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A Self-Regulated Learning Inventory Based on a Six-Dimensional Model of SRL

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ABSTRACT

A Self-Regulated Learning Inventory Based on a
Six-Dimensional Model of SRL

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This report discusses a study undertaken to develop, pilot, and tentatively validate a self-regulated learning (SRL) inventory for L2 contexts. This inventory was specifically designed to measure learners' ability to self-regulate their learning. Although there have been a few SRL inventories developed to measure this ability, they do not conform to the six-dimensional SRL model proposed by educational psychologists and backed by extensive research. This warranted the development of a new SRL inventory. The primary focus of this study was that of taking initial steps to develop such an inventory. These steps involved writing and refining items conforming to a six-dimensional SRL model. After selecting 30 items from the initial item pool, the SRL inventory was piloted. Both qualitative and quantitative measures were then employed to provide an initial indication of the inventory's trustworthiness, reliability, and validity.

Keywords: Self-regulated learning, inventory, L2 context

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TABLE OF CONTENTS

List of Tables vi

Preface vii

Introduction 1

Review of Literature 4

Learning strategies and the SILL 4

Self-regulated Learning and the SRCvoc 6

Research objectives 10

Methodology 10

Phase 1: item development 11

Phase 2: inventory piloting 13

Participants 13

Materials. 14

Administration procedures 14

Scoring procedures 15

Score evaluation 16

Phase 3: follow-up interviews 17

Student selection 17

Semi-structured interviews. 18

Phase 4: performance tracking 19

Tracking survey development. 19

Final tracking survey description 20

Tracking survey administration procedures 21

Phase 5: data analysis 21
Student interview analysis 22
Teacher observation analysis 24
Quantitative analysis 24
Results 25
Student interview results 25
Above average self-regulators 26
Low-average self-regulators 29
Teacher observation results 30
Above average self-regulators 31
Low-average self-regulators 33
Quantitative results 34
Reliability 34
Exploratory factor analysis 35
Discussion and Conclusion 37
Discussion 37
Limitations 38
Future research 39
Conclusion 40
References 41
Appendix A 45
Appendix B 52
Appendix C 55

LIST OF TABLES

Table 1 SRL Inventory Descriptive Statistics 26

Table 2 SRL Inventory Dimensional Reliability 35

Table 3 SRL Inventory Communalities 36

PREFACE

In accordance with TESOL MA program guidelines, this thesis was prepared as a manuscript to be submitted to the journal of *Applied Linguistics*. This journal was selected because of its focus. The journal of *Applied Linguistics* publishes articles representing a variety of fields related to language research, including the field of language research on which this thesis focuses.

Manuscripts that are submitted to the target journal should (1) be prepared according to specific guidelines set forth on the journal's website and (2) contain approximately 8,500 words. This manuscript was prepared in accordance with both of these requirements.

Alternative target journals include *Language Learning* and *System*. Similar to *Applied Linguistics*, these journals both publish articles representing a variety of fields related to language research. Length requirements vary between these two target journals (articles submitted to *Language Learning* must contain fewer than 10,000 words, whereas articles submitted to *System* must have fewer than 7,000 words).

Introduction

When it comes to effective L2 acquisition, learners who proactively participate in the learning process are more successful than their counterparts (Zimmerman & Martinez-Pons, 1986; Zimmerman & Martinez-Pons, 1988). Often, these proactive learners have become quite adept at engaging in self-regulated learning (SRL). Dembo, Junge, and Lynch (2006), researchers in the field of SRL, have stated that SRL is "the ability of learners to control the factors and conditions affecting their learning." (p. 188). Typically, these factors and conditions are controlled through a combination of metacognitive, motivational, cognitive, and behavioral processes. (Andrade & Evans, 2013; Dembo & Seli, 2013; Dörnyei, 2005). It is through efficient use of these processes that learners acquire more from their learning experience.

The ability to correctly use these self-regulatory processes must be developed by the learners. Nevertheless, learners may not develop these processes if they are unaware of their existence and proper use. While some learners possess a natural awareness of these processes, many learners lack a comprehensive awareness of the metacognitive, cognitive, motivational, and behavioral processes required to facilitate effective learning. Fortunately, research indicates that self-regulatory processes are teachable (Paris & Paris, 2001; Schunk, 1995; Shapely, 1995; Zimmerman, 1995). With this in mind, learners lacking awareness of self-regulatory processes must be informed of both their existence and proper implementation.

Responsibility for instructing students concerning self-regulatory processes most often falls on teachers. As teachers instruct their students regarding self-regulatory processes, the students are able to use the assimilated information to enhance their ability to self-regulate their learning—otherwise known as their self-regulatory capacity. Moreover, enhanced self-regulatory capacity positively correlates with increased academic success (Andrade & Evans, 2015; Dembo

et al., 2006; Schunk, 1995; Shapely, 1995; Zimmerman, 1995). As it pertains to English instruction, academic success manifests itself most prominently in the form of increased L2 proficiency within the four major language skills: speaking, reading, writing, and listening. Therefore, English teachers desiring to improve their students' overall L2 proficiency must instruct their students concerning proper implementation of self-regulatory processes as they pertain to the four major language skills. Doing so not only improves students' L2 proficiency, but it also leads to increased academic success.

Instructing students concerning proper implementation of self-regulatory processes is no easy task. One reason is that no learner is a blank slate. Learners may already understand how to effectively implement various aspects of self-regulatory processes. If so, time spent in class teaching students how to implement those particular aspects may waste time that could have been appropriated for other purposes; that said, teachers must determine which areas of SRL present the most problems for their students. Teasing out these problematic areas, however, is a difficult undertaking. One proposed method involves administering SRL inventories specifically structured to assess learners' self-regulatory capacity. While employing SRL inventories in classroom settings is an uncommon practice, doing so would likely prove invaluable. If reliable, these self-regulated learning inventories provide a distinct picture of learners' needs when it comes to self-regulated learning instruction.

To date, there have been at least two attempts to develop an SRL inventory for language learners. These SRL inventories include the SRCvoc (Tseng et al., 2006) and the SRLLQ (Salehi & Jafari, 2015). Although these inventories possess multiple strengths, they do not conform to a six dimensional model of SRL proposed by educational psychologists and backed by extensive research (Andrade & Evans, 2013; Andrade & Evans, 2015; Zimmerman & Risemberg, 1997).

These dimensions include motive, methods of learning, time, physical environment, social environment, and performance. The following represents a concise description of each (for more detailed definitions, see Appendix A):

1. *Motive* relates to learners' reasons for learning.
2. *Methods of learning* relates to the strategies learners use to accomplish learning tasks.
3. *Time* relates to what learners do to effectively use their time when learning.
4. *Physical environment* relates to characteristics of the places where learning occurs.
5. *Social environment* relates to the people learners use to facilitate learning.
6. *Performance* relates to how learners monitor the effectiveness of their learning.

The dimensions defined above are directly linked to SRL capacity. Furthermore, given that improving SRL capacity leads to academic success (Andrade & Evans, 2015; Dembo et al., 2006; Schunk, 1995; Shapely, 1995; Zimmerman, 1995), students desiring to perform well academically must exhibit masterful control of all six SRL dimensions. This indicates the value of employing an inventory that measures all six dimensions pertaining to students' SRL ability. An inventory that measures all six of these dimensions would likely provide a comprehensive picture of students' SRL instructional needs.

The purpose of the current study is to develop such an inventory. This development will involve both writing and refining items conforming to a six dimensional model of SRL. Once refined items are selected for the inventory, it will be piloted. After piloting the inventory, the study will then attempt to answer the following research question: Does the SRL inventory accurately measure SRL capacity? The answer to this question should provide a tentative indication of the inventory's effectiveness.

In the sections that follow, the discussion will turn to the methodology and the results surrounding the development and implementation of this new SRL inventory for L2 contexts. Prior to discussing the methodology and results, a brief review of literature concerning topics related to the current study will be provided.

Review of Literature

Given that self-regulated learning is closely connected to learning strategy theory, any discussion centering on SRL inventories in L2 contexts should typically begin with some reference to learning strategies and the primary tool involved with measuring those strategies in L2 contexts. Only after engaging in this discussion, is it possible to see why language researchers have shifted their focus from measuring learners' general strategy use to measuring the underlying processes governing strategy selection and implementation encompassed in self-regulated learning.

Learning strategies and the SILL

According to Ortega (2013), learning strategies "are conscious mental and behavioural procedures that people engage in with the aim to gain control of their learning process" (p.208). From the 1970s to the early 1990s, L2 researchers expended much effort studying these mental and behavioral procedures (Cohen & Aphek, 1980; Hosenfield, 1984; O'Malley et al., 1985; O'Malley & Chamot, 1990; Oxford, 1990; Oxford & Nyikos, 1989; Rubin, 1975). Not only did many of these studies attempt to pinpoint and categorize different varieties of learning strategies, some of them attempted to devise methods for measuring ELLs'[1] strategy use. One of the most notable of these studies was implemented by Oxford (1990). As part of her study, she developed the Strategy Inventory for Language Learning (SILL).

[1] Although this term typically refers to K-12 English learners, here it applies to all English language learners.

The SILL is a questionnaire designed to measure ELLs' SRL strategy use among six broad strategy groups: memory strategies, cognitive strategies, social strategies, compensation strategies, affective strategies, and metacognitive strategies. To measure the degree to which ELLs employ SRL strategies relative to these broad strategy groups, the SILL utilizes a five-point Likert scale. This scale prompts ELLs to determine the degree of truth concerning each inventory item as it pertains to their personal SRL strategy use in a given strategy group. For example, when presented with the inventory item 'I use flashcards to remember new English words'—a strategy tied to the memory strategy group, ELLs must choose the Likert scale option best representing the truth concerning that particular inventory item. If the ELLs think they always use flashcards to remember new English words, then they should select the rating scale option best reflecting that thought. In this case, they would select option five on the scale—always or almost always true of me. Once the ELLs have finished responding to the SILL items, teachers then total their scores for each strategy group. On averaging these scores, teachers may then determine the degree to which their ELLs employ learning strategies within specific strategy groups. While average scores approaching five generally indicate frequent strategy use**,** average scores close to one indicate infrequent strategy use**.**

At the time it was developed, one of the purported benefits involved with employing the SILL to determine the relative frequency of ELLs SRL strategy use specifically related to pedagogical practices. Supposedly, teachers implementing the SILL would be able to use the results to apprise themselves concerning their ELLs most deficient strategy groups. Teachers could then help their ELLs acquire SRL strategies relating to those groups. Doing so could potentially contribute to ELLs' improved success respecting L2 acquisition.

