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Abstract

The connection between goals and student motivation has been widely investigated in the research literature, but the relationship of goal setting and student achievement at the classroom level has remained largely unexplored. This article reports the findings of a 5-year quasi-experimental study examining goal setting and student achievement in the high school Spanish language classroom. The implementation of LinguaFolio, a portfolio that focuses on student self-assessment, goal setting, and collection of evidence of language achievement, was introduced into 23 high schools with a total of 1,273 students. By using a hierarchical linear model, researchers were able to analyze the relationship between goal setting and student achievement across time at both the individual student and teacher levels. A correlational analysis of the goal-setting process and language proficiency scores reveals a statistically significant relationship between the goal-setting process and language achievement ($p < .01$).

Moving to a Standards–Based, student-centered learning environment has required a deeper understanding and investigation of the factors that influence student achievement, such as motivation, self-regulation, ability, effort, time management, self-assessment, and persistence. Research that has examined the connection of the learning environment, goals, and student motivational outcomes has contributed significantly to our understanding and has set the stage for the next important research step: determining how to facilitate the writing of goals in the classroom and to examine the relationship between goal setting and student achievement (Ames, 1992b).

LinguaFolio, a standards-based, self-directed, formative assessment tool designed to increase learner autonomy through a carefully structured goal-setting process, was used as an intervention to determine the relationship between goal setting and student achievement. The purpose of this article is to report the findings of a 5-year study with

23 school districts that implemented LinguaFolio in their Spanish language classrooms.

Literature Review

Goal Orientation

Broadly defined, *goal setting* is the process of establishing clear and usable targets, or objectives, for learning. Goal theory proposes that there are two general goal orientations students can adopt: a task-focused orientation with an intrinsic focus on learning and improving and an ability-focused orientation with an extrinsic focus on external rewards (e.g., getting good grades and doing better than other students). The former is commonly referred to as learning, task involvement, or mastery goals and the latter is labeled as performance or ego-involving goals (Dweck, 1986; Dweck & Leggett, 1988; Elliott & Dweck, 1988).

Extensive research has linked mastery and performance achievement goals to very distinct ways

of thinking about oneself and learning activities. A *mastery goal* fosters a motivational pattern associated with a deeper level of engagement that secures and maintains achievement behavior. This deeper level of engagement promotes internalization of the connection between effort and achievement (Weiner, 1979). A *performance goal* fosters a pattern of motivation associated with failure avoidance (Covington, 1984; Dweck, 1986; Dweck & Leggett, 1988; Elliott & Dweck, 1988; Nicholls, 1984, 1989; Nicholls, Patashnick, & Nolen, 1985). Students who use performance goals are focused on how they will be judged and attribute results to lack of ability.

The effort–achievement connection of mastery goal orientation is supported by evidence (Ames & Archer, 1988; Nicholls et al., 1985) that links mastery goals to an attribution belief that effort leads to success. With a mastery goal, individuals are oriented toward developing new skills, trying to understand their work, improving their level of competence, or achieving a sense of mastery based on self-referenced standards (Ames, 1992a; Brophy, 1983; Meece, Blumenfeld, & Hoyle, 1988; Nicholls, 1989). This goal construct is congruent with Brophy's description of a "motivation to learn," whereby individuals are focused on mastering and understanding content and demonstrating a willingness to engage in the process of learning. *Self-efficacy*—the belief that one can succeed at something—plays a significant role in motivation. Self-efficacy is domain-specific and is dependent on past experiences within a certain context. If an individual succeeds at something, he or she will remain motivated. If he or she fails, efficacy may be low. Self-efficacy influences an individual's choice of activities, level of effort, persistence, and emotional reactions to success or failure (Bandura, 1997; Zimmerman, 2000).

A mastery goal is associated with a wide range of motivation-related variables that contribute to positive achievement and that are necessary mediators of self-regulated learning (Ames, 1992a). According to Jagacinski and Nicholls (1984, 1987), when mastery goals are adopted, pride and satisfaction are associated with successful effort, and guilt is associated with inadequate effort (Wentzel, 1987, as cited in Wentzel, 1991). Mastery goals have also been associated with a preference for challenging work and risk-taking (Ames & Archer, 1988; Elliott & Dweck, 1988; Meece et al., 1988; Stipek & Kowalski, 1989) and positive attitudes toward learning (Ames & Archer, 1988; Meece et al., 1988).

Conversely, performance goals focus on one's ability and sense of self-worth (Covington, 1984; Dweck, 1986; Nicholls, 1984). Achievement is measured by doing better than others and, more importantly, the recognition that results from such superior achievement. Learning is viewed only as a way to achieve a desired goal (Nicholls, 1979, 1989). Performance-based goals emphasize the connection between ability and outcome, and a person's self-worth is determined by a perception of an individual's ability to perform (Covington & Berry, 1976; Covington & Omelich, 1984). As a result, the expenditure of effort can threaten self-concept of ability when trying hard does not lead to success.

Goal Setting and the Autonomous Learner

Autonomy is "the ability to take responsibility for one's learning," as defined by Benson (2001), Dickinson (1987), and Holec (1981). It has been established that autonomy is a long-term aim of education (Candy, 1988; Pennycook, 1997) and a key factor in successful language learning. The recent paradigm shift in language education from teacher- to student-centered learning further emphasizes the importance of self-regulated and autonomous learning. Thus, it is important that learners develop responsible attitudes and autonomy (Scharle & Szabó, 2000). Benson, Dickinson, and Holec argued that autonomy is not innate but develops through learner training; that is, learners need to be taught learning strategies and how to use them. Thus, it is important to consider processes or activities by which teachers might overtly guide their learners toward increased autonomy.

Goal setting in language learning is commonly regarded as one of the strategies that encourages learner autonomy (Locke, Shaw, Saari, & Latham, 1981; Wentzel, 1991; Yang, 1998). A number of studies indicate that goal setting affects performance and enhances achievement (Boekaerts, 2002; Edwins, 1995; Griffee & Templi, 1997; Moriarity, Pavelonis, Pellouchoud, & Wilson, 2001; Schunk, 2003). In particular, studies have shown that appropriate goal setting, along with timely and specific feedback, can lead to higher achievement, better performance, a high level of self-efficacy, and self-regulation. In spite of this compelling evidence in support of goal setting, 85% of individuals responded "no" when asked "Were you taught how to set goals in school?" (Bishop, 2003). The case for goal setting has clearly been made and supported by research studies, yet this important learning strategy has been largely ignored in classrooms.

