement because students applied time and effort to purposeful tasks. These tasks were linked to students' programs of study over time. Using NSSE data correlated with data on High-impact practices (Kuh, n.d.), Kuh found that first-year students' GPA positively correlated with engagement in educationally purposeful activities and that Hispanic first-year students' GPA was more positively correlated than was Caucasian students' GPA to High-Impact Practices. Kuh suggested that if students could participate in at least one high-impact pedagogy during each year of enrollment, students' engagement would be sustained enough so that they would persist from year to year.

Suggestions made (Goldrick-Rab, 2010) to increase community college student success included developmental programs that combined college success skills and content learning strategies, contextualized instruction that linked vocational skills with content knowledge, and effective professional development to prepare instructors to meet these

challenges. Goldrick-Rab suggested there is a large need for new experimental and quasi-experimental research on the effects of various pedagogical strategies, especially for various sub-groups of students, such as for basic skills students. This is because it appears to be critical that instructors understand how different teaching strategies impact student success for different types of students. "All efforts to enhance community college student success should be rigorously evaluated with frameworks that are capable of both estimating and explaining impacts. We need to know what works and why" (Goldrick-Rab, 2010, p. 458). Other recommendations to improve student success were provided by the Community Colleges Student Success Task Force in response to declines in enrollment and graduation rates over the past 20 years. Nine recommendations, described in Chapter 1 of this proposal, were made. Two of these nine recommendations (Recommendations 5 and 6) specifically encourage community college faculty to learn and use effective teaching strategies when teaching basic skills students (California Community College Chancellor's Office, 2012):

1. Increase student readiness for college
2. Strengthen support for entering students
3. Incentivize successful student behaviors
4. Align course offerings to meet student needs
5. Improve the education of basic skills students
6. Revitalize and re-envision professional development
7. Enable efficient statewide leadership and increase coordination among colleges
8. Align resources with student success recommendations
9. Review outcomes-based funding

In sum, the challenges and suggestions presented by Goldrick-Rab (2010), the

suggestions presented by Kuh (2008), and the recommendations made by the Community Colleges Student Success Task Force (2012) seem to provide important support that basic skills instructors should learn to teach in ways that increase their students' engagement. Many of these recommendations fall into the arena of classroom instruction. Thus, the basic skills community college instructors in this study may be in a unique position to intentionally and positively influence their students' success by learning to teach in ways that have been found to increase student engagement.

Self Determination Theory

In this section, Self-Determination Theory will be described. Research on SDT in education to create learning environments that foster intrinsic motivation, and studies conducted on how SDT environments may increase student success by increasing student engagement will be described.

Deci and Ryan (1985) developed Self-Determination Theory in the late 1980's to describe the social conditions that satisfy people's innate psychological needs for competence, autonomy, and relatedness, to understand the conditions in which students acted as agents for their learning (deCharms, 1997) and acted toward overall well-being (Ryan & Deci, 2000). The premise was that students were more likely to apply intrinsic motivation when they felt secure, and experienced relatedness to others (Ryan & Grolnick, 1986). Students were agents for their learning when they were the originator of their decisions, and thus had an internal locus of control (deCharms, 1968) for meeting their goal. Self Determination Theory describes differences in behavior related to different types of motivation and regulation. Students with higher autonomy are self-determined and use intrinsic motivation to engage in activities they consider important and relevant.

Self Determination Theory is modeled as a continuum (Figure 1) showing the relationship between motivation, regulation, and autonomy (Ryan & Deci, 2002).

Type of Motivation	Amotivation	Extrinsic Motivation				Intrinsic Motivation
Type of Regulation	Non-regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Self-regulated
Quality of Behavior	Non Self-determined					Self-determined

Figure 1. Self-Determination Continuum with Types of Motivation and Regulation (Ryan & Deci, 2002)

Learners adopt a motivation strategy and regulatory pattern of behavior based on the classroom climate and individual differences (Deci & Ryan, 2004). On the top layer of the model, types of motivation (amotivation, extrinsic motivation, and intrinsic motivation) are matched with types of regulation on the middle layer (non-regulation, the four forms of extrinsic regulation, and intrinsic regulation), and quality of behavior (from non-self-determined to self-determined) on the bottom layer.

Amotivation (on the left side of the model) refers to learners who have little or no intention for learning and feel incapable of achieving due to perceptions of low competence. Extrinsic motivation describes students who engage and participate to earn rewards (higher grades) or avoid punishments (detention) because they are interested and choose to participate (Ryan & Deci, 2002), such as a student who studies hard to do well on an exam. Intrinsic motivation (on the right side of the model) is used by self-regulated students to sustain engagement, even during uninteresting activities (Deci & Ryan, 2002) because there is perceived value in doing so. The more an individual regulates his or her behavior the more self-determined the individual will be. Students with less integrated regulation seem to rely on external controls to maintain their motivation for engagement. To the extent that regulatory behaviors are more integrated, a student is more self-determined and more

autonomous.

The middle layer of the continuum describes Types of Regulation, from Non-regulation to Intrinsic Motivation. Four forms of regulation relate to different levels of external motivation and autonomy. Externally regulated students are motivated by avoiding negative consequences or by earning rewards for participation and engagement, regardless of their interest, goals, or needs. Students have introjected regulation when they feel controlled by guilt or shame, and engage in learning activities to increase feelings of self-worth and avoid guilt for not participating, especially when they perceive the task as less interesting or less valuable. Students demonstrate identified regulation when they value academic goals or behaviors, such as when studying diligently for a test because they value earning high grades. At the highest level, integrated regulation is autonomous but still relies on external motivators. Students engage and persist because the task, course, or program is enjoyable, interesting, or valuable. The bottom layer of the continuum describes self-determination associated with each form of regulation and motivation. Non-regulated students are amotivated for learning and non-self-determined. Students with intrinsic motivation have an internal locus of control (deCharms, 1968) and are autonomously motivated. These students are considered self-determined.

Classroom environments with pressures and controls, such as deadlines and threats, reduce intrinsic motivation because goals were imposed (Ryan & Deci, 2000). An imposed goal would be to write a 20-page paper on an assigned topic in a specific format, instead of writing a paper on a chosen topic of interest. In controlling environments, teachers relied on external motivators (Ryan & Deci, 2000) and rewards to engage students. Rewards reinforced an external locus of control (deCharms, 1968). Unfortunately, students and

teachers can enter a cycle where students relied on teacher's external motivators to engage, and then teachers reinforced students' dependence on rewards through exerting controls. In these environments, students were pawns, not origins (deCharms, 1968), because students were given less choice, demonstrated low intrinsic motivation, and were less apt to take initiative for learning (Ryan & Grolnick, 1986).

Deci and Ryan extended the idea of origins and pawns and identified three psychological needs that all people have: competence, autonomy, and relatedness (Deci & Ryan, 2000; Ryan and Deci, 2002b). Competence refers to feeling in control, autonomy refers to feeling that one's behavior is self-initiated, and relatedness refers to feelings of belonging in a group (Darner, 2009). In environments where psychological needs for competence, autonomy, and relatedness were satisfied, people relied less on external rewards to sustain engagement because they were intrinsically motivated to participate, reach a goal, or complete a task.

SDT has been researched in health, business, and education settings. In education, SDT studies were conducted in elementary schools (Ryan & Deci, 2009), middle school (Ryan, Stiller, Lynch, 1994; Vansteenkiste et al. 2005), high schools (Deci, 2004; Reeve et al. 2004), for school reform (Deci, 2009), and in universities (Black, & Deci, 2000; Jang, Reeve, Ryan, & Kim, 2009; Niemiec, Lynch, Vansteenkiste, Bernstein, Deci, & Ryan, 2006; Niemiec & Ryan, 2009).

In general, SDT studies seem to have tried to understand the dynamics and outcomes of supporting intrinsic motivation in various social contexts (such as education or health). Students' experiences of need satisfaction (for competence, autonomy, and relatedness), and teachers' attempts at supporting these needs, have been researched to try to describe how

students' motivation changed when these three needs were satisfied. For example, Niemiec and Ryan (2009) suggest in their position paper on applying SDT in the classroom, that teachers' support of autonomy, competence and relatedness leads to students' use of autonomous motivation for student success. Ways to apply SDT in education include replacing controlling conditions to motivate students (offering contingencies such as points, or applying pressures such as deadlines) encourage students' use of external motivation. That is, students come to rely on the teacher to be the motivator, instead of relying on their volition to succeed. Applying SDT during teaching includes promoting interest and enjoyment during learning. Two examples suggested to apply SDT were offering choices on learning tasks, setting limits and expectations in ways that support students' interests and needs.

Findings across SDT studies in education (Niemiec & Ryan, 2009) seem to indicate that in environments where students used more volition, students' performance and sense of well being tended to increase, because the more students' psychological needs were met, the more students used intrinsic motivation to engage in learning. These findings can help teachers understand ways to increase students' success by satisfying students' needs for competence, autonomy, and relatedness. It appears the teacher makes an important contribution to student success because the teacher's use of various strategies seems to impact whether the learning environment will be more supportive or less supportive (controlling).

Knowing in what ways supportive vs. controlling conditions impact student motivation is important for student success, because teachers who know how and why to facilitate their students' intrinsic motivation may intentionally support their students'

success. To the extent that the environment is more supportive, students may use more intrinsic motivation and may be more able to volitionally engage in learning activities and succeed. In many classrooms, some learning tasks are interesting while other learning tasks are uninteresting.

For example, in a study to teach students the Chinese language (Reeve, Jang, Hardre, and Omura, 2002) researchers wanted to know, would teachers who provided information to students about why an uninteresting task was important, help students engage more than when students did not know why a task was important? To find out, 140 non-Chinese-speaking university students were divided into four groups (three experimental and one control) and given conversational Chinese lessons delivered in a monotonous, uninteresting format. Students in all three experimental groups were given one of three very short messages in English that described one of three reasons why students should to try to learn Chinese. Each reason statement matched a quality of motivation: external regulation (you should try because there will be a test), introjected regulation (you should try because good teachers try hard), and identified regulation (you should try because learning Chinese is useful). Each reason statement was delivered using non-controlling, supportive language. The control group, however, was not given a reason to try.

Researchers measured all students' perceived lesson importance, self-determination, effort, and enjoyment using three different, Likert-scale surveys with different response scales. The scale for perceived lesson importance (Chronbach's $\alpha = 0.85$) measured the extent to which students agreed or disagreed about the importance of learning Chinese. The scale for self-determination (Chronbach's $\alpha = 0.73$) measured the perceived locus of causality (internal or external). The scale for effort (Chronbach's $\alpha = 0.96$) measured how

hard students' tried to learn Chinese. The scale for interest (Chronbach's $\alpha = 0.95$) measured the amount of attention students used during learning Chinese.

Researchers found that typically, students needed to be externally motivated to complete uninteresting tasks, unless their needs for competence, relatedness, and autonomy were supported. These results show that students in the control group found the activity uninteresting ($M = 3.26$, s.d. $= 1.90$), and students in the identified regulation group (you should try because doing so is useful) found the activity more important ($M = 4.57$, s.d. $= 1.27$) than students in the external ($M = 3.80$, s.d. $= 1.25$) and the introjected ($M = 3.69$, s.d. $= 1.08$) groups. Also, data from the three reasons to try (there will be a test; good teachers try hard; learning Chinese is useful) was correlated with effort. It appeared that students who used the most effort ($r = 0.68$) were those that perceived the task as important and so used one of the three reasons to try as rationale. In contrast, students who perceived the task as uninteresting used the least effort ($r = 0.01$), potentially because they had little reason (for themselves or provided by the teacher) to engage.

These results help provide an understanding of how teaching strategies may affect student success under different motivational conditions. Students' effort used to engage in uninteresting tasks seemed to be influenced by the teacher's use of various strategies (Assor, Kaplan, & Roth, 2002; Deci, Vallerand, Pelletier, & Ryan, 1991; Reeve, Jang, Hardre, Omura, 2002). The reason the teacher provided for why a task was important seemed to alter the students' effort and type of motivation. Thus, under the condition of an uninteresting activity, students appeared to benefit when teachers provided reasons to engage, and these reasons seemed to serve as external motivators.

A different way to understand the effects of autonomy support on students was offered by Reeve and Halusic (2009). Elementary school and high school teachers had concerns about how to motivate students, so in response to these concerns, Reeve and Halusic provided a framework based on a premise of Self Determination Theory: a teacher's motivating style could be more or less supportive of students' needs for competence, autonomy, and relatedness. A less-supportive motivational style was considered controlling, and seemed to encourage students to rely on external motivators (Deci, Schwartz, Sheinman, & Ryan, 1981) to engage. To describe what teachers could say and do to help students rely on their intrinsic motivation to maintain engagement, Reeve and Halusic (2009) grouped teachers' questions (Figure 2) under four headings (top row): Pre-lesson Reflection, Motivating Students and Solving Problems during lessons, and Post-lesson Reflection. This framework appears to help teachers decide how and when to increase their students' engagement by supporting their students' autonomy. The answers to these questions (Figure 3) form the framework for teachers' behaviors that may increase engagement by supporting students' autonomy. Further, this framework appears to offer a set of autonomy supportive teacher behaviors that may be used before, during, or after instruction.

	During Instruction		
Before Instruction	Motivating Students	Solving Problems	After Instruction
Q1: What is the goal of autonomy supportive teaching? Q2: How is autonomy supportive teaching unique? Q3: Does autonomy support mean permissiveness?	Q4: How would I encourage students' initial engagement in learning activities? Q5: How could I help students maintain their engagement?	Q6: What would I say? How might I talk? Q7: How would I solve motivational and behavioral problems?	Q8: How do I know if I provided instruction in an autonomy-supportive way?

Figure 2: Autonomy Supportive Motivating Style Framework (Reeve & Halusic, 2009)

Before Instruction	During Instruction Motivating Students, Solving Problems	After Instruction
Take students' perspectives	Nurture inner motivational resources	Take students' perspective
Display patience and allow time for learning	Provide explanatory rationales	Welcome and acknowledge students' perspectives, thoughts and feelings, goals, and behaviors
	Rely on non-controlling language	Support students' motivational development
	Accept expressions of negative effect	

Figure 3: When Teachers Use Various ASI Teacher Behaviors (Reeve & Halusic, 2009)

In an online article for education.com, Reeve (2004) provided a definition of autonomy support: "nurturing inner motivational resources, providing explanatory rationales, relying on non-controlling language, displaying patience to allow students the time they need for self-paced learning to occur, and acknowledging and accepting expressions of negative effect (n.p.)" This definition seems to be supported by the instructional behaviors presented in Reeve and Halusic's (2009) framework for the teacher behaviors used in Autonomy Supportive Instruction. In the current study, the definition for autonomy support provided by Reeve (2004) was used because it appears to be an accepted definition used by almost all ASI researchers in the past decade.

Autonomy Supportive Instruction

After defining Autonomy Supportive Instruction (ASI), selected studies found that developed and defined two constructs that characterize ASI will be described: teacher behaviors and classroom structures (Jang, Reeve, & Deci, 2010). This section concludes with a summary of the research on the benefits of ASI on students' perceived autonomy and on students' perceived engagement.

Autonomy Supportive Instruction is a pedagogical strategy within Self-Determination Theory in which teachers, parents, coaches, health care workers, managers, or therapists

intentionally support autonomy during interactions and learning by behaving or teaching in ways that identify and build the inner motivational resources of those with whom they work or teach (Reeve, 2004). Teachers who use ASI enact specific teacher behaviors and classroom structures to intentionally increase their students' autonomy (Jang, Reeve & Deci, 2010). Autonomy is a sense of volition and responsibility felt by self-regulated, autonomously motivated students (Deci & Ryan, 2004).

Autonomy support was initially described as a set of teacher behaviors. Researchers looked at various sets of autonomy-supportive behaviors and used labels such as instructional behaviors (Reeve, 2004), teacher supports (Reeve, 2006; Reeve & Jang, 2006), autonomy supports (Assor, Kaplan, & Roth, 2002; Reeve & Jang, 2006), and teacher behaviors (Assor, Kaplan, Feinberg, & Tal, 2009; Katz & Assor, 2006; Mandigo, Holt, Anderson, & Sheppard, 2008; Reeve, 2004; Reeve & Halusic, 2009; Vansteenkiste, Simons, Lens, Soenens, & Mattos, 2005) to describe what teachers can say and do to support student autonomy. The ambiguity in terminology made it difficult to know whether researchers were talking about teachers' direct support of autonomy, that is, making motivational comments, or whether autonomy support was an outcome of instructional decisions, that is, when teachers provided choice, students had autonomy.

Teachers' natural motivating style (teaching style) has been described as more or less autonomy supportive (Jang, Reeve & Deci, 2010; Reeve, 1998; Reeve & Jang, 2006; Vansteenkiste et al. 2005), depending on the behaviors teachers display during instruction. Research was conducted to find out what behaviors supported autonomy and what behaviors thwarted autonomy. ASI researchers contrasted autonomy supportive teacher behaviors with controlling teacher behaviors to test whether and to what extent controlling behaviors were

thought to suppress autonomy.

Table 4 provides a listing of researchers, descriptors used for the phrase, autonomy support, and the various phrasing used to describe ASI teacher behaviors and ASI classroom structures. ASI teacher behaviors may be used to intentionally support students' autonomy (Jang, Reeve & Deci, 2010; Reeve & Jang, 2006) while other teacher behaviors thwart autonomy (controlling behaviors) (Assor, Kaplan & Roth, 2002; Reeve & Jang, 2006). An example of a controlling behavior is using pressuring language (i.e. you should, you have to). Students taught by controlling teachers seem to have lower student engagement and persistence, as well as feelings of guilt, shame, and anxiety (Ryan & Deci, 2000b). An example of a classroom structure is providing feedback that develops students' perceptions of control and competence (Jang, Reeve, & Deci, 2010).

Table 4

Various ASI Researchers' Classification of ASI Teacher Behaviors

Researchers	Descriptors	ASI Teacher Behaviors / Classroom Structures
Reeve, 1998	Autonomy supportive strategies	Acknowledges and emphasizes students' point of view Encourages students' choice and initiative Communicates the rationale for requests Promotes students' interest and value and ability Uses a non-controlling communication style
	Neutral strategies	Helped students build organized and clearly-articulated schema Communicates there is a right and wrong way
	Controlling strategies (behavior modification strategies)	Provides attractive consequences for desirable behavior and undesirable consequences for undesirable behavior Positive/negative feedback for desirable/undesirable behavior Discriminates quickly when progress regresses Use verbal feedback as positive or negative reinforcement
Assor, Kaplan & Roth, 2002	4 clusters of supportive behaviors	Fosters relevance and provides choice Allows criticism Encourages independent thinking
Reeve et al. 2004	4 autonomy supports	Nurtures inner motivational resources Relies on informational, non-controlling language Promotes value for uninteresting tasks Acknowledges, accepts students expressions of negative affect
	2 measures of student engagement	Task involvement Influence attempts

Table 4, continued

Reeve & Jang, 2006	4 supportive behaviors	Offers encouragement Uses praise as informational feedback Is responsive to student questions Allows students time to work in their own way
	3 controlling behaviors	Makes should/got to statements Utters solutions and answers Asks controlling questions
McLachlan & Hagger, 2010	4 supportive teacher behaviors	Careful, full attention to students Acknowledges students' perspective Time students spent talking in class Infrequent use of directives and commands
Jang, Reeve, & Deci, 2010	3 supportive teacher behaviors	Nurtures inner motivational resources Uses informational language Acknowledges and accepts students' negative affect
	3 supportive classroom structures	Provides clear, understandable, explicit, detailed directions Provides strong guidance Provides skill-building, instructive feedback

Across several studies, researchers used various terms to identify ASI teacher behaviors and ASI classroom structures, but a consistent picture of ASI seems to be emerging. Table 5 provides a short list of ASI constructs studied, and whether the impact of ASI was measured on autonomy, engagement, or both.

Table 5

ASI Constructs Studied and the Primary Reason for the Study

Researchers	Constructs Studied	Impact on Autonomy	Impact on Engagement
Assor, Kaplan & Roth, 2002	4 supportive behaviors	X	X
Reeve et al. 2004	4 teacher behaviors	X	X
	4 classroom structures	X	
Reeve & Jang, 2006	4 supportive behaviors	X	
	3 controlling behaviors	X	
McLachlan & Hagger, 2010	4 teacher behaviors	X	
Jang, Reeve, & Deci, 2010	3 teacher behaviors	X	X
	3 classroom structures	X	X

The middle column lists the categories used by each researcher to describe ASI

teacher behaviors and classroom structures. The right side column lists the terms used by each researcher for each ASI teacher behavior and each ASI classroom structure they researched. To show which ASI teacher behaviors and classroom structures were found to impact autonomy and engagement, selected studies are listed in Table 6 with an "X" to indicate, for each construct studied (teacher/supportive and controlling behaviors or classroom structures), whether the study was conducted to understand the impact on autonomy (6 studies), or on both autonomy and engagement (2 studies). The four studies listed below will be reviewed next.

These sets of behaviors appear to be linked empirically to autonomy supports (Assor, Kaplan, & Roth, 2002; Jang, Reeve, & Deci, 2010; McLachlan & Hagger, 2010; Reeve, 1998; Reeve et al. 2004; Reeve & Jang, 2006; Reeve & Halusic, 2009), autonomy thwarts (Assor, Kaplan & Roth, 2002; Reeve & Jang, 2006) and engagement (Assor, Kaplan, & Roth 2002; Reeve, 2005; Jang, Reeve, & Deci, 2010). Research on ASI teacher behaviors and classroom structures seem to have been conducted for three main reasons: to identify autonomy supportive and controlling teacher behaviors and classroom structures, to describe how ASI teacher behaviors, controlling behaviors, and classroom structures impact students' autonomy, and to describe how ASI teacher behaviors, controlling behaviors, and classroom structures impact students' engagement.

Assor, Kaplan & Roth (2002) surveyed more than 850 elementary and middle school students to determine whether students could recognize teacher behaviors as autonomy supportive or controlling. Measures of autonomy support were: fostering relevance, providing choice, and allowing criticism. Measures of autonomy suppression were: suppressing criticism and independent opinions, intruding on student's pace for work, and

forcing meaningless and uninteresting activities. Thirty-four questionnaire items, scored on a 4-point Likert scale and compiled from several previously validated instruments [not described], assessed student perceptions about teacher behavior, student feelings, and student engagement during schoolwork. In their student self-reports, students perceived autonomy-supportive teachers to:

(a) Be attentive and considerate
(b) Allow students to work on tasks perceived as important to meet their goals
(c) Listen to student feedback in order to make learning activities more interesting
(d) Provide a strong rational for task importance to student learning or goals.

Based on smallest space analysis, two different age groups of students seemed to be able to accurately differentiate between autonomy supportive and suppressive teacher behaviors, as evidenced by expected clusters of responses (Figure 4) for both 3rd to 5th grade children and for 6th to 8th grade children. Measures of children's perceptions were heavily loaded on *fostering relevance* and *suppressing criticism* that seem to contribute to a clearer understanding about which teacher behaviors may be key for supporting or for thwarting student autonomy.

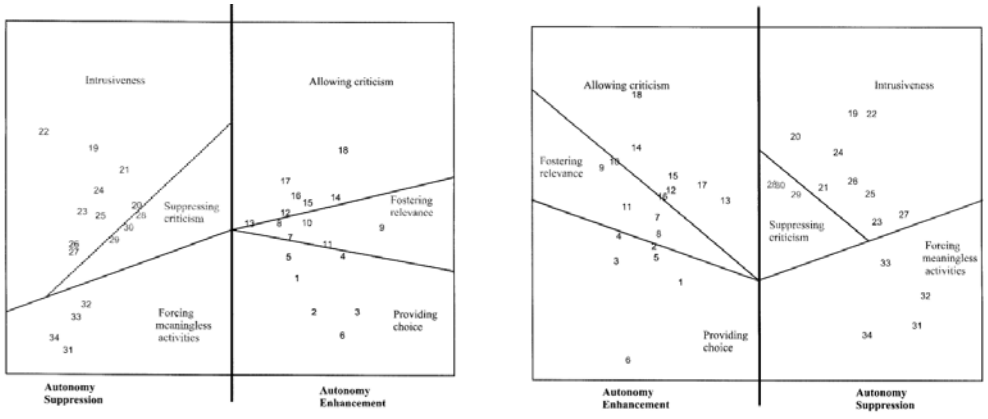

Figure 4. Children's Perceptions of Autonomy-affecting Teacher Behaviors (Assor, Kaplan & Roth, 2002).

Students labeled teacher's behaviors as controlling when teachers suppressed student

criticism and opinions, when teachers intruded on students work during task completion, and when teachers provided uninteresting activities. Students, especially adolescents, felt frustrated when they couldn't express their opinions to their teacher, and felt angry when their teacher interrupted their work on tasks. Students often said that uninteresting classroom tasks were typical (Assor, Kaplan, & Roth, 2002).

Reeve and Jang (2006) selected eleven ASI teacher behaviors and ten controlling behaviors to see which correlated most and least with previous measures of student autonomy. Researchers videotaped 72 pairs of university student pre-service teachers who role-played either a *teacher* or a *student* during a puzzle solving activity. The *teacher* displayed either a supportive or controlling behavior during the role-play. *Students* were surveyed using the Perceived Self Determination Scale (Reeve, Jang, Hardre, & Omura, 2002), to self-report perceptions of interest-enjoyment, internal locus of causality, volition, and choice. Student performance was measured by observing videotaped interactions of how the "teacher" and "student" were interacting to solve the puzzle. Results showed that students were able to recognize eight behaviors as autonomy supportive and six behaviors as controlling. Of these, three behaviors with the most significant (p = .001) negative correlation with autonomy were: making should/got to statements (-0.34), uttering solutions and answers (-.39), and asking controlling questions (-0.48). Asking controlling questions was defined as question forms of directives (Reeve & Jang, 2006), such as "Can you dribble the soccer ball like I showed you?" Teachers' use of controlling behaviors seemed to lead to students' feelings of guilt, shame, and anxiety, and reduced student engagement and persistence.

Four autonomy-supportive behaviors had a significant (p = 0.01) positive correlation to autonomy: offering encouragement (0.42), using praise as informational feedback (0.38),

being responsive to student-generated questions (0.38), and allowing time for students to work in their own way (0.36). Autonomy was significantly (p = .001) and positively correlated with interest-enjoyment (0.57) and with engagement (0.58). Results suggested that teachers' intentional support of students' autonomy might provide a framework in which students' inner motivational resources can be promoted. Teacher's intentional autonomy support seemed to create positive interpersonal relationships in which the student benefited both personally and academically.

McLachlan and Hagger (2010) trained nine college tutors on four clusters of ASI teacher behaviors comprised of primary and secondary teacher behaviors during two 20-minute training sessions to find out whether an ASI training in an authentic intervention increased tutors' use of ASI behaviors increased. A checklist of the six primary and eight secondary behaviors was used by trained observers (observations) and by tutors (self-reports) to collect data on which behaviors were applied during tutoring sessions. Tutors in the experimental group, compared to tutors in the control group, decreased their use of controlling behaviors and increased their use of ASI behaviors across three data collection times (Figure 5). For example, the time tutors provided for students to talk increased from 50 seconds (Time 1) to 150 seconds (Time 2) to 175 seconds (Time 3), and reduced their use of directives from 2.5 times (Time 1) to .75 times (Time 2) to .25 times (Time 3).

Jang, Reeve, and Deci (2010) designed a study to observe and measure ASI teacher behaviors, controlling behaviors, ASI classroom structures, and student engagement. Researchers hypothesized that when teachers supported student autonomy by using supportive behaviors and structures, students' engagement would be higher than if only teacher behaviors were used. Observers rated over 2500 high school students' engagement

and rated over 130 teachers' autonomy support.