Despite this purported benefit, the SILL faces at least one major limitation. This limitation centers on the SILL's primary measurement objective. As previously stated, the SILL is specifically designed to measure SRL strategy use. As Tseng et al. (2006) clearly indicate, this means a high score on the SILL largely depends on the amount of strategies employed by an ELL. Thus, when it comes to the SILL, it is quantity that matters, not quality. However, this directly contradicts current learning strategy theory, which stipulates that quality rather than quantity matters most (Ehrman, Leaver, & Oxford, 2003; Riding & Rayner, 1998; Tseng et al., 2006; Yamamori, Isoda, Hiromi, & Oxford, 2003). In other words, ELLs may employ as little or as many SRL strategies as desired to achieve their learning goals. The only thing that ultimately matters is that they use them effectively in a manner that is personally appropriate. Multiple researchers support this notion, including Oxford and her associates in their reassessment of the SILL.

Since researchers currently argue that it is quality, not quantity, that matters when it comes to strategy use, the SILL is no longer considered a viable tool for informing instructional practices related to improving ELLs' academic success. Although it provides an accurate picture of how many strategies learners employ, it does not provide any information as to whether they are using those strategies in a personally appropriate manner. To ameliorate this deficiency, Dörnyei (2005) has argued for the need to reframe strategy use within the broader context of self-regulated learning theory. When considering strategy use as one aspect of self-regulation theory, it becomes possible to measure strategy use in a way that viably informs pedagogical practices relating to improving learner success. Of course, strategy use is only one piece of the puzzle.

Self-regulated Learning and the SRCvoc

As Dembo et al. (2006) have noted, self-regulated learning (SRL) is "the ability of learners to control the factors and conditions affecting their learning." (p. 188). These factors and conditions are controlled through a combination of metacognitive, motivational, cognitive, and behavioral processes of which strategy use makes up a small part (Andrade & Evans, 2013; Dembo & Seli, 2013; Dörnyei, 2005). Studies have indicated that when learners efficiently employ these processes, they are more effective learners (Zimmerman & Martinez-Pons, 1986; Zimmerman & Martinez-Pons, 1988). Studies have also shown that these processes are teachable. Furthermore, not only are they teachable, they lead to improved academic success (Andrade & Evans, 2015; Dembo et al., 2006; Schunk, 1995; Shapely, 1995; Zimmerman, 1995). With this in mind, teaching learners how to implement SRL processes to improve academic performance is a welcome shift from teaching learners learning strategies, which do not necessarily lead to improved academic performance.

To instruct learners how to implement SRL processes, teachers must first determine which processes are most problematic for their learners. One proposed method is an SRL inventory. At least two of these inventories exist for L2 contexts. The most recently developed of these is the SRLLQ (Salehi & Jafari, 2015). The SRLLQ items were developed to address what the inventory's developers determined to be thirteen important subcomponents of SRL. These subcomponents include intrinsic motivation; self-efficacy; locus of control orientation; attitude; organization; memory strategies; self-monitoring; self-evaluation; planning and goal setting; concentration and sustained attention; effort regulation; regulation of environment; and help seeking. While these are certainly important subcomponents of self-regulated learning, a close analysis reveals that many of them, if not all, may be subsumed in the broader dimensions of

SRL employed for the purposes of this study (for a comparison of the two models, see Salehi & Jafari, 2015 and Andrade & Evans, 2015, p. 118).

In addition to the SRLLQ, Tseng et al. (2006) developed what is considered the most groundbreaking SRL inventory: the Self-Regulatory Capacity in Vocabulary Learning scale (SRCvoc). As part of their rationale for developing the SRCvoc, Tseng et al. state that the SRCvoc's purpose was to "target the learner trait of self-regulatory capacity rather than survey specific behavioural habits, as has been the norm in second language research" (p. 85). In this respect, the SRCvoc's primary measurement objective differs greatly from that of the SILL. Simply stated, while the SILL measures the frequency with which ELLs employ SRL strategies—a behavioral habit, the SRCvoc measures ELLs' innate self-regulatory capacity—an underlying trait governing effective selection and implementation of SRL strategies.

To measure self-regulatory capacity, the SRCvoc employs cumulative scales similar to those used in the SILL. The primary difference between the two, however, specifically relates to the SRCvoc's items. In direct opposition to the SILL, the SRCvoc's items require ELLs to make general declarations regarding actions across situations rather than making declarations concerning specific SRL strategy use. For example, the SRCvoc prompts students to make general declarations about whether they are able to reduce stress when studying vocabulary. The SILL, on the other hand, prompts students to make declarations regarding specific strategies they employ to reduce stress when learning English. This discrepancy represents the primary factor contributing to the SILL and SRCvoc's differing measurement objectives—strategy use and self-regulatory capacity, respectively. Moreover, this difference also establishes the SRCvoc as a relatively good tool for assessing ELLs' ability to self-regulate their learning since it focuses on measuring the underlying trait governing strategy use rather than strategy use itself.

Given the general nature of its items, the SRCvoc provides a relatively adequate assessment of students' self-regulatory capacity. The fact that the SRCvoc provides a relatively good assessment of students' self-regulatory capacity has further been established through various analyses performed by Tseng et al. Following its initial development, Tseng et al. repeatedly administered the SRCvoc among homogeneous groups of Taiwanese L2 learners. They then performed confirmatory and factor analyses to determine whether the results accurately measured the Taiwanese learners' self-regulatory capacity. These analyses strongly indicated that the SRCvoc did, in fact, reliably measure certain aspects of the Taiwanese learners' self-regulatory capacity, suggesting that the instrument may also be reliable in other contexts.

Although the SRCvoc proved reliable when measuring the Taiwanese learners' self-regulatory capacity, it conforms to a different SRL model than the one proposed for this study. Specifically, the SRCvoc conforms to an SRL model developed by Dörnyei (2001). This model includes five components: commitment control, metacognitive control, satiation control, emotion control, and environmental control. While this model possesses many merits, it differs enough from the six-dimensional SRL model proposed for this study to warrant the development of a new inventory (for a comparison of the two models, see Tseng et al., 2006, p. 85 and Andrade & Evans, 2015, p. 118).

The dimensions included in the six-dimensional SRL model are motive, methods of learning, time, physical environment, social environment, and performance. Extensive research supports these dimensions as those areas of SRL contributing the most to students' academic success (Andrade & Evans, 2013; Andrade & Evans, 2015; Zimmerman & Risemberg, 1997). This means learners desiring to perform well academically must exhibit masterful control of all

these dimensions. Thus, if teachers want to help their students perform well academically, they need to know which SRL dimensions are most problematic for their students. To identify these problems, it is certainly helpful to use a tool specifically developed to adequately address all six SRL dimensions. Currently, there are no extant SRL inventories specifically addressing these dimensions. These SRL inventories most notably include the previously discussed SRCvoc and the SRLLQ (Salehi & Jafari, 2015). To clarify, both the SRCvoc and the SRLLQ are based on models that differ from the six-dimensional SRL model.

Research objectives

Given that there are no extant SRL inventories conforming to the six-dimensional SRL model, the primary purpose of this study was that of taking initial steps to develop such an inventory. Thus, the development of this inventory involved writing and refining items adhering to the six-dimensional SRL model (Andrade & Evans, 2013; Andrade & Evans, 2015; Zimmerman & Risemberg, 1997). After selecting 30 items from the initial item pool, the SRL inventory was piloted. The study then focused on answering the following research question: Does the SRL inventory accurately measure self-regulatory capacity? Two qualitative measures were employed to tentatively answer this question. This answer was intended to furnish an indication of the inventory's trustworthiness. Furthermore, this indication functioned as an important precursor to support the study's quantitative measures of validity and reliability.

Methodology

The purpose of this study was to develop and pilot a new SRL inventory based on a six-dimensional SRL model (Andrade & Evans, 2013; Andrade & Evans, 2015; Zimmerman & Risemberg, 1997). Additionally, the study employed both qualitative and quantitative measures to determine the inventory's trustworthiness, reliability, and validity. With this in mind, the

scope of this study was that of completing the following phases: 1) item development, 2) inventory piloting, 3) follow-up interviews, 4) performance tracking, and 5) data analysis. In what follows, a detailed explanation of each phase will be provided.

Phase 1: item development

As part of this phase, the primary researcher first developed an expansive list of potential items connected to each SRL dimension. These items were designed to employ cumulative six-point Likert scales ranging from strongly disagree to strongly agree. This was done to facilitate respondents' ability to self-report the degree to which a given item described them as individuals. Furthermore, to inform the creation of these initial items, two techniques were used. First, previously published questionnaires overtly targeting at least one of Zimmerman's SRL dimensions were consulted (Britton & Tesser, 1991; Gardner, 2004; Lay, 1986; Strunk et al., 2013). Additionally, the primary researcher also relied on his own intuitions regarding each SRL dimension, especially when faced with a dearth of previously published questionnaires targeting a given dimension.

The language employed for each item was also a major consideration for initial item development. Each item was written in the form of a statement representing distinguishing qualities or characteristics directly attributable to a particular SRL dimension. Moreover, these qualities or characteristics often represented differing aspects of the same dimension. Take, for example, two items intended to measure SRL capacity pertaining to motivation:

1. I love learning English.
2. I want to learn everything I can about the English language.

At their core, these statements symbolize two different aspects of motivation. While the first expresses a general attitude about learning English, the second presents a specific desire related

to English acquisition. Although each statement embodies a different emphasis, both statements represent defining characteristics of individuals highly motivated to learn English. Thus, any respondents selecting the Likert scale option 'strongly agree' for both statements are more likely to be good self-regulators respecting motivation. This is due to the fact that these individuals have self-reported as highly motivated learners regarding two differing motivational aspects.