It is important to emphasize that simply setting one's own goals would not necessarily improve achievement (Schunk, 2003). There are a number of

important factors that must be considered, and effective goal properties are among them. Research offers various models describing quality goals. Some researchers identify difficulty, specificity, and proximity (Schunk, 2003; West & Thorn, 2001) as key features of effective goals, whereas others state that high-quality goals should be SMART; that is, learning goals should be specific, measurable, attainable, relevant, and time bound (Doran, 1981; Miller & Cunningham, 1981). Studies have found that higher results are achieved if goals are specific, measurable, and challenging (Dörnyei, 2001; Locke et al., 1981; Pintrich & Schunk, 1996), not unrealistic or outside the student's capacity.

Researchers emphasize that for goal setting to improve performance, students should be allowed to participate in setting their own goals (Azevedo, Ragan, Cromley, & Pritchett, 2002; Tubbs, 1986, as cited in Griffee & Templi, 1997). Participatory goal theory states that students who choose their own goals perform at higher levels than students who have goals set for them (Mento, Steel, & Karren, 1987, as cited in Griffee & Templi, 1997). Research reveals that many educators often create their own learning goals and rarely encourage students to adapt these goals to their personal needs and interests (Marzano, Pickering, & Pollock, 2001). Many overestimate their students' ability to set their own learning goals (Boekaerts, 2002). Whereas teachers commonly set specific goals or teaching outcomes for a class, these goals can be quite distinct from the goals that the students themselves are pursuing during the same class. According to Dörnyei (2001), these differences between teacher and student goals can lead to a lack of connection between the teacher's "official class goal" (p. 59) and that of an individual student. This disconnect can, in turn, result in a lack of understanding on the part of the students as to how and why they are involved in the learning process.

Students may find intrinsic value, attainment value, or utility value when they participate in a learning task (Cross & Steadman, 1996). When students do not understand the goal of a task or do not invest themselves in a task, there is a lack of ownership in the learning. The value of the learning task is diminished, thereby affecting their motivation to engage in that task. Connecting learning tasks with students' goals increases the value of the task and thus increases motivation. In the classroom, identifying goals increases motivation by assigning value to learning tasks and connecting learning tasks to students' own objectives. When students can attach personal value to tasks that are assigned to them, tasks become purposeful and students are more willing to meet the costs of achievement. Researchers echo this and stress that effective goals are not simply impersonal "outcomes to shoot for" (Dörnyei, 2001, p. 82) but rather standards by which students can evaluate their own performance and which mark their progress. Goals designed and evaluated by students themselves are more authentic and meaningful to the students (Bellanca & Fogarty, 1991, as cited in Moriarity et al., 2001). Boekaerts (2002) indicated that an optimal strategy is a combination of a learning goal set by a student and approved by the teacher. In this case, a learning goal becomes a joint agreement of both sides to "invest efforts." This agreed-upon learning goal has "a better chance of being accomplished" (Boekaerts, 2002, p. 18). Within this type of educational environment, students are more intrinsically motivated to produce high-quality work because they are not simply doing an assignment, fulfilling a requirement, or preparing for a test—they are taking a step toward reaching their own aspirations. This type of instruction also creates an environment conducive to motivating students to engage in their own learning process. This is a cycle in which "to be motivated, students must consciously participate in the learning environment of the classroom … on the other hand, to motivate students, learning environments must offer opportunities that will invite students' efforts and participation … tasks must be engaging and meaningful" (Turner, 1995, p. 413).

According to research conducted by Oxford and Shearin (1994), "goal setting can have exceptional importance in stimulating L2 [second language] learning motivation, and it is therefore shocking that so little time and energy are spent in the L2 classroom on goal setting" (p. 129). To effectively integrate goal setting into the curriculum, educators must be familiar with interventions that facilitate this process as well as how to effectively implement such interventions. Which classroom interventions lead to a mastery goal orientation that may contribute to enhanced language achievement? How do we implement these interventions such that students focus on effort versus ability, develop intrinsic interest in language learning, and make use of effective learning strategies?

According Ames (1992b), instructional interventions must connect with all aspects of the instructional plan and design:

> Comprehensive intervention requires attention
> to salient classroom structures, identification

of principles and strategies that can be mapped onto these structures, and a generation of exemplary practices that can be integrated into all curriculum areas and within all aspects of day-to-day classroom routine. (p. 268)

As a result of changing classroom plans and design, teachers may need to adjust their goals for learning and their belief systems (Good, Grouws, Mason, Slavings, & Cramer, 1990; Marshall, 1988; Nicholls, Cheung, Lauer, & Patashnick, 1989; Paris & Newman, 1990). A classroom goal-setting intervention should consist of explicitly teaching and illustrating the connection between effort and achievement. LinguaFolio, whose building blocks consist of the very principles established through research, therefore served as an appropriate, if not ideal, intervention to explore goal theory and student achievement at the classroom level. An examination of the evolution of the European Language Portfolio will assist in more fully understanding the origin, purpose, and adaptation of LinguaFolio in the United States.

The European Language Portfolio

The unification of European nations led to increased mobility of individuals among and between countries, creating the need for unified benchmarks that identified language skills and competencies required for employment and educational purposes. The European Language Portfolio (ELP) was developed by the Council of Europe (2010) as a product of its comprehensive frameworks for foreign language education. Its purpose was to accompany, reinforce, and guide any foreign language curriculum that aims to provide its learners with a communicative approach to language education while facilitating and reinforcing lifelong learning skills essential to success in any activity outside the classroom.

The ELP has two basic functions: a reporting function and a pedagogical function (Little & Perclová, 2001). The reporting function serves as a means for students to literally display the skills they have acquired throughout their learning experience. This function is especially important for students who are applying for jobs or universities and want to attract potential employers or schools by exhibiting their language competencies. It is important to note, however, that the portfolio is not intended to substitute for official certificates or diplomas that are awarded as the result of formal tests but rather to "supplement them by presenting additional information about the owner's experience and concrete evidence of his or her foreign language achievements" (Little & Perclová, 2001, p. 3).

The pedagogical function of the ELP comprehensively addresses the communicative skills involved in language learning and how these skills are being taught, used, and acquired in the classroom. This function is defined by Little and Perclová (2001) in their guide for teachers and teacher trainers as "a means of making the language learning process more transparent to learners, helping them to develop their capacity for reflection and self-assessment, and thus enabling them gradually to assume more and more responsibility for their own learning" (p. 3). In this view, the ELP claims to promote and develop learner autonomy and motivation with sufficient guidance from the teacher. This is thought to be achievable through continuous practice of reflection and self-assessment, metacognitive skills that are regularly utilized when working with the portfolio.