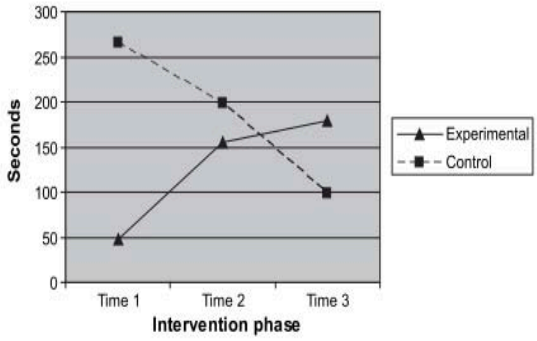

Fig. 1. The interaction between phase of the intervention and experimental condition for time students spent talking in class.

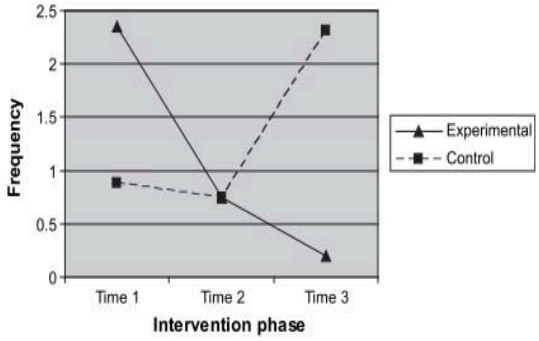

Fig. 2. The interaction between phase of the intervention and experimental condition for the frequency of directives and commands issued by tutors.

Figure 5. Interactions of Supportive and Controlling Behaviors (McLachlan & Hagger, 2010)

The instruments used were two observation sheets (one rated ASI teacher behaviors and the other rated ASI classroom structures). Next, measures of autonomy were correlated with measures of self-reported student engagement using a 4-item, 7-point Likert scale (1 meant "not at all true" and 7 meant "extremely true") student engagement survey (Fredericks et al. 2004). One item measured behavioral engagement ("During this class I paid attention"), two items measured cognitive engagement ("During this class I worked very hard," and "During this class I tried to learn as much as I could"), and one item measured affective engagement ("I enjoyed today's class"). The reliability of this short survey seemed fairly high (Chronbach's $\alpha = 0.88$).

Data indicated there were significant ($p = .01$) and positive correlations between measures of teacher autonomy and observed student engagement (Cohen's $d = 0.70$), between measures of teacher structure and self-reported student engagement (Cohen's $d = 0.36$), between teacher structure and observed student engagement (Cohen's $d = 0.76$), and between teacher structure and self-reported student engagement (Cohen's $d = 0.30$). Results appeared to show that teacher autonomy predicted student engagement more than teacher

structure predicted student engagement. However, both teacher autonomy and teacher structure appeared to have a significant effect on students' engagement. These results may support the suggestion that teachers use of both ASI teacher behaviors and ASI classroom structures used during instruction may promote students' engagement more than if only ASI teacher behaviors were used.

In sum, ASI now is characterized by teachers' combined use of autonomy supportive teacher behaviors with classroom structures. ASI seemed to be effective when the three teacher behaviors and the three classroom structures were used together to intentionally support student autonomy, increase engagement, and facilitate students' use of intrinsic motivation to complete learning tasks. Across these four studies reviewed above, it appears that autonomy supportive teacher behaviors and classroom structures predicted students' engagement. Thus, teachers can intentionally use autonomy-supportive behaviors to promote student engagement. Thus, the training intervention in the current study introduced instructors to both the teacher behaviors and the classroom structures. It seemed important that instructors were familiar with all six strategies of ASI, even though instructors were trained on a subset of these elements for practical reasons.

ASI Classroom Structures

The term "structure" previously referred to policies and procedures that teachers could use to help students get work done (Emmer, Evertson & Anderson, 1980) and seemed to be an outgrowth of research on teachers' classroom management skills (Jang, Reeve & Deci, 2010). ASI classroom structures are seen differently. Classroom structures that supported autonomy were provisions made by teachers to develop student's internal locus of control, and seemed to foster perceptions of control and competence. For example, when

teachers provided clear information about expectations and how to succeed academically, students reported being intrinsically motivated (Jang, Reeve, & Deci, 2010). Far less research has been conducted on ASI classroom structures (two studies found) than on ASI teacher behaviors (14 studies found). As with ASI teacher behaviors, phrases for classroom structures varied by researcher, perhaps due to the time between studies or to information gained on ASI teacher behavior research.

Classroom structures have been studied from a motivational perspective. Classroom structures were related to instructional decisions teachers made to help students learn in the classroom, so students felt in control of their learning, and so students could develop perceptions of competence, subject-matter mastery, and internal locus of control (Skinner, 1995; Skinner, Furrer, Marchand, & Kindermann, 2008). For example, a teacher might offer students a choice of essay topics so that students feel they can research a topic they are competent about, or a teacher might invite students to suggest potential test questions for an upcoming exam.

Teachers' autonomy support and classroom structures are provided either in controlling or supportive ways, depending on the teacher's motivational style (Jang, Reeve, & Deci, 2010). In Autonomy Supportive Instruction, teachers may intentionally provide classroom structure to support their students' academic success, and may do so in ways that support or thwart their students' autonomy (Jang, Reeve, & Deci, 2010). Table 6 provides phrasing found in the literature for controlling and supportive autonomy support and classroom structure.

Table 6

Phrasing for Teachers' Autonomy Support and Teachers' Structure

	Teacher's Autonomy Support		*Teacher's Structure*	
	Controlling	Supportive	Controlling	Supportive
Reeve et al. 2004	Relies on extrinsic motivational resources		Directions are absent, controlling, unclear and complicated	Clear predictable, understandable, detailed directions
	Uses controlling language	Uses informational language	Poor leadership, low and easy workload, scaffolding is absent	Strong leadership, high and hard workload, scaffolding is richly present
	Neglects value and importance of task, lesson, or behavior	Identifies value, and importance of task, lesson, or behavior	Feedback is ambiguous, off-task, rambling, or absent	Feedback is skill-building and instructive
	Reaction to students' negative affect: It is not OK, change it	Reaction to students' negative affect: Listens carefully		
Jang, Reeve, & Deci, 2010	Relies on extrinsic sources of motivation	Nurtures inner motivational resources	Instructions and directions are absent, unclear, ambiguous, or confusing	Instructions and directions are clear, explicit, understandable, and detailed
	Uses controlling language	Uses informational language	Guidance during lessons is weak	Guidance during lessons is strong
	Counters and tries to change students' negative affect	Acknowledges and accepts students' negative affect	Feedback is ambiguous or absent	Feedback is skill-building and instructive

In his research on self-determination theory (Deci & Ryan, 1985) and autonomy supportive instruction, Reeve (2004) concluded that support of student autonomy on the part of K-12 teachers and university faculty during instruction increased student engagement. *Autonomy* is defined as students' individual volition and responsibility for their own behavior (Deci & Ryan, 2004). Engagement has been defined as the effort and time that students put into their educational activities (Kuh et al., 2007). Engagement has also been described as students' quality of emotion and behavioral intensity during a learning task (Reeve, Jang, Carrell, Jeon, & Barch, 2004). Teaching in ways that supported student autonomy helped students learn quickly (Kuh, 2008), engage deeply, and become successful learners (Reeve,

2005). Autonomy-supported students perceived themselves as agents of their own education and tended to engage volitionally (Gagné, 2003). Thus, teaching in such a way as to support student autonomy may be a viable approach to support basic skills students' success

Until recently it did not seem clear whether ASI teacher behaviors were more beneficial than classroom structures to increase student engagement. For example, Reeve's literature review (Iowa Educational Research and Evaluation Association Conference, 2005) on how teachers can promote student autonomy described students who were engaged. The model in Figure 6 shows which aspects of engagement are impacted by autonomy support (teacher-provided autonomy support) and classroom structures (teacher-provided structure). Students demonstrate four types of engagement during a learning activity: behavioral, emotional, cognitive, and vocal. The model provides descriptors for each of these types of engagement.

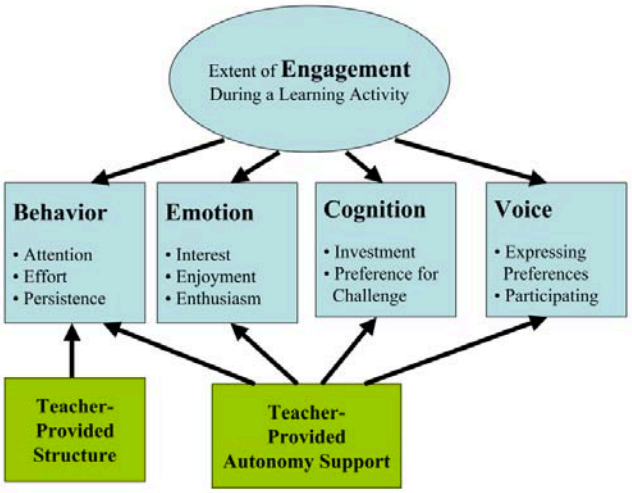

Figure 6. Engagement Promoted by ASI Classroom Structure and Autonomy Support (Reeve, 2005)

Classroom structures seemed to promote the behaviors of attention, effort, and persistence, and autonomy supports seemed to promote interest, enjoyment, and enthusiasm; cognitive investment and preference for challenge; and vocal expressions of preference and

participation. Past researchers portrayed the relationship between ASI teacher behaviors and ASI classroom strategies in one of three ways: oppositional (each construct contributed differently to student success), curvilinear (when one construct was delivered in high amounts, the other construct was not delivered in high amounts), or separate (the two constructs did not relate to each other) (Jang, Reeve, & Deci, 2010).

Therefore, effective use of ASI teacher behaviors and classroom structures appeared to increase student engagement. Engagement seemed to occur when students were motivated and when students' determination (competence, autonomy, and relatedness) to participate was satisfied (Jang, Reeve & Deci, 2010; Reeve, 2005; Reeve et al. 2004). It appears that using both ASI teacher behaviors and ASI classroom structures is important to increase students' engagement and overall success. Thus, teachers trained on both ASI teacher behaviors and ASI classroom structures may more fully support their student's autonomy, so perhaps these students may then benefit more from autonomy support, increased participation, and increased engagement. It did not seem practical to train instructors on six strategies in one fairly short training session, so the present study trained instructors to use one teacher behavior and one classroom structure to support basic skills students' autonomy as fully as seemed possible.

Benefits of Autonomy Supportive Instruction

Autonomy support seems to have benefitted students of all ages and led to increased academic success and engagement. In ASI studies across several subjects (i.e., language learning, math, chemistry, and physical education), grade levels (Pre K-12th grade), and with university tutors, it appears that K-12 and university students' academic success and engagement tended to be greater than in classrooms where teachers or tutors did not support

autonomy. Academic success included higher grades, higher rates of course completion, and increased student retention. Good teaching has also been associated with retention and was considered a key factor (Zepke, Leach, Prebble, Campbell, et al. 2005). Good teaching appears to include active learning, positive student-faculty interactions, prompt feedback, cooperation between students, teacher respect for students' learning in diverse ways (Chickering & Gamson, 1987), and teachers' use of autonomy supports (deCharms, 1976; Deci, Ryan, & Williams, 1996). Other benefits of autonomy support appeared to be

> … more positive emotionality, higher mastery motivation, greater intrinsic motivation, a preference for optimal challenge over easy success, higher creativity, enhanced psychological well-being, active and deeper information processing, greater conceptual understanding, higher academic achievement, and greater persistence in school versus dropping out (Reeve, 2004, p. 2).

Autonomy is defined as the amount of volition and responsibility one feels for their own behavior (Deci & Ryan, 2004). Volition refers to students taking initiative for learning, making choices to participate, and acting as agents for their leaning (deCharms, 1976). Engagement is defined as a student's quality of emotion and behavioral intensity (paying attention) during a learning task (Reeve et al. 2004). During engagement, students displayed emotions such as enjoyment, tried to learn as much as possible, and worked hard (Jang, Reeve, & Deci, 2010).

Researchers found that students taught in autonomy-supportive classrooms displayed several school success skills such as intrinsic motivation (Grolnick & Ryan, 1987), higher conceptual understanding (Deci et al. 1981; Ryan & Grolnick, 1986), and lower school drop out rates (Vallerand, Fortier, & Guay, 1997). Students taught by teachers who supported their

students' autonomy reported they felt more self-determined and seemed to be more intrinsically motivated to engage in the learning environment (Niemiec & Ryan, 2009). Students reported and were observed to have increased engagement, an increased sense of challenge, earned higher grades, and displayed a sense of well being (Jang, Reeve, & Deci, 2010) in the classroom environment.

Many studies were conducted to understand the impact of ASI on student autonomy and student engagement. Data were collected using both self-report surveys and observation sheets coded by trained observers. Table 7 provides a listing of these studies, provides an indication of whether the data collected on the variables were self-reported or observed, and lists the data collection instrument or strategy that was used.

Table 7

Self-reported (SR) and Observed (O) Teacher Autonomy and Student Engagement

Researchers	Teacher Autonomy (O or SR)	Student Perceptions of Teacher Autonomy (O or SR)	Student Engagement (O or SR)	Pearson's Product, *r*
Reeve & Jang (2006)	O: video tape interactions	SR: survey (PSD Scale)	SR: PSD Scale	$r = 0.56$*
Chatzisarantis & Hagger (2009)	SR: Survey	SR: survey (LCQ adapted for PE teachers)	SR: Survey	$r = 0.45$***
Jang, Reeve & Deci (2010)	O: Rating sheet		O: Rating sheet SR: survey	$r = 0.70$** $r = 0.36$**
Reeve et al. (2004)	O: Rating sheet		O: Rating Sheet	T2: $r = 0.75$** T3: $r = 0.77$**
Black & Deci (2000)	SR: Survey	SR: survey (LCQ)	SR: Interest/ Enjoyment	$r = 0.28$**

Students' engagement and affect was observed during instruction. Engagement was described as classroom participation such as asking questions, following directions, and completing assignments. Observed affect during instruction was described as demonstrations of interest, comfort, and enjoyment, asking questions, having conversations with classmates, and smiling. Students' engagement and affective responses to autonomy support were

expressed as enjoyment and participation during instruction, perhaps because students were engaged volitionally in interesting activities (Assor, Kaplan & Roth, 2002). These results appear to validate some of the benefits of Autonomy Supportive Instruction described by Reeve (2004).

Training Teachers to Use ASI

This section describes the literature on training teachers to use ASI, followed by studies used to design the proposed training intervention. Next, literature to design how the training will be conducted will be reviewed, followed by literature on the two ASI strategies being trained. These two strategies trained were an ASI teacher behavior (nurtures inner motivational resources) and an ASI classroom structure (provides informational feedback). This section will conclude with a summary.

ASI training interventions appear to have been conducted for about 15 years, since 1998. Overall, it seems that teachers learned to support their students' autonomy, and then students benefitted academically. Reeve (1998) studied 159 university student pre-service teachers, to find out (a) whether students could learn to be more autonomy supportive and (b) whether their natural motivating style relied on external or internal motivators. Reeve posited that pre-service teachers would have less resistance to being trained in ASI if they perceived autonomy support to be useful. Researchers gave participants one of three training booklets to read and study during an 80-minute session. The booklets described an autonomy-supportive style (acknowledges students' point of view, provides choices and rationale for learning activities, promotes student interest, and uses non-controlling communication), a controlling style (uses external motivators such as tokens and praise to manage behavior), and a neutral style (helps students organize and build well-articulated schema). The three

booklets were identically formatted and included research-based information on the ASI theory, benefits, and classroom applications. Also, the first of two case studies was provided to give an example of how a teacher could enact the strategies described. Participants wrote an essay following the second case study describing how he or she would apply the strategy in their booklet to the second case study. The last page of the booklet was a question with a 5-point Likert scale response ("not at all familiar" to "very familiar") to assess how familiar or unfamiliar the teacher was with the material prior to reading the booklet. Next, participants wrote a second essay to respond to the Problems in School Questionnaire (Deci, Schwartz, Sheinman, & Ryan, 1981), which contains a series of very short case studies for which teachers' responses are used to assess teacher's motivating style.

Results appeared to be that regardless of how familiar teachers were with controlling practices before the training, teachers who read the autonomy-supportive booklet responded to the case study and the *Problems in Schools* questionnaire using more autonomy supportive strategies ($M = 4.5$) than did those who read about controlling strategies ($M = 1.8$) or who read about neutral strategies ($M = 3.3$). Further, teachers in the autonomy-supportive group reported they were familiar with a controlling teaching style than teachers in the control (neutral booklet) group. Results also showed that pre-service teachers' motivation orientation after the training related to their willingness to provide autonomy support during instruction. Teachers' essays were rated from 1-5 (1 meant least similar and 5 meant most similar) to indicate how similar was the motivational style in responses with the motivational style presented in the booklet read ($M = 4.5$, s.d. = 0.7). One month after training, ANOVAs were used to compare mean autonomy support for teachers who were more or less autonomy-supportive before training, measured by repeated measures of motivating style (the content

read in the booklets).

These results showed that teachers who adopted an autonomy-supportive style appeared to continue teaching in autonomy-supportive ways whether teachers were more autonomy-oriented before the training (5.90) compared to those in the control group (3.16), or whether teachers were more control-oriented before the training (5.74) compared to those in the control group (2.78). These results seem to indicate that teachers who are more autonomy-supportive before training tend to use autonomy supports over time slightly more than do teachers who are less autonomy-supportive before training.

Reeve (1998) concluded that not only may a teacher's motivating style change with training, but that teachers may continue to support students' autonomy during teaching, even if their style is more controlling before training. Reeve suggested that future ASI interventions be aimed at changing teachers' motivational orientation, include skill-based training over an extended time, and additional training should carry over into the classroom. It appeared that becoming more autonomy supportive required teachers to use a different motivational paradigm than they experienced as learners (i.e., learning in classrooms where external motivators, such as token economies and praise, were used to control behavior). Regardless of a teacher's own previous learning experiences, all teachers seemed to benefit to some extent from having additional time to integrate autonomy supportive strategies into their thinking and their teaching. Then, after ASI strategies were conceptualized, teachers could apply ASI strategies to their own teaching. Thus, training interventions that provided teachers with a model of ASI, where teachers were given time to practice, and then teachers were given feedback after classroom interactions with students, seemed to facilitate teachers' ability to make a paradigm shift from using external motivators to supporting autonomy in

order for students to engage.

There were 14 ASI interventions in education that were conducted between 1998 and 2010. These studies are presented in Table 8, which indicates the studies that investigated the impact of ASI teacher training on students' autonomy (14) and students' engagement (3). Seven studies each were conducted in K-12 and higher education classrooms; two studies were conducted in lab environments, and 12 were conducted in authentic environments. Lab interventions did not measure changes in actual teaching, while authentic interventions did measure changes in actual teaching. Across these studies, researchers generally wanted to better understand the relationship between a teacher's motivating style (more or less autonomy supportive or controlling) and students' autonomy and engagement. Some of these interventions were found to be highly effective (Su & Reeve, 2010) and are identified by an asterisk (*) to the left of the researchers' name.

Table 8

Summary of ASI Interventions Conducted Between 1998 and 2010

	Variable Measured		Teachers		Environment	
Researchers	Autonomy	Engagement	Pre- K-12	University	Lab	Authentic
*Reeve, 1998	X			X	X	
Black & Deci, 2000	X			X	X	
*Collins, 2001	X		X			X
*Reeve et al. 2004	X	X	X			X
Barch, 2006	X			X		X
Reeve & Jang, 2006	X			X		X
*Edmunds, Ntoumanis, & Duda 2008	X			X		X
*Tessier, Sarazin, & Ntoumanis, 2008	X		X			X
*Chatzisarantis & Haggar, 2009	X		X			X
*Moss, 2009	X		X			X
*Cheon & Moon, 2010	X			X		X
Jang, Reeve, & Deci, 2010	X	X	X			X
Tessier et al. 2010	X		X			X
McLachlan & Hagger, 2010	X	X		X		X

ASI training interventions were of varying lengths of time and were facilitated using

different formats and materials. Some training sessions were as short as an hour (Reeve, 1998; Reeve et al. 2004), some were a few hours (Barch, 2006; Tessier, Sarazin, Ntoumanis, 2010), and some lasted several hours over several sessions (Chatzisarantis & Haggar, 2009; Collins, 2001; deCharms, 1976). Training materials included self-paced information gathered from the ASI literature (Cheon & Moon, 2010; Edmunds, Ntoumanis, & Duda, 2008; Reeve, 1998), booklets (Reeve, 1998), computer presentations (Moss, 2009), or individual sessions (Edmunds et al. 2008; Tessier et al. 2008; Reeve et al. 2004). Some interventions were conducted in a classroom setting with a facilitator who provided paper or multimedia materials (Barch, 2006; Edmunds et al. 2008), or who provided post-training sessions (Chatzisarantis & Haggar, 2009; Collins, 2001; deCharms, 1976; Moss, 2009; Reeve et al. 2004; Tessier et al. 2008) or individual meetings to provide feedback (Tessier et al. 2008).

In general, teachers who participated in ASI training increased their use of autonomy support (Assor, Kaplan & Roth, 2002; McLachlan & Hagger, 2010; Reeve & Jang, 2006). In the studies that measured student engagement, student engagement increased when teachers applied more autonomy support during teaching (Jang, Reeve, & Deci, 2010). Therefore, it seems that training teachers to use ASI is possible, can be effective, and useful because a teacher's style appears to impact his or her students' perceived autonomy and engagement during learning.

The studies listed in Table 8 with an asterisk were included in a meta-analysis (Su & Reeve, 2010) because they were found to be highly effective based on effect sizes either provided in the study or calculated by Su and Reeve. The purpose of the meta-analysis was to determine the effectiveness of ASI training interventions, and to identify characteristics associated with the most effective interventions. To find effective interventions, Su and

Reeve conducted extensive literature searches and then applied three criteria to the ASI interventions found (author-labeled, experimental design, and included sufficient data to calculate effect size) and identified 19 studies for further review.

These 19 ASI interventions, their effect sizes, and the population trained are listed in Table 9. Participants were trained on three, four, or five ASI teacher behaviors. Although operational definitions used various phrasing across studies, Su and Reeve compiled definitions that were worded as complete operational definitions for each ASI teacher behavior studied. These teacher behaviors (and the number of studies that trained them) were: Provides meaningful rationales (0), Acknowledges perspective and feelings of students (3), Offer choices (5), Nurtures inner motivational resources (2), and Uses non-controlling language (3).

Table 9

ASI Interventions Selected for Review in Su and Reeve's (2010) Meta-analysis

Researchers	Effect Size	Participants Trained
Edmunds, Ntoumanis, & Duda 2008	5.76	1 College Exercise Teacher
Cheon & Moon, 2010	3.64	1 College PE Instructor
Reeve, Jang, Carrell, Barch, & Jeon, 2004	1.94	20 High School Teachers
Chatzisarantis & Haggar, 2009	1.56	10 High School PE Teachers
Collins, 2001	1.55	8 K-6 Female Teachers
Reeve, 1998	1.29	159 Pre-service Teachers
Tessier, Sarazin, & Ntoumanis, 2008	0.89	5 High School PE Teachers
deCharms, 1976a	0.88	60 K-6 Teachers
Barch, 2006	0.88	91 Pairs* Pre-service Teachers
deCharms, 1976b	0.55	60 Teachers
Moss, 2009	0.09	13 Teachers
Williams, Gagne, Ryan & Deci, 2002	1.57	27 Physicians
Williams, 1999b	0.73	2 Physicians
Williams and Deci, 1996	0.55	58 Medical students
Williams, 1999a	0.33	1 Physician
Williams et al. 2006	0.39	Counselors (medical)
Hardre & Reeve, 2009	1.48	20 Managers
Froiland, in review	1.21	40 Parents
Weber-Gasparoni, in press	0.54	223 Moms
Weber-Gasparoni, 2003	-0.29	86 Moms

* Pre-service teachers role-played either a teacher or student, and only those playing teachers were trained.

None of these studies trained ASI classroom structures. Su & Reeve (2010) computed effect sizes based on data provided by each study, then calculated Cohen's *d* for each study, weighted for each group of participants (teachers, managers, parents, or physicians) and based on population size. The mean effect size for all interventions combined was $d = 0.67$.

In their meta-analysis, Su and Reeve (2010) identified and described the characteristics of highly effective training interventions (Cohen's *d* weighted across interventions = 0.60). Nine of the interventions were conducted with parents (N = 3, $d = .45$), medical clinicians (N = 5, $d = 0.44$), and corporate managers (N = 1, $d = 1.48$). Of the 11 teacher interventions ($d = 1.16$), two were conducted with college instructors, four with middle and high school teachers, two with elementary teachers, one with preschool teachers, and two with pre-service teachers.

Su and Reeve (2010) concluded that to be effective, future ASI interventions should be conducted with high-quality methodologies to provide accurate and unbiased findings. Training regarding both teacher behaviors and classroom structures should be offered, and the results should be published to inform future ASI training interventions. Characteristics of teacher interventions reviewed by these researchers were scored according to effectiveness. Those with the highest scores showed that effective interventions lasted from one to three hours ($d = 1.45$), included skills-based instruction ($d = 1.07$) along with theoretical knowledge and information ($d = 0.84$), and provided a follow-up supplement such as a post-training website, coaching sessions, or materials that could be accessed and reviewed later (Cohen's *d* not provided).

Three studies reviewed by Su and Reeve (2010) and presented in Table 10 were selected to inform this study's intervention design because of their high effect scores. In

these studies, four characteristics associated with effectiveness were selected and replicated in the current setting, as follows: (a) 20 or fewer teachers trained in one session with follow-up, (b) facilitator was knowledgeable about self-determination theory (SDT), (c) training session included knowledge-based discussion plus skills practice, and (d) students' perceptions of autonomy support were measured. Interventions that trained teachers to support their students' autonomy were more effective than those for training managers, medical clinicians, or parents. Interventions that trained people (across all groups) to use non-controlling language were most effective ($d = 0.94$). Training people to acknowledge students' perspectives ($d = 0.64$), nurture inner motivational resources ($d = 0.63$), and provide rationales ($d = 0.63$) were highly effective.

Table 10

Characteristics of Three Effective ASI Teacher Interventions

Researchers	Effect Size	Number Trained	Intervention Format	Facilitator knowledge about SDT	Knowledge discussion with skills practice	Measured perceptions of autonomy
Reeve, Jang, Carrell, Barch, & Jeon, 2004	1.94	20 T	One-hour seminar and individual website follow-up.	X	X	X
Chatzisarantis & Haggar, 2009	1.56	10 T	Three 3-hour sessions with feedback on skills demonstration.	X	X	X
Tessier, Sarazin, & Ntoumanis, 2008	0.89	5 T	Seminar with eight individual follow-up sessions	X	X	X

Note. T = Teachers.

In three studies, K-12 (Jang, Reeve, & Deci, 2010) and university teachers (Niemiec & Ryan, 2009; Reeve, 1998) were successfully trained to support student autonomy and effectively increased their students' autonomy (Reeve et al. 2004; Reeve & Halusic, 2009; Su & Reeve, 2010) based on survey reports of perceived autonomy after the intervention.

Autonomy support leads to increased student engagement (Reeve, Jang, & Carrell, 2004). Engagement of underserved students has been shown to increase more than that of typical students (Kuh et al., 2007). Therefore, K-12 and university students taught by teachers who used ASI had higher engagement and persisted longer than those students whose teachers did not use ASI. However, the response of basic skills students, who are historically underserved and underprepared for college, to this method of instruction is as yet unknown. Can these students' perceptions of autonomy increase, and can their academic engagement increase if their autonomy is supported?

Research was conducted by Niemiec and Ryan (2009) and by Vansteenkiste et al. (2005) to compare the impact of autonomy-supportive and controlling instruction. The results seemed to indicate that controlling instruction was characterized by pressuring language, i.e., statements such as "you should …" or "you have to …" (Vansteenkiste et al. 2005), and that controlling instruction reduced student engagement and persistence. Such instruction may also result in feelings of guilt, shame, and anxiety on the part of the students (Ryan & Deci, 2000b). When students do not engage during instruction, they cannot benefit from it, regardless of the pedagogical techniques used.