Following dimensional language considerations similar to those above, two groups were consulted to determine item effectiveness. While the first group consisted of professors in Brigham Young University's (BYU) English Language department and MA TESOL students, the second group consisted of the L2 students who were to be the inventory's beneficiaries. The group consisting of professors and MA TESOL students were given two tasks. First, they were asked to determine whether each potential inventory item truly represented its intended SRL dimension. They were then asked to decide whether the same items unintentionally represented other SRL dimensions. Both of these tasks were accomplished in a single survey (Appendix A). This survey required respondents to first read through basic SRL dimensional definitions and then answer the following questions respecting each potential inventory item:

1. Which of the six dimensions does the following item most strongly represent? Select only one.

2. What other dimensions might the item represent?

Based on respondents' answers to the questions above, the initial pool of 60 items was decreased to 30 items to be used in the pilot SRL inventory. Not only did these 30 items represent all six SRL dimensions—five items per dimension, they also represented those items respondents unanimously viewed as clearly belonging to a particular dimension with minimal or no overlap among other SRL dimensions.

Once the item pool had been narrowed, a small group of low intermediate L2 students according to ACTFL standards for proficiency were consulted to refine the 30 remaining items. To do so, a few of these students' teachers were given the inventory in advance and asked to choose one or two students in their class to respond to the inventory using six-point Likert scales. Additionally, the teachers were also instructed to request that the students read each item carefully to detect any language problems obscuring comprehension. After taking the inventory, students reported any difficulties they may have had understanding the items. If they mentioned any difficulties respecting comprehension, the teachers were then instructed to have students explain the source of their comprehension problems. Teachers made note of these comprehension problems and reported back to the primary researcher. This process was undertaken to determine if the language used for each item was clear enough to allow inventory respondents to easily make their Likert scale selections. Following this process, minor wording changes were made to a few problematic items.

Phase 2: inventory piloting

Following item development, the SRL inventory was administered two times at BYU's English Language Center (ELC). This was done at the beginning of two adjoining semesters in an effort to obtain the largest possible sample size within institutional time constraints limiting the study's duration**.**

Participants. Since the SRL inventory was written in English, lower level students were omitted from the study due to their inability to fully understand the inventory's items. Thus, the student participants for the study were 182 mid- to high-intermediate students according to ACTFL standards for proficiency. Additionally, these students were both male[2] (81) and female (96) falling into the following age groups: 18-25 (115), 26-30 (37), 31-40 (15), and 41-60 (10).

[2] Demographic information could not be obtained for five students.

Together, they composed a heterogeneous group representing many different native languages around the world. These languages included Spanish (105), Portuguese (20), Chinese (20), Korean (10), Japanese (5), Russian (4), Mongolian (4), French (3), Kazakh (2), Farsi (1), Kinyarwanda (1), Slavic languages (1), and Thai (1). Furthermore, given the ELC's rigorous screening and admission process, these students were typically considered to be low to above average students respecting academic performance. In other words, there were no truly poor academic performers in the sample.

Materials. To fulfill administration procedures, three types of materials were required. The first of these was the SRL inventory booklet (Appendix B). This booklet contained instructions for the students concerning how to respond to inventory items, the final list of 30 items selected for the inventory, and a master list of Likert scale options for students to reference when responding to each item. This master list of Likert scale options was presented as a table above the 30-item inventory list. The table consisted of two rows possessing six boxes each. While Likert scale options filled the first row of boxes—one option per box, the second row of boxes were labeled as letters A through F. These letters were used as a reference to facilitate student answers on the second set of materials required for the study: bubble sheets. It was determined that bubble sheets were required to facilitate scoring and data analysis. The students used these bubble sheets to mark their responses for each inventory item. A final document required to fulfill administration procedures was a script for inventory administrators. This script provided detailed instructions on how to administer the SRL inventory.

Administration procedures. For the first administration, multiple ELC teachers were requested to administer the SRL inventory on a preselected day during class. Prior to that day, they received the materials mentioned above: the administrator script, inventory booklets, and

bubble sheets for each student. For each inventory item, the students were asked to fill in the bubble sheet letter corresponding to a given point on a Likert scale (e.g. A represented strongly agree, B represented agree, etc.). Following administration, both the inventory booklets and bubble sheets were collected and returned to the primary researcher to be scored and analyzed.

The SRL inventory's second administration occurred a few days before the beginning of the next semester. In contrast to the first administration, however, the primary researcher was the sole administrator for the second. Aside from the primary researcher, no other ELC teachers were involved with administration procedures. Moreover, to fulfill this administration, the primary researcher distributed test booklets and bubble sheets to all eligible incoming students. This was done in one of the ELC's classrooms following incoming student interviews held as part of the ELC's orientation procedures. Again, after administration, the inventory booklets and bubble sheets were collected for scoring and analysis.

Scoring procedures. Following both inventory administrations, student responses to the SRL inventory were collected and scored. Holistically, the inventory was worth 180 points. This means each inventory item had a point value ranging from one to six depending on a given response; that is, students' selections of specific Likert scale options directly determined the points they received for each item. For example, while a response of 'strongly agree' typically translated to a point value of six, a response of 'strongly disagree' most often translated to a point value of 1. These scores depended on the polarity of each item. In other words, for reverse polarity items—items targeting poor SRL tendencies, a response of 'strongly agree' was worth one point while 'strongly disagree' was worth six points. These reverse polarity items were deemed necessary for maintaining students' attention while completing the inventory.

In addition to the holistic score, there were six dimensional sub-scores totaling 30 points each. Each sub-score represented five items targeting one SRL dimension. These sub-scores were used to determine respondents' most problematic dimensions respecting SRL capacity. While lower scores within a given dimension indicated a problematic dimension, higher scores suggested a dimensional strength.

Score evaluation. Holistically, student scores were interpreted according to two cut scores: 90 and 150. Students scoring 150 or above were deemed exceptional self-regulators. These students were those who averaged five points or more per inventory item, indicating that they either agreed or strongly agreed that they possessed qualities or characteristics indicative of excellent self-regulators. Conversely, students scoring 90 or below were labeled poor self-regulators. These students were those averaging three points or less per inventory item. This suggested that they generally disagreed or strongly disagreed that they exhibited SRL qualities or characteristics. Finally, students scoring between 90 and 150 were categorized as low- to high-average self-regulators. While these students generally averaged above three points per inventory item, this average fell short of five. This indicated that they viewed themselves as neither possessing an abundance nor extreme lack of SRL qualities and characteristics.

Just as a method was established for interpreting the SRL inventory's holistic score, a method was also devised for interpreting dimensional sub-scores. Each dimensional sub-score was worth 30 points. Much like the holistic score, the dimensional scores were interpreted using two cut scores: 15 and 25. Students scoring 25 or above were deemed exceptional self-regulators respecting a given dimension. These students were those who averaged five points or more per dimensional item, indicating that they either agreed or strongly agreed that they possessed SRL qualities or characteristics relating to the dimension in question. On the other hand, students

scoring below 15 were considered poor self-regulators with respect to a particular dimension. These students were those averaging three points or less per dimensional item. This suggested that they typically disagreed or strongly disagreed that they exhibited SRL qualities or characteristics for that dimension. Finally, students scoring between 15 and 25 were labeled as low- to high-average self-regulators respecting a given dimension. Although these students generally averaged above three points per dimensional item, this average never achieved five. Again, this indicated that they viewed themselves as neither possessing an abundance nor extreme lack of SRL qualities or characteristics for that dimension.

Phase 3: follow-up interviews

Immediately proceeding inventory scoring, the study entered its third phase. The primary purpose of this phase was that of conducting semi-structured interviews with key student respondents. These interviews were held as a confirmatory measure to help determine if the students' responses on the inventory conformed to their actual SRL behaviors. This was done to establish an initial indication of the SRL inventory's trustworthiness.

Student selection. Five key students were interviewed regarding their responses on the SRL inventory. Their holistic inventory scores determined their selection. The five key students fell into two disparate categories based on their scores: students possessing above average scores on the SRL inventory (180, 178, and 164) and those possessing low-average scores (113 and 122). These differing groups of students were chosen since they represented both the highest and lowest sets of scores from the original sample (n=182). Such a disparity was determined to be one of the most effective means of establishing the SRL inventory's trustworthiness. In other words, these students were those who had self-reported as either excellent or mediocre self-regulators, both qualities that could be easily verified or discredited during the interview process.

Moreover, given that these qualities could be easily verified, the five key students selected for the interview represented the subjects most likely to furnish good data. Selecting study subjects based on the likelihood that they will yield good data is an essential aspect of qualitative research (Marshall & Rossman, 1995).

Semi-structured interviews. Following student selection, the primary researcher engaged the five key students in recorded semi-structured interviews. The purpose of these interviews was to determine whether interview responses confirmed inventory results. To fulfill this purpose, students were asked to explain their responses to numerous inventory items. This explanation consisted of students providing reasons for why they had chosen specific points on the Likert scales attached to items throughout the inventory. The primary researcher later used these reasons to determine if students' interview responses aligned with inventory results.

Before eliciting the aforementioned reasons, key inventory items needed to be selected for the interviews. Selection of the items to be used in each interview was contingent on two conditions. First, the interviews needed to address all six of the inventory's SRL dimensions. For this reason, students were asked to explain their responses to at least two items per SRL dimension. Requiring students to explain their answers to at least two items per dimension provided a comprehensive picture of students SRL behaviors. Such a comprehensive picture was necessary for confirming or discrediting inventory results. The second condition for selecting interview items specifically related to dimensions of interest. In other words, under certain circumstances, students' responses within a given dimension were deemed unique enough to merit further inquiry. Thus, for these particular dimensions, students were asked to explain their answers to more than just the standard two items per dimension. Once students had provided

sufficient information for determining or discrediting the inventory's effectiveness, the primary researcher finished the interviews and saved the recordings for future analysis.