LinguaFolio

The National Council of State Supervisors of Foreign Languages (NCSSFL) adopted LinguaFolio as its official project for the 2005 Year of Languages. Building on the knowledge and insights gleaned from the European case studies and experiences with the ELP, NCSSFL created a version of such a portfolio for American schools that was named LinguaFolio.

LinguaFolio is a portfolio that focuses on building autonomous learners through student self-assessment, goal setting, and collection of evidence of language achievement. LinguaFolio provides students with strategies to improve achievement, transforms standards into classroom goals in the form of "can do" statements, informs students of short- and long-term goals, and involves students directly in the assessment process. This formative assessment tool consists of three components:

1. Language Biography: Students record information about current and past experiences with language as well as their learning habits and strategies.

2. Language Passport: Students assess their own language skills in the form of "can do" statements to identify their level of language proficiency and to follow their growth in proficiency.

3. Dossier of Evidence: Students identify goals, create an action plan that details the path to goal attainment, and provide examples of their work that serves as evidence of accomplishment of learning goals. A final step involves

student reflection to determine at what level the goal was accomplished. (NCSSFL, 2010)

The LinguaFolio goal-setting process (the Dossier of Evidence component) involves students directly in the learning process as they keep track of learning goals and track progress toward these goals. At the beginning of each new thematic unit, textbook chapter, or learning unit, students identify and record their learning goals for the chapter and address one or more of the four skills: reading, writing, listening, and speaking. An action plan is created that delineates how these goals will be achieved. The action plan typically takes the form of tasks that students will perform to achieve their end goal. Students revisit their goals at the end of the chapter or unit, select evidence that supports mastery of the goal, and record responses to the following reflective questions: "Did you meet your goals?" "How do you know?" "How could you have better met your goals?" "Are you satisfied with your performance in this chapter? Why or why not?" "Based on the evidence that you chose, what can you do now that you could not do at the beginning of this chapter?" Asking students to revisit goals they set at the beginning of the chapter encourages them to make SMART (specific, measurable, attainable, realistic, time-bound) goals SMARTER, by adding evaluation and reflection segments aimed at examining the quality of the work completed. This personal reflection on the learning supplies the important element of feedback as defined by Locke and Latham (1990) as "knowledge of one's performance" (p. 173) or as "knowledge about performance" (West & Thorn, 2001, p. 42). In this case, students provide their own feedback (self-assessment) as they monitor their own progress (Marzano et al., 2001). Feedback "tells people what is" and "goals tell them what is desirable" (Locke & Latham, 1990, p. 197). Feedback provides information on progress made toward goal accomplishment, and goals facilitate the ability to evaluate this progress using a goal standard (Locke & Latham, 1990). See the LinguaFolio implementation cycle designed to guide classroom application of these principles (Appendix A).

A collaboration of states adapted the NCSSFL LinguaFolio to interface with the Standards for Foreign Language Learning, the American Council on the Teaching of Foreign Languages (ACTFL) Performance and Proficiency Guidelines, and their individual state foreign language frameworks. State-specific versions of LinguaFolio were developed and piloted in North Carolina, South Carolina, Indiana, Kentucky, Virginia, and Nebraska.

Classroom-Based Research

A quantitative research study was conducted at the classroom level to determine the educational value related to the goal-setting process as facilitated through the integration of LinguaFolio in the language classroom. The unique challenges inherent in working in K–12 educational settings for any length of time can discourage researchers from studying young learners, or minors, as such studies require very strict procedures to secure institutional approval that include parental consent. This examination of goal setting and student achievement required institutional review board permissions, district and school approval, parental consent, student assent, and teacher consent on an annual basis. Working in K–12 schools, researchers were faced with concerns of ensuring rigor in a natural and difficult-to-control environment laden with attrition due to teachers leaving or transferring schools, replacement teachers not invested in study participation, and student attrition as they transitioned to more advanced (and nonmandatory) levels of study. By choosing hierarchical linear modeling—a statistical tool that allowed researchers to use all of the data collected in spite of attritional challenges—researchers were able to overcome these significant obstacles.

Purpose and Research Questions

The purpose of this study is to analyze the relationship between goal-setting ability and second-language performance for high school students in the Spanish language classroom. Students' goal-setting processes and language proficiency performance were analyzed for 4 consecutive years (with an additional year for a pilot that informed the study). Researchers investigated trends in the goal-setting process and the relationship between goal setting and language production in reading, writing, and speaking.

1. What is the relationship between goal setting and performance for students of Spanish?

2. What are the general trends in goal setting for Spanish students in levels 1, 2, 3, and 4?

Methodology

Participants

A purposive sampling of teachers was recruited for the study that would allow the researchers to

Table 1. Student Sample

Student Participants	2005	2006	2007	2008	2009
Total	106	394	527	484	332
First-Year Students	80	270	186	48	173
Second-Year Students	13	123	307	261	72
Third-Year Students	13	1	34	158	37
Fourth-Year Students	NA	NA	NA	16	51

follow the same students and teachers for several years in an attempt to reduce the external variables in the study. Researchers identified and recruited teacher participants through a statewide "Improving Teacher Quality"—a funded initiative in which Spanish educators participated in a 10-day intensive immersion institute designed to enhance language skills, pedagogical practices, and technological integration into their classrooms. The participants also received extensive training in goal setting and reflection, and they were introduced to LinguaFolio, a classroom-based, structured intervention designed to promote self-regulation among learners. Between 2005 and 2009, researchers recruited 21 teacher participants and their 1,273 individual students. These 21 teachers represented 23 Nebraska schools, including 19 public and 4 parochial schools of varying sizes.

In each year of the study, the sample grew in diversity and size. New teachers and students were recruited in an effort to increase the sample size while current participants continued with their language learning experience. New recruits were from all levels of language learning and not solely from the first year of language study. This was done in an effort to provide the greatest level of breadth and depth of sample diversity. Additionally, a number of participants were lost due to teacher, school, or student attrition. As a result of this longitudinal tiered recruitment and attrition, the final data set consisted of data stemming from students at all levels of Spanish, some of whom were followed for multiple consecutive years and some of whom participated for only a snapshot of their Spanish learning experience. All data were valuable for the purposes of this study as explained in the section addressing hierarchical linear modeling (HLM) methodology. Table 1 outlines the sample composition for the duration of the study.