Training teachers was more effective ($d = 0.63$) than training clinicians ($d = 0.44$), than managers ($d = 1.48$), and parents ($d = 0.50$). More effective training interventions lasted from one to three hours, compared to those of longer or shorter duration. Trainees who had a causality orientation were more able to accept and internalize changes related to autonomy support, and then seemed to integrate autonomy supports into their style more easily than trainees with a control orientation. Effect sizes were higher for participants who had a causality orientation ($d = 0.62$) than for those with a control orientation ($d = 0.37$), however,

control-oriented participants were successfully trained. These results were explained as a potential cognitive conflict for control-oriented trainees who were being asked to integrate a strategy that perhaps did not fit with their current strategies. Trainees' provision of autonomy support was measured after training using classroom observations, written responses to a case study, or self-report surveys (i.e., the *Problems in Schools* questionnaire or the *Learning Climate Questionnaire*).

Su and Reeve (2010) coded these 19 interventions and identified seven intervention characteristics that were then compared with effect sizes in order to understand the characteristics associated with more effective interventions. These characteristics were

1. Trainings were conducted in laboratory settings
2. Trainers were familiar with SDT theory
3. Trainers used a combination of print and electronic training materials
4. Training focus included ASI skills and information.
5. Trainers were familiar with ASI theory
6. Training duration was 1-3 hours
7. Trainers provided a post-training follow-up

Of these seven, four characteristics made the greatest contribution to effect size: training setting, type of training materials, focus of the training, and length of training. Su and Reeve made three recommendations for future ASI interventions. First, the intervention should train multiple aspects of ASI. Second, the intervention should provide training in a few short sessions and provide follow-up training. Third, the intervention should assess participants' pre-training beliefs so that the training content may address participants' level of autonomy or control orientation.

To summarize, 14 ASI interventions were found that trained teachers between 1998 and 2010. Studies most often were experimental and were conducted in authentic settings. Researchers measured changes in students' autonomy and engagement. Of these 14 studies, nine were included in a meta-analysis of effective interventions (Su & Reeve, 2010). Characteristics of effective interventions were identified by comparing various elements of how each intervention was conducted with the overall effect size of each intervention. Training that was laboratory based, used print and electronic materials, focused on building skills, and lasted from one to three hours was most effective, and future interventions should address teacher's pre-training beliefs and pre-training level of autonomy support. The current study was conducted in an authentic environment and characteristics of effective classroom interventions were used to inform the training intervention design. Unfortunately, information on how the training was delivered was not described in any of the studies reviewed. It makes sense that training delivered using ASI may be beneficial for teachers' maximum engagement. The researcher/trainer for the current study has used ASI in college classrooms with basic skills students for approximately two years. The training intervention was designed and facilitated using ASI strategies. In an attempt to close this gap all aspects of the training intervention were described so that other researchers can replicate the current intervention strategy.

A new feature of the completed intervention was that instructors' autonomy support was observed before, during, and after the intervention, and data described the extent to which the instructors used ASI strategies after the intervention. Previous research omits descriptions of teaching style in terms of orientation for either the control or treatment groups prior to training. Only teachers' autonomy support levels after training were described using

observation rating sheets and self-report surveys.

Literature to Inform the Design of the Training Intervention

Three ASI interventions were selected to inform the proposed intervention: Reeve et al. 2004; Chatzisarantis & Hagger, 2009; and McLachlan & Hagger, 2010. These studies were selected because they have higher effect sizes (first two studies) and because characteristics of these interventions were practical to replicate (all three studies), given the students to be studied and the teachers to be trained. For example, students were enrolled in one of several sections of a community college basic skills English course, there will be 10-12 instructors in the training population, each instructor's behavior change attempts will be tallied using a checklist based on an ASI observation sheet, the researcher (the intervention facilitator) is familiar with self-determination theory and ASI, and the researcher will assess pre-training autonomy support and provide post-training follow-ups.

Two of these three studies have higher effect sizes, as calculated by Su & Reeve (2010). For the meta-analysis, researchers calculated each intervention's effect size (if it was not already provided) by converting provided values for *t*, *F* and *r* into Cohen's *d*. For these two studies, Su and Reeve's calculated effect sizes were 1.94 (Reeve et al. 2004) and 1.56 (Chatzisarantis & Hagger, 2009). The effect size of the third study by McLachlan & Hagger (2010) was not provided in the study so this researcher will calculate the effect size, but the McLachlan and Hagger suggested there were "significant changes and large effect sizes in the desired direction … and significant decrements in [tutor's] use of controlling directives and commands" (pp. 1208-1209).

The study by Reeve et al. (2004) attempted to correlate teacher's autonomy supportive behaviors with students' engagement after teachers attended training. Twenty

high school teachers participated in an information session and web-based instruction on ways to support their students' autonomy. The ASI behaviors trained were (a) nurtures inner motivational resources, (b) relies on informational, non-controlling language, (c) promotes value in uninteresting activities, and (d) acknowledges and accepts students' expressions of negative effects. Training was conducted in a short workshop, via a website, and a post-training information session. Trained observers measured students' autonomy and engagement by using rating sheets (Jang, Reeve & Deci, 2010). Results seemed to indicate that teachers who were trained to support autonomy did so, and in turn their students' engagement increased. Suggestions for future research were made to identify specific behaviors teachers could use in their classrooms to successfully support autonomy (Reeve et al., 2004).

The elements in the Reeve et al. (2004) study selected to inform the proposed training intervention was that teachers were trained on the ASI teacher behavior of "nurtures inner motivational resources," students' engagement was measured before and after the training intervention using an observation rating sheet, and teachers received a post-training following up, which occurred during two 30-minute coaching sessions facilitated by the researcher.

In the second study (Chatzisarantis & Hagger, 2009), high school physical education teachers were assigned to an experimental group to receive autonomy supportive training on (a) providing rational in an autonomous way, (b) providing feedback in an autonomous way, (c) providing choice, and (d) acknowledging students' difficulties. The control group received training on providing rationale and feedback only. Trained observers rated teachers' autonomy-supportive and controlling behaviors at baseline and at two follow-up times.

Students' levels of autonomous motivation and engagement were measured in self-reports and also observed by trained observers. Results suggested that teachers' autonomy support was important not only for increasing students' intention to exercise, but also seemed important for students' actual exercise behavior. Data at the first teacher observation time was significantly (p = .001) and positively correlated to teachers' autonomy support at baseline (0.88) and student's intentions to participate in exercise was significantly ((p = .001) and positively correlated with teachers' autonomy at baseline (0.33) and was significant (p = .001) at the first observation (0.18). Students' actual behavior at the second observation was significantly (p = .001) and positively correlated with their intention to exercise (0.47).

The elements of the Chatzisarantis and Hagger (2009) study selected to inform the proposed training intervention was (a) trained teachers to provide feedback in an autonomy-supportive way, (b) used observations and a rating sheet to describe teacher's use of ASI strategies after training, and (c) measured students' perceptions of autonomy using the Learning Climate Questionnaire.

Teachers provide informational feedback when they make timely and relevant comments about student work and effort. Informational feedback is constructive, skill-building, and competence-building. Teachers may think they deliver useful feedback, but it may not be informative or skill-building. Teachers tend to know that providing "good" feedback supports student success, but they may not know how to provide specific feedback that consistently leads to student engagement. *Provides informational feedback* was selected for training for two reasons: first, to allay potential misconceptions about how and why feedback supports engagement, and second, because informative feedback helps students become more competent, which may help basic skills students experience feelings of

competence.

The third study (McLachlan & Hagger, 2010) that was used to inform the proposed training seems to be one of only a few ASI interventions conducted with college students. Researchers applied a behavior change model to increase college tutors' autonomy-supportive instruction. Graduate student tutors were trained in six "primary" and eight "secondary" autonomy-supportive behaviors. After training, tutors were observed three times during instruction by trained observers using a checklist of the primary and secondary behaviors. The experimental group participated in trainer-led discussions on primary and secondary autonomy-supportive behaviors, while the control group engaged in discussions about effective teaching strategies, in two 20-minute sessions held one week apart. The six primary autonomy-supportive behaviors were (a) offering encouragement, (b) time allowing students to work in their own way, (c) time allowing students to talk, (d) avoiding controlling questions, (e) avoid "should" and "you've got to" statements, and (f) providing meaningful rational. The secondary autonomy-supportive behaviors were (a) time spent listening to students, (b) giving praise as feedback, (c) offering hints, (d) being responsive to student questions, (e) acknowledging the students perspective, (f) minimizing time spent holding learning materials, (g) avoiding giving solutions or answers, and (h) avoiding giving directives or commands.

The sample size was small (N = 9) so researchers used three data collection times for observed and for self-reported data. Tutors were observed and self-reported their behavior change on a checklist of the primary and secondary ASI behaviors. To analyze these data, mean values for tutor behaviors was calculated between observations and between self-reports. ANOVAs were used to find out whether there were significant differences between

control and treatment tutors. Results indicated significant main effects on two behaviors: acknowledging student perspectives and relying on non-controlling language. For the latter behavior, tutors in the experimental group significantly reduced their use of controlling language in the third round of data collection. Researchers concluded that tutors could be successfully taught to increase autonomy-supportive behaviors and can modify their behavior after two short interventions. A suggested limitation in this study was the potential lack of tutor attention to secondary behaviors in favor of primary behaviors. No rationale for this distinction was provided to the tutors, but researchers suggested that no labeling distinction should be made in replications of this intervention. Last, researchers acknowledged that the lower level of tutoring skill might have been a confounding variable for the large number of behaviors being trained and observed for change. Researchers suggested that future studies utilize the comprehensive checklist of autonomy-supportive behaviors utilized in this study as an intervention protocol, especially because both verbal and non-verbal behaviors were included.

The elements in this study that will be used to inform the proposed training intervention will be (a) training the specific ASI strategies being measured, (b) training a relatively small number of people in higher education, and (c) data will be collected multiple times. In the proposed study, two specific strategies will be trained and measured, there will be no more than 12 instructors trained because there are 12 sections of English 250 being offered during the research timeline, and instructors will be observed twice.

It seems that only one ASI intervention, by Jang, Reeve, and Deci (2010), trained and measured ASI teacher behaviors *and* ASI classroom structures. The current study attempts to add to this strand of ASI research by training instructors on one ASI teacher behavior and

one ASI classroom structure. It may be useful to find out whether basic skills teachers' use of just one ASI teacher behavior and one ASI classroom structure (as opposed to multiple ASI teacher behaviors and multiple classroom structures) can increase students' perceptions of autonomy and engagement. Additionally, results may indicate whether the two strategies trained are an effective combination of ASI strategies for increasing students' autonomy and engagement.

Literature on *Nurtures Inner Motivational Resources*

The ASI teacher behavior to be trained is, *nurtures inner motivational resources*. Intrinsic motivation seems to be key to students' becoming self-determined and appears to be a desirable benefit of ASI. Nurturing students' inner motivational resources was considered the primary focus of ASI because when students' inner motivation was supported, students seemed more self-regulated (Eisenman, 2007). When teachers provided for students' interests, preferences, and internalized values, students seemed more engaged (Reeve, 2005; Reeve et al. 2004). In an experimental intervention (Reeve et al. 2004) that provided a workshop, a self-study website, and follow-up information sessions, 20 high school teachers were trained (half assigned to the treatment group and half assigned to a delayed treatment group) to use four ASI teacher behaviors (nurturing inner motivational resources, using non-controlling language, promoting value in uninteresting activities, and acknowledging and accepting students' expressions of negative affect).

Both groups of teachers were observed three times by trained observers using a four-quadrant rating sheet. The quadrants are, clockwise from upper left, Teacher's Autonomy Support, Teacher's Structure, Students' Collective Engagement, and Teacher's Involvement. To rate these four variables, trained observers used the descriptors on either end of a 7-point

Likert scale to determine whether the variable was more controlling (scores of 1, 2, or 3), neutral, (score of 4) or more supportive (score of 5, 6, 7). Thus the scale was a continuum where 1 was most controlling and 7 was most supportive. The literature did not describe how observers made a determination to select scores of 1, 2, or 3, or 5, 6 or 7. It was stated that a score of 4 was a starting point for each observation.

There was very little information provided in the literature describing how this data sheet was used during observations. It seems cumbersome and difficult to take reliable data on all four quadrants at one time. There are many elements on the sheet to look for, and the four response scales are provided in small font. It is assumed that video-taped observations may better lend themselves to such a rating sheet because a tape can be replayed to observe the variables in one quadrant at a time, or could be reviewed multiple times for reliability. Real-time observations, then, would probably need to be made on a modified version of this rating sheet so that errors and bias are not a concern. Another concern with this data sheet relates to duplicability. Because the literature does not provide indicators for specific scores it is unclear what criteria were used for each score. Reeve et al.'s (2004) rating sheet (Appendix F) provided the basis from which a new coding guide was developed to code instructor's ASI statements in the current study.

Results indicated that teachers in the treatment group did appear to learn to use autonomy supports ($M = 4.57$) more than teachers in the control group ($M = 2.91$), and appeared to learn to use structure ($M = 5.17$) slightly more than those in the control group ($M = 5.02$). Teachers in the delayed treatment group used autonomy supports ($M = 4.02$) significantly more at the third observation than at the second ($M = 2.72$) observation. Students' engagement (task involvement) appeared to increase significantly ($p < .01$) at the

second (M = 9.63) observation compared to the first (M = 8.67) observation, suggesting that increased autonomy support predicted increased engagement. Thus, an ASI training intervention for community college basic skills teachers who may have not been exposed to ASI or to other pedagogies designed to support student engagement or student success could be important to provide teachers with a well-researched foundation on which to support students' autonomy and engagement.

The ASI teacher behavior, *nurtures inner motivational resources,* was first studied in 1996. Various phrases have been used to describe ways teachers can nurture students' inner motivational resources as shown in Table 11.

Table 11

Phrasing to Describe 'Nurtures Inner Motivational Resources'

Researchers	Phrasing for *Nurtures Inner Motivational Resources*
Reeve, 1996	Encourages students' use of 11 inner resources during learning: self-determination, competence, relatedness, self-efficacy, personal control beliefs, striving for achievement, goal setting, the self, curiosity, interest, and enjoyment and flow.
Assor, Kaplan & Roth, 2002	Encourages students' independent thinking.
Reeve, 2004	Identifying and supporting students' needs, interests, and preferences during instruction.
Reeve et al. 2004	Encourages students' interest, enjoyment, psychological need satisfaction (competence, autonomy, relatedness), and sense of challenge or curiosity during the engagement of a requested activity.
Reeve, 2005	Builds instructional activities around students' interests, enjoyment, sense of being challenged, preferences, and choice making.
Reeve & Jang, 2006	Allows students time to work in their own way, offers encouragement, creates classroom opportunities for students to use their inner motivational resources to engage in learning activities, and spends time listening to students and accepts students' perspective.
Reeve & Halusic, 2009	Capitalizes on students' psychological needs for competence, autonomy, and relatedness; uses students' interests, preferences, sense of challenge, personalization, and intrinsic goals to elicit student motivation.
Jang, Reeve, Deci, 2010	Relies on students' interests, enjoyment, and sense of challenge, and creates opportunities for students to take initiative.
McLachlan & Hagger, 2010	*Primary Behaviors*: Offers encouragements, provides time for students to work their own way, and to spend talking.

For each researcher listed on the left side, there is a description on the right side of their definition of *nurtures inner motivational resources*. The definition compiled by Su and

Reeve (2010) from studies included in their meta-analysis (indicated with an asterisk next to each set of researchers) was "Vitalization of the [student's] interest, enjoyment, psychological need satisfaction (autonomy, competence, and relatedness), or the sense of challenge or curiosity during the engagement of a requested activity" (p. 4). Common themes across these definitions appear to relate to ways teachers may respond to students' interests and needs, ways teachers may provide support for students' needs, and ways teachers may create opportunities for students to succeed. The definition used in the current study for *nurtures inner motivational resources* was based on Reeve et al. (2004), because it provided an objectively stated set of behaviors that could be observed, and because it was the foundation of the definition used by Su and Reeve (2010) in their meta analysis.

Literature on *Provides Informational Feedback*

Feedback appeared to be instructive when it gave students ways to improve work quality and increase academic achievement. Teachers provided classroom structure by giving explanations and feedback to help students accomplish and master skills. Also, providing informational feedback may develop self-regulation, perceived competence and control, and may be a way to nurture students' inner motivational resources (Jang, Reeve, & Deci, 2010).

Table 12 lists researchers and descriptions of the ASI classroom structure, *provides informational feedback*. Teacher's feedback appeared to be autonomy supportive when it provided rationale and described ways to improve skills. Teachers who provided meaningful rationale seemed to develop students' self-regulation, perceived competence, and control, which then appeared to intrinsically motivate and engage students. Overall, the common thread across these definitions seemed to be that autonomy supportive feedback helps students increase achievement by giving students information on ways they may improve

their skills and performance, and ways they can work toward mastery. *Provides Informational Feedback* seems to be an important skill for teachers to learn. Teachers may think they deliver useful feedback, but their feedback may not be autonomy-supportive or intrinsically motivating when it is comparative, grade-oriented, or delivered using non-positive terms. Teachers may provide informational feedback when they give positive, verbal encouragement, which can build academic skills, perceptions of competence, and may be intrinsically motivating to the student (Reeve et al. 2004).

Table 12

Researchers' Descriptions of Autonomy Supportive Feedback

Researcher	Phrasing for Provides Informational Feedback
Deci, Vallerand, Peletier, & Ryan, 1991	Feedback is accompanied by autonomy support (delivered with non-controlling language and provides choice).
Deci & Ryan, 2000	Feedback enhanced perceived competence and built self-efficacy for meeting challenges.
Reeve, 2005	Offer constructive feedback on how students can gain control over valued outcomes, constructive feedback helps students build on their skills and sense of competence.
Young, 2005	Supportive, positive feedback vs. graded, comparative, corrective feedback; positive feedback supports the development of competence and task mastery orientation; informational feedback maintains the sense of perceived autonomy and increases intrinsic motivation.
Furtak, 2009	Feedback contains information to help students improve their performance; feedback that places value on effort and progress; feedback is inviting and open to different approaches.
Niemiec & Ryan, 2009	Feedback downplays evaluation, emphasizes students' effectiveness, and provides relevant information on how to master the task at hand.
Reeve & Halusic, 2009	Autonomy-supportive feedback relies on being non-evaluative, flexible, and stated in informational language.
Jang, Reeve & Deci, 2010	Offer constructive feedback on how students gain control over valued outcomes, feedback is clearly stated, skill-building, enhances students' competence, and enhances students' perceived control after lessons.
McLachlan & Hagger, 2010	Feedback communicates positive effects about students' improvement or mastery

The current study trained instructors to provide informational feedback during classroom discussions in order to find out whether this strategy may change basic skills English students' autonomy or engagement.

Summary

In conclusion, this literature review described research on and suggestions to improve California community college students' success, on Self-Determination Theory, on Autonomy Supportive Instruction, on training teachers to use ASI, and on literature used to inform the proposed ASI training intervention. Research on community college basic skills student success concluded that underserved and unprepared students enrolled in basic skills courses were educationally marginalized and tended to display lower engagement, at times because instruction was not provided in was that invited engagement. Autonomy Supportive Instruction was correlated with increased engagement. Basic skills students may engage and succeed more when their teacher uses Autonomy Supportive Instruction, a research-based pedagogy found to increase engagement. There seems to be support for the need to train community college basic skills instructors in ASI to increase students' engagement so students may have a better chance to succeed in college. This review also has attempted to provide an empirical foundation for the proposed ASI training intervention design so that it can be as effective as possible by replicating those characteristics associated with effective ASI interventions, as evidenced by higher effect scores. Finally, there are concerns with the observation rating sheet (Reeve et al, 2004) and with how training interventions were facilitated. The current study addressed these concerns by redesigning the observation rating sheet several times and by designing the ASI intervention to be facilitated using ASI strategies.

According to the literature found, there seem to be no studies to describe ASI interventions with community college basic skills instructors. ASI training intervention studies reviewed seemed to conclude that teachers teaching from pre-school through university levels can effectively learn to use ASI strategies, even when teachers appear to have a controlling orientation before training. The benefits to students when their teachers used ASI teacher behaviors and ASI classroom structures included increased intrinsic motivation, autonomy and engagement. Students' inner motivational resources appeared to be nurtured when students received informational feedback. Feedback delivered in autonomy supportive ways seemed to build competence, which appears to lead to increased intrinsic motivation and engagement during classroom learning experiences.

CHAPTER THREE

METHODOLOGY

The purpose of this study was to find out whether and to what extent instructors trained on two autonomy supportive instruction (ASI) strategies increased their autonomy support during instruction and also whether their students' engagement and perceived autonomy increased. The participants were a control (n = 3) and treatment (n = 3) group of community college English 250 instructors and their students (N=152). English 250 is a remedial English course taught at a rural California community college. The independent variable was training condition. The dependent variable for instructors was change in autonomy vs. control orientation score, as measured by the *Problems in Schools* questionnaire (Appendix B), and, for only the treatment group, as measured by the percentage of controlling vs. autonomy supportive statements made during instruction coded on the ASI Observation Coding Guide (Appendix C). The dependent variable for students was perceptions of autonomy and students' engagement as measured by the 14-item *Student Learning Survey* (Appendix D).

A three-part intervention was designed to train participating instructors on two autonomy supportive instruction strategies: one teacher behavior (nurtures inner motivational resources) and one classroom structure (provides informational feedback). Data were collected from the treatment and control group instructors on frequency of autonomy supportive and controlling statements made during instruction, and on changes

in students' perceptions of autonomy and engagement, before (pretest measure), immediately following (posttest measure), and three weeks after (maintenance measure) treatment. The research questions were

1. How autonomy-supportive, as compared to a control group, are English 250 instructors before and after treatment as measured by scores on the PIS questionnaire and by the percentage of instructor statements categorized as autonomy-supportive for the ASI strategies, nurtures inner motivational resources and provides informational feedback?
2. To what extent did perceived autonomy change for English 250 students in the treatment group before and after their instructor's participation in an ASI training intervention compared to the control group?
3. To what extent does perceived engagement change for English 250 students in the treatment group during and after their instructor's participation in an ASI training intervention compared to the control group?

Research Design

A quasi-experimental, mixed methods study was conducted with six basic skills English 250 instructors with approximately 20-25 students each. Three instructors were placed into the control group and three instructors were placed into the treatment group. All instructors were surveyed before (pretest) and after (maintenance) the treatment intervention. Treatment group instructors participated in a three-part training intervention that included (a) three classroom observations, (b) an ASI training session, and (c) two individual, 30-minute coaching sessions. Data for student engagement were collected then analyzed using *t*-tests (control) and repeated-measures ANOVAs (treatment).

Qualitative data were collected from treatment group instructors as audio recorded statements during instruction then transcribed and coded to determine the percent controlling vs. autonomy supportive statements. The coded transcripts were also used to inform the researcher's comments and suggestions provided during coaching sessions to potentially increase instructors' use of the ASI strategies that were trained. Table 13 provides a visual representation of the instruments used to collected data and when data were collected for both groups.

Table 13

Data Collection Instruments and Schedule

	Instructor Autonomy Orientation			Student Autonomy and Engagement		
	Pretest (Week 1)	Posttest (Week 7)	Maintenance (Week 10)	Pretest (Week 1)	Posttest (Week 7)	Maintenance (Week 10)
Control Instructors n=3	PIS Score		PIS Score			
Control Students n=47				Student Learning Survey		Student Learning Survey
Treatment Instructors n=3	PIS Score Observed Autonomy	PIS Score Observed Autonomy	PIS Score Observed Autonomy			
Treatment Students n=33				Student Learning Survey	Student Learning Survey	Student Learning Survey

There were three instructors each in the treatment and control groups. Data to describe instructors' self-reported autonomy orientation was collected using the Problems in School Questionnaire that was modified for this study. Instructors' autonomy orientation statements were observed (recorded) during class and their comments were transcribed then coded using the ASI Observation Coding Guide. Data to describe students' self-reported perceived autonomy and engagement was collected using the

Student Learning Survey. Data from control instructors and students were measured at pretest and maintenance, and data from treatment instructors and students were measured at pretest, posttest, and maintenance. These data were used to answer the three research questions.

Sample

The sample studied was six English 250 instructors and their students enrolled during the Fall 2012 semester. There were three instructors who self-selected into the treatment group and three instructors who self-selected the control group, forming a convenience sample. All instructors were given a baseline self-report survey to determine their baseline self-report control vs. autonomy support orientation score.

The six participating English 250 instructors have taught at the college for between 6 and 15 years in the English Department, and taught English 250 for a range of three to 26 semesters. There were full-time and part-time, male and female instructors in each group. One instructor in each group attended training at a Basic Skills conference and two instructors in each group participated in departmental training for working with basic skills students. All instructors participated in departmental discussions related to increasing student success for basic skills English students.

English 250 is a basic skills course that is one level below English 1A and teaches students to research, develop, and construct effective essays in standard English. In-class learning activities typically include short lectures, discussions, worked examples, and frequent small group and partner activities. According to the college website, English 250 student learning outcomes are

1. Demonstrate the ability to write clear, coherent essays in standard English.

2. Apply research techniques to finding and evaluating sources and writing college-level research papers.
3. Analyze essay writing in terms of message, form, effectiveness.
4. Utilize reading and writing skills to effectively complete a timed argument essay (department final), thus demonstrating the ability to proceed to English 1A or receive an AA degree.
5. Evaluate texts to determine an author's purpose and argument and assess its validity and relevance to the student's own life and values.
6. Apply effective reading strategies to read a book-length work and write a cogent analysis and response.

There were 152 English 250 students who participated in the study. These students were demographically diverse, demonstrated English proficiency on a standardized placement test at a level rated between 8th and 12th grade, and demonstrated uneven attendance patterns. Data collected from 86 of the 152 participating students was analyzed. Data were missing because not all of the English 250 students who agreed to participate in the study attended class on all of the survey data collection days. Only data collected from students who did take to all three surveys was included in analysis.

Protection of Human Subjects

Procedures to protect human subjects were followed. All paperwork required was completed and submitted as required by the University of San Francisco's (USF) Institutional Review Board and the Protection of Human Subjects, and by the community college's Office of Institutional Research. All Institutional Research Board (IRB) approval letters (Appendix A), and informed consent forms (Appendix E) were based on

templates provided by USF's IRB website.

Participating instructors and their students may have benefited and were not harmed by this research. Benefits to treatment group students included learning in an environment where their instructor intentionally implemented strategies to potentially increase student perceptions of engagement and success. Basic skills instructors in the treatment group may have benefited in two ways: they were trained on two ASI strategies to potentially increase their students' autonomy and engagement, and their participation in the study counted toward professional development hours required by the college.

Only the researcher administered surveys to students (the Student Learning Survey) and instructors (the Problems in Schools questionnaire). The researcher and the researcher's assistant entered student and instructor survey data into Excel spreadsheets. All data and results were coded such that individual data was not available or reported. Survey raw scores were transferred to data sheets and individual mean scores and class group scores were calculated, reviewed, analyzed, and reported. Instructors did not handle or read any surveys or data at any time for any reason. Access to completed individual surveys and observation instruments was limited to the researcher and the researcher's assistant, and surveys were stored off campus.

Data was confidential but not anonymous. Students and instructors who agreed to participate signed a consent form before completing the surveys and students wrote their college ID number (students) on the upper right hand corner of the survey. Instructors provided their class meeting time and days at the beginning of each administration of the *Problems in Schools* questionnaire. A research number was assigned to each student and instructor survey to identify whether the survey was in the control or treatment group,

and to which of the six class groups it belonged. The researcher matched the student ID number and instructor class meeting time and days with his or her research number, entered the research number on the upper right hand corner of the survey and compiled a master list of completed pretest, posttest, and maintenance surveys. Data collected from students who did not complete all of the surveys administered to their group was not analyzed. The researcher did not make any attempt to remember which research number went with any student ID number. The area of the surveys where students wrote their ID number and where instructor wrote their class meeting time and days was physically blacked out at the end of the study.