Phase 4: performance tracking

Just as follow-up interviews were used as a means of establishing an initial indication of inventory trustworthiness, it was reasoned that a second method for determining trustworthiness was warranted. Specifically, this method involved tracking the five key students' SRL behaviors throughout the course of a semester. These behaviors could potentially be used to confirm survey results. To achieve this purpose, the primary researcher enlisted the help of the students' teachers. Since the students were enrolled in four classes at the ELC, four teachers were requested to observe each student's SRL behaviors during the semester. To facilitate these observations, a student tracking survey was developed.

Tracking survey development. The student tracking survey (Appendix C) was developed to facilitate teachers' observations of the five key students' SRL behaviors throughout the course of a semester. Development of this survey involved two steps. The first step focused on item development. To complete this step, the primary researcher composed a large list of potential survey items. These items were designed as probing questions concerning students' SRL behaviors that prompted teachers to provide specific details regarding students' observed SRL behaviors over a given time period. Once these types of probing questions had been developed for each SRL dimension, the primary researcher was ready to begin the second step of survey development: determining item effectiveness.

To determine item effectiveness, a small group of ELC teachers were consulted. These teachers were given the list of potential survey items. They were then asked to determine if they could provide responses to the items based on observations they had made concerning randomly

selected students from their classes. Those items teachers found easiest to answer were kept for the final survey.

Final tracking survey description. Structurally, the final tracking survey contained six sections representing all six SRL dimensions. Each section contained a brief dimensional definition along with at least four questions focusing on a given students' SRL behaviors. Without exception, the first question in each section asked teachers to report whether they had seen evidence of a particular student's SRL behaviors based on the dimensional definition provided at the beginning of the section (e.g. Given the preceding definition of motive, have you observed any evidence suggestive of [Grace]'s motivation?). To respond to this question, the teachers were simply required to select either a 'yes' or 'no' option. If teachers selected 'yes', the second question in each section prompted them to describe the observed SRL behaviors (e.g. If you answered yes, please describe the evidence that has been suggestive of [Grace]'s motivation). All teachers were then prompted to report the frequency of observed dimensional SRL behaviors in response to a third question (e.g. How often have you observed this evidence of [Grace]'s motivation?). This was a multiple choice question requiring teachers to choose one of the following options: sometimes, often, very often, always, or I answered no to question one. Following this question, a fourth question prompted teachers to describe any observed behaviors indicating a student was a poor self-regulator respecting the dimensional definition presented at the beginning of the section (e.g. Have you noticed any evidence suggesting [Grace] is not a motivated learner? If so, explain). Teachers who observed no such behaviors were not required to respond.

In addition to the questions mentioned above, multiple survey sections included more questions focusing on highly specific SRL behaviors. Take, for example, the survey section

focusing on time. Not only did this section contain the four questions mentioned above, but it also contained questions prompting teachers to determine the frequency with which students exhibited highly specific time-centered SRL behaviors. Among others, these behaviors included punctuality pertaining to both class attendance as well as homework completion. Such behaviors were those considered easily observable during the survey's development.

Tracking survey administration procedures. The final tracking survey was administered every four weeks (three times) to the five key students' teachers during one semester. When responding to the survey, teachers were either allowed to submit the same answers or different answers based on new observations over the course of the four-week period. This was done to provide the comprehensive picture of students' SRL behaviors necessary for confirming or discrediting SRL inventory results.

To facilitate administration, the primary researcher distributed the survey electronically via Qualtrics, a website providing survey software and tools. Every four weeks, teachers were given one of five links to the tracking survey and asked to complete it in three days. Each link was attached to a particular student's survey. Thus, the link teachers received depended on the student they were following for the semester. Moreover, once teachers had responded to the survey, their responses were automatically saved as PDF documents in separate files depending on the link they received. Each of these files was pre-labeled with one of the five key students' names. This was done to ensure that there was no confusion regarding the data collected for each student. Saving the data in this manner made it extremely clear which set of survey responses belonged to a given student.

Phase 5: data analysis

Once the student tracking survey had been administered three times, the study entered its fifth phase: data analysis. The data analysis for the study was both qualitative and quantitative. With respect to the qualitative analysis, there were two separate components, both intended to assess the SRL inventory's trustworthiness. Lincoln and Guba (1985) define trustworthiness as the "criteria that [has] been offered for judging the quality or goodness of qualitative inquiry" (p. 164). These criteria stipulate that data must be credible (internally valid), transferable (generalizable), dependable (reliable), and confirmable (objective).

The first qualitative component employed to establish inventory trustworthiness involved determining whether student interview responses confirmed or contradicted inventory results. The second component was similar to the first. Its primary focus, however, was that of determining whether teacher observations of the five key students' SRL behaviors confirmed or contradicted inventory results. Indeed, confirmation of survey results from both student interview responses and teacher observations of students' SRL behaviors would serve as evidence for the SRL inventory's trustworthiness.

In contrast to the qualitative analysis, the quantitative analysis involved assessing inventory reliability and validity based on the inventory responses of all 182 students from the original sample. While Cronbach's Alpha coefficients were computed to determine reliability, exploratory factor analysis was undertaken to measure construct validity.

Student interview analysis. The five key students' interview responses were analyzed to determine whether they were confirmatory of their SRL inventory results. To facilitate this analysis, an Excel spreadsheet was created for each student. Structurally, these spreadsheets were divided into six categories in the first column along the vertical axis. Each category was labeled with one of the six SRL dimensions. These dimensions were further subdivided into three

subcategories possessing the following sub-labels: confirmatory, neutral, and contradictory. Once this basic structure had been established for the spreadsheets, the primary researcher transcribed the students' interviews.

During the transcription process, students' explanations for their responses to inventory items were labeled as confirmatory, neutral, or contradictory of inventory results. They were then placed accordingly in the spreadsheet. For example, if students provided confirmatory explanations for their responses to inventory items within a given dimension, those explanations were placed in the spreadsheet's second column in the cell adjacent to the confirmatory cell for that particular dimension.

Before student explanations could be placed in the appropriate cells, criteria had to be established for labeling those explanations as confirmatory, neutral, or contradictory. It was determined that confirmatory explanations of inventory responses were those for which students provided a clear reason for their responses along with one or two strong examples to illustrate. For instance, if students self-reported that they always effectively use their time, as a reason they may indicate that they have a daily plan for completing homework. Potentially, they may then proceed to provide examples to explain how they both develop and implement that plan. Indeed, such a strong explanation would constitute a confirmatory interview response for students who truly use their time effectively. If, however, students self-reported as effective time users and only provided a basic reason without examples, their interview explanations would be labeled as neutral. Such explanations were neither strong enough to confirm nor weak enough to contradict inventory responses. Contradictory explanations were those for which students could provide no reason or explanation for a given inventory response. In these instances, students would either

state that they did not know why they marked a particular response or comment that they should have responded differently.

Teacher observation analysis. Following student interview analysis, teacher observations of the five key students' SRL behaviors were also analyzed to further determine the SRL inventory's trustworthiness. The general process for organizing teacher observations of student SRL behaviors was nearly identical to that of the student interview explanations; that is, teacher observations were labeled as confirmatory, neutral, or contradictory of survey results and placed accordingly in the third, fourth, and fifth columns of the same spreadsheets used to analyze student interview explanations. These columns represented the first, second, and third administrations of the student tracking survey.

Although data organization of teacher observations was similar to that of student interview explanations, the criteria for determining confirmatory, neutral, and contradictory observations were slightly different. In this case, these categorizations were a direct function of students' general performance in a given SRL dimension. For example, supposing students had self-reported as below average self-regulators respecting the time dimension (a dimensional score of 0-14), then teacher observations indicating poor time use would be categorized as confirmatory. Conversely, teacher observations indicating good time use would be categorized as contradictory. If, however, teachers had observed no evidence of good or poor time-centered behaviors, such a response would be categorized as neutral.

Quantitative analysis. In addition to the student interview and the teacher observation analyses, quantitative analysis of inventory responses from the original sample (n=182) was also undertaken. As part of this analysis three things were considered. The first of these was reliability. It was determined that to effectively measure SRL ability, the inventory must be

reliable, both holistically and dimensionally. For this reason, a Cronbach's Alpha was obtained for the inventory as a whole as well as each set of questions representing a given SRL dimension.

Aside from the reliability, two quantitative measures yielded by the exploratory factor analysis were also considered. These included the communalities for each inventory item and the components derived from the factor analysis. With respect to communality, it was determined that item communalities indicating a factor loading less than .4 should be considered poorly functioning items (Hair, Anderson, Tatham, & Black, 1998). These items were those most likely to interfere with the inventory's validity. Once the communalities had been analyzed, the various components derived from the factor analysis were assessed to determine whether the inventory generally measured the six SRL dimensions.

Results

Both qualitative and quantitative data analyses yielded some interesting results. For example, while student interview analysis results provided enough information to tentatively suggest the SRL inventory's trustworthiness, results from the teacher observation analysis were more difficult to interpret. Furthermore, quantitative results indicated both that the inventory was generally reliable and that most of the items were functioning properly. However, the number of components furnished by the exploratory factor analysis (8) raised some questions concerning whether the inventory was measuring more than the six SRL dimensions.

Student interview results

Student interview results generally confirmed SRL inventory responses, tentatively suggesting the SRL inventory's trustworthiness. In other words, all five students typically provided strong explanations for their inventory responses. To illustrate the strength of student explanations, it is necessary to look at the two disparate groups composing the five key students

interviewed for the study. Before discussing these students' explanations, however, it may be helpful to discuss some descriptive statistics for both groups in *Table 1* below.