Instruments and Procedures

All participating teachers and their students engaged in the LinguaFolio goal-setting process as an established component of their Spanish-learning classroom curriculum. The LinguaFolio goal-setting process required students to establish personalized goals and action plans in accordance with chapter objectives, to collect classroom-based evidence throughout a chapter or unit, and to reflect on relative goal attainment upon completion of a chapter or unit. This process was repeated with each subsequent chapter (see Appendix A for visual representation of the LinguaFolio cycle of implementation).

The independent variable for this study (LinguaFolio Goal-Setting Process) consists of three components: setting goals, establishing an action plan for goal attainment, and reflecting on relative attainment of goals. For each year of the study, researchers collected and analyzed qualitative data in the form of student-produced goals, action plans, and reflections. In 2005, with the collection of the first year of goal-setting data, researchers identified a need for a rubric to score student-produced goals and reflections. Researchers entered 200 student-produced goals into a qualitative database and analyzed those goals to determine the natural and authentic separation of actual student data. Working independently, 5 researchers explained the similarities and differences by establishing common themes. The team then met to compare and contrast its findings and arrived at a final, comprehensive rubric derived from actual student-produced data. The rubric was peer-reviewed by 3 teacher participants, and their feedback was applied to finalize the LinguaFolio Goal-Setting Process Rubric (see Appendix B).

With each annual collection of goals (with a mean of 1,000 goals per year), interrater reliability was established at the 90% level through the following process.

A random sample of 10 sets of LinguaFolio goal-setting data (goal, action plan, reflection) was reviewed by each of the 3 researchers involved in the goal-rating process. They utilized the LinguaFolio Goal-Setting Process Rubric to independently rate each of the 10 student sample sets. Each of the 3 researchers independently produced 30 scores (10 goal scores, 10 action plan scores, 10 reflection scores), resulting in a total of 90 scores (30 scores × 3 researchers). After rating the 10 student goals independently, all scores were compared during a meeting that allowed for a discussion of similarities and differences. Another random sample consisting of 10 LinguaFolio goal-setting data was reviewed, each rater repeating the previous process. This continued until researchers arrived at 90% agreement among their 90 scores. With the establishment

of 90% agreement, a final sample rating was conducted, eliminating chance occurrence. The 3 researchers then divided all student samples, each taking a portion of the data set to rate. These scores were utilized as raw data in analyzing the relationship between student goals and achievement.

Dependent variables for this study include teacher-independent scores produced annually through an online proficiency assessment—the Standardized Measure of Proficiency (STAMP) assessment. STAMP, a statistically validated, realiabased, textbook-independent, and computer adaptive assessment, produces a comprehensive score for proficiency in reading, writing, and speaking (Avant Assessment, 2010).

For each year of the study, teachers guided student participants through the goal-setting process, and students stored all goals and reflections in folders or binders. At the culmination of a Spanish course, students participated in the STAMP assessment. At the conclusion of each academic year, researchers collected all LinguaFolio student-produced goals and they analyzed the goals using the LinguaFolio Goal-Setting Process Rubric.

Hierarchical Linear Modeling

Hierarchical structuring is commonly found in organizational settings such as educational systems (i.e., assignments within students within classes within teachers within schools within districts within regions, and so on). In longitudinal studies conducted within educational systems, repeated measurements are made on the same experimental unit, or subject, over time. In the case of this study, researchers desired to make repeated measures representing Spanish learner growth while accounting for the nested learning structure. HLM was adopted, as HLM is able to capture these "measurement occasions" within a nested structure. In this study, these measurement occasions (lower level or level 1) are nested within students (higher level or level 2). These students (level 2) are then nested within teachers (highest level, or level 3). Proc Glimmix in Statistical Analysis Software (SAS) facilitated the HLM analyses.[1]

Researchers initially planned on utilizing the HLM to analyze reading, writing, and speaking scores in light of all components of the goal-setting process variable (goal setting, action plan, reflection). However, the high correlations (Table 3) among these variables implied that collinearity might occur if they were all included as predictors. When examining the correlations between the

Table 2. Goal Process Scores by Level of Spanish

Spanish Level		Goal	Action Plan	Reflection
All Levels	μ	2.48	2.41	2.28
	SD	0.828	0.929	0.794
	n	877	847	876
First Year	μ	2.39	2.19	2.18
	SD	0.729	0.911	0.784
	n	346	320	347
Second Year	μ	2.42	2.39	2.28
	SD	0.818	0.871	0.793
	n	376	372	374
Third Year	μ	2.98	2.97	2.49
	SD	0.956	0.973	0.824
	n	131	131	131
Fourth Year	μ	2.10	2.67	2.58
	SD	0.571	0.381	0.434
	n	24	24	24

goal-setting process components and the STAMP results, the goal-setting and action plan variables presented stronger correlations with STAMP proficiency scores. Because of these stronger correlations and because this study involved an analysis of the link between goal setting and student achievement, researchers opted to concentrate on goal and action plan writing as predictors for the HLM analysis. Although this eliminated the student reflection detail in the goal-setting process and student achievement relationship, it increased accuracy and power by decreasing the error risked with collinearity among three factors. For each dependent variable, researchers established the best-fit model through a series of unconditional and conditional hierarchical linear models. For all of the models, restricted maximum likelihood (REML) was used with Satterthwaite approximation for degrees of freedom.

Results

Descriptive analyses were run for goal writing, action plan writing, and reflection scores according to levels of Spanish. The results of the descriptive analysis are depicted in Table 2.

The descriptive analysis revealed a consistent increase in goal setting, action plan, and reflection mean from level 1 through level 3 of Spanish. The analysis revealed a drop in goal-setting and action plan means between years 3 and 4, but the mean score for reflection continued to rise between years 3 and 4. The decrease in mean scores from the third

Table 3. Correlations for LinguaFolio and STAMP

		STAMP Writing	STAMP Speaking	STAMP Reading	LF Goal	LF Plan	LF Reflection
LF Goal	Pearson Correlation	.376**	.341**	.263**	1	.623**	.623**
	n	836	801	845	877	845	875
LF Plan	Pearson Correlation	.419**	.383**	.211**	.623**	1	.468**
	n	807	777	817	845	847	845
LF Reflection	Pearson Correlation	.249	.221**	.237	.623**	.468**	1
	n	835	800	845	875	845	876

LF = LinguaFolio; STAMP = Standardized Measure of Proficiency.
**$p < .01$ (2-tailed).

year to the fourth year for both goal setting (μ= 2.98, 2.10) and action plan (μ= 2.97, 2.67), coupled with a decrease in standard deviation for goal setting (*SD*= 0.956, 0.973), action plan (*SD*= 0.973, 0.381), and reflection (*SD*= 0.825, 0.434), calls for a closer analysis of the data. Results may not accurately depict growth because conducting aggregate descriptive analyses of means considers the scores even of those students who may be writing goals for the first time as third- or fourth-year Spanish students. When considering the data represented in Table 2, the third- and fourth-year declines may result from analyzing the data in aggregate form without considering sample attrition or retention. With disaggregation of the data to represent solely students participating in all 4 years of consecutive levels of Spanish instruction, the sample size decreases significantly (*n*= 24). Conducting an analysis with such a small sample risks producing questionable results. As such, the descriptive analysis primarily served as a source of guidance as researchers continued with their data analysis.