Instrumentation

This section describes three instruments used to collect data in this study: two instruments measured instructor's autonomy and one instrument measured student perceptions of autonomy and engagement. These instruments were based on existing and validated instruments that were modified then piloted for use in this study. Descriptions of how each instrument was developed and of pilot test results are provided in Appendix F. The instruments used to collect data on instructor autonomy orientation were a modified *Problems in Schools* questionnaire and an original instrument, the *ASI Target Statement Sheet*. The instrument used to collect data on student autonomy and engagement was *The Student Learning Survey*.

The Problems in Schools Questionnaire

The original *Problems in Schools* (PIS) questionnaire provided eight very short vignettes and four responses, and was reworded to describe similar situations faced by English 250 instructors (Appendix L). Results of the PIS provide an instructor's self-

reported control vs. autonomy orientation (termed *autonomy orientation*) on four scales: high control, moderate control, moderate autonomy, and high autonomy. Results described an instructor's overall autonomy orientation. Results described instructor's autonomy vs. control orientation as a weighted average score that fell between -18 and 18. A negative number score indicated a controlling orientation, 0 indicated neither a controlling nor a supportive orientation, and a positive number score indicated supportive orientation.

Four responses following each of eight vignettes and each response described a course of action that related to each scale. Instructors used a 7-point Likert scale to rate their perception of the appropriateness of each response to each vignette, where 1 was "not at all appropriate" and 7 was "very appropriate." Each instructor's orientation score was calculated in two ways: first as the mean of eight item scores for each orientation, and second as the weighted average of the eight item scores for each orientation scale: high autonomy, moderate autonomy, moderate controlling and high controlling. Mean scores on each scale described each instructor's perception of how appropriate was each type of response and weighted average scores described overall autonomy orientation. Both mean and weighted average orientation scores ranged from -18 to 18. Scores between -18 to -10 indicated High Control, scores from -9 to -1 indicated moderate control, scores from 1 to 9 indicated moderate autonomy and scores from 10 to 18 indicated high autonomy.

The reliability of each subscale on the original instrument was high control (HC, α = 0.82), moderate control (MC, α = 0.79), moderate autonomy (MA, α = 0.82), and high autonomy (HA, α = 0.77). Eight scores (corresponding to the eight vignettes) for each

subscale were averaged, then a weighted average of all four scale averages was computed to indicate the instructor's overall autonomy orientation scores, as follows: (HC score x 2) + (MC score x 0) + MA score x -2) and (HA score x -1). An orientation score of zero indicated a balanced orientation (Reeve and Jang, 2010).

For this study, the researcher slightly modified the wording of the eight vignettes and their corresponding four response items to fit a community college setting in a remedial English course. Table 14 shows an example of an original item on the left side of the table and its reworded item on the right.

Table 14

Example of Original and Reworded PIS Item

Original PIS Item for K-12:	Reworded PIS Item for English 250:
Jim is an average student who has been working at grade level. During the past two weeks he has appeared listless and has not been participating during reading group. The work he does is accurate but he has not been completing assignments. A phone conversation with his mother revealed no useful information. The most appropriate thing for Jim's teacher to do is:	Jim is an average student who has been getting Bs on most assignments. During the past two weeks he has appeared listless and did not participate in writing lab discussions. The work he does is accurate but he did not complete the last two assignments. The most appropriate thing for you to do is:
1. Impress upon him the importance of finishing his assignments since he needs to learn this material for his own good.	1. Impress upon him the importance of finishing his assignments since he needs to learn this material for his own good.
2. Let him know that he doesn't have to finish all of his work now and see if she can help him work out the cause of the listlessness.	2. Let him know that he doesn't have to finish all of his work now and talk with him to identify the cause of the listlessness.
3. Make him stay after school until that day's assignments are done.	3. Encourage him stay in the writing lab until the assignments are done.
4. Let him see how he compares with the other children in terms of his assignments and encourage him to catch up with the others.	4. Let him see how his scores compare with the class average in terms of his assignments and encourage him to catch up.

Reliability for the revised PIS was established using SPSS, as follows: for HA α = .84; for MA α = .53; for MC α = .81; and for HC α = .88. The reliability was lower on the MA scale because one item was found to behave atypically after assessing the stability of each scale. That is, instructors did not respond to one item on the MA scale as

consistently as they scores the other items. This item (item #7) asked respondents to rate the appropriateness of responses to a vignette involving a counselor not an instructor. Community college instructors had varying perceptions, however, on the appropriateness of each response provided. When Item #7 was removed and reliability was recalculated, Chronbach's alpha for the MA scale was .74. It makes sense that this item was scored inconsistently because instructors probably had varying degrees of knowledge about a counselor's role and responses.

ASI Observation Coding Guide

The *ASI Observation Coding Guide* was based on Reeve and Jang's (2010) four-part coding sheet (Appendix H). The *ASI Observation Coding Guide* provided a list of ASI behaviors found in the ASI literature and used in observation data collection to describe the things that teachers say during ASI to nurture students' inner motivational resources (ASI teacher behavior) and to provide informational feedback (ASI classroom structure). Data were collected on 17 target statements organized into four scales: controlling motivational statements (CM), supportive motivational statements (SM), controlling feedback statements (CF), and supportive feedback statements (SF). Target statements within each scale were operationalized so that each instructor statement could be coded. For example, a statement such as, "You will earn 5 points of extra credit for each revision you make on your term paper," demonstrated the target statement *offers incentives* on the scale, controlling orientation for *nurtures inner motivational resources*. A statement such as, ""Spell-checking help you identify spelling errors" demonstrated the target statement *feedback suggests using a skill or strategy* on the scale, supportive

orientation for *providing informational feedback*.

The observable behaviors (instructor statements) that related to the ASI strategies that were trained (*nurtures inner motivational resources* and *provides informational feedback*) were operationalized, then piloted and revised again. This instrument was designed over several revisions so that coding became less fatiguing, was as objective as possible, and so that all aspects of controlling and supportive statements could be consistently and reliably identified on transcriptions of instructor's classroom statements. Reliability was established ($\alpha = .98$) and the coding guide was was re-formatted to more easily code instructor comments.

It was important for the researcher to know how autonomy supportive each instructor was before, during, and after training, because in the literature, gain scores for autonomy support were smaller after interventions for teachers with higher baseline autonomy support than for those with lower baseline autonomy support (Jang, Reeve, & Deci, 2010). The final ASI Observation Coding Guide was used to code each treatment group instructor's statements made during teaching, and collected at pretest, posttest, and maintenance data collection times (nine transcripts total). Visiting classrooms before, during and after treatment gave the researcher an indication of whether each instructor attempted to use any of the ASI target statements at all. Quantitatively describing the gains teachers made and the extent to which they used the strategies trained before, during and after training and coaching on both ASI strategies provided intervention fidelity.

The final design of the ASI Observation Coding Guide adds a new instrument to the literature that is objective and provides an in depth descriptions of each instructor's

behavior change. Previous instruments did not provide target statements or examples for each orientation to be coded. Scoring conventions for previous instruments were not described in the literature so it was unclear how an observer determined an instructor's observed autonomy orientation score, and therefore observation scores procedures could not be duplicated.

With this new coding guide, frequency counts for each of the 17 target statements were translated into a percentage of total target statements. This level of detail was not presented in previous instruments. Thus, instructor's changes in autonomy orientation were now not only more accurately measured, but also each instructor's behavior change for each target statement can be measured and described over time. For example, not only was percentage change for *provides informational feedback* after treatment compared to baseline percentage at pretest, but also percentages for each target statement that operationalized controlling and supportive ways to *provide informational feedback* was compared at pretest, posttest and maintenance. In the current study, pretest and posttest individualized results were used to inform coaching sessions for each instructor during the treatment intervention.

The Student Learning Survey

The Student Learning Survey had 13 slightly reworded items selected from two existing and validated instruments, plus one original demographic item. It was designed for this study to collect pretest, posttest, and maintenance data on students' autonomy (six items), engagement (seven items). The autonomy items were taken from the 6-item Learning Climate Questionnaire (Appendix I) and slightly reworded to be understandable by students enrolled in a community college remedial English course (Appendix J). The

proposed autonomy items (items 1-6) were scored on a 7-point Likert scale where 1 meant "strongly disagree" and 7 meant "strongly agree." The original engagement items were selected and reworded from the National Survey of Student Engagement (Appendix K). The selected items addressed classroom participation and were slightly reworded to fit a community college remedial English classroom. The engagement items (items 7-13) were also scored on a 7-point Likert scale, but for these items 1 meant "rarely" and 7 meant "frequently." Thus, autonomy items and engagement items were not intermixed. The survey's 14th item was a demographic item (Have you taken a class with this instructor before?). Students responded by checking either a box labeled "yes" or a box labeled "no." This last item was intended to control for a potential response bias due to students' familiarity with the instructor.

To establish content validity and reliability, an expert reviewed item wording and the researcher used SPSS to compute item reliability using pilot test results of the final instrument. This instrument was piloted two times: once to test the time needed to administer the survey and collect student input on the items, and the second time to determine item reliability (Chronbach's alpha) for the autonomy items ($\alpha = .89$) and the engagement items ($\alpha = .72$) used in the final *Student Learning Survey*. The survey was administered to control group students two times (pretest and maintenance) and to treatment group students three times (pretest, posttest, and maintenance).

Description of the Treatment Intervention

The treatment was a three-part training intervention: three classroom visits (one before and two after training), an ASI training session and two 30-minute individual coaching sessions (one after training and one after the second data collection classroom

visit). This section describes each part of the intervention. The ASI training was designed (Appendix M) and piloted (Appendix N) by the researcher.

Classroom Visits

The researcher visited each treatment group instructor's classroom to collect data for evidence of how controlling vs. autonomy supportive was his or her teaching, and to observe learning activities used to teach English 250. Baseline observation data was used to determine how much variance there was between instructors' autonomy before training, giving an indication of the ASI skills each treatment group instructor naturally had before training.

It was considered that instructors used different frequencies of autonomy supportive or controlling behaviors during different kinds of learning activities. For example, during a class discussion, some instructors called upon specific students to answer questions (coded as a controlling way to elicit participation) but during small group work the instructors did not single out individual students during discussion. Rather, they posed their question to the small group, which supported motivation because it provided a chance for those students to take initiative.

There were three purposes for the classroom visits. First, to collect data on how frequently after training treatment group instructors used each ASI target behavior, compared to before and after training. Second, to provide data for training fidelity (to what extent did instructors change their amount and type of autonomy support after the training?). Third, these data were used to inform talking points for the second coaching session.

ASI Training Session

The researcher has taught using ASI strategies for the past three years and designed and facilitated the three hour face-to-face ASI training session. This training taught treatment group instructors how to use two ASI strategies: one autonomy supportive teacher behavior (nurtures inner motivational resources) and one autonomy supportive classroom structure (provides informative feedback). The ASI training session lasted approximately three and one-quarter hours and had three parts, and covered the topics shown in Table 15.

Table 15

ASI Training Session Outline

Part	Content	Time Used
1	Welcome and introduce participants	10 minutes
	ASI Theory	30 minutes
	Overview of SDT and ASI theory	
	Overview of ASI teacher behaviors and classroom structures	
2	ASI Knowledge on ASI strategies	50 minutes
	Specific skills for *Nurtures Inner Motivational Resources*	
	Specific Skills for *Provides Informational Feedback*	
	Break	10 minutes
3	ASI Skills Practice	90 minutes
	Introduce English 250 vignette	
	Skills Practice (role play) applied to vignette	
	Confirm second classroom visit, second coaching session	10 minutes
	Closure: Thank participants for attending	

Part 1 of the training focused on ASI and its underlying theory; Part 2 focused on specific ASI knowledge and skills, and Part 3 focused on ASI skills practice for the two ASI strategies that were trained. Notations made during English 250 learning activities observed during the first classroom visit were incorporated into ASI skills practice to provide authentic examples for using ASI strategies during English 250 instruction. The

training was held during the second week of the study in a classroom setting at the college where the treatment group instructors taught. The second coder attended the training session in order to be trained on the ASI strategies that would be coded to describe instructors' autonomy orientation.

ASI Coaching Sessions

Individual coaching sessions were designed to provide informational feedback to each instructor to support behavior change toward increased use of ASI strategies. In the three ASI interventions selected to inform this study, researchers implemented different types of post-training follow-ups with teachers. The intent of the individual meetings in the literature was to identify specific behaviors that increase autonomy support in the classroom (Reeve, et al 2004). In this study, the intent of individual coaching sessions was to identify specific behaviors that would increase student engagement. The researcher answered instructor questions about autonomy support, talked about ways to integrate ASI strategies into English 250 instruction, and provided informational feedback on the instructor's observed use of ASI strategies based on ASI coding guide data.

The purpose of the second coaching session was to have a conversation about changes the instructor made to his or her autonomy support during English 250 learning activities after the training session, for the researcher to provide informational feedback on observed ASI strategy use, and for the researcher to give each instructors a chance to take initiative for sustaining ASI strategy use until the maintenance data collection time. As was done in the first coaching session, the researcher prepared for each second coaching session by making a list of talking points based on each instructor's ASI

coaching sheet tallies and percent controlling vs. autonomy supportive statements observed in the second classroom observation. ASI coding information, tallies, percentages, and content was not shown to instructors.

In summary, the three-part ASI training intervention provided instructors in the treatment group with classroom training and individual coaching on ASI theory, knowledge, and skills to implement two ASI strategies into English 250 instruction. Researcher's notes taken during classroom visits gave the researcher talking points to nurture each instructor's inner motivational resources and provide informational feedback, facilitated in a conversational manner. In this way, the researcher intentionally supported each instructor's motivation (using autonomy support) and competence (giving informational feedback) during the two 30-minute, individual coaching sessions.

Procedures

This section describes procedures used to identify participants; to conduct classroom visits, the ASI training session and coaching sessions; and to collect data to answer the research questions. Table 16 shows the timeline for each part of the study.

Table 16

Timeline of Major Events in the Study

Date	Event
February 2012	Participants (basic skills instructors) recruited
March 2012	English 250 instructors identified to participate
July 2012	English 250 instructors confirmed to participate
September 18 and 19, 2012	Pretest Data Collection: PIS (control and treatment instructors), classroom observations (treatment instructors), and Student Learning Survey (control and treatment students)
September 21, 2012	Intervention: ASI training session
October 2 and 5, 2012	Intervention: First coaching sessions
October 22 and 25, 2012	Intervention: Second coaching session

Table 16, continued

October 9, 10, 15, 2012	Posttest Data Collection: PIS (treatment instructors), classroom observations (treatment instructors), and Student Learning Survey (treatment students)
November 19 and 20, 2012	Maintenance Data Collection: PIS (control and treatment instructors), classroom observations (treatment instructors), and Student Learning Survey (control and treatment students)

Procedures to Identify Participants

To identify instructors to participate in the proposed study, the researcher presented a research overview at a Department Chairs meeting in November 2011 and asked attendees to place a checkmark next to the names of instructors in their department scheduled to teach basic skills courses in the Spring 2012 semester. Sixty-two instructors scheduled to teach basic skills English, math, and ESL courses were identified.

The researcher composed and delivered a short overview of the study to the basic skills instructors via email and paper copy in campus mailboxes asking they indicate their intent to participate in the proposed study. Of the 62 instructors contacted, three instructors said they did not want to participate, 47 did not reply, and 12 said they intended to participate. Of these, ten taught basic skills courses: three taught the same English course and one taught a different English course, one taught math, two taught ESL, and three taught Guidance. Three instructors taught English 250. Because this group of instructors provided the most positive response, the researcher and the English department chairperson agreed that all English 250 instructors assigned to teach English 250 would be asked to participate in the study.

Because of timing needs, the study was scheduled for the Fall 2012 semester. The English Department Chair gave the researcher a list of 12 instructors scheduled to teach

English 250. The researcher wrote a short research overview handout that was emailed in March 2012 to the English 250 instructors who indicated they were selected to participate in the study at one of two levels of participation. Three instructors agreed to be in the control group where the researcher surveyed his or her students during class in the first and last (tenth) week of the study and instructors earned 4 hours of professional development credit. Three instructors agreed to be in the treatment group and attend the three-part training intervention in addition to permitting the researcher to audio record three class sessions and administer a survey three times to their students, at the beginning, middle, and end of the study. Treatment group instructors earned eight hours of professional growth credit. Professional development credit hours were offered to acknowledge and incentivize instructors' participation in the study. Two weeks before the start of the Fall 2012 semester, the researcher sent a personalized email to each English 250 instructor who did not respond to previous invitations inviting them to participate in the study and earn the professional development credit hours. There was no response.

Student participants were students enrolled in the participating instructors' section of English 250 taught in the Fall 2012 semester. Students were given the option to participate in the student survey each time the survey was administered by the researcher during class (pretest, posttest, and maintenance.) There were approximately 25 students per section of English 250 at the beginning of the semester.

Procedures to Conduct Classroom Visits

A few minutes before each classroom visit began, the researcher provided and set-up a pocket recording device and lapel microphone to record the instructor's statements during teaching. During instruction, the researcher used sheets of paper to take notes on

the activities and types of instructor statements during each classroom visit. At the top of each sheet there was a space to note each activity name and start and stop time. Examples of activity names were “class discussion,” “think-pair-share,” and “student presentation.” Noting the start and stop time of each activity was important because shorter activities and activities in which students were self-sustained had fewer total tallies. Aspects of each activity (how small groups were formed, how students responded to instructor statements and comments) were also noted. Notes taken during the first observation were incorporated into the ASI training session skills practice vignette; notes taken during the second and third observation were incorporated into coaching session talking points. The researcher stayed for each entire class period observed, took notes on all learning activities, and sat in the back or to the far side of the classroom without interacting with the students or instructor. At the end of each classroom visit, the researcher removed the recorder and thanked the instructor.

After each classroom visit, the audio recording file was uploaded to the researcher’s computer in a .wav format. Each file was titled to reflect the instructor number (1, 2, and 3) and data collection time (pretest, posttest, and maintenance). Each file was copied then emailed to a research assistant who word-processed the audio recording and emailed the transcription document to the researcher. The researcher formatted this document into three columns. The left column had the activity name and start-stop times, the middle column had instructor statements as transcribed, and the right column provided space for target statement coding.

Procedures to Conduct The ASI Training Session

The training session classroom had short tables arranged in a U-shape with a side

table for name tags, felt pens, handouts, water bottles, and small snacks. To begin the training, the researcher wrote the session agenda on the board, greeted instructors as they arrived, and invited them to make a nametag and get a handout and snacks. The researcher opened the training by welcoming the instructors, read out the agenda, and provided a one-sentence summary of what would be learned during each part of the training: ASI theory and knowledge, ASI strategies, and ASI skills practice.

The first part of the training took approximately 40 minutes. The researcher provided handouts and used slides projected onto a screen in the front of the room. Self Determination Theory (SDT) in education was described as the effect teachers have on various types of motivation that students use to learn, relative to how well the learning environment meets a learner's need for autonomy, competence, and relatedness (Reeve, 2002). The SDT continuum (Deci & Ryan, 2002) was described to show how four types of motivation related to being more or less autonomous and determined. Autonomy Supportive Instruction (ASI) was described as teacher behaviors and classroom structures provided by teachers to support their students' autonomy (Jang, Reeve, & Deci, 2010). The researcher explained that students' engagement was found to be higher for students' whose autonomy was supported. Studies on the impact of ASI on student engagement were summarized. The Self-Determination website URL and a reference list of SDT and ASI studies was provided so instructors could find out more about SDT as desired.

The second part of the training lasted about 40 minutes and ended with a 10-minute break. This part of the training session focused on ASI teacher behaviors and classroom structures. In the first 20 minutes the researcher provided definitions and descriptions of three ASI teacher behaviors and three ASI classroom structures used to

support student autonomy. In the second 20 minutes participants discussed specific behaviors for the teacher behavior and classroom structure being trained, reviewed the ASI coaching sheets, and provided a 10-minute break.

The researcher provided handouts and used slides projected onto a screen while defining and describing ASI strategies and the ASI coaching sheet. ASI was introduced as, "ASI includes two complimentary but different constructs: a set of teacher behaviors and a set of ASI classroom structures, as described by researchers Sierens, Vansteenkiste, Goosens, Spoenens, and Dochy (2009) and by Jang, Reeve, and Deci (2010). ASI teacher behaviors support autonomy and ASI classroom structures support competence."

Instructors discussed when to nurture students' intrinsic motivation (*nurtures inner motivational resources*) and when to support competence (*provides informational feedback*) (Jang, Reeve, & Deci, 2010) during English 250 learning activities. Instructors brainstormed to identify statements they could make to show interest in students' attempts, ask questions to provide challenges for students, and create opportunities for students to take initiative. Teachers discussed how and when to make statements that affirmed effort and that gave skill-building feedback on student assignments. Instructors discussed how to identify and then provide relevant writing skill information to support student competence.

Next, the *ASI Target Statement sheet* was introduced for teachers to compare and discuss what were controlling and autonomy supportive statements. Then the researcher described how coded statements from the classroom visit transcripts would be used to inform the researcher's talking points during individual coaching sessions. Participants discussed specific statements they could use to enact each of the target statements. This

training part ended with a 10-minute break.

The third section of the training last about 90 minutes and focused on ASI skills practice using guided rehearsal. First, the researcher introduced guided rehearsal as a vignette discussion, strategy brainstorm, and a role-play. Next the researcher introduced one English 250-specific vignette that was based on classroom learning activities during the researcher's classroom visits. This vignette was reworded to disguise actual classroom features and individual instructor characteristics, and related to giving directions in a way that encouraged students to take initiative. The purpose of the vignette was to frame a relevant theory-to-practice discussion and to facilitate skills practice of the ASI strategies using an English 250 specific example. Instructors discussed the vignette then role-played the original vignette. The instructors independently initiated a brainstorming discussion to select appropriate ASI strategies using the ASI Coding Guide then revised the vignette to include what they could do differently to use autonomy-supportive teacher behavior and structure. For example, instructors suggested a short list of positively phrased, effort-affirming statements to support essay writing competence, such as "*Do* cite all sources" or "*I suggest that you* evaluate whether that website is commercial or educational before deciding to use its content." English 250-specific examples for ASI skill building gave instructors a relevant learning experience to realistically support their students' autonomy and motivation. In a follow-up discussion, instructors said they were looking forward to changing their teaching to be more autonomy supportive.

Next, the researcher provided informative feedback on the instructors' practice during a group discussion. The researcher showed interest in instructors' choices,

affirmed instructor's suggestions for change, and provided comments about how to integrate their suggestions into instruction. Last, instructors had time for an open discussion about the ASI target statements, followed by time to ask questions about any aspect of ASI and the training content. To end this part of the training, the researcher restated the ASI strategies and asked instructors to recall instances when the researcher modeled each strategy during training.

The researcher closed the training by inviting instructors to implement the two ASI strategies into their instruction over the next three weeks. Then the researcher passed around a sign-up sheet to schedule the first and second coaching sessions and confirmed each instructor's second classroom visit day. After the training session the researcher was available for individual comments and questions before cleaning up the classroom. On Tuesday after the training, the researcher sent reminder emails to each instructor with the date and time of his or her coaching session and second classroom visit.

Procedures to Conduct ASI Coaching Sessions

To prepare for each coaching session, the researcher referred to notes taken during classroom visits and to tallies on the ASI coding sheet to identify talking points to support ASI strategy use. Suggestions for ways to increase use of autonomy supportive strategies were related to learning activities observed during the visit. For example, during a partner activity an instructor was observed offering extra credit points to students who did not engage as readily as others, so the researcher suggested the instructor instead state why the partner activity was helpful for student achievement in the course. This would be a suggestion to use the autonomy supportive strategy of *provides rationale*.

To prepare for each coaching session the researcher made a short list of talking points based on each instructor's percent controlling vs. autonomy supportive statements. Information from the ASI coaching sheets informed the researcher's suggestions for using ASI strategies. Specific information from the ASI coding sheet, such as tallies and ASI scores, were not shared with, nor shown to, any instructor.

The first 30-minute ASI coaching session was held in the instructor's office or classroom. The purpose of the first coaching session was to answer questions about autonomy support and to have a conversation about applying the two ASI strategies to each instructor's English 250 instruction. During this session the researcher intentionally provided informational feedback by relating selected coaching conversation topics back to the training session skills practice and by phrasing suggestions in positive terms. To begin the first half of the first coaching session, lasting approximately 15 minutes, the researcher first asked whether the instructor had questions about autonomy support or about the ASI strategies trained. This was followed by a conversation about supporting autonomy based on the instructor's questions and comments. For example, the researcher said, "You tended to call on individual students by name to ask questions, and that is a controlling strategy. There are other ways to invite participation that encourage students to take initiative, which is a supportive strategy." To begin the second half of the coaching session, lasting approximately 15 minutes, the researcher provided informational feedback in a conversational manner by recalling suggestions on ways to increase autonomy support that were discussed during skills practice in the training session. The researcher nurtured the instructor's inner motivational resources by making

statements that affirmed the instructor's effort at using autonomy supportive behavior and classroom structure. For example, "I noticed that you asked a variety of positively phrased, scaffolding questions when you realized that students needed help to identify the elements of a strong thesis sentence." A few minutes before the end of the coaching session, the researcher asked whether the instructor felt satisfied that his or her questions or comments were discussed. If more conversation was desired, the researcher and instructor agreed to continue the conversation for a few more minutes. The first coaching session ended after the researcher and instructor confirmed the date and time of the second classroom visit and of the second 30-minute coaching session.

In the second coaching session, the researcher began the first half (about 15 minutes) by nurturing the instructor's inner motivational resources for supporting autonomy. The researcher asked the instructor in what ways he or she had supported students' autonomy since the first coaching session. Next, in a conversational manner, the instructor was asked to describe instructional changes he or she had made thus far, how the instructor applied training content, and how the instructor applied information discussed in the first coaching session. Then, the researcher conversationally provided informational feedback on ASI strategy use comparing the first and second classroom visit's observations (informed by the second classroom visit's ASI coding sheet tallies and percent controlling vs. autonomy supportive statements) to support ASI skill development. The instructor was invited to select and discuss a few specific autonomy supportive behaviors to increase engagement or reduce motivational problems. The researcher made affirming and supportive comments to support each instructor's behavior

change.

In the second half of this coaching session (approximately 15 minute) the researcher nurtured the instructor's inner motivational resources by asking what kinds of changes he or she has seen in his or her students' engagement, giving the instructor an opportunity to take initiative for continued ASI behavior change. The researcher supported each instructor's reported behavior change toward increased autonomy support by inviting him or her to suggest additional times he or she could apply the autonomy supportive teacher behavior and classroom structure during instruction. The researcher also asked the instructor to what extent did he or she think he or she would continue to use ASI after the study ended. A few minutes before the end of the 30 minutes, the researcher asked whether the instructor felt satisfied that his or her questions and comments were discussed. The researcher also reiterated that there were three weeks between the coaching session and the end of the study (the maintenance observation) and invited each instructor to contact the researcher for resources, to share success, or ask questions. The second coaching session ended after the researcher thanked the instructor for his or her time and effort to learn ways to support his or her students' autonomy.

Procedures to Collect Data on Instructor Self-reported Autonomy Orientation

A modified version of the *Problems in Schools* questionnaire was used to collect data on each instructor's autonomy orientation. The researcher entered the modified PIS items and responses into Survey Monkey preceded by information required by USF's IRB office for electronic surveys. The researcher wrote an email to the participating English 250 instructors asking them to complete the survey within a specified few days, explained

the purpose of the survey and that responses were confidential but not anonymous. and provided a link to the survey. Instructors were given 2 weeks to complete the pretest survey, and approximately one week to complete subsequent surveys. Each survey was downloaded from Survey Monkey. Instructors provided the class meeting days for their English 250 class on the first item, and this response was labeled with the instructor's initials who completed a particular survey. Control group instructors took two surveys (pretest and maintenance) and treatment group instructors took three surveys (pretest, posttest, and maintenance).

Procedures to Collect Data on Instructor Observed Autonomy Orientation

To collect observed data on instructor autonomy orientation, the researcher scheduled three classroom visits to each instructor's classroom. The pretest visit was during Week 1, the posttest visit was during Week 6, and the maintenance visit was during Week 10. The researcher arrived shortly before each class session began, and provided a lapel microphone connected to a voice recorder for the instructor, who attached it to his or her clothing. The instructor turned on the microphone just before class began, and turned it off just after class finished, then returned it to the researcher. The researcher stayed in the class and took notes on the types of learning activities and noted the time in case there were any sections of the tape that were difficult to transcribe.