Table 1
SRL Inventory Descriptive Statistics

	High		Low		Total	
Dimensions	*M*	*SD*	*M*	*SD*	*M*	*SD*
Motive	6.00	0.00	4.00	1.33	5.40	0.87
Performance	5.80	0.78	3.60	1.17	4.66	1.11
Time	5.87	0.35	3.40	1.43	4.68	1.09
Physical Environment	5.53	0.83	3.50	1.27	4.52	1.13
Method of Learning	5.80	0.78	3.80	1.32	4.21	1.31
Social Environment	6.00	0.00	4.30	1.16	5.30	0.86

This table compares three groups of respondents. While the first group represents the three above average self-regulators selected for the interviews, the second group represents the two low-average self-regulators. The third group of respondents—labeled 'Total'—represents all students from the original sample (n=182). A close inspection of all three groups' means indicates the above average students consistently scored higher than both the low-average students and the group of students from the original sample respecting all six SRL dimensions. Conversely, the low-average students consistently scored lower than the group of students from the original sample and the above average students for all dimensions. More than anything else, this solidified the two disparate groups of students selected for the interviews as truly above average and low-average self-regulators, respectively. In what follows, a detailed description of these students' explanations for their inventory responses will be provided. Although these descriptions generally focus on one or two SRL dimensions per student, the confirmatory nature of their explanations extends to all dimensions.

Above average self-regulators. Without exception, the three students composing the group of above average self-regulators provided strong explanations for their inventory

responses. For example, when one student was asked why she responded ‘strongly agree’ to the item ‘I always look for ways to use my time effectively,’ she gave a detailed explanation of her daily study habits. As part of this explanation, she indicated that she devoted four hours to studying English per day. Each of these hours represented one of her ELC classes. She would prioritize each hour by first finishing any assignments that were due the next day for a given class. If any time remained, she would then either move on to bigger class assignments that would take multiple days to complete or study something related to the skill area (writing, reading, speaking, etc.) for the class in question. Once the hour had ended, she would then spend the next hour focusing on another class. Certainly, this detailed description of her study habits constituted a particularly strong explanation for methods she employs to maximize her time. Along with similarly detailed explanations, this explanation solidified her status as an above-average self-regulator, confirming her holistic inventory score of 180 out of 180. She was not the only student who provided explanations of this caliber.

Another student provided a particularly strong explanation regarding his response to an inventory item focusing on learning methods. When questioned about his selection of ‘strongly disagree’ to the item ‘I do not use special learning techniques to help me learn English,’ he delineated numerous examples of methods he has used to learn English. For instance, immediately following his acceptance to the ELC, he began taking daily trips to the library to find any materials he could to help him learn English. Additionally, he downloaded English learning apps to use on his phone. In fact, he credited these two learning methods for taking him from understanding very little English to being able to skip the most novice level at the ELC on arrival. Not only did this student employ learning methods before arriving at the ELC, he also indicated that he continues to use new learning methods daily. Currently, one of his favorite

learning methods involves listening to academic lectures in English while completing his custodial work. He further stated that this technique has noticeably helped him improve his English comprehension respecting academic contexts.

The aforementioned student's description of the learning methods he has employed to learn English clearly depicts him as a strong self-regulator within the SRL dimension of learning methods. Further, given that his explanations were equally as detailed for all six SRL dimensions represented by the inventory, it was certainly no stretch concluding that this student was indeed an exceptional self-regulated learner in general. This conclusion was highly confirmatory of his holistic survey score (178).

Just as the first two students provided confirmatory explanations of their SRL inventory responses, so did the third student from the group of above-average self-regulators. Although his holistic score was slightly less than the other two at 164, his explanations still contained numerous strong examples confirming his score. Take, for example, his explanation for his response to the item 'I know that there are many people who can help me with my English.' For this item, he explained that his response of 'strongly agree' was attributable to the fact that he consistently asked numerous groups of individuals for help with English assignments. Among others, these groups included tutors, roommates, coworkers, and teachers. After listing these groups, he then described specific instances in which he asked them for help. One of these instances was when he went to a former teacher to ask for help with a reference page. Another instance was when he asked his roommate for help with an essay. Surely, these specific examples strongly supported this student's position as a strong self-regulator respecting the SRL dimension of social environment.

Low-average self-regulators. Clearly, the above average self-regulators' explanations for their survey responses were largely confirmatory of inventory results. To a slightly lesser extent, the same was true of the two low-average self-regulators. However, there were two notable exceptions—one exception per student. Both exceptions involved students stating that they would have changed their response to a particular item were they to take the inventory again. While one student indicated that he would have changed his response to an item targeting the learning methods dimension, the other student admitted she would have changed her response to an item relating to the social environment dimension. Regardless of these two contradictory explanations, the majority of the low-average self-regulators' explanations confirmed their survey results.

One example of a student's confirmatory explanation relates to her response regarding the following inventory item targeting motivation: 'I am highly motivated to learn English.' Her response to this item was 'somewhat disagree.' As part of her explanation, she stated that although she was more motivated at the beginning of the previous semester, her motivation had slowly declined over the course of the semester. This was primarily due to the ELC's heavy focus on academic English. She further indicated that she was not interested in learning English for academic purposes, but, rather, to improve her speech for professional purposes. For this reason, her motivation was limited to performing well in classes focusing on speaking, listening, and grammar. Nevertheless, when it came to classes she deemed overtly academic, she lacked any sense of motivation. These included her reading and writing classes. Given that she was motivated to perform well in some classes while lacking motivation to perform well in other classes, her response of 'somewhat disagree' for the motivational item in question was particularly apt. In conjunction with similar explanations for different dimensional items, this

explanation confirmed her inventory results, categorizing her as a truly low-average self-regulator with a holistic inventory score of 116 out of 180.

The second student composing the group of low-average self-regulators provided confirmatory explanations on par with those of the first. A particularly salient example relates to his explanation for an inventory item concerning the time dimension: 'I take time each day to make a plan for completing my English language assignments.' For this item, the student reported that he strongly disagreed. To explain his response, he clearly indicated that he rarely did his homework the previous semester. He further explained that although he was completing most of his homework for the current semester, he always pushed his assignments to the last minute. As evidence for this explanation, he referenced a lengthy essay assignment that he did not complete until the morning of its due date. This explanation clearly suggested that the student was not a good self-regulator respecting time. In addition to similar explanations for different inventory items, this explanation confirmed his inventory results (113).

Teacher observation results

Although student interview analysis results were generally confirmatory of SRL inventory responses, teacher observations of the five key students' SRL behaviors were more difficult to decipher. To clarify, while observations of the above average self-regulators' SRL behaviors appeared confirmatory of inventory results, observations of the low-average self-regulators' SRL behaviors were frequently contradictory. The pervasive nature of these contradictions suggested two possibilities: a) the SRL inventory was invalid or b) teacher observations of students' SRL behaviors constituted a faulty method for establishing the inventory's trustworthiness.

Above average self-regulators. In general, teacher observations of the above average self-regulators appeared to confirm inventory results; that is, teachers' observations of these students' SRL behaviors seemed to confirm both their holistic and dimensional inventory results. To illustrate, it is helpful to take a closer look at the student who scored 178. Without exception, teachers' unanimously observed that this student was an excellent self-regulator regarding all SRL dimensions. These observations appeared extremely confirmatory of inventory results given his holistic inventory score of 178. Further evidence of the confirmatory nature of these observations was perfectly encapsulated in one teacher's comment responding to the student tracking survey's summary question:

> [This student] is a great student. He was selected as the outstanding student of the semester for [his level at the ELC]. This says a lot about his work ethic and self-regulation that even after several semesters at the ELC he would be recognized by his teachers as an outstanding student.

Here, the teacher in question clearly indicates that the student was given the ELC's outstanding student award. This award is a particularly difficult award to receive. Reception of the award depends largely on students' exceptional work as well as their general attitude toward learning English. Moreover, no student is eligible to win the award unless the majority of her teachers present her name for nomination. Once nominated, the student must then pass more regulations stipulated by the ELC's administration. Certainly, due to these stringent requirements, it is extremely unlikely that poor self-regulators could earn the outstanding student award. These students would either fail to earn the award due to mediocre work or a perceived lack of motivation to learn English in one or more classes. Therefore, since the aforementioned student passed all requirements to earn the outstanding student award, he was more than likely an above

average self-regulator. In fact, his earning this award could almost stand alone as a separate method for establishing the SRL inventory's trustworthiness.

Teachers' observations of the two remaining students composing the above average group of self-regulators appeared to similarly confirm inventory results with a few limited exceptions. These exceptions included one or two minor contradictory comments regarding no more than two SRL dimensions per student. Furthermore, since the same teachers also provided multiple confirmatory observations within the same dimensions, these contradictory comments were judged relatively inconsequential. In other words, when considering the vast majority of all teachers' confirmatory observations, the general picture of these students as above average self-regulators regarding each SRL dimension remained relatively unaltered.

Although teacher observations of the above average self-regulators generally appeared confirmatory of inventory results, they were still not sufficient to establish the SRL inventory's effectiveness. This is mostly attributable to the scope of the teachers' observations. Teachers' observations were limited to only what they could see during class time. This means teachers were completely blind to numerous student SRL behaviors only manifesting themselves outside the classroom. Take, for example, procrastination. This type of behavior is difficult for teachers to notice, especially if students generally turn in assignments when they are due. In other words, if students consistently turn their assignments in on time, teachers generally have no way of knowing whether students pushed assignment completion until the last minute, indicating poor time use. This suggests teacher observations of student SRL behaviors depicted only a partial image of students' comprehensive SRL abilities. Such an incomplete image could not be used to validate the SRL inventory. Evidence supporting this notion of an incomplete image of students'

comprehensive SRL abilities was made explicitly clear following analysis of teacher observations concerning low-average self-regulators.

Low-average self-regulators. In contrast to observations of above average self-regulators, teacher observations of low-average self-regulators were frequently contradictory of inventory results. This does not mean there was a lack of confirmatory observations. On the contrary, there were numerous instances of confirmatory observations for both students. Regardless of these instances, the discussion in this section will remain focused on teacher observations that were contradictory of inventory results. These contradictory observations are those that bear the most relevance to the study.

One notable contradiction was a discrepancy between a student's SRL results pertaining to time and teachers' observations of his time-centered SRL behaviors. While both his inventory results and interview explanations indicated he was a poor self-regulator respecting time, teachers' observations suggested otherwise. To illustrate, teachers consistently praised this student's punctuality regarding class attendance and homework completion. Contrary to his results, this suggested that he effectively used his time. Since he consistently turned his homework in on time and arrived early to class, he must be using his time effectively. If so, inventory results were not accurate, suggesting that the inventory was not trustworthy.