A correlational analysis of the goal-setting process and STAMP assessment variables reveals a statistically significant relationship between each component of the goal-setting process and each component of the STAMP assessment ($p < .01$). The results of the correlational analysis are depicted in Table 3. Restricting the investigation of relationships to a correlational analysis neglects potential differences resulting from student, teacher, and other predictors. HLM was therefore adopted to further investigate the relationship between goal setting and student achievement. HLM allows for a deeper understanding of the relationship between goal setting and achievement, with the emphasis no longer on snapshot relationships but rather growth relationships that account for variation due to student, teacher, and other predictors.

Empty and Unconditional Models

To build a model in HLM, researchers began with a basic, or empty, model. The empty model aimed to reveal the source of variance in the absence of specific predictors. In this case, goal-setting process predictors were absent in the empty model. A three-level empty model (random intercept only) was fitted for each dependent variable (STAMP reading, writing, speaking scores). The three levels in this model represent measurement occasion (level 1), student (level 2), and teacher (level 3). The random effects at each level and the interclass correlations (ICCs) are depicted in Table 4.

As is evident from Table 4, some variance in STAMP outcomes can be accounted for by student and teacher differences. For example, 35.4% of the variance for STAMP writing can be accounted for by student difference (this includes the teacher difference by definition) and 22.7% can be attributed to teacher difference. Sixty-four percent of the 35.4% student difference can be attributed to teacher differences.

Level of Spanish, centered at the first year of Spanish, was then included in the empty model. Due to the limited levels of Spanish (four), researchers chose to not pursue more complex models such as quadratic or cubic models, opting to remain with the linear model. It was found that including the random slope at the student level did not improve the model fit for STAMP writing and STAMP speaking (deviance difference = 2.78; Δdf = 2, $p > .05$; deviance difference = 27.7; Δdf = 2; $p > .05$, respectively) but did improve for STAMP reading (deviance difference = 77; Δdf = 2, $p < .05$). Thus,

Table 4. Random Effects for Empty Models and Interclass Correlations

		STAMP Writing	STAMP Speaking	STAMP Reading
Random Intercept Variance at Level 2		.125	.105	.160
Random Intercept Variance at Level 3		.223	.151	.108
Residual Variance		.634	.592	.359
ICC	Level 1 within Level 2 and Level 3	.354	.302	.427
	Level 1 within Level 3	.227	.178	.172
	Level 2 within Level 3	.64	.590	.403

ICC = interclass correlation; STAMP = Standardized Measure of Proficiency.

the baseline model for STAMP writing and STAMP speaking did not include random slope, but the baseline model for STAMP reading did include random slope at the student level.

Conditional Models

Goal-setting and action plan variables were then included in the baseline model. These two variables were at the measurement occasion level (level 1), and three new predictors were established for both goal-setting and action plan variables. The teacher-level predictor (level 3) was represented by the mean scores of all students for an individual teacher. For goal setting, this was centered at 2, for action plan writing it was centered at 2.4. The student-level predictor (level 2) was represented by the difference between the mean scores for an individual student and the mean score attributed to all students of the corresponding individual teacher. The difference of scores associated with each Spanish level and the means of an individual student served as the measurement occasion level predictor (level 1). Thus, six covariates were created and were included into the baseline model. The results are shown in Table 5. The regression equations for the final model of STAMP writing, speaking, and reading are provided in Appendix C.

Hierarchical linear modeling results are interpreted in the same manner for STAMP reading, writing, and speaking (Table 5). Results for STAMP writing and the goal-setting process will be explained as a representative model of HLM interpretation. The 1.54 intercept implies that the STAMP writing score is 1.54 for a student in his or her first year of Spanish study, with the mean of the combined scores for all students of a teacher (the "teacher mean score") of 2 for goal setting and 2.4 for action plan writing, with the individual student mean goal-setting and action plan scores equal to the teacher's mean scores, and with the student goal-setting and action plan scores considered to be average. The level of Spanish of 0.683 implies that completion of additional years of Spanish relates to a 0.683 increase in STAMP writing score for each year.

The teacher-level goal setting of 0.17 implies that the STAMP writing score of a student increases by 0.17 if the average goal-setting score of the teacher is 1 unit higher (average score of a teacher = average of all student scores of that teacher). The student-level goal setting of 0.283 implies that a student's STAMP writing score increases by 0.283 if the student's goal-setting score increases by 1 unit. The measurement occasion level goal setting of 0.005 implies that the STAMP writing score increases by 0.005 if a student's goal-setting score is 1 unit higher than the average.

The teacher-level action plan writing of 0.369 implies that the STAMP writing score of a student increases by 0.369 if the average action plan writing score of the teacher is 1 unit higher. The student-level action plan writing of 0.162 implies that a student's STAMP writing score increases by 0.162 if the student's action plan writing score increases by 1 unit. The measurement occasion level action plan writing of 0.214 implies that the STAMP writing score increases by 0.214 if the action plan writing score is 1 unit higher than average. This interpretation of the HLM results would apply in an equivalent manner, with the appropriate respective numbers, for both STAMP speaking and STAMP reading scores.