The recording was uploaded to a PC by the research assistant and then transcribed into a word-processed document. The transcript was titled with the date that it was recorded. Each transcript was saved to a USB memory stick and given to the researcher. The researcher kept a log so that transcript dates could be matched to each instructor and to indicate whether the transcript was collected for a pretest, posttest, or maintenance

measure. Two copies of each transcript were printed, one for the researcher and one for the second rater.

The transcript document was formatted in three columns: one wide column for the instructor comments, and two narrow columns to the right side of the instructor comments, labeled Coder 1 and Coder 2. In the instructor comments column, instructor comments were typed word for word. Student comments were not typed word for word, rather were labeled as "student response," "student comment," or "student question," to indicate the type of student verbalization. "Student response" was noted when the verbalization was as a response to the instructor's question; "student comment" was indicated when the verbalization was not in response to an instructor question or statement such as during a discussion or small group work session. The researcher and second rater used the second and third columns, respectively, to write in the ASI Observation Sheet Code to indicate the type of target statement made by the instructor. Statements that were not target statements were not coded and the column space was left blank.

Procedures to Collect Data on Students' Perceived Autonomy and Engagement

Self-report student data was collected using the *Student Learning Survey* from all participating students to measure the dependent variables, perceived autonomy and engagement. At pretest (first week of the study) and at maintenance (last week of the study) survey data were collected from both groups, and during the sixth week posttest data were collected from treatment group students.

To collect student survey data, the researcher visited each English 250 class taught by a participating instructor in the study for about 10 minutes. The researcher

described the study and the consent forms (approximately 5 minutes) and then provided time to fill out the consent form and survey (approximately 5 minutes). First, the researcher gave students the *Research Subjects Bill of Rights* handout and briefly described the research project and student participation, and invited all students to complete the student consent form and the one-page, written survey to measure their classroom perceptions. Students were asked to provide their Student ID number, and told that their participation was voluntary, they could withdraw at any time, and their participation would have no impact on their course grade in the class. During the pretest visit to the treatment group students were also told that the researcher would visit the classroom three times during the study to observe and record their instructor. After answering student questions the researcher first distributed the student consent form and then distributed the survey to all students in each class. Students who decided to participate completed the consent form and survey, and all forms and surveys were returned to the researcher each time. The researcher thanked the students and instructor, and then left the classroom.

Data Analysis

Data collected from the PIS and the ASI Observation Coding Guide were used to answer the first research question. Data collected from the Student Learning Survey were used to answer the second (items 1 – 6) and third (items 7 – 13) research questions. Data to control for the students' familiarity with their instructor, was collected by the 14th item on the Student Learning Survey, and asked students whether they had taken a course from the instructor before. Results of this last item, however, indicated that only two participating students were familiar with their instructor, so these data were not used to

answer the third research question.

Data Analysis for Research Question 1

To analyze data from the PIS, the researcher entered each instructor's 32 item scores for each administration of the PIS into an Excel spreadsheet. Excel was used to calculate the mean and standard deviation for each PIS sub-scale (eight items for each subscale): high control (HC), moderate control (MC), moderate autonomy (MA), and high autonomy (HA). Scores on each subscale (for means and for weighted means) can range from -18 to 18, where 0 was neutral orientation. Scores from -18 to -10 indicated high control orientation, scores from -9 to -1 indicated a moderate control orientation, scores from 1 to 9 indicated a moderate autonomy orientation and scores from 10 to 18 indicated a high autonomy orientation.

Next, weighted means for each instructor's subscales were calculated using the formula described in the PIS scoring guide on the Self-Determination Theory website as follows: (HC x -2) + (MC x -1) + (MA x 0) + (MA x 2). Ryan and Deci (nd) found that the MA subscale was biased toward controllingness, so multiplying MA by zero was found to more accurately describe a respondent's autonomy orientation. The weighted mean score for each instructor were entered into another chart to describe each instructor's autonomy orientation at each measurement time, using the same score ranges as for the means, described above.

To analyze data from the ASI Observation Coding Guide, two sets of transcripts for each classroom visit were made to code instructors' observed autonomy orientation. The researcher reviewed each instructor statement on each transcript. Statements that matched any of the 17 target statements were coded in a column provided on the right

side of the page. Statements that did not match any target statements were not coded. The second rater used the second set of transcripts and independently coded each transcript.

Tallies for each target statement were counted then entered into a chart. The frequency of each target statement was computed as a percentage of the total number of coded statements for each transcript. The percentage autonomy support for each target statement was calculated and recorded for each treatment group instructor. Target statement percentages in each of the four types of statements were added together in two ways. First, the controlling and the supportive percentages were added to determine the instructor's autonomy orientation. Next, the two percentages for *nurtures inner motivational resources* and for *provides informational feedback* were added together to describe how much change each instructor demonstrated on each of the strategies trained. Table 17 provides one transcript example for one target statement in each of the four categories.

Table 17

Examples of ASI Target Statements

Category of ASI Target Statement	Classroom Visit Transcript Example
Controlling Motivation (SM) Offers incentives controlled by the instructor, such as points or rewards.	"You will earn 5 points extra credit for each revision you make on your term paper."
Supportive Motivation (SM) Offers encouragement or support, such as statements that boost, sustain, or request student's participation.	Responds to student attempts with, "OK," or other positive phrase using a voice tone that goes up at the end of the statement,
Controlling Feedback (CF) Feedback is negatively phrased in response to an incorrect/incomplete attempt or to a correct/complete attempt.	"Let's see if you can't get this question right on the next try."
Supportive Feedback (SF) Feedback provides information to increase skill and competence (describes how to do something).	"Check to be sure that your works cited pages lists every reference in your essay."

Data Analysis for Research Questions 2 and 3

Data collected from items one through six on the Student Learning Survey were used to answer the second research question, and data collected from items seven through 13 were used to answer the third research question. Incomplete data were not included in data analysis and were not reviewed to estimate missing data. Survey item scores for each student in each class group were entered into Excel. Columns were labeled for each survey item at pretest and maintenance for the control group, and at pretest, posttest, and maintenance for the treatment group. Rows were labeled with each student survey number and organized within each class group.

To analyze these data, individual scores were imported into SPSS, and labeled by class (1, 2, and 3 for treatment and 4, 5, and 6 for control groups) to compute mean scores for autonomy, engagement, and instructor familiarity. Higher scores indicated more autonomy, engagement or familiarity, and lower scores indicated less autonomy, engagement, and familiarity. Control group mean autonomy and mean engagement at pretest and maintenance were analyzed using a *t*-test, and treatment group mean autonomy and mean engagement were analyzed using a Repeated Measures ANOVA to describe differences between groups.

In summary, this quasi-experimental study investigated whether and to what extent changes in instructors' autonomy orientation after an ASI training intervention affected their students' perceived autonomy and engagement. Table 18 provides the variables that were investigated and the instrument that was used to collect data on each variable.

Table 18

Participants, Variables, and Instruments

Instructors' Autonomy Orientation		Students' Perceived Autonomy and Engagement	
Self-reported Problems in School Questionnaire	Observed ASI Observation Coding Sheet	6 autonomy items The Learning Climate Questionnaire	7 engagement items The Learning Climate Questionnaire

CHAPTER FOUR

RESULTS

The purpose of this quasi-experimental study was to describe the impact of a training intervention that trained two out of six ASI strategies on students' perceived autonomy support and engagement in the community college remedial English classrooms. This chapter is organized by research question and concludes with an overall summary of results.

Both self-report and observed data were collected from instructors and self-reported data were collected from students. Data were collected twice from control group instructors (n = 3) and control group students (n = 46) at pretest (week1) and at maintenance (week 10). The modified Problems in Schools questionnaire was used to collect self-reported data from instructors and the Student Learning Survey was used to collect self-reported data from students. Observed data to describe changes in instructor autonomy orientation were collected by the researcher as recorded comments made by treatment group instructors during three classroom visits. After statements were transcribed, the researcher and a trained second rater independently coded these transcripts using the ASI Observation Coding Guide, an instrument based on the literature and designed specifically for this study. Inter-rater reliability was 98% across all nine transcripts.

Research Question 1

How autonomy-supportive, as compared to a control group, are English 250 instructors before and after treatment as measured by scores on the PIS questionnaire and by the percentage of instructor statements categorized as autonomy-supportive for the ASI strategies: nurtures inner motivational resources and provides informational feedback?

To answer this research question, PIS questionnaire results for both groups will be provided first, followed by observation data results for the treatment group to provide instructor's self-reported autonomy orientation score. For the treatment group, observation data were used to calculate a percentage of autonomy supportive statements made during instruction, and this will be referred to as instructors' *observed orientation*.

Self-reported Orientation Based on PIS Scores

Control and treatment group's orientation scores were collected on the Problems in School questionnaire. Results from the PIS were calculated as the weighted average of four subscale scores: high control (HC), moderate control (MC), moderate autonomy (MA), and high autonomy (HA). Scores can range from -18 to 18, where 0 was neutral orientation. Scores from -18 to -10 indicated high control, scores from -9 to -1 indicated moderate control, scores from 1 to 9 indicated moderate autonomy and scores from 10 to 18 indicated high autonomy. Results are provided in Table 19 with group means on the left side of the table and instructors' individual self-reported orientation scores in the right side of the table.

The control group's mean self-reported orientation was moderately controlling (-4.25) at pretest and became slightly more controlling (-5.63) at the end of the study. The treatment group's mean orientation was moderately controlling at pretest (-5.38),

controllingness increased at posttest (-6.37), and then decreased back to nearly the same level at maintenance (-5.58) as pretest.

Table 19

Group Means and Individual Instructor Self-Reported Orientation Scores

Orientation	Pretest	Posttest	Maintenance
Control Mean (n = 3)	-4.24	NA	-5.63
Treatment. Mean (n = 3)	-5.38	-6.37	-5.58
Control:			
Instructor 1	-3.63	NA	-4.63
Instructor 2	-4.25	NA	-6.63
Instructor 3	-4.88	NA	-5.63
Treatment:			
Instructor 1	-5.25	-7.25	-5.13
Instructor 2	-4.50	-6.13	-5.88
Instructor 3	-6.38	-5.75	-5.75

Individually, control instructors' orientation scores ranged from -3.63 to -4.88 at pretest and from -4.63 to -6.63 at the end of the study. Treatment instructors' orientation scores ranged from -4.50 to -6.38 at pretest, -5.75 to -7.25 at posttest, and -5.13 to -5.88 at maintenance. These results indicate that all instructors' self-reported orientation was moderately controlling at all measurement times, and that instructors became slightly more controlling at maintenance compared to pretest.

The Problems in School questionnaire results for each subscale were reviewed and are reported in Table 20 for each data collection time. In the control group, the highest scores were on the MA scale at pretest and maintenance, indicating that instructors considered the moderate autonomy responses to be the most appropriate. In the treatment group, the highest scores were on the MA scale at all three measurement times.

Table 20

PIS Subscale Means and Standard Deviations

Subscales	Pretest (SD)	Posttest (SD)	Maintenance (SD)
Control Group			
HC	2.62 (1.11)	NA	2.25 (1.07)
MC	2.91 (0.80)	NA	3.17 (1.09)
MA	3.20 (0.93)	NA	3.46 (1.13)
HA	3.08 (1.04)	NA	3.33 (1.01)
Treatment Group			
HC	3.46 (0.47)	2.91 (0.62)	3.45 (0.47)
MC	4.00 (0.94)	3.91 (0.90)	4.00 (0.94)
MA	4.20 (0.29)	3.96 (0.59)	4.21 (0.28)
HA	4.08 (0.40)	4.30 (0.85)	4.08 (0.40)

However, the instructors' self-reported autonomy returned to the pretest level after treatment was removed. At both the pretest and maintenance measure the standard deviation was small (0.29 and 0.28, respectively) indicating that responses were relatively homogeneous.

Observed Autonomy Orientation Based on Instructor Statements

Instructors were observed three times to measure changes in their autonomy orientation. The mean scores for instructors' percentage of supportive statements was 82% at pretest, 90% at posttest, and 91% at maintenance. There was a 12% increase from pretest to posttest and a 1% increase from posttest to maintenance. These results indicate a slight upward trend because instructors increased the percentage of supportive statements they made across the duration of the study. Data for instructor's percentage of each target statement type were calculated for each measurement time, and are provided in Table 21. The four types of target statements were supportive motivation (SM), controlling motivation (CM), supportive feedback (SF), and controlling feedback (CF).

Table 21

Percentage of Each Type of Target Statement at Each Measurement Time

	Instructor 1 (%)	Instructor 2 (%)	Instructor 3 (%)
Pretest			
CM	15	10	12
SM	62	65	61
CF	2	10	7
SF	21	15	20
Posttest			
CM	10	5	4
SM	57	67	76
CF	3	4	4
SF	29	24	17
Maintenance			
CM	5	6	9
SM	69	48	67
CF	1	7	2
SF	25	40	23

To analyze these data, first the percentages of supportive (motivation and feedback) and of controlling (motivation and feedback) statements were calculated then reviewed. Table 22 provides these data, and shows that instructors' percentage of supportive statements ranged from 80% to 84% at pretest, increased slightly to range between 86% and 92% at posttest, and increased again to range between 88% and 94% at the maintenance measure.

Table 22

Instructors' Percentage of Total Supportive (and Controlling) Statements

% Supportive (Controlling)	Pretest	Posttest	Maintenance
Instructor 1	84 (16)	86 (14)	94 (6)
Instructor 2	80 (20)	91 (9)	88 (12)
Instructor 3	81 (19)	92 (8)	90 (10)

These results show that Instructors 1 and 3 increased their use of autonomy-supportive statements as the study progressed and Instructor 2 initially increased supportive statements then decreased slightly at maintenance; the greatest percentage gain was observed between pretest and posttest for all three instructors. For controlling statements, Instructor 1's percentage decreased from 16% at pretest to 6% at maintenance, Instructor 2's controlling statements decreased from 20% to 12%, and Instructor 3's controlling statements decreased from 19% at pretest to 10% at maintenance. Instructors 2 and 3 had lower percentages of controlling statements at posttest, immediately following the intervention, than at maintenance, indicating that when the intervention was withdrawn these instructors did not continue decreasing their use of controlling statements.

Next, data for mean percentage and for individual percentages of supportive motivational (SM) statements and for supportive feedback (SF) statements were reviewed. These results are presented in Table 23, and indicate that instructors increased their use of supportive motivational and supportive feedback statements, and decreased their use of controlling motivational and controlling feedback statements. Instructors had higher percentages of supportive motivational statements at posttest and higher percentages of supportive feedback statements at maintenance.

Table 23

Mean Group and Individual Percentages of Supportive Motivation (SM) and Supportive Feedback (SF) Statements

	Mean Supportive Motivation (SD)	Mean Supportive Feedback (SD)	Instructor 1		Instructor 2		Instructor 3	
			SM	SF	SM	SF	SM	SF
Pretest	63 (2.00)	19 (3.22)	63	21	65	15	61	20
Posttest	67 (9.00)	23 (6.56)	57	29	67	24	76	16
Maintenance	61 (11.60)	29 (9.00)	69	25	48	40	67	23

Table 22 also provides the standard deviation for mean supportive motivation and mean supportive feedback. For both measures results show that variability increased from pretest to posttest to maintenance, indicating that instructors became less, not more, homogeneous.

Third, results for controlling motivation and controlling feedback statements were reviewed. Table 24 provides instructors' mean percentage and individual percentages of controlling motivation (CM) and of controlling feedback (CF).

Table 24

Mean Group and Individual Percentages of Controlling Motivation (SM) and Controlling Feedback (SF) Statements

	Mean Controlling Motivation (SD)	Mean Controlling Feedback (SD)	Instructor 1		Instructor 2		Instructor 3	
			CM	CF	CM	CF	CM	CF
Pretest	12.33 (2.52)	6.33 (4.04)	15	2	10	10	12	77
Posttest	6.33 (3.21)	3.67 (0.57)	10	3	5	4	4	4
Maintenance	5.00 (2.08)	3.33 (3.21)	5	1	6	7	9	2

Instructors' percentage of controlling statements was lowest at maintenance and decreased from pretest to posttest to maintenance. Mean controlling motivation decreased from approximately 12% to 6% to 5%, and instructors' mean controlling feedback decreased from approximately 6% to 4% to 3% across the study. The most variance was found at pretest for controlling feedback and the least variance was found at posttest for controlling feedback, indicating that instructors' controlling feedback became more similar at the end of the treatment than at maintenance. Changes in variance for the controlling motivation were less than for controlling feedback, indicating that responses across instructors were more consistent on this measure.

Individual instructor's percentage scores indicate that two instructors decreased their use of controlling feedback overall, two instructors increased their use of controlling feedback at maintenance compared to posttest, and one instructor decreased his or her percentage use of controlling feedback at each measure compared to the previous measure. These results indicate that, even though all instructors decreased their use of controlling feedback overall, instructors' decreased percentage use of controlling feedback was inconsistent. The percent change for Instructor 2 was very slight (1%) and could have been due to error, and for Instructor 3 was approximately double the percentage at maintenance as at posttest.

In summary, these results show overall that instructors decreased their use of controlling statements and increased their use of supportive statements, and that instructors used more motivational statements than feedback statements. Not all instructors increased their use of supportive motivational statements or supportive feedback statements at posttest compared to the maintenance observation, and instructors increased their percentage use of supportive feedback statements across measurement times.

Research Question 2

To what extent did perceived autonomy change for English 250 students in the treatment group before and after their instructor's participation in an ASI training intervention compared to the control group?

Student autonomy and engagement were measured using the Student Learning Survey, a self-report, pencil-and-paper questionnaire. The first six of 14 items measured autonomy. The researcher administered this survey to English 250 students taught by the

control group instructors at pretest and posttest, and to English 250 students taught by the treatment group instructors at pretest, posttest, and maintenance. Table 25 provides mean student autonomy and standard deviations for both groups at pretest and posttest.

Table 25

Student Control and Treatment Pretest and Posttest Perceived Autonomy

Mean (SD)	Pretest	Posttest	Maintenance
Control (n=47)	5.96 (1.09)	NA	5.80 (1.33)
Treatment (n=33)	5.81 (1.20)	5.97 (0.91)	5.78 (1.36)

The control group's mean perceived autonomy was higher overall than the treatment group's mean perceived autonomy. The control group's mean perceived autonomy slightly decreased from pretest (5.95) compared to the maintenance measurement time (5.80) at the end of the study. The treatment group's mean perceived autonomy increased slightly from pretest (5.81) to posttest (5.97) and then decreased at maintenance (5.78) to lower than at pretest. Both groups' perceived autonomy decreased from pretest to posttest, and the treatment group's perceived autonomy was highest immediately following the intervention. Results of an independent samples *t*-test indicated that differences between the control and treatment groups' perceived autonomy was not statistically significant at pretest, $t(78) = -0.61$, $p = .55$, nor at posttest, $t(78) = -0.073$, $p = .94$.

Results of a Repeated Measures ANOVA for the treatment group showed that the changes in mean perceived autonomy scores were not statistically significant $F(2,98) = .008$, $p = .93$. There was a very small effect size ($Eta^2 = .034$) for the differences between scores on students' perceived autonomy. These results indicate that the differences in mean autonomy were too small to be attributed to the treatment intervention.

Research Question 3

To what extent does perceived engagement change for English 250 students in the treatment group during and after their instructor's participation in an ASI training intervention compared to the control group?

Student engagement was measured with items seven through 13 on the Student Learning Survey. Table 26 provides mean engagement and standard deviations for both groups at pretest and maintenance, and for the treatment group at posttest. The control group's mean engagement increased from pretest (4.65) to maintenance (5.80), and the treatment groups' mean engagement increased from pretest (4.29) to posttest (4.42) and increased again at maintenance (5.78).

Table 26

Student Control and Treatment Pretest and Posttest Engagement

Mean (SD)	Pretest	Posttest	Maintenance
Control (n=47)	4.65 (1.24)	NA	5.80 (1.32)
Treatment (n=33)	4.29 (1.25)	4.42 (1.19)	5.78 (1.36)

Results of an independent samples *t*-test indicated that differences between control and treatment group engagement were not statistically significant at pretest, $t(78) = -1.29$, $p = .20$, nor were statistically significant differences found for the maintenance measure, $t(78) = -1.218$, $p = .23$.

Results of a Repeated Measures ANOVA for the treatment group showed that the changes in mean engagement were not statistically significant $F(2,98) = 2.040$, $p = .14$. There was a very small effect size ($Eta^2 = .06$) for differences between scores on the engagement items, indicating that the changes in mean engagement were too small to be attributed to the treatment intervention.

Summary of Results

Self-reported data were collected for both groups of instructors and students. Observation data were collected for the treatment group instructors only. All instructors' self-reported autonomy orientation related to using these two ASI strategies was moderately controlling, based on results of the modified Problems in Schools questionnaire. Changes in these orientation scores indicated that all control group instructors and one treatment group instructor were slightly more controlling at posttest than at pretest. The two other treatment group instructors self-reported their orientation as slightly less controlling at posttest compared to pretest.

Treatment group instructors' observed orientation can be described as moderately autonomy-supportive at the beginning and end of the study and slightly more moderately supportive at the mid-semester and end of the study. Changes over the course of the study included increased use of supportive feedback and variations in change at different data collection times for all three instructors.

There were no statistically significant changes in students' mean autonomy and mean engagement overall. These changes were too small to be attributed to instructors' use of the two ASI strategies, nurtures inner motivational resources and providing informational feedback, made at the end of the 10-week study. The greatest changes for the treatment group were found in instructors' provision of autonomy at posttest, and in students' mean autonomy and mean engagement at maintenance, a few weeks after the end of the treatment intervention. However, the treatment group students' perceived autonomy was slightly lower than the control group students' perceived autonomy.

CHAPTER FIVE

SUMMARY, LIMITATIONS, AND CONCLUSIONS

The purpose of this study was to find out whether and to what extent instructors who were trained on two autonomy supportive instructional (ASI) strategies increased their autonomy support during instruction and whether their students' perceived autonomy or engagement increased. This chapter provides a summary of the study and its findings followed by a discussion of the study's limitations, findings, and conclusions, and finishes by describing implications for research and for practice.

Summary of the Study

The problem addressed in this study is related to increasing the engagement and persistence of basic skills students enrolled in community college. A statewide initiative to increase basic skills student persistence recommended that community college basic skills instructors improve their instruction to increase students' persistence. Results over several years from the National Study for Student Engagement concluded that increased student engagement lead to increased persistence (California Chancellor's Office, 2012). Kuh (2008) found that high impact instructional strategies increased students' engagement. Although student engagement predicted persistence, there is little research on how community college instructors can teach using theoretically based pedagogical strategies to increase basic skills students' engagement. Results of research on Self-Determination Theory concluded that students who were more self-determined were

more engaged, and that Autonomy-Supportive Instruction (ASI) was one pedagogical strategy that supported students' increased autonomy and engagement (Reeve, 2004). A teacher's style can be described as either autonomy-supportive or controlling, based on whether the teacher's strategies support or undermine students' intrinsic motivation (Ryan & Deci, 2002). When teachers continued to support student autonomy, students were more engaged (Reeve, Jang, Carrell, Jeon, & Barch, 2004). However, little research was conducted with community college basic skills instructors or students to identify what instructors could actually do to increase student engagement.

This quasi-experimental study examined whether ASI may be a viable strategy to increase basic skills students' engagement. A group of three basic skills English instructors were trained and coached to use two ASI strategies during instruction. The dependent variables were instructor percentage of autonomy supportive statements, student autonomy, and student engagement and the independent variable was training condition. Results were used to determine how much the instructors changed their teaching, how much their students' perceived autonomy changed, and how much their students' engagement changed.

A three-part intervention was designed to train participating instructors on two autonomy supportive instructional strategies: one teacher behavior (nurtures inner motivational resources) and one classroom structure (provides informational feedback). Three sets of data were collected: treatment and control group instructors self-reported their autonomy orientation and their students self reported autonomy and engagement; treatment group instructors were observed for frequency of autonomy supportive and controlling statements made during instruction, before treatment (pretest), immediately

following treatment (posttest), and 3 weeks following treatment (maintenance measure). The research questions were

1. How autonomy supportive, as compared to a control group, were English 250 instructors before and after treatment as measured by scores on the Problems in Schools questionnaire and by the percentage of instructor statements categorized as autonomy supportive for the ASI strategies, nurtures inner motivational resources and provides informational feedback?
2. To what extent has perceived autonomy changed for English 250 students in the treatment group during and after their instructor's participation in the ASI training intervention compared to the control group?
3. To what extent has perceived engagement changed for English 250 students in the treatment group during and after their instructor's participation in the ASI training intervention compared to the control group?

Summary of Findings

There were four main findings from this study. Two findings were related to the instructors and two findings were related to the students. Survey and observation data were collected from the instructors and survey data were collected from the students. The instructor survey was the Problems in Schools questionnaire modified to fit a community college basic skills English course. The student survey was a new instrument designed to measure autonomy using items from the Learning Climate Questionnaire (Williams & Deci, 1996) and to measure engagement using selected items from the NSSE that related only to classroom engagement behaviors. Students used a 7-point Likert response scale to indicate their level of autonomy and engagement, where 1 was low and 7 was high. To

analyze the student data, *t*-tests were used to compare means between pretest and posttest for the control and treatment groups, and a Repeated Measures ANOVA was used to compare changes in the treatment group students' self-reported autonomy. Differences in the instructors' observed ASI strategy use before, immediately following, and 3 weeks after the treatment intervention were calculated to determine whether and to what extent instructors changed their level of autonomy support.

The four main results of this study can be summarized as follows:

- A small group of community college basic skills English instructors' self-reported results from the Problems in Schools questionnaire indicated their autonomy orientation was moderately autonomy supportive before treatment and more moderately autonomy supportive after treatment, and their autonomy orientation returned to the moderate level when the maintenance measure was taken 3 weeks after training ended.
- A small group of community college basic skills English instructors were observed to successfully implement a higher percentage of ASI skills immediately after participating in a short ASI training intervention, and the percentage of ASI strategy use slightly increased after the intervention was removed. Each instructor was observed to continue to increase his or her autonomy support after treatment was withdrawn, compared to the pretest observation.
- Treatment group basic skills students' mean perceived autonomy was 5.81 (sd = 1.20) before and 5.78 (sd = 0.91) after intervention, and was 5.78 (sd = 1.36) at the maintenance measure. There were no significant differences between treatment and control group perceived autonomy scores at pretest or at posttest or

maintenance measurement times.

• At pretest, the treatment groups' mean engagement was 4.29 (sd = 1.25), was 4.42 (sd = 1.19) at posttest, and was 5.78 (sd = 1.36) at the maintenance measure. There were no significant differences for treatment group student engagement compared to control group engagement at any measurement time.

Limitations

There were six limitations to this study. Four limitations related to the sample were initial concerns, and two limitations that were related to the student survey emerged after data were analyzed. Each limitation will be described followed by a statement of why each limitation was important to the results.

First, participants formed a convenience sample of instructors and their basic skills students being taught by English 250 instructors who chose to participate in this research. The number of instructors in the control and treatment groups was relatively small so there was wide variance in instructional style, length of time teaching English 250, and length of time teaching at the community college. Thus, generalization of results to other groups of instructors and students cannot be made. The six participating instructors responded to an invitation given to all 11 English 250 instructors. The remaining five instructors were contacted twice (via phone and email). None of them responded to these additional invitations, however, so the researcher did not make further attempts.

Second, all participating instructors were asked during the first coaching session why they decided to participate in this research. All participating instructors said they valued professional development as one reason to participate, and this group may

represent non-typical basic skills instructors or this group may include a higher percentage of such instructors because their participation was used as a professional development activity.

Instructors' additional reasons to participate indicated that they were determined to participate, evidenced by identified and integrated regulation, two of the higher levels of external regulation. For example, all instructors demonstrated identified regulation when they said they valued professional development activities. Table 27 lists instructors' reasons to participate matched with the level of regulation that supports each reason, based on the types of regulation described in the Self-Determination Theory continuum (Ryan & Deci, 2002).