At first blush, this contradiction between the student's SRL inventory results and his observed behaviors certainly seemed to suggest that the SRL inventory may not be effective. Nevertheless, on closer inspection, this was not necessarily the case. After reviewing the student's interview explanations, it became clear that teachers were not observing the entire picture. For example, in explanation of his inventory responses concerning time, this student mentioned that he almost never completed his homework the preceding semester. Moreover,

although he was consistently completing assignments for the current semester, he always waited until the last minute to do so. In fact, he listed multiple occasions in which he waited until the brief breaks between classes to finish assignments. Certainly, these explanations strongly suggested poor SRL behaviors pertaining to time. Additionally, these behaviors were those only manifesting themselves outside of class. For this reason, teachers were incapable of observing the behaviors. If they had observed these behaviors, their comments on the student tracking survey would likely have been more confirmatory of inventory results.

Multiple teacher observations followed the pattern described above; that is, although they contradicted survey results, these observations did not necessarily negate the SRL inventory's trustworthiness. On the contrary, these contradictions revealed teachers' inability to form a comprehensive image of students' SRL behaviors. This revelation suggested that teacher observations of students' SRL behaviors constituted a faulty method for establishing the SRL inventory's trustworthiness.

Quantitative results

In addition to the qualitative measures used to establish the SRL inventory's trustworthiness, quantitative measures performed on the original sample (n=182) were employed to reveal important information regarding the SRL inventory's reliability and validity. Indeed, these quantitative measures suggested both strengths and weaknesses respecting the inventory's reliability and validity.

Reliability. To determine reliability, Cronbach's Alpha coefficients were calculated for the SRL inventory as a whole as well as each dimensional subcomponent. Holistically, the SRL inventory's Cronbach's Alpha was .84. Generally, this suggested that the inventory reliably measured students' capacity to self-regulate their learning. However, as *Table 2* indicates below,

this consistency was not as evident based on the Cronbach's Alpha coefficients calculated for each dimensional subcomponent.

Table 2
SRL Inventory Dimensional Reliability

Dimensions	α
Motive	0.789
Performance	0.536
Time	0.594
Physical Environment	0.374
Method of Learning	0.650
Social Environment	0.624

Clearly, this table indicates the dimensional Cronbach Alpha coefficients to be lower than the holistic Cronbach's Alpha of .84. This suggests that there may be deficiencies respecting reliability for specific dimensional subcomponents. The worst of these is physical environment with a Cronbach's Alpha of .374. This indicates that future inventory revisions will be necessary to improve internal consistency, especially concerning the items linked to physical environment.

Exploratory factor analysis. The inventory's construct validity was measured through exploratory factor analysis. As part of this analysis, communalities were measured for all items to determine if there were any poorly functioning items. Poorly functioning items were considered those interfering with construct validity. Table 3 includes all inventory items along with their communalities.

Table 3
SRL Inventory Communalities

Inventory Items	h^2
1. I am losing my desire to learn English.	.660
2. I know how well I am doing in my English classes.	.536
3. If a learning technique does not help me learn English, I try using a new technique.	.528
4. I make sure that I am physically comfortable when I work on English assignments.	.630
5. I do **NOT** use special learning techniques to help me learn English.	.727
6. I love learning English.	.676
7. I know what I do well when it comes to learning English	.623
8. I know **only a few** different learning techniques I can use to help me improve my English.	.578
9. Electronics and people frequently distract me when I do my English assignments.	.467
10. I know which English assignments will take the most time to complete	.568
11. I do **NOT** ask other people to help me learn English.	.592
12. I look for ways to use my time effectively when learning English.	.453
13. I want to learn everything I can about the English language.	.465
14. I know that there are many people who can help me with my English.	.593
15. When other people help me with my English, I am grateful.	.584
16. I try to pay attention to my scores on my English assignment	.484
17. I do **NOT** give myself enough time to do my English homework.	.586
18. After I complete an English assignment or test, I do **NOT** think about it again.	.575
19. I know that there are special techniques I can use to help me learn English.	.579
20. I make sure that I am emotionally comfortable when I work on my English assignments.	.586
21. I take time each day to make a plan for completing my English language assignments.	.570
22. When I am studying English, I know that the physical learning environment is important.	.608
23. When I need help with my English, I ask other people for help.	.623
24. I am highly motivated to learn English.	.742
25. I know where to find people who can help me understand English principles.	.691
26. I use my time well when I have to complete English assignments.	.633
27. I do **NOT** know what I need to do to improve my English.	.580
28. I avoid distractions when I do my English assignments.	.533
29. I think learning English is boring.	.570
30. I use special learning techniques to help me learn English.	.758

The communalities in this table clearly indicate that there were no factor loadings falling below .4 (Hair et al., 1998). This means that all items appeared to be functioning. Moreover, since all items were functioning, there were no items overtly interfering with construct validity.

Aside from the relatively high item communalities, the exploratory factor analysis also indicated that the inventory was measuring eight separate components. Ideally, since the inventory was based on a six-dimensional SRL model, there should have been only six separate components. This means that the instrument unintentionally produced at least two additional components.

Discussion and Conclusion

Interpretation of results led to significant insights carrying important implications concerning the SRL inventory's trustworthiness, reliability, and validity. In fact, these insights along with their implications are so important that they merit further discussion.

Discussion

One significant insight obtained from the study concerns student interview results in conjunction with quantitative results. Specifically, these results provided an initial indication of the SRL inventory's trustworthiness, reliability, and validity. For example, both above average and low-average self-regulators provided strong explanations of their inventory responses, confirming their inventory results. This means that not only did they consistently provide solid reasons explaining their inventory responses for all six SRL dimensions, they also supported their reasons with detailed examples. Additionally, quantitative results suggested that although some dimensional subcomponents possessed less than ideal reliability, the inventory as a whole possessed relatively high reliability with a Cronbach's Alpha of .84. Moreover, exploratory factor analysis supported construct validity by only yielding item communalities indicating factor loadings above .4. Of course, this was tempered by the fact that the factor analysis also indicated that the inventory was measuring at least two more components than the desired six.

A second significant insight was that teacher observations of students' SRL behaviors failed to properly establish the SRL inventory as trustworthy. This insight derived from multiple teacher observations contradicting the low-average self-regulators' inventory results. Although these observations initially appeared to negate the inventory's effectiveness, they actually highlighted teachers' inability to form a comprehensive image of students' SRL behaviors. Teachers' inability to form such an image was largely attributable to numerous student SRL behaviors only manifesting themselves outside the classroom. Moreover, since teachers were unable to form a comprehensive picture of students' SRL behaviors, teacher observations of SRL behaviors were deemed ineffective for indicating trustworthiness.

Together, the insights garnered from the study furnished two important implications. First, the results from student interviews and quantitative analysis suggest promise for future inventory use. In other words, with some changes, it may indeed be a useful tool for determining SRL capacity. With this in mind, teachers could potentially rely on the tool to ascertain which SRL dimensions are most problematic for their students. They could then use this information to inform SRL instruction in the classroom.

An additional implication gathered from the study is that another method must be established to further determine the SRL inventory's effectiveness. This is due to the fact that teacher observations of SRL behaviors constituted an ineffective method for determining initial inventory trustworthiness. Certainly, devising another method to confirm SRL inventory results could potentially strengthen the inventory's trustworthiness. Doing so would further establish the inventory as an effective tool for measuring SRL capacity.

Limitations. There were at least three limitations involved with this study. The most notable of these was the ineffectiveness of teacher observations to establish the SRL inventory as

trustworthy. To truly demonstrate the inventory's effectiveness, another qualitative method for measuring trustworthiness must be devised to triangulate inventory results. In other words, although student interviews tentatively established the inventory as trustworthy, they alone cannot attest to the inventory's effectiveness.

A second limitation associated with the study relates to quantitative analysis. Specifically, the analysis of the eight subcomponents derived from the exploratory factor analysis was relatively superficial. A more detailed analysis of these eight components pinpointing exactly what they are measuring warrants further research.

A final limitation of the study relates to sample characteristics. The SRL inventory's respondents were mostly average to above average academic performers. This means there were no truly poor academic performers in the sample. Moreover, since academic performance has been closely linked to SRL ability (Zimmerman & Martinez-Pons, 1986), there were almost no below average self-regulators in the sample. Certainly, piloting the survey with a more diverse sample respecting SRL ability would have been better.

Future research. The limitations and results of any study lead to ideas for future research. The most obvious of these involves developing another qualitative measure to establish the SRL inventory's effectiveness. One possibility may involve comparing class standing or GPA with inventory results. Since SRL ability is closely connected to academic performance, it follows that above average self-regulators would generally exhibit a higher GPA or perceived class standing than average or below average self-regulators. Verifying such a connection would certainly strengthen the SRL inventory's effectiveness and applicability to the classroom.

Another idea for future research relates to the study's quantitative measures of validity and reliability. The statistical data resulting from these measures indicate that at least some

revisions need to be made to improve the SRL inventory's dimensional reliability. Additionally, a more in depth analysis of the eight components deriving from the exploratory factor analysis needs to occur before any inventory revisions are made. Such an analysis would indicate what components the inventory is truly measuring in addition to the six SRL dimensions. A determination could then be made as to what to do with these components: eliminate them or include them.

A third idea for further research concerns the sample. To clarify, future research should involve piloting the inventory with a larger, more diverse sample. This would improve both qualitative and quantitative measures of trustworthiness, validity, and reliability.

A final idea for future research that does not necessarily derive from the study's limitations or results involves using the SRL inventory to determine cultural trends relating to SRL ability. In other words, it may be that individuals belonging to a particular culture share certain SRL deficiencies or strengths. If so, using the SRL inventory to determine these shared deficiencies or strengths could potentially facilitate SRL instruction in the classroom. If teachers already know the culturally influenced SRL deficiencies and strengths affecting their students, this will allow them to focus their SRL instruction accordingly. This would be particularly relevant for homogenous contexts respecting culture.