Table 5. Parameter Estimates and Model Fit Statistics for Final Conditional Models

Parameters	STAMP Writing			STAMP Speaking			STAMP Reading		
	Estimate	SE	p-Value	Estimate	SE	p-Value	Estimate	SE	p-Value
Fixed Effects									
Intercept	1.54	0.153	<.0001	1.32	0.123	<.0001	1.3	0.074	<.0001
Level of Spanish	0.683	0.035	<.0001	0.605	0.034	<.0001	0.373	0.033	<.0001
BWT Goal	0.17	0.283	.557	0.42	0.223	.078	0.256	0.127	.061
BWS Goal	0.283	0.052	<.0001	0.19	0.052	.0003	0.244	0.047	<.0001
WS Goal	0.005	0.085	.952	–0.003	0.008	.973	0.106	0.08	.188
BWT Plan	0.369	0.273	.198	0.151	0.214	.493	0.03	0.117	.799
BWS Plan	0.162	0.046	.0004	0.159	0.045	.0005	–0.043	0.041	.29
WS Plan	0.214	0.07	.0027	0.111	0.067	.102	–0.07	0.066	.291
Random Effects									
Residual Variance	0.335	0.033		0.311	0.031		0.313	0.011	
Intercept Variance	0.142	0.061		0.08	0.033		0.015	0.033	
BWT									
Intercept Variance	0.154	0.035		0.149	0.033		0.033	0.039	
BWS									
Intercept-Linear							0.062	0.015	
Covariance BWS									
Linear Variance BWS							0*	—[a]	
Model Fit									
AIC	1750.68			1626.88			1656.91		
BIC	1753.18			1635.38			1660.24		
No. of Parameters	11			11			11		

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; BWS = between student/student level (level 2); BWT = between teacher/teacher level (level 3); WS = within student/measurement occasion level (level 1).
a. Not estimable.
*2.52^{-19}.

Discussion and Conclusion

Analysis of the data reveals a consistent increase over time in the mean goal, action plan, and reflection scores of high school Spanish learners. This trend held true for all levels except for the progression from third- to fourth-year Spanish for action plan writing and goal setting. With the disaggregation of the data at the third and fourth year, this consistency continued; however, a limited sample size is a limitation at these levels. The greatest improvement in goal setting occurred between the second and third levels of Spanish. This can be explained in part by the attrition of those students who discontinued their Spanish studies, as this sufficed to meet the language requirement for entry into college. This increase in score could also be attributed to a myriad of reasons that may include smaller class size, more opportunities to use the second language, and higher motivation among those students who chose to continue language studies beyond the minimum language requirement. Given the indicated relationship between goal setting and achievement, future research to further clarify development in both areas, as well as the interrelationship, should be considered. For example, a similar study with a control group would provide increased clarity and strengthen our understanding of the relationship between goal setting and achievement. Although causation certainly cannot be claimed with the statistical analyses conducted in this study, the consistent growth in goal, action plan, and reflection scores may serve as a rationale for future consideration of the factors involved in increasing skill proficiency (practice, educational level, maturity, etc.).

One might hypothesize that these lesser mean scores (goal-setting process) for the third and fourth levels are due to a training effect on the part of teachers (Schärer, 2004). Knowledge of the

goal-setting process and its implementation has evolved during this study, and trainings for teacher participants were adjusted accordingly. Students who accumulated 4 consecutive years of participation began the study with teachers who received their training when the least was known about the goal-setting process. Their students, in turn, likely received a less detailed and structured plan of guidance when compared to those who began participating in the third or fourth year of the study. Each iteration of the study brought new understanding about goal setting, which was immediately implemented in the training sessions with participating teachers. An additional factor contributing to this may be the sense of community that was established among the participants via Blackboard, face-to-face meetings, and additional training at regional and state conferences and seminars. This provided a forum for teachers to share insights, experiences, and successes (Schärer, 2004).

Correlational analyses revealed a statistically significant positive relationship between each component of the goal-setting process and each component of the STAMP assessment ($p < .01$). These correlations reveal a positive relationship between proficiency and the writing of goals, action plans, and reflections—a learner more practiced and skilled at goal setting relates positively to higher language achievement in Spanish. Thus, a student with a higher goal, action plan, or reflection score will likely also be a student who achieves a higher STAMP proficiency score in reading, writing, or speaking. Conversely, a student who has lower goal setting, action plan, or reflection scores will likely be a student who achieves a lower STAMP proficiency score. Although there is a strong positive relationship between goal setting and language achievement, causality can only be established through experimental research using a control group.

Although the correlation results might be considered a defense of "better goal writers equal better users of language," the HLM elucidates the nature of the relationship of the growth that occurs with both goal setting and proficiency. The HLM analysis revealed a statistically significant relationship at the student level when considering both goal writing and action plan writing in relation to STAMP proficiency ($p < .001$). The relationship of this growth is independent of level of language learning or achievement level—growth in the ability to write goals or action plans is related to growth in Spanish language proficiency. This general finding elucidates the need to focus

on the goal-setting process for the potential benefit of all learners, whether they be high achievers, low achievers, beginning students, or advanced students (at the secondary level). Kohonen (2002) found that especially lower secondary and elementary students are accustomed to relying on the teacher for planning and guiding them through the learning process and found little value in taking on the responsibility themselves. Lacking the key metacognitive skills that are stimulated by the ELP/LinguaFolio, many students struggled to make the connection between reflection and self-assessment exercises and their language learning. This fact emphasizes that the goal-setting process is especially important for these learners to achieve academic success and can serve as a powerful intervention. LinguaFolio, as evidenced in this study, can serve as an effective tool for promoting self-regulation in learners through structured goal setting.

The HLM teacher-level goal-setting score refers to a combined mean goal score of all learners for one particular teacher, and the HLM analysis does not reveal a significant relationship for teacher-level scores and student STAMP scores. An increase in the teacher-level goal-setting score does not relate to an increase in STAMP scores of individual students (writing, $p = .557$; reading, $p = .06$; speaking, $p = .078$). The action plan scores at the teacher level do not reveal a relationship with the STAMP scores of individual students (reading, $p = .799$; writing, $p = .198$; speaking, $p = .493$). This finding gains more meaning when one recalls that the previously mentioned HLM statistically indicated a relationship between student growth in the goal-setting process and proficiency ($p < .001$). The presence of student-level-related growth combined with the lack of relationship between teacher goal/action plan writing growth and student STAMP growth emphasizes the student-specific nature of the effects of goal writing and language proficiency. In other words, according to the HLM findings, growth in student proficiency is related to growth in student goal writing independent of the teacher. Factors that may influence these results include teacher-independent variables that impact student achievement, such as motivation, the goal-setting process itself, and the meaningfulness of the curriculum. Researchers have emphasized that simply setting one's own goals does not necessarily improve achievement (Schunk, 2003), that a number of important factors contribute to improved performance, such as high-quality goals (Dörnyei, 2001; West & Thorn, 2001), setting

one's own goals (Azevedo et al., 2002; Griffee & Templi, 1997), teacher- and student-agreed-upon learner goals (Boekaerts, 2002), and the learning environment (Turner, 1995).