Table 27

Instructors' Reasons to Participate Related to Levels of Regulation

Reasons	Regulation Level
Wanted to support his or her students' success	Introjected
Wanted recognition for improved instructional skills	Introjected
Wanted to earn "Flex Activity Hours" for participation	Introjected
Interested in learning ways to improve own instruction	Identified
Wanted to earn tenure (2nd attempt after "needs improvement")	Identified
Wanted to improve their instruction to increase students' success	Identified
Interested in research and was considering getting a doctorate	Integrated

Thus, there may have been a potential bias related to self-selection. This limitation may have affected the study's results because the participating instructors may have higher levels of regulation related to motivation for professional development than was typical for the population of English 250 instructors, thus providing a biased sample. It is not known whether higher levels of regulation may have improved instructor results because no provision was made to collect motivational information from instructors.

Third, there was a small sample of student participants in this quasi-experimental design. The 152 participating students were enrolled in one of the six self-selected instructors' English 250 course. Each class group had a maximum enrollment of 30 students and there was no provision to randomly assign students to the treatment or control group. Basic skills students in English 250, however, are academically homogeneous because their enrollment was based on placement scores in the same range on a standardized placement test.

Uneven student attendance, a characteristic of basic skills students, was a fourth limitation that impacted data collected from the treatment group and may have been compounded by a small sample size. Only 53% of the participating students were in class on all of the days that surveys were administered. Therefore, data from just over half of the participating students could be used to calculate results (47 students in the control and 33 students in the treatment group). In particular, at the maintenance data collection day in one treatment group class, only six students attended out of 26 students enrolled. On that day there was a rough draft of the final course essay due and a peer review activity was scheduled. According to the instructor, students' preparation of the essay up to that point had been poor. The researcher suggested returning on a different day to collect data but the instructor declined, saying that lower attendance was typical at the end of the term, and that workshop-style activities in upcoming class sessions related to the final exam would probably also yield low attendance. This limitation affected the results because with an initially small sample, low student attendance reduced the total number of surveys by approximately half. The size of the treatment student group was near the minimum possible for data analyses to answer the second and third research questions.

There were two limitations related to the student survey. A ceiling effect was found for both autonomy and engagement responses. A 7-point response scale was used to collect self-reported autonomy and engagement, where 7 indicated the highest perceived autonomy and engagement. Twelve percent of the treatment group students (n=4) had a mean pretest and a mean posttest score of 7 on autonomy, and 3% of the treatment group students (n = 1) had a mean score of 7 at both measurement times for engagement. This effect impacts the results because the survey did not provide a way for these five students to indicate positive change in their perceived autonomy or engagement. There was also a ceiling effect for 43% of the students (n = 34) in both groups combined, whose mean score was between 6.00 and 6.83 on pretest autonomy and for 14% of the students (n = 11) whose mean score was between 6.00 and 6.86 on pretest engagement.

The sixth limitation relates to the students' motivation for completing English 250. The researcher found out at the end of the study from one treatment group instructor that students can repeat English 250 only once. Students must complete English 250 in order to earn any certificate. Thus, student motivation for taking the course may have been a confounding variable for engagement. College records to identify which students enrolled in English 250 for the second time could not be provided to instructors or to the researcher, so this information could not be reviewed after the study. This confounding variable affects the results because it is unknown how many participating students were taking English 250 for a second time and may have been motivated to engage for reasons other than instructor ASI strategy use. Potentially there was a subset of students that were engaged because of their goal orientation (identified regulation) and not because of their

instructors' autonomy support.

Discussion of Findings

In this section results for each research question will be reviewed in relation to the relevant literature. Literature describing intervention studies that were conducted in authentic learning environments and literature related to the instruments used in this study will be included.

Findings on Training Instructors to Use ASI

The first research question addressed how autonomy supportive English 250 instructors were before, immediately following, and five weeks after the intervention. Results showed that instructors responded positively to the treatment intervention by increasing their level of autonomy support. However, their autonomy support level returned to pretest levels at the maintenance measure. In the literature, teachers were successfully trained to use ASI strategies (Su & Reeve, 2010) as evidenced by self-reported and observed use of ASI strategies. Goldrick-Rab (2010) and Kuh (2008) suggested that basic skills instructors improve their instruction by learning to teach in ways that increase their students' engagement.

The teachers in the present study successfully implemented the two ASI strategies trained. Nurtures inner motivational resources is defined as, "Vitalization of the [student's] interest, enjoyment, psychological need satisfaction (autonomy, competence, and relatedness), or the sense of challenge or curiosity during the engagement of a requested activity" (p. 4, Su & Reeve, 2010). Teachers who make autonomy-supportive responses to students' interests and needs and give opportunities for students to succeed nurture their inner motivation. Providing informational feedback was the second

construct trained and is a newer construct in ASI. It describes the types of explanations given to students to help them accomplish and master skills, improve their work quality, and increase their academic achievement (Jang, Reeve, & Deci, 2010). Researchers found that providing informational feedback was linked to students' development of self-regulation, perceived competence and control, and it also nurtured students' inner motivational resources (Jang, Reeve, & Deci, 2010).

The results of the current study are consistent with the literature on training teachers to use ASI. ASI is characterized by teachers' combined use of autonomy supportive teacher behaviors that show the student that their teacher values and understands them when combined with autonomy supportive classroom structures that give students strong and consistent guidance during learning. Students associate their behavior with academic outcomes. ASI classroom structures address students' attention, effort and persistence, autonomy support, interest and enjoyment, investment, and their participation. ASI classroom structures facilitate students' motivation to complete learning tasks and predict their engagement (Reeve, 2004). On average, the instructors trained in this study were observed to increase their provision of consistent guidance by increasing the number of informational feedback statements by about one-third at the maintenance measure compared to the pretest. Two instructors increased informational feedback statements by about 20%, and one instructor more than doubled the frequency of supportive informational feedback (see Table 22 in Chapter IV).

Results described in the literature for the Problems in Schools questionnaire found that a group of teachers trained in ASI and then surveyed twice, once at posttest and once at maintenance about a month following the intervention, increased their autonomy

support at both measures (Reeve, 1998). Results of the current study are similar to those found in the literature for increased posttest scores, but results were not the same for the maintenance measure for all three instructors. For Instructor 1 the maintenance score was lower than at posttest, for Instructor 2 the maintenance score was higher than at posttest, and for Instructor 3 the maintenance score was equal to posttest (see Table 23, Chapter Four).

Findings on Student Autonomy

The ASI literature describes a positive impact of teachers' autonomy support on students' autonomy. Students respond to autonomy-supportive instruction by displaying school success skills and higher conceptual understanding (Deci et al. 1981; Ryan & Grolnick, 1986), and lower drop out rates (Vallerand, Fortier, & Guay, 1997). Students also report feeling more intrinsically motivated to engage in the learning environment (Niemiec & Ryan, 2009). Students reported and were observed to have higher engagement, to attempt more challenges, to earn higher grades, and to display a sense of well being (Jang, Reeve, & Deci, 2010) in the classroom.

The 6-item version of the Learning Climate questionnaire was used in the present study to measure student autonomy. Students in the treatment group reported increased autonomy (5.97, sd = 0.91) immediately following the intervention compared to the pretest measure (5.81, sd = 1.20) and reported decreased autonomy (5.78, sd = 1.36) at the maintenance measure. This latter finding is not similar to the findings in ASI research. Reeve (2004) describes conditions in which teachers who provide ongoing autonomy support have students who display and report continued autonomy over time. It is possible that inconsistent results similar to the present study may be found in

unpublished studies and dissertations that have small sample sizes or confounding variables more typical of authentic learning environments.

Some results indicate there was a ceiling effect for the students' perceived autonomy. At pretest, 12 out of 33 students in the treatment group scored a 7 for the autonomy item, "I feel that my instructor provides me choices and options" and 10 students scored a 7 for the autonomy item, "My instructor encourages me to ask questions." At posttest and at maintenance, more students rated this latter item a 7 than other items: 11 at posttest and 9 at maintenance. Students more frequently scored 7 on the pretest autonomy items compared to posttest and maintenance times. Further, this study was conducted over one semester and results were completed before students finished the course so follow-up with these students was not possible.

Findings on Student Engagement

There are fewer studies to measure student engagement than to measure student autonomy. Of the ASI studies on student engagement in the literature, fewer than 8% were conducted in community college settings (McClenney & Marti, 2006). The National Survey for Student Engagement was used with permission to measure classroom engagement in the present study. The items selected were worded identically to items also on the Community College Survey for Student Engagement (CCSSE). The definition of student engagement provided in the ASI literature refers to a student's quality of emotion and behavioral intensity during a learning task (Reeve, Jang, Carrell, Jeon, & Barch, 2004) and the effort and time students put into their educational activities (Kuh et al., 2007).

Students in the treatment group responded similarly to those studied in the

literature. For example, two items that students scored the highest on the Student Learning Survey were, "I had discussions with classmates during class" and "I worked harder than I thought I thought I could." These behaviors demonstrate Reeve et al.'s (2004) description of engagement as behavioral intensity during learning because students were behaving in ways that demonstrated active participation. These results also provide examples of the effort students used to engage in the classroom (Kuh, 2008) because students claimed they worked harder than they thought they could. These findings align with research that describes student engagement as perceptions of enthusiasm about and interest in classroom learning activities and where students try to retain or understand the course information (CCCSE, 2010). These findings are supported in the ASI intervention literature results that students' who perceive higher autonomy respond with increased engagement.

In the present study, findings for students' engagement echo findings made by Kuh (2008) in the community college engagement literature and by the prominent ASI researchers, Reeve, Jang, and Deci and Ryan. In the ASI literature no studies were found that were conducted with community college basic skills students. However, in one community college meta-analysis of several community college student engagement studies, the results showed that students' engagement was higher in active and collaborative learning environments (McClenney & Marti, 2006). In the present study, the ASI classrooms were primarily group-oriented in that instructors facilitated classroom discussions of essay writing knowledge and skills, as opposed to lecturing on ways to write effective essays. In Jang, Reeve and Deci (2010) researchers described increased student engagement in K-12 and university students after their teachers increased their

use of autonomy supportive teacher behaviors and classroom structures. ASI researchers found that students benefited because the teaching "style supports students' internal perceived locus of causality … and sense of choice during learning activities" (p. 589). These results were echoed across several studies (Reeve, 2009; Reeve, Deci, & Ryan, 2004; Reeve, Jang et al 2004). Students in the present study increased their engagement from a mean score of 4.29 (sd = 1.25) on a 7-point Likert scale at pretest to 4.42 (sd = 1.19) at posttest, and to 5.78 (sd = 1.36) at the maintenance measure three weeks after treatment conditions were removed.

Researchers who evaluated results from the National Survey of Student Engagement for both university and community college students concluded that student engagement predicts college completion and is an outcome of "effective teaching and meaningful learning … the heart of student success" (p. 4, CCCSE, 2010). Overall, findings in the literature indicate that student engagement increases when students are engaged in purposeful activities. Purposeful activities include high impact strategies where students are active participants in the learning environment and who had opportunities to discuss ideas with others and explore various perspectives during class discussions (Kuh, 2008). It is possible that the interactive nature of the English 250 classroom activities were a confounding variable for engagement. Typically in the treatment group classrooms, students participated in small group activities, small and large group discussions, and partner activities.

Conclusions

Overall, the data collected indicated that instructors had a positive response to self-determination theory and to the two ASI strategies trained in this study. However,

students' autonomy and engagement returned to pretest levels after ASI intervention activities were withdrawn, even though instructors continued to demonstrate use of ASI skills. As described in previous sections, this study's limitations and confounding variables muddy the results such that it is not possible to determine whether changes in student engagement were due solely to ASI changes made by the instructors after training. Therefore, there was not enough information to determine whether ASI may be an effective theory on which to design future professional development for basic skills instructors.

As is consistent with the ASI literature on training teachers, results indicated that instructors can successfully increase their autonomy support and that their students self-reported an increase in perceived autonomy and engagement on measures taken immediately after treatment, but that their perceptions of higher autonomy and engagement are not sustained in measures taken one month after treatment (Furtak, 2009; Reeve, 1998).

Second, results on changes to students' perceptions of autonomy and engagement did typify one of the cautions made in the literature for authentic ASI interventions by Su and Reeve (2010). Su and Reeve found that ASI laboratory interventions had higher effect scores compared to ASI interventions conducted in authentic environments, primarily because the laboratory environment could control for various confounding variables. In authentic learning environments such control was not as possible. Specifically, Furtak (2009) noted that one of the confounding variables in her authentic ASI intervention was low attendance at data collection times due to students' delayed return from a sports competition that reduced the sample size at one measurement time.

In the present study, the follow-up survey in one class group was completed by only six out of the possible 24 students. Again, due to no opportunity for follow-up with students after the study, the reason(s) for low attendance cannot be explored.

Implications for Research and Educational Practice

Four suggestions for future ASI research will be discussed, followed by the implication of each suggestion for either research or for practice. First, on future administrations of the Problems in Schools questionnaire, items that are course-specific may yield more consistent results across time than general items because instructors would be better able to relate ASI strategy use to typical and familiar classroom situations. This would potentially provide more reliable results over time because instructors would have more relatable scenarios to consider. Second, adding demographic items to the student survey asking about their reasons for enrolling in the basic skills course may give researchers a better understanding of students' motivation to engage and could explain variance within class groups and may also explain why their engagement did not decrease at the end of the study even though they reported decreased perceptions of autonomy. Third, the measurement scale on the student survey could be changed to reduce a ceiling effect. Thus, students who gave high ratings for perceptions of autonomy at pretest would still be able to indicate increases in autonomy over time. Fourth, after the second coaching session and the posttest data collection, no support was provided for instructors' continued use of ASI strategies. Given that the duration of the intervention was fairly short, instructors' success may have increased if they were provided a "cheat sheet" of supportive motivational and feedback statements to which they could refer.

The first implication for practice relates to the design of the ASI training

intervention. The ASI trainer used ASI strategies throughout the intervention, but there was no provision made to track whether this had any impact on the instructors. The literature clearly shows that teachers respond positively to ASI interventions and it would be useful for trainers of community college instructors to experience higher instructor engagement during training. Potentially, ASI used by trainers could address the California Chancellor's Office 2012 Recommendation 5 that states, *Improve the education of basic skills students*.

Second, student response rates may be increased and the confounding variable of student attendance may be decreased if the student survey was provided electronically and open to students over a few days in each specified data collection time frame. This would allow students to more fully participate in data collection, which increases the sample size and the number of useable surveys collected across all data collection times.

Third, in the second coaching session all treatment group instructors anecdotally commented on the positive impact that using ASI strategies had on themselves when their students seemed more motivated and engaged. During the training session, instructors said that they did not like "pulling teeth" and "making students comply with directions" in order to teach them how to write better essays. After learning to use ASI strategies, the instructors said they felt that the line between teaching and learning was blurred. They were learning ways to support intrinsic motivation and provide feedback while their students were learning ways to have student success. Instructors unanimously reported that teaching with ASI was "easier" and "smoother" than using rewards and consequences to acknowledge and encourage students' engagement.

Fourth, the researcher could have provided Slide 12 and Slide 16 from the ASI

training session to each instructor as a one-page handout at the end of his or her last coaching session. The researcher would then have asked each instructor to refer to the handout during grading and while preparing for class sessions to remind him or her to use the ASI strategies they were learning. Providing this handout would have been useful because it models the classroom structure, "Provides strong guidance and leadership," and classroom structures promote competence (Reeve, 2004). Slide 12 (as shown in Figure 7) gives the instructors specific direction on what to do (written in black font) and what not to do (written in red font) to enact ASI strategies.

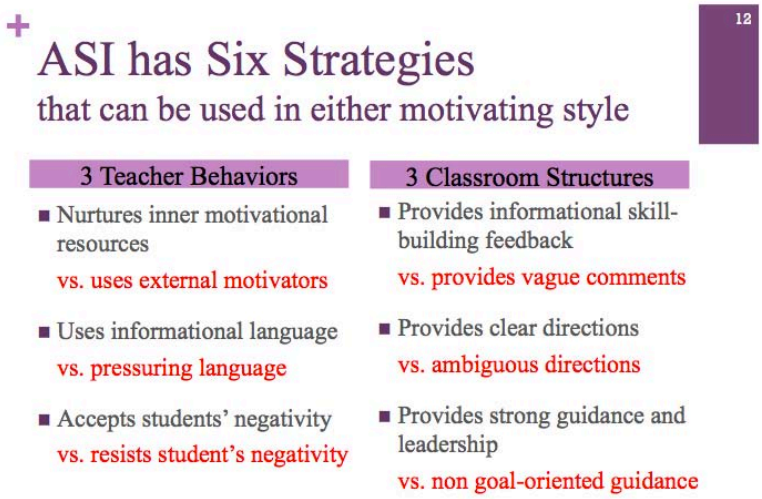

Figure 7. Slide 12 from the ASI Training Session: Specific ASI Strategies

Slide 16 (as shown in Figure 8) provides a reminder of the specific behaviors used to enact the two ASI skills discussed during the training session. Such a tool may have been especially useful for providing informational feedback on student papers and assignments. Providing a handout with these two slides may have increased training intervention fidelity because ASI strategy use would have been supported even after the intervention phase of the study.

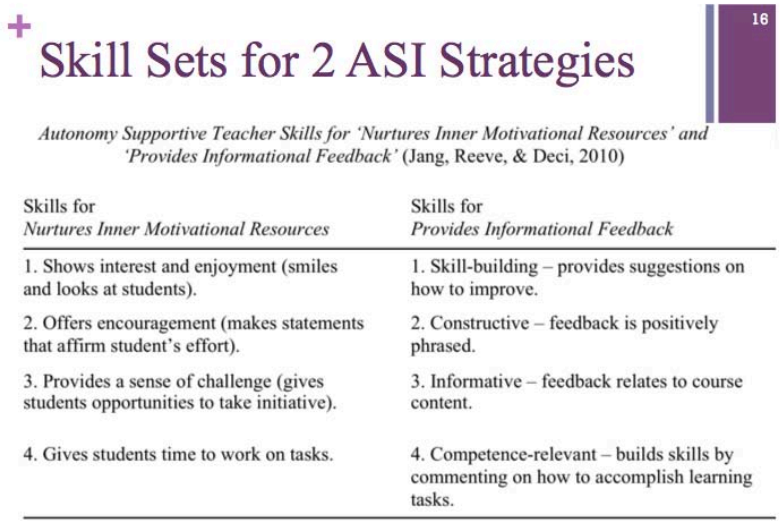

Figure 8. Slide 16 from the ASI Training Session: Skill Sets for 2 ASI Strategies

Summary

In conclusion, these results suggest that autonomy supportive instruction may be a viable strategy to use with community college basic skills English students who have typically experienced past academic failure. Participating instructors who taught a basic skills English course readily engaged in the ASI training intervention and were motivated to incorporate the two ASI strategies trained into their instruction. These instructors reported using integrated and identified motivation to participate, which indicates higher levels of self-determination for learning ways to promote their students' engagement.

Students perceived their instructors as fairly autonomy supportive throughout the study and students reported increased engagement during the treatment intervention. Results were favorable immediately following treatment even though intervening variables in instrumentation and student individual differences potentially interfered with describing a relationship between ASI training and English 250 student engagement. Students' engagement scores did not maintain after the treatment phase was completed

even though instructors increased their provision of informational feedback. In all, it is suggested that ASI be further studied with community college basic skills instructors and their students to more clearly determine the conditions under which basic skills English students' engagement is increased and sustained to positively impact student success.

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Appendix A

USF IRB Approval Letter and Letter of Permission to Conduct Research

University of San Francisco Institutional Review Board Approval Letter

USF IRBPHS irbphs@usfca.edu
to me, mitchellm

May 15, 2012

Dear Ms. Clabaugh:

The Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (USF) has reviewed your request for human subjects approval regarding your study.

Your application has been approved by the committee (IRBPHS #12-062). Please note the following:

1. Approval expires twelve (12) months from the dated noted above. At that time, if you are still in collecting data from human subjects, you must file a renewal application.

2. Any modifications to the research protocol or changes in instrumentation (including wording of items) must be communicated to the IRBPHS. Re-submission of an application may be required at that time.

3. Any adverse reactions or complications on the part of participants must be reported (in writing) to the IRBPHS within ten (10) working days.

If you have any questions, please contact the IRBPHS at (415) 422-6091.

On behalf of the IRBPHS committee, I wish you much success in your research.

Sincerely,

Terence Patterson, EdD, ABPP
Chair, Institutional Review Board for the Protection of Human Subjects

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IRBPHS – University of San Francisco
Counseling Psychology Department
Education Building – Room 017
2130 Fulton Street
San Francisco, CA 94117-1080
(415) 422-6091 (Message)
(415) 422-5528 (Fax)
irbphs@usfca.edu

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http://www.usfca.edu/soe/students/irbphs/

[redacted] COLLEGE

5055 Santa Teresa Blvd., Gilroy, CA 95020 www.gavilan.edu (408) 848-4800
Steven M. Kinsella, DBA, CPA, Superintendent/President

Consent to Conduct Research

March 29, 2012

Institutional Review Board for the Protection of Human Subjects
University of San Francisco
2130 Fulton Street
San Francisco, CA 94117

Dear Members of the Committee:

On behalf of [redacted], I am writing to formally grant authorization of the research proposed by Ms. Dionne Clabaugh, a student at the University of San Francisco (USF). Ms. Clabaugh intends to conduct her research by administering a written survey to Basic Skills students enrolled in the English 250 classes taught by instructors participating in the study.

I am responsible for instructional programs and research as the Executive Vice President and Chief Instruction Officer at [redacted]. The Director of Institutional Research and I have approved Ms. Clabaugh's proposal in principle and will review the approved IRB proposal to insure it meets with our standards.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Kathleen Rose, EdD.
(408) 848-4760
krose@gavilan.edu
Executive Vice President
and Chief Instruction Officer
[redacted]ge

Randy Brown, PhD.
(408) 848-4852
rbrown@gavilan.edu
Director of Institutional Research
[redacted]ege

Appendix B

Problems in Schools Questionnaire (Final Instrument)

The Problem in Schools Questionnaire (Final Instrument)

English250 Instructors PreTest Survey Exit this survey

Thank you for participating in this survey

Your responses will increase my understanding of motivation in community college basic skills English education.

This survey identifies ways teachers motivate their students, and has been tailored for the English 250 instructors at Gavilan College.

If you would like an overview of the results of this survey, please contact the researcher, Dionne Clabaugh at dclabaugh@gavilan.edu.

Your answers are completely confidential and individual responses will not be shared in any way.

This survey has eight short vignettes about students, each followed by four possible responses that teachers could take. For each situation please indicate how appropriate you feel each response is. There are no right or wrong answers.

First, enter the day(s) and time you teach English 250. Next, please read each vignette and its four possible responses. For each response, click the button that represents how appropriate you feel it is to the situation presented in the vignette. There are no right or wrong answers.

***1. What is your instructor number?**

- 1
- 2
- 3
- 4
- 5
- 6

***2. What are the day(s) and time that you teach English 250?**

✱3. Jim is an average English250 student who has been getting B's on most assignments. During the past two weeks he has appeared listless and did not participate in writing lab discussions. The work he does is accurate but he did not complete the last two assignments. The most appropriate thing for you to do is:

	Very Inappropriate			Moderately Appropriate			Very Appropriate
1. Impress upon him the importance of finishing his assignments since he needs to learn this material for his own good.	○	○	○	○	○	○	○
2. Let him know that he doesn't have to finish all of his work now and talk with him to identify the cause of the listlessness.	○	○	○	○	○	○	○
3. Encourage him stay in the writing lab until the assignments are done.	○	○	○	○	○	○	○
4. Let him see how his scores compare with the class average in terms of his assignments and encourage him to catch up.	○	○	○	○	○	○	○

✱4. Sarah's guidance counselor told her that Sarah made more progress than expected since the last appointment. Sarah agreed with the counselor that they both hope she continues to improve (After the midterm, Sarah is expecting to hear that she continues to improve), and that she does not have to repeat English250. As a result of the appointment, the counselor should:

	Very Inappropriate			Moderately Appropriate			Very Appropriate
5. Offer her a scholarship if she continues to improve.	○	○	○	○	○	○	○
6. Tell her that she's now doing as well as other students in the class.	○	○	○	○	○	○	○
7. Let Sarah know that the counselor is aware of her increased progress.	○	○	○	○	○	○	○
8. Continue to emphasize that Sarah has to work hard to get better grades.	○	○	○	○	○	○	○

***5. Donny loses his temper several times in class and has a way of agitating other students. He doesn't respond well to your directions and you're concerned that he won't learn the social skills he needs to succeed in college courses. The best thing for you to do is:**

	Very Inappropriate			Moderately Appropriate			Very Appropriate
9. Emphasize how important it is for him to control himself in order to succeed in school and in other situations.	○	○	○	○	○	○	○
10. Move him in to a classroom with more structure and reward contingencies.	○	○	○	○	○	○	○
11. Talk about how other students behave in various situations and praise him for doing the same.	○	○	○	○	○	○	○
12. Realize that Donny may not be getting the attention he needs and start being more responsive to him.	○	○	○	○	○	○	○

***6. Your student, Tom, is one of the better players on the college's soccer team, which has been winning most of its games. However, you are concerned because Tom just failed his writing test and is missing tomorrow's lab because of a game. You decide to:**

	Very Inappropriate			Moderately Appropriate			Very Appropriate
13. Ask Tom about how he plans to handle the situation.	○	○	○	○	○	○	○
14. Tell him he probably ought to forego tomorrow's game so he can review the test with his lab group.	○	○	○	○	○	○	○
15. See if other students are in the same predicament and suggest Tom do as much preparation as other students on a sports team.	○	○	○	○	○	○	○
16. Insist he miss tomorrow's game to study because soccer has been interfering too much with his schoolwork	○	○	○	○	○	○	○

***7. Your writing lab group has had trouble with spelling all semester. How could you best support the group?**

	Very Inappropriate			Moderately Appropriate			Very Appropriate
17. Have regular spelling bees so that students will be motivated to do as well as the other groups.	○	○	○	○	○	○	○
18. Make students drill more and give them extra credit for improvements.	○	○	○	○	○	○	○
19. Have each student keep a spelling journal and emphasize how important it is to track personal success.	○	○	○	○	○	○	○
20. Help the group devise alternative ways of learning how to spell the words together (skits, games, and so on).	○	○	○	○	○	○	○

***8. In the cafeteria, you overhear students in your English 250 class gossiping about one of their classmates, Joanne. Joanne is quiet and usually sits off to the side of the classroom. You decide to:**

	Very Inappropriate			Moderately Appropriate			Very Appropriate
21. Prod Joanne into interactions and provide her with praise for social initiative.	○	○	○	○	○	○	○
22. Talk to Joanne and emphasize that making friends will make her happier.	○	○	○	○	○	○	○
23. Invite Joanne to talk about her relationships with other classmates and encourage her to take small steps when she is ready.	○	○	○	○	○	○	○
24. Encourage Joanne to observe how other students relate during class and to join in with them.	○	○	○	○	○	○	○

***9. For the past few weeks writing supplies have been disappearing from the writing lab. One student was seen taking several mechanical pencils from the supplies box and putting them into his backpack. You decide to**

	Very Inappropriate	.	.	Moderately Appropriate	.	.	Very Appropriate
25. Talk to him about the consequences of stealing from the college and what it means in relation to other students.	○	○	○	○	○	○	○
26. Talk to him and express your confidence in his ability to stop, and attempt to understand why he has been taking the supplies.	○	○	○	○	○	○	○
27. Reprimand him, saying stealing cannot be tolerated and he will be dropped from the course if he continues.	○	○	○	○	○	○	○
28. Emphasize that stealing is wrong, and have him apologize to the writing lab students and agree not to continue stealing supplies.	○	○	○	○	○	○	○

***10. Your English250 class' average score is 75% across assignments so far, and you'd like to see this improve. A useful approach might be to:**

	Very Inappropriate	.	.	Moderately Appropriate	.	.	Very Appropriate
29. Encourage students to talk about what good grades means for them.	○	○	○	○	○	○	○
30. Go over the grade sheet with individual students and point out where they stand in relation to the class average.	○	○	○	○	○	○	○
31. Stress that students should do better because they will never get into transferable courses with grades like these.	○	○	○	○	○	○	○
32. Offer students 4 points of extra credit for an A and 2 point extra credit for a B on the upcoming midterm.	○	○	○	○	○	○	○

Done

Appendix C

ASI Observation Coding Guide (Final Instrument)

ASI Observation Coding Guide (Final Instrument)

Teacher Behavior: Controlling Motivational Statements (CM)

Target Statement	Examples
1. Offers incentives controlled by the instructor, such as points or rewards.	"You will earn 5 points extra credit for each revision you make on your term paper."
2. Offers contingencies controlled by the instructor, such as reminders about higher scores for increased effort.	"If you spend more time making revisions to your essay, then you will get a higher grade on your department final."
3. Gives directives using "should" or "ought to" types of statements.	"You should read your essay backwards to find all of the spelling mistakes."
4. Seeks compliance by praising students after they follow directives.	"Good job. Now you know how I want you to … ."