Conclusion

The primary scope of this study has been that of developing, piloting, and determining the effectiveness of a self-regulated learning inventory conforming to the six-dimensional SRL model. The methods employed to determine its effectiveness were both qualitative and quantitative intended to provide an initial indication of trustworthiness, validity, and reliability. While one of the qualitative methods—student explanations of inventory responses—tentatively

established the inventory's trustworthiness, the second—teacher observations of students' SRL behaviors—failed to do so. This failure did not suggest that the inventory was not effective but, rather, that the method for establishing trustworthiness was faulty. For this reason, future studies should attempt to devise another qualitative method for determining the inventory's effectiveness.

Following implementation of qualitative measures to determine inventory trustworthiness, quantitative measures were employed to determine reliability and validity. Holistically, these measures suggested that the inventory was reliable. However, steps should be taken in the future to improve the reliability pertaining to at least a few of the inventory's dimensional subcomponents. With respect to validity, quantitative measures showed that all of the items possessed communalities indicative of factor loadings above .4, suggesting that there were no specific items interfering with the inventory's validity. Nevertheless, the eight components derived from exploratory factor analysis suggested that the inventory was measuring more components than the intended six SRL dimensions. Therefore, it should be the goal of future studies to determine exactly what components the inventory is measuring in addition to the six dimensions. A decision may then be made as to whether future inventory revisions should attempt to include or exclude these components.

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Appendix A

Final Item Selection Survey

Background

The purpose of this thesis is to develop a self-regulated learning (SRL) inventory for language learning contexts. The creation of this inventory will draw heavily on theory established in current SRL literature as well as theory pertaining to questionnaire development. Once constructed, this inventory will prompt students to report their ability to self-regulate their learning among six different SRL dimensions: motive, methods of learning, time, physical environment, social environment, and performance (Andrade & Evans, 2013). If the SRL inventory proves to be a valid and reliable tool for measuring students' self-regulatory ability, the information generated by the inventory should prove extremely useful. Teachers will be able to use this information to determine students' weaknesses pertaining to SRL. Moreover, with this knowledge, teachers will be able to devote instruction time to improving their students' ability to self-regulate their learning. As students improve this ability, their academic success will increase

Instructions

As mentioned above, the purpose of my thesis is to develop an SRL inventory intended to measure students' ability to self-regulate their learning among six different dimensions (motive, methods of learning, time, physical environment, social environment, and performance). As part of the development process, I need to determine whether the potential inventory items truly correspond to their intended dimensions. With this in mind, please take the time to read the SRL dimensional definitions developed by Evans and Andrade (2015). After reading these definitions (provided on the next page), you will be given a list of potential inventory items. For each potential inventory item, you will be asked two questions:

1. Which of the six dimensions does the following item most strongly represent? Select only one.

2. What other dimensions might the item above represent?

As you answer these questions, please feel free to refer to the dimensional definitions as much as necessary.

Self-regulated Learning Dimensions

Motive: Motive is related to reasons for learning; it answers the question 'why'. Values, beliefs, and expectations are related to the dimension of motive. Motivated learners can encourage themselves through difficult tasks even when they do not feel like completing them. In this dimension, learners are guided by principles such as knowing their values, beginning with an end in mind, and having a clear vision of how current expectations and tasks will lead them to where they ultimately wish to be. (Andrade & Evans, 2015, p. 118)

Methods of learning: [This dimension] relates to 'how' learners learn. In other words, this dimension pertains to the strategies and techniques used to accomplish tasks. Self-regulated learners must be aware of the methods of learning that help them improve, and they must know how to modify methods to their learning styles. (Andrade & Evans, 2015, p.118)

Time: [This dimension] addresses the question of 'when' and for 'how long' learners apply themselves to tasks. Knowing what time of day is best for certain tasks and gauging how long a task will take are central to this dimension. Related principles include prioritizing tasks, managing time, dividing tasks into manageable components, avoiding procrastination, and studying at optimum times. The dimension of time is noticeably related to motive. For example, when one has a clear goal in mind, time and task management are logical strategies for achieving goals. (Andrade & Evans, 2015, p. 118)

Physical Environment: [This dimension] relates to 'where' the learning takes place. A successful learner must understand that physical surrounding can contribute to or distract from learning. These factors are typically associated with external variables like sights, sounds, smells, and temperature. However, certain internal factors that can impact learning are also related to the physical environment. These consist of such things as not feeling well, being sleepy, or experiencing high anxiety. The associated principles are being aware of and avoiding external and internal distractions. (Andrade & Evans, 2015, p. 119)

Social Environment: [This dimension] determines 'with whom' one associates to improve learning. This can include teachers, classmates, tutors, and peers. Principles derived from this dimension consist of associating with others who have similar academic aims; asking questions when you don't understand; using your teacher as a resource; surrounding yourself with human, print, and electronic resources; and getting involved with learning communities, such as study groups, lab sessions, and tutoring sessions. (Andrade & Evans, 2015, p. 119)

Performance: [This dimension] answers such questions as: What have I accomplished? What needs to be improved? And what are my strengths and weaknesses?... Related principles include knowing yourself as a learner, always being aware of your status in class (grades, attendance, participation), and analyzing to improve. In many ways performance is the process of monitoring progress on each of the SRL dimensions with the aim of adjusting performance to achieve maximum learning outcomes. (Andrade & Evans, 2015, p. 119)

		1. Which of the six dimensions does the following item most strongly represent? Select only one.						2. What other dimensions might the item above represent?					
Item	Statement	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance
1.	I use feedback from my English assignments and tests to improve my English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
2.	I start working on difficult English learning assignments as soon as possible.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
3.	I do not normally know how well I am doing in my English classes.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
4.	I know which English assignments will take the most time to complete.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
5.	When I need help with my English, I ask other people for help.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
6.	I know what I need to improve when it comes to using English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
7.	I know where to find people who can help me understand English principles.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
8.	Studying English is not enjoyable.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
9.	I know what I do well when it comes to speaking English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
10.	I think learning English is boring.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
11.	When I have to learn a new English principle, I try to find the learning technique that works best for me.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
12.	I work on my English assignments where other people are talking loudly.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
13.	I know only a few different learning techniques I can use to help me improve my English language skills.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐

		1. Which of the six dimensions does the following item most strongly represent? Select only one.						2. What other dimensions might the item above represent?					
Item	Statement	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance
14.	I am losing my desire to learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
15.	I am aware of which learning techniques fit my learning style.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
16.	I use different resources to help me learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
17.	I turn in English learning assignments late.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
18.	I try to find a quiet place to do my English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
19.	I do not know what I need to do to improve my English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
20.	I am highly motivated to learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
21.	I try to pay attention to my performance on my English assignments and tests.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
22.	People and electronics frequently distract me when I do my English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
23.	I know that there are special techniques that I can use to help me learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
24.	I think asking for help with my English shows that my English skills are not good.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
25.	I avoid distractions when I do my English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
26.	I am aware of the learning techniques that are most helpful to me when it comes to learning English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐

		1. Which of the six dimensions does the following item most strongly represent? Select only one.						2. What other dimensions might the item above represent?					
Item	Statement	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance
27.	I do not like it when others point out my English mistakes.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
28.	I do not use special learning techniques to help me learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
29.	I do not trust other people to help me with my English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
30.	I do not write a schedule for completing my English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
31.	I want to know everything about the English language.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
32.	I know that there are many people who can help me learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
33.	I make sure that I am emotionally comfortable when I work on my English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
34.	I use many different people to help me learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
35.	I forget when My English assignments are due.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
36.	If a learning technique does not help me learn a new English principle, then I try using a new learning technique.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
37.	I love to use English whenever I can.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
38.	I look for ways to use my time effectively when learning English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
39.	After I complete an English assignment or test, I do not think about it again.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐

		1. Which of the six dimensions does the following item most strongly represent? Select only one.						2. What other dimensions might the item above represent?					
Item	Statement	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance	Motive	Learning Methods	Time	Physical Env.	Social Env.	Perform-ance
40.	I take time each day to make a plan for completing my English language assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
41.	I love learning English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
42.	If multiple learning techniques help me improve my English skills, I use all of them.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
43.	I use special learning techniques to help me learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
44.	I make sure that I am physically comfortable when I work on English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
45.	I use my time well when I have to complete English assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
46.	I do my English assignments in noisy places.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
47.	When I am studying English, I know that the physical learning environment is important.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
48.	I try to keep my physical study environment organized in a way that makes learning English easier.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
49.	I do not normally know how long it will take me to do a difficult English assignment.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
50.	I try to learn from the mistakes I make on my English tests and assignments.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
51.	I have difficulty finding motivation to learn English.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐
52.	I give myself enough time to do my English homework.	❍	❍	❍	❍	❍	❍	☐	☐	☐	☐	☐	☐

References

Andrade, M.S., & Evans, N.W. (2015). Developing self-regulated learners: Helping students meet challenges. In N. W. Evans, N. J. Anderson, & W. G. Eggington (Eds.), *ESL Readers and Writers in Higher Education* (pp. 113-129). Florence, US: Routledge.

Appendix B

Self-Regulated Learning Inventory Booklet with the Final Inventory

Instructions:

Listed below you will find thirty statements related to your English learning experience. Please read each statement carefully. As you read each statement, try to decide how closely it describes you as an English learner. Once you have decided how the statement generally describes you as an English learner, select the answer on your bubble sheet that best matches your view of yourself. Please try to be as accurate with your answers as possible. Remember, there are no wrong answers, and this survey will not affect your grades. Furthermore, any answers you provide will be kept strictly confidential.

Sample Statement:

I try to find a quiet place to study English.