One might also attribute the lack of relationship between teacher-level scores and student STAMP scores to the very prescribed goal-setting procedures used uniformly by the participating teachers (see Appendix A). Such a prescribed set of procedures may have reduced the variations between teacher means. Allowing for variability in goal-setting procedures may reveal teacher effect for goal writing and student achievement.

This study does not imply that teachers do not influence the language acquisition process. When turning to the empty model (Table 4), there is indication of variability for student achievement that is related to differences among teachers. The empty model is the basic level of development of the more complex HLM model, and as such, it does not take into account multiple variables. The focus in the empty model is growth in proficiency independent of other variables. Because there is a statistically indicated relationship between teacher and student growth in proficiency in the empty model, we can assume that the teacher contribution to variability in student proficiency is related to factors independent of the goal-setting process. This assumption stresses the fact that the teacher relationship to student achievement (STAMP scores) may involve other variables. Variables such as classroom climate, use of the second language, grouping, learner-centered instruction, teacher language proficiency, and teacher and student personality have correlated with higher achievement. Classroom observations, teacher interviews, and lesson plan reviews would provide valuable data regarding what is happening inside those classrooms in which students consistently outperform other classes of students.

This study provides insight into relationships that exist between the goal-setting process and student achievement in the Spanish language classroom. Researchers found a significant relationship between a student's ability to set goals and language achievement in the Spanish language classroom. A growth relationship was also revealed, with growth in goal-setting ability significantly relating to growth in proficiency. This growth relationship proved to be significant at the individual student level, independent of the classroom teacher. Interestingly, whereas the teacher did not account for variance in the growth relationship, the teacher did account for general variance in student proficiency according to the HLM empty model. These combined results call for future investigation into the nature of teacher effect in the foreign language classroom, such as the teacher's role in the goal-setting process. Qualitative studies are recommended that investigate both general classroom teacher effect as well as the teacher effect component on student goal-setting processes. How the teacher introduces the goal-setting process, the degree of peer and teacher feedback of the goals, the consistent and regular review of goal setting during the course of the semester, the degree of participation of the student in the identification of the learning goals, the personalization of the learning goals, and the use of SMART goals to evaluate the quality of student goals may play a significant role in the degree of student achievement. Finally, this study has introduced LinguaFolio as a potential intervention for the integration of the goal-setting process into the language learning classroom. Given the indicated relationship between the goal-setting process and student achievement, the need for such interventions is underscored. Future investigations may further elucidate the optimal manner in which students might navigate this goal-setting process to increase motivation, promote autonomous learning, and enhance academic achievement.

Note

HLM uses all available information within a data set, and meaningful variance is not lost, as would be the case with listwise elimination of cases in techniques such as analysis of variance and regression. HLM presents another data-related advantage within the context of this study when considering that it enables researchers to analyze relationships in growth between or among variables. Due to the emphasis on growth, students may enter at any level of learning, and their data will be of value for this study. In this study, HLM relates growth in goal-writing ability with growth in proficiency, and the growth rate is considered to be constant. Because of this underlying assumption of constant growth rate, the comparison of growth is unrelated to level of language learning. Thus, students may enter the study at any level and may be included in this longitudinal analysis of growth relationships. For these reasons, HLM is the strongest and most appropriate statistical analysis procedure for this study, as researchers desire to most accurately model the true growth-related relationships between outcomes and predictors within the nested educational context of Spanish learning experience within students within teachers.
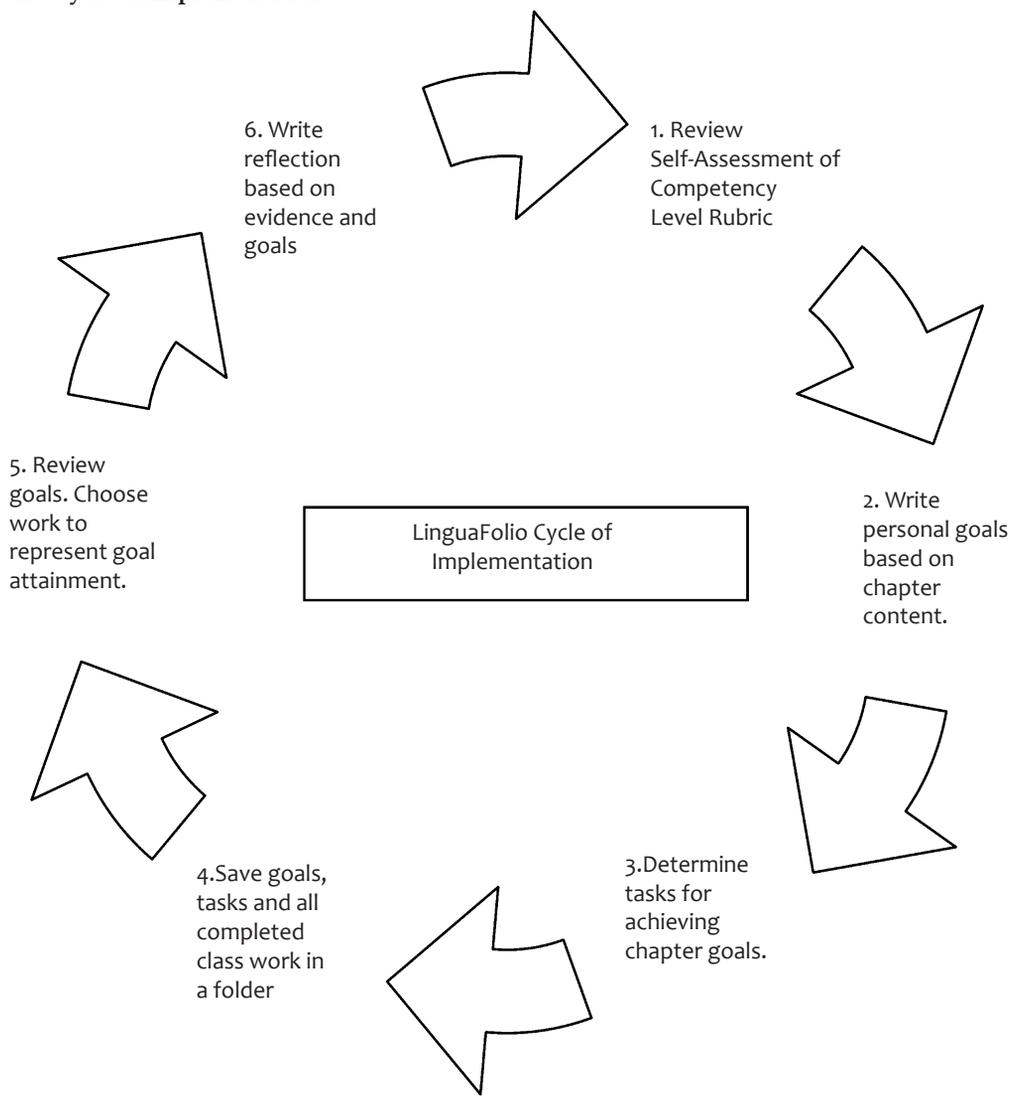
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Appendix A
LinguaFolio Cycle of Implementation