Teacher Behavior: Autonomy Supportive Motivational Statements (SM)

Target Statement	Examples
1. Gives students time to work on tasks, or carry out requests.	Instructor does not talk to or interrupt students during group work or while students are completing a requested task.
2. Offers encouragement, such as statements to boost or sustain the student's engagement.	"Instructor recognizes effort put forth by students: "Almost," "You're close," "You can do it." Says, "OK," with positive inflection (voice tone goes up) after a student comment, question, or response attempt.
3. Provides challenge by asking students to answer a content-related question.	"Using the Writing Center will help you with your paper," Pay attention to the assignment requirements," and "The textbook shows you how to …"
4. Gives students chance to take initiative by asking students to complete a task, use a skill, use a resource, or try a strategy.	Invites students to interact with classmates or learning materials. "Trade papers and read rough drafts with a classmate before turning it in," "Take a look at the textbook… ," or "Tell me what you think about … ."
5. Shows interest and enjoyment during a response to a student's work, comment, or question. [Coded for each teacher/student exchange during in-class small group work and after-class one-on-one conversations with students. There may be multiple exchanges during one group or conversation.]	Verbal and affective signals of active, contingent, and responsive information processing. Answers student's questions, responds to student in an affirming and supportive way.

Classroom Structure: Controlling Feedback Statements (CF)

Target Statement	Examples
1. Feedback is not provided after a student completes a task or responds to a question.	Instructor is silent after a student answers an instructor question or participates in a classroom task.
2. Feedback is off-task after a student completes a task or responds to a question.	Instructor comments on a task different than the student.
3. Feedback is off-topic after a student completes a task or responds to a question.	Instructor comments on a topic different than the student.
4. Feedback is negatively phrased and followed by the student withdrawing his or her attention from the conversation or task.	"No, that is not right," "Well, that won't work," or "Let's see if you can't get this one on the first try."

Classroom Structure: Autonomy Supportive Feedback Statements (SF)

Target Statement	Examples
1. Feedback suggests using a skill or strategy to improve work quality.	"Spell-checking helps you identify spelling errors," or "You can use auto-format for your table of contents.
2. Feedback is positively phrased to increase esteem.	"Your thesis is well supported with the details you provided in the body of the essay."
3. Feedback provides specific information to increase knowledge.	"Reviewing your notes will help you understand what we are talking about," or "Reading before class gives you a head start on what we are doing next week."
4. Feedback provides general comments for greater understanding to increase competence.	The purpose of a Works Cited page is to tell your reader where you found your information.

Appendix D

The Student Learning Survey (Final Instrument)

G00 #: _ _ _ _ _ _ _ _

The Student Learning Survey

This survey asks questions about your perceptions in English 250. Your responses are confidential and your instructor will not know whether you responded or not. Please be honest and candid.

Please circle a number to show your perceptions in this class.

	Strongly Disagree			*Neutral*			*Strongly Agree*
1. I feel that my instructor provides me choices and options.	1	2	3	4	5	6	7
2. I feel understood by my instructor.	1	2	3	4	5	6	7
3. My instructor shows confidence in my ability to do well in the course.	1	2	3	4	5	6	7
4. My instructor encourages me to ask questions.	1	2	3	4	5	6	7
5. My instructor listens to how I would like to do things.	1	2	3	4	5	6	7
6. My instructor tries to understand how I see things before responding.	1	2	3	4	5	6	7

Please circle a number to show how often you do each of these in this class.

	Rarely			*Sometimes*			*Frequently*
7. I ask questions in this class.	1	2	3	4	5	6	7
8. I make comments during class discussions.	1	2	3	4	5	6	7
9. I work with other students on projects during class.	1	2	3	4	5	6	7
10. I help other students understand what we are learning in this course.	1	2	3	4	5	6	7
11. I discuss grades or assignments with my instructor.	1	2	3	4	5	6	7
12. I discuss ideas from readings and class with my classmates.	1	2	3	4	5	6	7
13. I worked harder than I thought I could to meet my instructor's standards or expectations.	1	2	3	4	5	6	7

Please circle YES or NO to indicate whether you are familiar with your English250 instructor.

14. I have had a class with this instructor before. YES NO

Appendix E

IRB Informed Consent Forms

INFORMED CONSENT (Student)

[redacted] and UNIVERSITY OF SAN FRANCISCO

Purpose and Background

Ms. Dionne Clabaugh, a graduate student in the School of Education at the University of San Francisco is doing a study on student learning for English250 students. The researcher is interested in understanding how much various learning experiences describe your experience in English 250.

Procedures

If I agree to be a participant in this study, the following will happen:

- I will complete a short survey giving my G00 number (student ID number) and basic information about my learning experiences in this class.
- The survey will be given to me two or three times: once at the beginning of the study and once at the end of the study, and for some classes, once in the middle of the study.

Risks and/or Discomforts

- It is possible that some of the questions on the classroom learning survey may make me feel uncomfortable, but I am free to decline to answer any questions I do not wish to answer or to stop participation at any time.
- Participation in research may mean a loss of confidentiality. My student number on the survey will be kept as confidential as is possible. No individual identities will be used in any reports or publications resulting from the study. Survey information will be coded and kept in locked files at all times. My English250 instructor will not have access to any of the student surveys.

Benefits

There is no direct benefit to me for participating in this study. The anticipated benefit of this study is a better understanding of student learning experiences and how they help students succeed in English 250.

Costs/Reimbursements

There are no financial costs to me as a result of taking part in this study. There are no reimbursements to me for my participation in this study.

Questions

I have talked to Ms. Clabaugh about this study and have had my questions answered. If I have further questions about the study, I may call her at (408) 504-7408 or contact Dr. Xornam Apedoe at (415) 422-4480 or xapedoe@usfca.edu. If for some reason I do not wish to do this, I may contact USF's IRBPHS office by calling (415) 422-6091, by e-mailing IRBPHS@usfca.edu, or by writing to the IRBPHS, Department of Psychology, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

Consent

I have been given a copy of the "Research Subject's Bill of Rights" and I will be given a copy of this consent form to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to be in this study, or to withdraw from it at any point. My decision as to whether or not to participate in this study will have no influence on my present or future status as a student at Gavilan College. My signature below indicates that I agree to participate in this study.

_____

Student's Signature Date of Signature

_____

Signature of Person Obtaining Consent Date of Signature

INFORMED CONSENT (Instructor)

[redacted] and UNIVERSITY OF SAN FRANCISCO

Purpose and Background

Ms. Dionne Clabaugh, a graduate student in the School of Education at the University of San Francisco, is doing a study on student autonomy and engagement for students who attend Gavilan College English 250 classes. If I agree to be a participant in this study, the following will happen:

Control Group

1. I will complete a short online survey at the beginning (pre-test) and the end of the study (post-test).
2. I will schedule three days and times with the researcher (first week, fifth or sixth week, and last week of the study) for the researcher to administer a short survey to my students to measure their perceptions in English 250.
3. I will not handle the surveys and I will not know which students did or did not complete surveys.
4. I will earn 3 hours of Flex Activity Time for my participation.

Treatment Group

1. I will complete a short online survey at the beginning and at the end of the study.
2. I will schedule three days and times (first or second week, fifth or sixth week, and last week of the study) for the researcher to administer a short survey to my students to measure their perceptions in English 250. I will not handle the surveys or know which students did and did not complete them.
3. I will attend a 3-hour training session in the third week of the study to learn and practice using a teaching strategy and specific skills that I can use to teach English 250.
4. I will schedule three days and times (first or second week, fifth or sixth week, and last week of the study) for the researcher to visit my English 250 classroom to collect data. The researcher will record what I say to my students during class. This recording will be transcribed by a third party and then coded to indicate my use of the strategies that were trained.
5. I will schedule two 30-minute individual coaching sessions with the researcher to discuss my use of the strategies trained. Data from the coded transcriptions will help me implement training strategies.
6. I will earn 7 hours of Flex Activity Time, if desired, for participation in this study.

Risks and/or Discomforts

1. It is possible that I may feel uncomfortable when the researcher administers the student survey. I am free to stop participation at any time.
2. Participation in research may mean a loss of confidentiality. My individual identity will not be used in any reports or publications resulting from the study.
3. My student's ID numbers on the surveys will be kept as confidential as possible. Survey information will be coded and student ID numbers will be removed once the study is complete. All surveys and research data sheets will kept in locked files at all times. I will not have access to student surveys or other data documents.

Benefits

Control Group: There will be some direct benefit to me by earning 3 Flex Time Activity hours.
Treatment Group: There will be some direct benefit to me by earning 7 hours of Flex Activity Time, and by learning and practicing new teaching strategies.

Costs/Reimbursements

There will be no financial costs or monetary reimbursement to me for my participation in this study.

Questions

I have talked to Ms. Clabaugh about this study and have had my questions answered. If I have further questions about the study, I may call her at (408) 504-7408 or contact Dr. Xornam Apedoe at (415) 422-4480 or xapedoe@usfca.edu. If I do not wish to do this, I may contact USF's IRBPHS office at (415) 422-6091, IRBPHS@usfca.edu, IRBPHS, Department of Psychology, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

Consent

I have been given a copy of the "Research Subject's Bill of Rights" and I have been given a copy of this consent form to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I may decline to participate, or withdraw at any time. Participating will have no influence on present or future status as a Gavilan College instructor.

My signature below indicates that I agree to participate in this study.

Instructor's Signature	Date of Signature	Researcher's Signature	Date of Signature

Appendix F

Instrument Development and Pilot Testing

Instrument Development and Pilot Testing

The ASI Observation Coding Guide Development

The *ASI Observation Coding Guide* was based on an ASI observation sheet (Reeve & Jang, 2010) used to rate observed teachers' use of controlling and autonomy supportive statements. Raters used Reeve and Jang's sheet to assign a score of 1 (most controlling) through 7 (most autonomy supportive) on a Likert scale during observation. The scale was placed between two lists of teacher behaviors (on the top half of the chart) and two lists of classroom structures (on the bottom half of the chart), with controlling items placed on the left (upper and lower) side and autonomy supportive items on the right (upper and lower) side of the sheet. In the literature, coding procedures were vague and did not describe the criteria or rationale used by an observer to assign a particular score, other than to say that 4 represented a neutral point between controlling and autonomy supportive, and that observers should begin their observation from this neutral point. It appeared that the observation sheet could be used as a rating tool, so it was redesigned and labeled the *ASI Observation Coding Guide*.

Initially, this instrument was named the *ASI Target Statement sheet* and laid out as a four section, two-column instrument of 17 target statements for the two ASI strategies being trained, observed, and coached. Each target statement's operational definition in both a controlling orientation and an autonomy supportive orientation was provided, creating four sections. In the left column operational definitions were listed and in the right column specific English 250 examples of each target statement were provided. Each target statement definition-example pair was given an alpha-numeric code that the researcher and the trained second rater used to identify statements that could be coded.

Influence Attempts:
Behavior intended to produce a change in the flow of the class or the behavior of the other person.
Teacher-Initiated Hits (Influence attempts):
Student-Initiated Hits (Influence attempts):

Rater:
Teacher:
Classroom:
School:

Rating Period (circle one):
1st10m 2nd10m 3rd10m 4th10m 5th10m
Number of Students:
Day/Date/Hour:

Teacher's **Autonomy Support**

Relies on Extrinsic Motivational Resources * Incentives, Consequences * Directives, Deadlines * Makes Assignments * Seeks Compliance	1	2	3	**4**	5	6	7	**Nurtures Intrinsic Motivational Resources** * Interest, Enjoyment * Challenge * Competence/Confidence * Choice-Making
Controlling Language * Controlling, Coercive * Should, Must, Have to, Got to * Pressuring, Rigid, #No nonsense#	1	2	3	**4**	5	6	7	**Informational Language** * Informational * Flexible * Not at All Controlling
Neglects Value, Importance, of Task/Lesson/Behavior * Neglects Value, Meaning, Use, Benefit, Importance	1	2	3	**4**	5	6	7	**Identifies Value, Importance, of Task/Lesson/Behavior** * Identifies Value, Meaning, Use, Benefit, Importance #This is important because...#
Reaction to Negative Affect: Is Not OK: Change It * Neg. Affect Is Unacceptable * Tries to Fix, Counter, or Change into Something Else	1	2	3	**4**	5	6	7	**Is OK: Listens, Accepts** * Listens Carefully * Open to Complaints * Accepts as OK, Valid Reaction

Teacher's **Structure**

During Introduction/Directions: **Absent, Confusing Unclear, Complicated** * Rules, Procedures are Confusing, Absent * Little or No Organization	1	2	3	**4**	5	6	7	**Clear, Predictable, Understandable, Detailed** * Clearly Stated Procedures * Frames Upcoming Lesson Well * Clear Organization
During Lesson/While Students Learn: **Poor Leadership** * Fails to Show Leadership * No Plan, No Goals	1	2	3	**4**	5	6	7	**Strong Leadership** * Organized, Leader, Conductor * Clear Plan, Clear Goals
Low, Easy Workload * Little Challenge, Slow Pace * Asks for only Small Capacity	1	2	3	**4**	5	6	7	**High, Hard Workload** * Much Challenge, Fast Pace * Asks for Full Capacity
Scaffolding is Fully Absent * Lack of: Hints, Clues, Tips * Questions Missed, Answered Poorly	1	2	3	**4**	5	6	7	**Scaffolding is Richly Present** * Hints, Clues, Tips, Reminders, * Answers Questions Well, Fully
During Feedback, Post-Performance Commentary: **None, Ambiguous, Off-Task, Rambling**	1	2	3	**4**	5	6	7	**Skill-Building, Informative, Instructive**

Teacher's **Involvement**

Seems Cold, Closed * Business-like * Doesnt Enjoy Time with Ss	1	2	3	**4**	5	6	7	**Seems Warm, Open** * Expresses Affection, Caring * Does Enjoys Time with Ss
Withholds Personal Resources * Time, Attention, Energy	1	2	3	**4**	5	6	7	**Invests Personal Resources** * Time, attention, energy
Physical Proximity: Distant * Keeps Distance * Stays Up Front During Class	1	2	3	**4**	5	6	7	**Physically Proximity: Close** * Walks over to Students * Stands Near/Sits Close
Knows Students: No, Not at all * No Mention of Names, Academic/Personal Histories	1	2	3	**4**	5	6	7	**Knows Students: Yes, Detailed Knowledge** * Knows Names, Academic/Personal Histories

Student's Collective **Engagement**

Dispersed Attention	1	2	3	**4**	5	6	7	**Focused Attention**
Passive, Slow, Minimal Effort	1	2	3	**4**	5	6	7	**Active, Quick, Intense Effort**
Verbally Silent * Student Dont Talk, Ask Questions, Discuss	1	2	3	**4**	5	6	7	**Verbally Participating** * Students Do Talk, Ask Questions, Discuss
During Challenge, Failure, or Confusion: **Gives Up Easily** * Decreases Effort Over Time	1	2	3	**4**	5	6	7	**Persists** * Increases Effort Over Time
Flat Emositive Tone * Bored, Disinterested, Flat	1	2	3	**4**	5	6	7	**Positive Emotional Tone** * Enjoyment, Interested, Fun

Note for Each Rating: Use the bold, underlined **4** as your anchor/starting point.

First, the researcher repositioned the operationalized items into a list with headers for each ASI strategy. An observer could then mark one tally each time each behavior was observed. A blank space to the right of the list allowed the observer to make notes on classroom dynamics or student responses. From each set of tallies for each set of target behaviors, a percent controlling or autonomy supportive can be calculated to describe the proportion of controlling to autonomy supportive instruction. This instrument was titled the *ASI Coaching Sheet* because the data from it was used to inform talking points during individual coaching sessions. This instrument was used during one pilot observation and one coaching session each for three community college instructors who taught math, English as a Second Language (ESL), and psychology to basic skills students.

In the second revision, the researcher removed one vaguely stated item that was difficult to code (*Shows Interest*) to create an instrument to tally instructor's statements that were listed on the sheet because they could be identified and coded as either controlling or autonomy supportive. These statements were referred to as *target statements*. Next, the researcher added a definition for each ASI strategy and provided English250-specific examples of each target statement to be coded. At the end of this revision the instrument was titled, *The ASI Target Statement sheet* to identify its purpose and use throughout the study.

Piloting the ASI Observation Coding Sheet

The ASI Target Statement sheet was pilot tested using a transcript of one class session taught by the researcher that lasted approximately one hour and ten minutes.

ASI Target Statement Sheet Pilot Instrument (Page 1)

Teacher Behavior: ***Nurtures Inner Motivational Resources***
Definition: Teachers show interest in students, provide challenges, create opportunities for students to take initiative, and support student needs and interests.

Controlling Motivational Statements

Target Statement	Example	Tallies
Offers incentives, such as points or rewards.	You will earn 5 points extra credit for each revision you make of your term paper.	
Offers contingencies, such as the hope of higher scores for increased effort.	If you spend more time making revisions to your essay, then you could have a higher grade on your department final.	
Gives directives, such as telling students they should or should not approach a task in a particular way.	You should read your essay backwards to find all of the spelling mistakes.	
Seeks compliance, such as praising students when they follow directives.	Great You found three more spelling mistakes because you read your essay backwards.	

Autonomy Supportive Motivational Statements

Target Statement	Example	Tallies
Gives students time to work on tasks, such as in small group or partner tasks without interrupting student-to-student interactions.	Please take about 5 minutes to respond to the reflection prompt on the board.	
Offers encouragement, such as to recognize effort put forth by student.	Excellent The effort you used during your tutoring session has paid off. Your thesis statement is much more clearly stated.	
Provides challenge, such as to suggest students try harder or try a different strategy.	Typically, students who use the Writing Center on the day after getting rough draft comments typically make better revisions.	
Gives students chance to take initiative, such as invites students to talk to classmates.	You might consider trading and reading rough drafts with a classmate before turning it in.	

ASI Target Statement Sheet Pilot Instrument (Page 2)

Classroom Structure: ***Provides Informational Feedback***
Definition: Provides informational feedback: comments are affirming, build skills, and provide relevant information on competence.

Controlling Statements

Target Statement	Example	Tallies
Feedback is not provided, such as when a student completes a task and the instructor does not provide any comment	Instructor does not provide comments about a task or assignment completed	
Feedback is off-task, such as when a student completes a task and the instructor comments on something other than the task	Looks like you can have a good weekend now that your essay is finished	
Feedback rambles off topic, such as when a student completes a task and the instructor comments on topics unrelated to the task	Oh, your essay is on the website? You logged in twice this week and commented on Emily's post about getting a ride to class, and posted comments on a movie	
Feedback reduces compliance, such as when a student does not complete a task and the instructor's statements are negatively phrased	You should have known better than to turn in an essay that you didn't proofread	

Autonomy Supportive Statements

Target Statement	Example	Tallies
Feedback builds skills, such as suggesting a skill to improve work quality	Many people use the spellchecker in their word processor to identify spelling errors	
Feedback is constructive, such as is positively phrased and builds esteem	Your thesis is clearly stated and I can second-guess what your body paragraphs will describe	
Feedback is instructive, such as a suggestion to increase content mastery	Did you use a thesaurus? You have many more active verbs in this draft than in the last draft	
Feedback builds competence such as comments that lead to a deeper understanding	You effectively placed supporting details to effectively compare and contrast the views on this issue	

After piloting this instrument, the researcher and second coder decided to reformat the observation sheet into a one-page document to be used as a coding guide, not as a data collection sheet. It was decided that the codes for each target statement found would be written directly onto the transcript. This procedure allowed the researcher and the second coder to easily identify and discuss any statements that were coded differently during the process of establishing inter-rater reliability.

ASI Observation Coding Guide Pilot to Establish Inter-rater Reliability

A second rater was recruited by the researcher and attended the intervention training session to understand (a) the ASI strategies being trained, (b) the literature on each *ASI Target Statement sheet* item, and (c) become familiar with the definitions and examples for each target statement being coded (autonomy-supportive and controlling statements for *nurtures inner motivational resources* and for *provides informative feedback*). The researcher and second rater practiced coding using the second version of the ASI Observation and Coaching Sheet to become familiar with the coding guide. They used transcribed statements from two pre-recorded class sessions conducted by the researcher.

As a result, the researcher and second rater made four sets of revisions to the coding guide to increase its usability and inter-rater reliability. The researcher and the rater computed inter-rater reliability on the second and third versions of the coding guide. The researcher revised some of the target statement descriptions in response to the second-rater's comments and questions after a discussion. This version of the coding guide was used to code three pretest transcripts, resulting in 75% inter-rater reliability. The researcher and the second rater worked together on the fourth and final version of the

ASI Observation Coding Guide to more clearly state those definitions that were inconsistently coded, and to restate some examples, in order to increase inter-rater reliability. After using this fourth revision to recode the pretest transcripts, inter-rater reliability was 98% overall.

The Student Learning Survey Development

To measure students' perceived autonomy, all six items from the short format of the Learning Climate Questionnaire (Williams & Deci, 1996) (LCQ), a self-report, paper-and-pencil survey, were selected and modified for use in this study. The LCQ is one of four related questionnaires that measure perceptions of how autonomy supportive is the social context in education, health care, corporate, and sports environments. The LCQ can be used as either a 15-item instrument (a = 0.92) or a 6-item instrument (a = 0.92). LCQ items are statements a student would make in regard to his or her instructor, and rated on a 7-point Likert scale showing the level of agreement, where 1 meant, "strongly disagree" and 7 meant "strongly agree."

Permission was provided on the Self Determination Theory (SDT) website from the originators of Self Determination Theory, Drs. Deci and Ryan, to adapt LCQ item wording to fit the environment being studied. For example, an original item (and its revision) was, "My instructor conveyed (shows) confidence in my ability to do well in the course." The 6-item version of the LCQ is comprised of a subset of items on the 15-item version of the LCQ. Specifically these were items 1, 2, 4, 7, 10, and 14. This shorter version was selected not only after a second pilot test (described below) because it had the same reliability as the 15-item version, but also so that the instrument created for this study would not be too long for remedial English students to complete.

To measure engagement, 18 items that measured classroom engagement from the 87-item ($\alpha = 0.82$), self-report National Survey of Student Engagement (NSSE) were selected. Verbal permission to use NSSE items in this study was granted to the researcher by a NSSE consultant at an October 2011 Student Success Conference. The NSSE has been used in college and university settings to measure five aspects of college student engagement (active and collaborative learning, student effort, academic challenge, student-faculty interactions, and support for learners).

Engagement in ASI studies has been measured for K-12 students, but was not measured in remedial community college students. To ensure that selected engagement items were similar to those in the ASI literature, the selected engagement items were compared to those found in the literature, as shown in Table 28.

Table 28

Engagement Items Selected and Found in the ASI Literature

Selected Engagement Items	Engagement Items Found in the ASI Literature
1. I ask questions in this class.	- I participate in conversations and discussions in class
2. I make comments during class. I discuss ideas from readings or class with my classmates.	- Verbal participation (talking, discussing, asking questions) - Demonstrated verbal participation - Demonstrated use of own voice
3. I work with other students on projects during class.	N/A

Table 29, continued

4. I help other students understand what we are learning in this course.	- I try to understand the material studied in class
5. I discuss grades or assignments with my instructor.	N/A
7. I worked harder than I thought I could to meet my instructor's standards or expectations.	- I come to class unprepared (without reading or homework)* - I do more than what I am required when I study the subjects taught - Active, quick, intense effort, demonstrated effort - Persists (increases effort over time) - During this class I paid attention - During this class I worked very hard - During this class I tried to learn as much as I could - Demonstrated attention, focused attention - Demonstrated effort - Demonstrated persistence

The 4-point Likert response scale to measure frequency was revised to a 7-point Likert scale with similar frequency-related descriptors, where 1 meant “rarely” and 7 meant “frequently.” In this way, the response scales for autonomy and engagement were parallel, where 1 conceptually meant “least” and 7 conceptually meant “most,” so students would have a similar response scale for autonomy items and engagement items and to potentially reduce any confusion.

The researcher found that there was content overlap for items related to effort (item 7) and for items related to verbal participation (items 1, 2, and 6). Item 4 is related to comprehension and overlaps with one ASI engagement item. Measures matched to item 3 (related to collaboration) and to item 5 (related to interactions with faculty) were

not found on ASI instruments in the literature. Overall this review indicated there was much more content consistency for verbal and effort measures of engagement than for comprehension, and there is no overlap for collaboration or faculty interaction measures of engagement in ASI literature.

Dr. Ben Baab at the University of San Francisco provided expert advice on seven engagement items for item wording syntax and consistency. These items were reworded again to ensure present tense, parallel construction with autonomy items, and to ensure that remedial English college students would understand the items. For example, two of the original items (and their revisions) were, "Asked questions in class" ("I ask questions in this class") and "Tutored or taught students, paid or voluntary ("I helped students understand what we are learning in this class").

The Student Learning Survey Pilot Test

Two pilot tests of the *Student Learning Survey* were conducted. In the first pilot timing was tested. The researcher administered the first *Student Learning Survey* (15 autonomy items and 18 engagement items) to one class group of community college students enrolled in a curriculum design course taught by the researcher. Students ranged from 20 to approximately 55 years old, were female (100%), and ethnically diverse: Asian (30%), Indian (30%), Caucasian (20%), Hispanic (15%) and African American (5%). The survey items were:

1. I feel that my instructor provides me choices and options
2. I feel understood by my instructor.
3. I am able to be open with my instructor during class.
4. My instructor conveyed confidence in my ability to do well in the course.
5. I feel that my instructor accepts me.
6. My instructor made sure I really understood the goals of the course and what I need to do.

7. My instructor encouraged me to ask questions.
8. I feel a lot of trust in my instructor.
9. My instructor answers my questions fully and carefully.
10. My instructor listens to how I would like to do things.
11. My instructor handles people's emotions very well.
12. I feel that my instructor cares about me as a person.
13. I don't feel very good about the way my instructor talks to me.
14. My instructor tries to understand how I see things before suggesting a new way to do things.
15. I feel able to share my feelings with my instructor.
16. A asked questions in class or contributed to class discussions.
17. I made a class presentation.
18. I prepared two or more drafts of a paper or assignment before turning it in.
19. I worked on a paper or project that required integrating ideas of information from various sources.
20. I came to class without completing readings or assignments.
21. I worked with other students on projects during class.
22. I tutored or taught other students (paid or voluntary).
23. I used electronic media (email, course website, message board) to discuss or complete an assignment.
24. I used email to communicate with my instructor.
25. I discussed grades or assignments with my instructor.
26. I received prompt written or oral feedback from my instructor on my performance.
27. I worked harder than I thought so I could meet my instructor's standards or expectations.

It took about 8 minutes for the researcher to describe the study, provide consent forms, and administer the consent form and survey. Therefore, the researcher allowed 10 minutes during the pretest, posttest, and maintenance administrations of this survey.