Possible Answers:

Strongly Agree	**Agree**	**Somewhat agree**	**Somewhat disagree**	**Disagree**	**Strongly disagree**
A	B	C	D	E	F

1. I am losing my desire to learn English.

2. I know how well I am doing in my English classes.

3. If a learning technique does not help me learn English, I try using a new technique.

4. I make sure that I am physically comfortable when I work on English assignments.

5. I do **NOT** use special learning techniques to help me learn English.

6. I love learning English.

7. I know what I do well when it comes to using English.

8. I know **only a few** different learning techniques I can use to help me improve my English language skills.

9. Electronics and people frequently distract me when I do my English assignments.

10. I know which English assignments will take the most time to complete.

11. I do **NOT** ask other people to help me learn English.

12. I look for ways to use my time effectively when learning English.

13. I want to learn everything I can about the English language.

14. I know that there are many people who can help me with my English.

15. When other people help me with my English, I am grateful.

16. I try to pay attention to my scores on my English assignments and tests.

17. I do **NOT** give myself enough time to do my English homework.

18. After I complete an English assignment or test, I do **NOT** think about it again.

19. I know that there are special techniques I can use to help me learn English.

20. I make sure that I am emotionally comfortable when I work on my English assignments.

21. I take time each day to make a plan for completing my English language assignments.

22. When I am studying English, I know that the physical learning environment is important.

23. When I need help with my English, I ask other people for help.

24. I am highly motivated to learn English.

25. I know where to find people who can help me understand English principles.

26. I use my time well when I have to complete English assignments.

27. I do **NOT** know what I need to do to improve my English.

28. I avoid distractions when I do my English assignments.

29. I think learning English is boring.

30. I use special learning techniques to help me learn English.

Appendix C

Student Tracking Survey

Instructions:

Listed below you will find six sets of questions related to [Grace]'s general ability to self-regulate her learning over the last four weeks. Each set of questions targets a specific dimension of self-regulated learning. With this in mind, please review each dimensional definition before carefully answering its corresponding set of questions.

Motive: Motive is related to reasons for learning; it answers the question 'why'. Values, beliefs, and expectations are related to the dimension of motive. Motivated learners can encourage themselves through difficult tasks even when they do not feel like completing them. In this dimension, learners are guided by principles such as knowing their values, beginning with an end in mind, and having a clear vision of how current expectations and tasks will lead them to where they ultimately wish to be. (Andrade & Evans, 2015, p. 118)

1. Given the preceding definition of motive, have you observed any evidence suggestive of [Grace]'s motivation?

❍ yes
❍ no

1.1 If you answered yes, please describe the evidence that has been suggestive of [Grace]'s motivation.

1.2 How often have you observed this evidence of [Grace]'s motivation?

❍ sometimes
❍ often
❍ very often
❍ always
❍ I answered no to question 1

1.3 Have you noticed any evidence suggesting [Grace] is **NOT** a motivated learner? If so, explain.

2. How often has [Grace] demonstrated motivation in class over the last three weeks.

❍ never
❍ sometimes
❍ usually

❍ almost always
❍ always
❍ I don't know.

3. Describe your perception of [Grace]'s attitude in class over the last 3 weeks.

❍ poor
❍ neutral
❍ happy
❍ enthusiastic
❍ highly enthusiastic

4. Please rank [Grace]'s level of engagement in your class over the last three weeks on a scale from one to five. While one represents unengaged, five represents extremely engaged. (motivation/Social)

❍ one
❍ two
❍ three
❍ four
❍ five

Time: This dimension addresses the question of 'when' and for 'how long' learners apply themselves to tasks. Knowing what time of day is best for certain tasks and gauging how long a task will take are central to this dimension. Related principles include prioritizing tasks, managing time, dividing tasks into manageable components, avoiding procrastination, and studying at optimum times. The dimension of time is noticeably related to motive. For example, when one has a clear goal in mind, time and task management are logical strategies for achieving goals. (Andrade & Evans, 2015, p. 118)

1. Given the preceding definition of time, have you observed any evidence indicating [Grace] uses her time well?

❍ yes
❍ no

1.1 If you answered yes, what activities or actions has [Grace] displayed indicating she uses her time well?

1.2 How often have you witnessed [Grace] participating in these activities or actions?

❍ sometimes
❍ often
❍ very often

❍ always
❍ I answered no to question 1

1.3 Have you noticed any evidence suggesting [Grace] does **NOT** use her time well? If so, explain.

2. How often has [Grace] turned assignments in on time over the last three weeks?

❍ never
❍ sometimes
❍ usually
❍ almost always
❍ always

3. How often has [Grace] been on time to class over the last three weeks?

❍ never
❍ sometimes
❍ usually
❍ almost always
❍ always

Performance: This dimension answers such questions as: What have I accomplished? What needs to be improved? And what are my strengths and weaknesses?... Related principles include knowing yourself as a learner, always being aware of your status in class (grades, attendance, participation), and analyzing to improve. In many ways performance is the process of monitoring progress on each of the SRL dimensions with the aim of adjusting performance to achieve maximum learning outcomes. (Andrade & Evans, 2015, p. 119)

1. Given the preceding definition of performance, have you observed [Grace] using any special methods to monitor her performance in class (e.g. asking about grades, class status, feedback, etc.)?

❍ yes
❍ no

1.1 If you answered yes, what activities or actions has [Grace] displayed that indicate she is a good performer (e.g. asking about grades, class status, feedback, etc.)?

1.2 How often have you witnessed [Grace] participating in these activities or actions?

❍ sometimes
❍ often
❍ very often
❍ always
❍ I answered no to question 1

1.3 Have you noticed any evidence suggesting [Grace] is **NOT** a good performer? If so, explain.

Social Environment: This dimension determines 'with whom' one associates to improve learning. This can include teachers, classmates, tutors, and peers. Principles derived from this dimension consist of associating with others who have similar academic aims; asking questions when you don't understand; using your teacher as a resource; surrounding yourself with human, print, and electronic resources; and getting involved with learning communities, such as study groups, lab sessions, and tutoring sessions. (Andrade & Evans, 2015, p. 119)

1. Given the preceding definition of social environment, have you observed any evidence indicating [Grace] uses her social environment well?

❍ yes
❍ no

1.1 If you answered yes, what activities or actions has [Grace] displayed indicating she uses her social environment well?

1.2 How often have you observed [Grace] participating in these activities or actions?

❍ sometimes
❍ often
❍ very often
❍ always
❍ I answered no to question 1

1.3 Have you noticed any evidence suggesting [Grace] is **NOT** a good self-regulated learner when it comes to social environment? If so, explain.

2. Please rank [Grace]'s level of engagement in your class over the last three weeks on a scale from one to five. While one represents unengaged, five represents extremely engaged.

❍ one
❍ two

❍ three
❍ four
❍ five

3. Over the last three weeks, describe your perception of how often [Grace] has been willing to ask you for help with her reading/speaking/listening/writing/grammar skills.

❍ never
❍ sometimes
❍ usually
❍ almost always
❍ always
❍ She/she doesn't seem to need much help

4. Over the last three weeks, describe your perception of how often [Grace] has worked well with her classmates during class.

❍ never
❍ sometimes
❍ usually
❍ almost always
❍ always

Physical Environment: This dimension relates to 'where' the learning takes place. A successful learner must understand that physical surrounding can contribute to or distract from learning. These factors are typically associated with external variables like sights, sounds, smells, and temperature. However, certain internal factors that can impact learning are also related to the physical environment. These consist of such things as not feeling well, being sleepy, or experiencing high anxiety. The associated principles are being aware of and avoiding external and internal distractions. (Andrade & Evans, 2015, p. 119)

1. Given the preceding definition of physical environment, have you observed any evidence indicating [Grace] uses her physical environment well?

❍ yes
❍ no

1.1 If you answered yes, what activities or actions has [Grace] displayed indicating she is a good self-regulated learner when it comes to physical environment?

1.2 How often have you witnessed [Grace] participating in these activities or actions?

❍ sometimes
❍ often
❍ very often
❍ always
❍ I answered no to question 1

1.3 Have you noticed any evidence suggesting [Grace] is **NOT** a good self-regulated learner when it comes to physical environment? If so, explain.

2. Have you witnessed [Grace] employing any methods for organizing (e.g. notebook, folder, binder, etc.) the assignments or handouts you give her in class.

❍ yes
❍ no

2.1 If you answered yes to question 2, please explain.

3. How often does [Grace] become distracted by conversations in class that are irrelevant to the class discussion?

❍ never
❍ sometimes
❍ often
❍ very often
❍ always

4. How often does [Grace] look at her cellphone in class?

❍ never
❍ sometimes
❍ often
❍ very often
❍ always

5. If you have witnessed [Grace] studying at the ELC over the last three weeks, please answer the following questions. If not, select N/A for each question.

5.1 Was [Grace] focused on her work?

❍ yes
❍ no
❍ N/A

5.2 Did [Grace] appear to be distracted by her cellphone or other unnecessary electronics?

❍ yes
❍ no
❍ N/A

5.3 Did [Grace] appear to be distracted by other students?

❍ yes
❍ no
❍ N/A

5.4 Was [Grace] studying in a quiet environment?

❍ yes
❍ no
❍ N/A

Methods of learning: This dimension relates to 'how' learners learn. In other words, this dimension pertains to the strategies and techniques used to accomplish tasks. Self-regulated learners must be aware of the methods of learning that help them improve, and they must know how to modify methods to their learning styles. (Andrade & Evans, 2015, p.118)

1. Given the preceding definition of methods of learning, have you observed [Grace] using any special learning methods to facilitate her learning while in your class (these may be methods you have taught or any kind of learning method in general)?

❍ yes
❍ no

1.1 If you answered yes, what activities or actions has [Grace] displayed indicating her use of learning methods to facilitate her learning?

1.2 How often have you observed [Grace] using these learning methods?

❍ sometimes
❍ often
❍ very often
❍ always
❍ I answered no to the question 1

1.3 Have you noticed any evidence suggesting [Grace] does **NOT** use learning methods to facilitate her learning? If so, explain.

Summary Question

Is there anything you would like to add about [Grace]'s self-regulated learning behavior or her general behavior as a student over the last three weeks?

References

Andrade, M.S., & Evans, N.W. (2015). Developing self-regulated learners: Helping students meet challenges. In N. W. Evans, N. J. Anderson, & W. G. Eggington (Eds.), *ESL Readers and Writers in Higher Education* (pp. 113-129). Florence, US: Routledge.