6. Write reflection based on evidence and goals

1. Review Self-Assessment of Competency Level Rubric

5. Review goals. Choose work to represent goal attainment.

LinguaFolio Cycle of Implementation

2. Write personal goals based on chapter content.

4.Save goals, tasks and all completed class work in a folder

3.Determine tasks for achieving chapter goals.

Appendix B
LinguaFolio Goal-Setting Process Rubric

	4/High	3/Mid-High	2/Mid-Low	1/Low
Goals	Goals use authentic language and are tied to context. Goals are growth oriented, theme based, measurable, specific, realistic, challenging, personally relevant, and time bound ("by the end of this chapter . . .").	Goals do not necessarily use authentic language. Goals are somewhat contextualized, growth oriented, and connected to a theme. Goals are measurable, somewhat specific, realistic, and somewhat challenging.	Goals do not use authentic language and/or are not growth oriented, not theme based, broad, unfocused, vague or too specific, too challenging, or not at all challenging.	Goals are not authentic, there is no focus on growth, and they are too broad, unrealistic, and/or generic. The student is unable to articulate a goal.
Action Plan	Breaks down goal into a specific action plan with manageable tasks. It is clear how each goal will be achieved.	Action plan present, but not specific, or additional steps would be necessary in order to make the goal manageable.	Action plan present, but specific steps for success are not articulated, extremely vague (i.e., "study," "listen").	No action plan for improving achievement.
Evidence & Reflection	Goals are reflected upon and are consistently revised when deemed inappropriate by the student.	Goals are reflected upon and are sometimes revised when deemed inappropriate.	Goals are reflected upon, but they are not revised when deemed inappropriate.	Goals are not reflected upon.
	Each sample of work in the dossier includes a rationale for why it was chosen and how it relates to the goals that were set. The rationale is very clearly stated, labeled, and dated.	Most samples of work in the dossier include a rationale for why they were chosen and how they relate to the goals that were set. The rationale is briefly stated and may or may not be labeled and dated.	Few samples of work in the dossier include a rationale for why they were chosen and/or how they relate to the goals that were set. The rationale, if stated, is vague and lacking labels and dates.	No samples of work in the dossier include a rationale for why they were chosen and/or how they relate to the goals that were set

Appendix C
Regression Equations for the Final Model of STAMP

STAMP Writing, Level 1 (within student):

$$(\text{STAMP Writing})_{tij} = \beta_{0ij} + \beta_{1ij} * (\text{Level of Spanish}) + \beta_{2ij} * (\text{level\_1\_goalsetting}_{tij}) + \beta_{3ij} * (\text{level\_1\_plan}_{tij}) + e_{tij}$$

STAMP Writing, Level 2 (between student):

$$\beta_{0ij} = \delta_{00j} + \delta_{01j} * (\text{level\_2\_goalsetting}_{ij}) + \delta_{02j} * (\text{level\_2\_plan}_{ij}) + U_{0ij}$$

$$\beta_{1ij} = .683$$
$$\beta_{2ij} = .005$$
$$\beta_{3ij} = .214$$

STAMP Writing, Level 3 (between teacher):

$$\delta_{00j} = 1.54 + .17 * (\text{level\_3\_goalsetting}_j) + .369 * (\text{level\_3\_plan}_j) + V_{0j}$$

$$\delta_{01j} = .283$$
$$\delta_{02j} = .162$$

Note:
   t: tth level of Spanish
   i: ith student
   j: jth teacher

STAMP Speaking, Level 1 (within student):

$$(\text{STAMP Speaking})_{tij} = \beta_{0ij} + \beta_{1ij} * (\text{Level of Spanish}) + \beta_{2ij} * (\text{level\_1\_goalsetting}_{tij}) + \beta_{3ij} * (\text{level\_1\_plan}_{tij}) + e_{tij}$$

STAMP Speaking, Level 2 (between student):

$$\beta_{0ij} = \delta_{00j} + \delta_{01j} * (\text{level\_2\_goalsetting}_{ij}) + \delta_{02j} * (\text{level\_2\_plan}_{ij}) + U_{0ij}$$

$$\beta_{1ij} = .605$$
$$\beta_{2ij} = -.003$$
$$\beta_{3ij} = .111$$

STAMP Speaking, Level 3 (between teacher):

$$\delta_{00j} = 1.32 + .42 * (\text{level\_3\_goalsetting}_j) + .151 * (\text{level\_3\_plan}_j) + V_{0j}$$

$$\delta_{00j} = 1.32 + .42 * (\text{level\_3\_goalsetting}_j) + .151$$

$$\delta_{01j} = .19$$
$$\delta_{02j} = .159$$

STAMP Reading, Level 1 (within student):

$$(\text{STAMP Reading})_{tij} = \beta_{0ij} + \beta_{1ij} * (\text{Level of Spanish}) + \beta_{2ij} * (\text{level\_1\_goalsetting}_{tij}) + \beta_{3ij} * (\text{level\_1\_plan}_{tij}) + e_{tij}$$

STAMP Reading, Level 2 (between student):

$$\beta_{0ij} = \delta_{00j} + \delta_{01j} * (\text{level\_2\_goalsetting}_{ij}) + \delta_{02j} * (\text{level\_2\_plan}_{ij}) + U_{0ij}$$

$$\beta_{1ij} = \delta_{10j} + U_{1ij}$$
$$\beta_{2ij} = .106$$
$$\beta_{3ij} = -.07$$

STAMP Reading, Level 3 (between teacher):

$$\delta_{00j} = 1.3 + .256 * (\text{level\_3\_goalsetting}_j) + .03 * (\text{level\_3\_plan}_j) + V_{0j}$$

$$\delta_{01j} = .244$$
$$\delta_{02j} = -.043$$
$$\delta_{10j} = .244$$