In the second pilot test, the researcher shortened the student instrument but needed to maintain high reliability. Autonomy items that were not in the 6-item version of the LCQ were removed and the survey was renamed *The Student Learning Survey*. Then the researcher piloted this second survey with two community college class groups taught by the researcher during the same week. The same introductory and permissions procedures were used in this pilot as during the first pilot.

The survey took about 7 minutes to complete and results were analyzed in SPSS

to compute reliability for the autonomy and engagement items. The reliability for autonomy items was computed as $\alpha = 0.89$. Upon review, there seemed to be some redundant engagement items. To effectively reduce the number of engagement items and maintain reliability, the USF statistics tutor assisted the researcher to enter engagement responses into an Excel spreadsheet. Then SPSS was used to compute reliability for the engagement items ($a = 0.72$). Nine engagement items that specifically addressed students' in-class effort and time spent on learning activities were selected then analyzed with SPSS to determine reliability ($a = 0.72$). Two items were removed that slightly increased reliability ($a = 0.73$), resulting in seven proposed engagement items.

Appendix G

The Problems in Schools Questionnaire (Original Instrument)

The Problems in Schools Questionnaire (Original Instrument)

On the following pages you will find a series of vignettes. Each one describes an incident and then lists four ways of responding to the situation. Please read each vignette and then consider each response in turn. Think about each response option in terms of how appropriate you consider it to be as a means of dealing with the problem described in the vignette.

You may think the option to be "perfect," in other words, "extremely appropriate" in which case you would respond with the number 7. You might consider the response highly inappropriate, in which case would respond with the number 1. If you find the option reasonable you would select some number between 1 and 7. So think about each option and rate it on the scale shown below. Please rate each of the four options for each vignette. There are eight vignettes with four options for each.

There are no right or wrong ratings on these items. People's styles differ, and we are simply interested in what you consider appropriate given your own style.

Some of the stories ask what you would do as a teacher. Others ask you to respond as if you were giving advice to another teacher or to a parent. Some ask you to respond as if you were the parent. If you are not a parent, simply imagine what it would be like for you in that situation.

Please respond to each of the 32 items using the following scale.

1	2	3	4	5	6	7
very inappropriate			moderately appropriate			very appropriate

A. Jim is an average student who has been working at grade level. During the past two weeks he has appeared listless and has not been participating during reading group. The work he does is accurate but he has not been completing assignments. A phone conversation with his mother revealed no useful information. The most appropriate thing for Jim's teacher to do is:

1. She should impress upon him the importance of finishing his assignments since he needs to learn this material for his own good.
2. Let him know that he doesn't have to finish all of his work now and see if she can help him work out the cause of the listlessness.
3. Make him stay after school until that day's assignments are done.
4. Let him see how he compares with the other children in terms of his assignments and encourage him to catch up with the others.

B. At a parent conference last night, Mr. and Mrs. Greene were told that their daughter Sarah has made more progress than expected since the time of the last conference. All agree that they hope she continues to improve so that she does not have to repeat the grade (which the Greene's have been kind of expecting since the last report card). As a

result of the conference, the Greenes decide to:

5. Increase her allowance and promise her a ten-speed if she continues to improve.
6. Tell her that she's now doing as well as many of the other children in her class.
7. Tell her about the report, letting her know that they're aware of her increased independence in school and at home.
8. Continue to emphasize that she has to work hard to get better grades.

C. Donny loses his temper a lot and has a way of agitating other children. He doesn't respond well to what you tell him to do and you're concerned that he won't learn the social skills he needs. The best thing for you to do with him is:

9. Emphasize how important it is for him to "control himself" in order to succeed in school and in other situations.
10. Put him in a special class, which has the structure and reward contingencies, which he needs.
11. Help him see how other children behave in these various situations and praise him for doing the same.
12. Realize that Donny is probably not getting the attention he needs and start being more responsive to him.

D. Your son is one of the better players on his junior soccer team which has been winning most of its games. However, you are concerned because he just told you he failed his unit spelling test and will have to retake it the day after tomorrow. You decide that the best thing to do is:

13. Ask him to talk about how he plans to handle the situation.
14. Tell him he probably ought to decide to forego tomorrow's game so he can catch up in spelling.
15. See if others are in the same predicament and suggest he do as much preparation as the others.
16. Make him miss tomorrow's game to study; soccer has been interfering too much with his school work.

E. The Rangers spelling group has been having trouble all year. How could Miss Wilson best help the Rangers?

17. Have regular spelling bees so that Rangers will be motivated to do as well as the other groups.
18. Make them drill more and give them special privileges for improvements.
19. Have each child keep a spelling chart and emphasize how important it is to have a good chart.
20. Help the group devise ways of learning the words together (skits, games, and so on).

F. In your class is a girl named Margy who has been the butt of jokes for years. She is quiet and usually alone. In spite of the efforts of previous teachers, Margy has not been accepted by the other children. Your wisdom would guide you to:

21. Prod her into interactions and provide her with much praise for any social initiative.
22. Talk to her and emphasize that she should make friends so she'll be happier.
23. Invite her to talk about her relations with the other kids, and encourage her to take small steps when she's ready.
24. Encourage her to observe how other children relate and to join in with them.

G. For the past few weeks things have been disappearing from the teacher's desk and lunch money has been taken from some of the children's desks. Today, Marvin was seen by the teacher taking a silver dollar paperweight from her desk. The teacher phoned Marvin's mother and spoke to her about this incident. Although the teacher suspects that Marvin has been responsible for the other thefts, she mentioned only the one and assured the mother that she'll keep a close eye on Marvin. The best thing for the mother to do is:

25. Talk to him about the consequences of stealing and what it would mean in relation to the other kids.
26. Talk to him about it, expressing her confidence in him and attempting to understand why he did it.
27. Give him a good scolding; stealing is something that cannot be tolerated and he has to learn that.
28. Emphasize that it was wrong and have him apologize to the teacher and promise not to do it again.

H. Your child has been getting average grades, and you'd like to see her improve. A useful approach might be to:

29. Encourage her to talk about her report card and what it means for her.
30. Go over the report card with her; point out where she stands in the class.
31. Stress that she should do better; she'll never get into college with grades like these.
32. Offer her a dollar for every A and 50 cents for every B on future report cards.

Appendix H

Autonomy and Engagement Observation Sheet (Reeve et al. 2004)

Autonomy and Engagement Observation Sheet (Reeve et al. 2004)

Influence Attempts:

Behavior intended to produce a change in the flow of the class or the behavior of the other person.

Teacher-Initiated Hits (Influence attempts):

Student-Initiated Hits (Influence attempts):

Rater:

Teacher:

Classroom:

School:

Rating Period (circle one):

1st10m 2nd10m 3rd10m 4th10m 5th10m

Number of Students:

Day/Date/Hour:

Teacher's Autonomy Support

Relies on Extrinsic Motivational Resources 1 2 3 **4** 5 6 7
- Incentives, Consequences
- Directives, Deadlines
- Makes Assignments
- Seeks Compliance

Controlling Language 1 2 3 **4** 5 6 7
- Controlling, Coercive
- Should, Must, Have to, Got to
- Pressuring, Rigid, #No nonsense#

Neglects Value, Importance, of Task/Lesson/Behavior 1 2 3 **4** 5 6 7
- Neglects Value, Meaning, Use, Benefit, Importance

Reaction to Negative Affect: Is Not OK; Change It 1 2 3 **4** 5 6 7
- Neg. Affect Is Unacceptable
- Tries to Fix, Counter, or Change into Something Else

Nurtures Intrinsic Motivational Resources 1 2 3 **4** 5 6 7
- Interest, Enjoyment
- Challenge
- Competence/Confidence
- Choice-Making

Informational Language 1 2 3 **4** 5 6 7
- Informational
- Flexible
- Not at All Controlling

Identifies Value, Importance, of Task/Lesson/Behavior 1 2 3 **4** 5 6 7
- Identifies Value, Meaning, Use, Benefit, Importance
- #This is important because...#

Is OK; Listens, Accepts 1 2 3 **4** 5 6 7
- Listens Carefully
- Open to Complaints
- Accepts as OK; Valid Reaction

Teacher's Structure

During Introduction/Directions:

Absent, Confusing 1 2 3 **4** 5 6 7

Unclear, Complicated
- Rules, Procedures are Confusing, Absent
- Little or No Organization

During Lesson/While Students Learn:

Poor Leadership 1 2 3 **4** 5 6 7
- Fails to Show Leadership
- No Plan, No Goals

Low, Easy Workload 1 2 3 **4** 5 6 7
- Little Challenge, Slow Pace
- Asks for only Small Capacity

Scaffolding is Fully Absent 1 2 3 **4** 5 6 7
- Lack of Hints, Clues, Tips
- Questions Missed, Answered Poorly

During Feedback, Post-Performance Commentary:

None, Ambiguous, Off-Task, Rambling 1 2 3 **4** 5 6 7

Clear, Predictable, Understandable, Detailed
- Clearly Stated Procedures
- Frames Upcoming Lesson Well
- Clear Organization

Strong Leadership
- Organized, Leader, Conductor
- Clear Plan, Clear Goals

High, Hard Workload
- Much Challenge, Fast Pace
- Asks for Full Capacity

Scaffolding is Richly Present
- Hints, Clues, Tips, Reminders,
- Answers Questions Well, Fully

Skill-Building, Informative, Instructive

Teacher's Involvement

Seems Cold, Closed 1 2 3 **4** 5 6 7
- Business-like
- Doesnt Enjoy Time with Ss

Withholds Personal Resources
- Time, Attention, Energy 1 2 3 **4** 5 6 7

Physical Proximity: Distant 1 2 3 **4** 5 6 7
- Keeps Distance
- Stays Up Front During Class

Knows Students: No, Not at all 1 2 3 **4** 5 6 7
- No Mention of Names, Academic/Personal Histories

Seems Warm, Open
- Expresses Affection, Caring
- Does Enjoys Time with Ss

Invests Personal Resources
- Time, attention, energy

Physically Proximity: Close
- Walks over to Students
- Stands Near/Sits Close

Knows Students: Yes, Detailed Knowledge
- Knows Names, Academic/Personal Histories

Student's Collective Engagement

Dispersed Attention 1 2 3 **4** 5 6 7

Passive, Slow, Minimal Effort 1 2 3 **4** 5 6 7

Verbally Silent 1 2 3 **4** 5 6 7
- Student Doing Talk, Ask Questions, Discuss

During Challenge, Failure, or Confusion:

Gives Up Easily 1 2 3 **4** 5 6 7
- Decreases Effort Over Time

Flat Emotive Tone 1 2 3 **4** 5 6 7
- Bored, Disinterested, Flat

Focused Attention

Active, Quick, Intense Effort

Verbally Participating
- Students Do Talk, Ask Questions, Discuss

Persists
- Increases Effort Over Time

Positive Emotional Tone
- Enjoyment, Interested, Fun

Note for Each Rating: Use the bold, underlined **4** as your anchor/starting point.

Appendix I

The Learning Climate Questionnaire (6-item version)

The Learning Climate Questionnaire

Edward Deci

The questionnaire is typically used with respect to specific learning settings, such as a particular class, at the college or graduate school level. If, however, it is being used to assess a general learning climate in which each student has several instructors, the questions are stated with respect to the autonomy support of the faculty members in general.

Scores are calculated by averaging the individual item scores. Higher average scores represent a higher level of perceived autonomy support.

This questionnaire contains items that are related to your experience with your instructor in this class. Instructors have different styles in dealing with students, and we would like to know more about how you have felt about your encounters with your instructor. Your responses are confidential. Please be honest and candid.

1. I feel that my instructor provides me choices and options.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

2. I feel understood by my instructor.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

3. My instructor conveyed confidence in my ability to do well in the course.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

4. My instructor encouraged me to ask questions.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

5. My instructor listens to how I would like to do things.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

6. My instructor tries to understand how I see things before suggesting a new way to do things.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

Appendix J

Original and Reworded Autonomy Items

Original and Reworded Autonomy Items

Original Autonomy Items	Reworded Autonomy Items
1. I feel that my instructor provides me choices and options.	1. I feel my instructor provides me choices and options.
2. I feel understood by my instructor.	2. I feel understood by my instructor.
3. My instructor conveyed confidence in my ability to do well in the course.	3. My instructor shows confidence in my ability to do well in the course.
4. My instructor encouraged me to ask questions.	4. My instructor encourages me to ask questions.
5. My instructor listens to how I would like to do things.	5. My instructor listens to how I would like to do things.
6. My instructor tries to understand how I see things before suggesting a new way to do things.	6. My instructor tries to understand how I see things before responding.

Appendix K

Original and Reworded Engagement Items

Original and Reworded Engagement Items

	Original NSSE Items	Reworded Engagement Items
1.	Asked questions in class or contributed to class discussions.	1. I ask questions in this class.
2.	Asked questions in class or contributed to class discussions.	2. I make comments during class discussions.
3.	Worked with other students on projects during class.	3. I work with other students on projects during class.
4.	Tutored or taught other students (paid or voluntary).	4. I help other students understand what we are learning in this course.
5.	Discussed grades or assignments with an instructor.	5. I discuss grades or assignments with my instructor.
6.	Discussed ideas from your readings to classes with faculty members outside of class.	6. I discuss ideas from readings or class with my classmates.
7.	Worked harder than you thought you could to meet an instructor's standards or expectations.	7. I worked harder than I thought I could to meet my instructor's standards or expectations.

Appendix L

Original and Reworded PIS Items

Original and Reworded PIS Items

Original Items	Reworded Items
A. Jim is an average student who has been working at grade level. During the past two weeks he has appeared listless and has not been participating during reading group. The work he does is accurate but he has not been completing assignments. A phone conversation with his mother revealed no useful information. The most appropriate thing for Jim's teacher to do is:	A. Jim is an average English 250 student who has been getting Bs on most assignments. During the past two weeks he has appeared listless and has not been participating during reading group. The work he does is accurate but he has not been completing assignments. The most appropriate thing for you to do is:
1. She should impress upon him the importance of finishing his assignments since he needs to learn this material for his own good. 2. Let him know that he doesn't have to finish all of his work now and see if she can help him work out the cause of the listlessness. 3. Make him stay after school until that day's assignments are done. 4. Let him see how he compares with the other children in terms of his assignments and encourage him to catch up with the others.	1. Impress upon him the importance of finishing his assignments since he needs to learn this material for his own good. 2. Let him know that he doesn't have to finish all of his work now and see if she can help him work out the cause of the listlessness. 3. Encourage him to stay in the writing lab until that day's assignments are done. 4. Let him see his scores compare with the class average in terms of his assignments and encourage him to catch up with the others.
B. At a parent conference last night, Mr. and Mrs. Greene were told that their daughter Sarah has made more progress than expected since the time of the last conference. All agree that they hope she continues to improve so that she does not have to repeat the grade (which the Greene's have been kind of expecting since the last report card). As a result of the conference, the Greenes decide to:	Sarah's guidance counselor told her that Sarah made more progress than expected since the last appointment. Sara agreed with the counselor that they both hope she continues to improve. After the midterm Sara is expecting to hear that she continued to improve, and that she does not have to repeat English 250. As a result of the appointment, the counselor should:

Original Items	Reworded Items
5. Increase her allowance and promise her a ten-speed if she continues to improve. 6. Tell her that she's now doing as well as many of the other children in her class. 7. Tell her about the report, letting her know that they're aware of her increased independence in school and at home. 8. Continue to emphasize that she has to work hard to get better grades.	5. Offer her a scholarship if she continues to improve. 6. Tell her that she's now doing as well as many of the other children in her class. 7. Let Sarah know that the counselor is aware of her increased progress. 8. Continue to emphasize that Sarah has to work hard to get better grades.
C. Donny loses his temper a lot and has a way of agitating other children. He doesn't respond well to what you tell him to do and you're concerned that he won't learn the social skills he needs. The best thing for you to do with him is:	C. Donny loses his temper several times in class and has a way of agitating other students. He doesn't respond well to your directions and you're concerned that he won't learn the social skills he needs to succeed in college courses. The best thing for you to do is:
9. Emphasize how important it is for him to "control himself" in order to succeed in school and in other situations. 10. Put him in a special class, which has the structure and reward contingencies, which he needs. 11. Help him see how other children behave in these various situations and praise him for doing the same. 12. Realize that Donny is probably not getting the attention he needs and start being more responsive to him.	9. Emphasize how important it is for him to "control himself" in order to succeed in school and in other situations. 10. Move him to a classroom with more structure and reward contingencies. 11. Talk about how other students behave various situations and praise him for doing the same. 12. Realize that Donny may not be getting the attention he needs and start being more responsive to him.
D. Your son is one of the better players on his junior soccer team, which has been winning most of its games. However, you are concerned because he just told you he failed his unit spelling test and will have to retake it the day after tomorrow. You decide that the best thing to do is:	D. Your student, Tom, is one of the better players on the college soccer team, which has been winning most of its games. However, you are concerned because Tom just failed his writing test and is missing tomorrow's lab because of a game. You decide to:

Original Items	Reworded Items
13. Ask him to talk about how he plans to handle the situation.	13. Ask Tom about how he plans to handle the situation.
14. Tell him he probably ought to decide to forego tomorrow's game so he can catch up in spelling.	14. Tell him he probably ought to forego tomorrow's game so he can review the test with his lab group.
15. See if others are in the same predicament and suggest he do as much preparation as the others.	15. See if others students are in the same predicament and suggest Tom do as much preparation as the others.
16. Make him miss tomorrow's game to study; soccer has been interfering too much with his school work.	16. Insist he miss tomorrow's game to study because soccer has been interfering too much with his school work.
E. The Rangers spelling group has been having trouble all year. How could Miss Wilson best help the Rangers?	E. Your writing lab group has had trouble with spelling all semester. How could you best support that group?
17. Have regular spelling bees so that Rangers will be motivated to do as well as the other groups.	17. Have regular spelling bees so that students will be motivated to do as well as the other groups.
18. Make them drill more and give them special privileges for improvements.	18. Make students drill more and give them extra credit for improvements.
19. Have each child keep a spelling chart and emphasize how important it is to have a good chart.	19. Have each child keep a spelling journal and emphasize how important it is to track personal success.
20. Help the group devise ways of learning the words together (skits, games, and so on).	20. Help the group devise alternate ways of learning to spell the words together (skits, games, and so on).
F. In your class is a girl named Margy who has been the butt of jokes for years. She is quiet and usually alone. In spite of the efforts of previous teachers, Margy has not been accepted by the other children. Your wisdom would guide you to:	F. In the cafeteria. You overhear students in your English 250 class gossiping about one of their classmates, Joanne. Joanne is quiet and usually sits off to the side of the classroom. You decide to:

Original Items	Reworded Items
21. Prod her into interactions and provide her with much praise for any social initiative.	21. Prod Joanne into interactions and provide her with praise for social initiative.
22. Talk to her and emphasize that she should make friends so she'll be happier.	22. Talk to Joanne and emphasize that making friends will make her happier.
23. Invite her to talk about her relationships with the other kids, and encourage her to take small steps when she's ready.	23. Invite Joanne to talk about her relationships with the other kids, and encourage her to take small steps when she's ready.
24. Encourage her to observe how other children relate and to join in with them.	24. Encourage Joanne to observe how other students relate and to join in with them.
G. For the past few weeks things have been disappearing from the teacher's desk and lunch money has been taken from some of the children's desks. Today, Marvin was seen by the teacher taking a silver dollar paperweight from her desk. The teacher phoned Marvin's mother and spoke to her about this incident. Although the teacher suspects that Marvin has been responsible for the other thefts, she mentioned only the one and assured the mother that she'll keep a close eye on Marvin. The best thing for the mother to do is:	G. For the past few weeks writing supplies have been disappearing from the writing lab. One student was seen taking several mechanical pencils from the supplies box and putting them into his backpack. You decide to:
25. Talk to him about the consequences of stealing and what it would mean in relation to the other kids.	25. Talk to him about the consequences of stealing from the college and what it means in relation to other students.
26. Talk to him about it, expressing her confidence in him and attempting to understand why he did it.	26. Talk to him and express your confidence in his ability to stop, and attempt to understand why he has been taking the supplies.
27. Give him a good scolding; stealing is something that cannot be tolerated and he has to learn that.	27. Reprimand him; stealing cannot be tolerated and will be dropped from the course if he continues.
28. Emphasize that it was wrong and have him apologize to the teacher and promise not to do it again.	28. Emphasize that stealing is wrong, and have him apologize to the writing lab students and agree not to continue stealing supplies.

Original Items	Reworded Items
H. Your child has been getting average grades, and you'd like to see her improve. A useful approach might be to:	E. Your English 250 class' average score is 75% across assignments so far, and you'd like to see this improve. A useful approach might be to:
29. Encourage her to talk about her report card and what it means for her.	29. Encourage students to talk about what good grades mean to them.
30. Go over the report card with her; point out where she stands in the class.	30. Go over the grade sheet with individual students and point out where each stands in relation to the class average.
31. Stress that she should do better; she'll never get into college with grades like these.	31. Stress that students should do better because they will never get into transferable courses with grades like these.
32. Offer her a dollar for every A and 50 cents for every B on future report cards.	32. Offer students 4 points of extra credit for an A and 2 points of extra credit for a B on the upcoming midterm.

Appendix M

ASI Training Session Design

ASI Training Session Design

The researcher intended to design a highly effective ASI training session. Thus, the results of a meta-analysis (Su & Reeve, 2010) were reviewed to identify characteristics of effective training interventions that trained teachers in ASI strategies in order to increase their students' engagement. The researcher focused on characteristics that could be replicated and would meet the requirements of this dissertation study. Three studies were selected. Table 18 provides these studies, reported intervention effect sizes, and the variables measured. Discussion of the Meta-analysis results for these three studies indicated that effective training sessions lasted (a) from one to three hours, (b) included print and electronic information on ASI theory and benefits, (c) provided opportunity to practice using ASI, and (d) was followed by a post-training activity. In this study, the training session lasted about three hours and included ASI theory, knowledge, and skills practice; materials were in print and electronic formats; and the follow-up activity was two individual, 30-minute coaching sessions.

Three studies informed the ASI intervention but did not provide details on whether the training facilitator used ASI during training, so was is not known whether or to what extent treatment participants' autonomy was supported during training. Teaching with ASI teacher behaviors and ASI classroom structures supports autonomy and predicts increased engagement (Reeve, 2005; Reeve & Jang, 2006; Reeve & Halusic, 2009), so the researcher chose to use ASI strategies during the training and coaching sessions to potentially increase treatment group engagement and promote use of ASI strategies. The study by Chatzisarantis and Hagger (2009) measured student engagement and the effect size (Cohen's d) was 1.56. The Tessier, Sarrazin, and Ntoumanis (2008) study measured

student engagement and Cohen's d was 0.89. The third study, by McLachlan & Hagger (2010) measured two ASI teacher behaviors: time allowed for students to talk in class (d = 5.35) and teacher's reduced use of directives and commands (d = 3.28).

To select content for the first and second parts of the training session, the researcher outlined ASI theory and ASI strategies to be trained, based on content found in the SDT and ASI literature. Second, a Keynote presentation was designed to supplement instruction, and question prompts were added to stimulate discussion. Note-taking handouts were printed from the Keynote presentation slides and provided to the participants at the beginning of the training.

To design the third part of the training session (discussion and guided ASI skills practice) the researcher incorporated aspects of learning activities observed during the first classroom visits. These aspects were combined and used to write one short, one-paragraph vignette. The vignette was used during ASI skills practice to link theory to practice. For example, during one classroom visit the researcher observed an instructor telling students his or her expectations for a writing assignment using controlling statements ("you should" and "you need to"), and during another classroom visit saw another instructor giving contingencies and seeking student compliance ("If you follow my outline exactly the way I wrote it on your handout, your rough draft will require less work and your final draft will get a better score"), so these observations were rephrased into a short vignette. During the third part of the training session, the instructors discussed the vignette then practiced restating assignment expectations using autonomy-supportive phrases to link what was discussed about ASI teacher behavior and classroom structure to strategies they said were realistic to use in their own teaching.

Appendix N

ASI Training Session Pilot Procedures

ASI Training Session Pilot Procedures

The training session was piloted in July 2012 with a group of instructors who teach basic skills students at several community colleges, and was held at one of these colleges. The researcher sent an email invitation to 12 colleagues and promised individual coaching sessions to five participants during the fall semester to be selected at the end of the training session by drawing their name tag from a basket. Offering coaching sessions to all participants was not feasible due to the researcher's time constraints. Seven colleagues attended and two of the five participants whose names were drawn for an observation and coaching session did schedule and have an observation and coaching session in the fall semester.

To secure a training location, the researcher contacted the department chair at a college where the researcher is teaching a summer course and asked permission to use one classroom for the pilot training. After permission was granted, the researcher provided location and directions via email to the colleagues who agreed to attend. Then the researcher prepared an ASI training session facilitator outline, the Keynote presentation, and participant handouts for all three parts of the training session.

To facilitate Part 1 of the pilot training session, the instructor asked each participant to introduce him or herself followed by a short classroom-based problem statement in which students needed motivation to complete a task or learning activity. The researcher noted the problem statements to be considered for use during the ASI skills practice session. The researcher introduced Self Determination Theory and Autonomy Supportive Instruction using the Keynote presentation. This part ended with a short Q&A session.

Part 2 of the pilot training session began by the researcher asking participants to review the SDT Continuum Model. Participants were told that ASI was an instructional strategy in which instructors intentionally said and did specific things to support students' use of intrinsic motivation and self-determination. Keynote presentation slides were used and the ASI chart of six strategies was reviewed, followed by definitions of and a discussion about the ASI teacher behavior, *Nurtures inner motivational resources* and the ASI classroom structure, *Provides informational feedback*. After a Q&A session, this part ended with a 10-minute break.

To facilitate the skills practice (Part 3) in the pilot training session, the researcher selected two typical classroom situations presented by the participants during their introductions. These two situations were used as vignettes for each of two small group ASI strategy skills practices. Participants formed two groups based on where they were sitting, and discussed the vignettes for understanding. Then participants identified their vignette's key roles and selected specific ASI skills to apply to the situation. Participants decided who would play each role and worked out the role-play, first in its original vignette form and second to include ASI target statements. Each group performed their role-play while the other group used an ASI target statements sheet to identity the target statements being used. After both groups performed, each group provided feedback to support the use of ASI target statements. Last, all participants discussed the benefits and potential outcomes to students and instructors for using ASI and ASI target statements. Participants did not have further questions, so the researcher ended this part of the training.

After Part 3 was finished, participants were asked for written responses to the four

questions listed in Table 19 in the left column. Responses were coded for themes (listed in the right column) and were used to make changes to the ASI training session more effectively present training content and learning activities. Feedback themes indicated that the information was presented in a clear and organized manner and there were few questions about the content and skills being trained. Comments for improvement suggested that the ASI strategies section was too long, that handouts should be formatted for note taking, and that the skills training section should include time for open discussion after skills practice. Thus, the timing for the skills practice in Part 3 was increased minutes and the information on ASI strategies in Part 2 as shortened.

Table 29 provides feedback questions and the themes of the instructors' responses.

Table 29

Pilot ASI Training Session Feedback Questions and Response Themes

Feedback Question	Feedback Response Themes
1. What is autonomy supportive instruction?	- A teaching strategy that increases motivation - Two strategies where students' motivation is tapped into - What instructors can say to help students find their intrinsic motivation
2. How clearly presented was this information?	- Very clearly - Very easy to understand - I understand how to use this information in my teaching
3. How effective was the organization of the information presented?	- Very well organized - All parts of the training was well organized
4. What could be done to increase the clarity and organization of the content presented?	- I would like note taking handouts - I wanted note paper sooner to write about ASI - Needed less time to discuss ASI strategies in Part 2 - We needed longer for discussion after the role plays - Nothing

Instructors provided answers to four feedback questions so the researcher could determine how autonomy supportive the participants felt the instruction was, how clearly and effectively the information was presented, and to provide suggestions to improve the training delivery and content. At the end of the training session, participant nametags were placed in a small basket and five names were selected by a participant to receive individual coaching sessions. The researcher scheduled the coaching sessions via email with two participants who responded and these observations and coaching sessions were held later that term.