

**Teachers' Perceptions of Student Engagement and  
Teacher Self-Efficacy Beliefs**  
Sotiria Pappa

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<b>Tiedekunta – Faculty</b> Faculty of Education	<b>Laitos – Department</b> Department of Education
<b>Tekijä – Author</b> Sotiria Pappa	
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## 1 INTRODUCTION

The first three years of secondary education of the Greek education system is a major transition for 11-year-old students, as it is a very different educational setting from what they have been used to in elementary school. While students try to adjust themselves in the beginning, and learn and achieve academically in the following years, teachers face difficulties in classrooms, such as classroom management, student engagement, and options and implementation of methodology. Teachers' views of their students' engagement in coordination with their beliefs regarding how well they perform as professionals affect their classroom practices, effectiveness of teaching and their own feelings of reward, fatigue and stress. In addition to that, teachers' belief in their professional capabilities has been associated with their own enthusiasm, commitment and behavior as well as their students' achievement and motivation (OECD 2014, 182). Thus, teachers' perceptions of students' affective and cognitive engagement and their beliefs concerning their self-efficacy as teachers are worth examining.

Most research regarding student engagement has focused on students and has taken a self-reporting approach, which cannot always provide teachers with feedback that reflect the reality. Student engagement has been viewed in terms of up to four aspects which are interrelated. In particular, the two unseen ones, namely cognitive and affective engagement, have been measured from the student's point of view, but the amount of research conducted from a teacher's perspective is considerably less. While affective engagement encompasses the feelings a student has towards learning, school and the people related to the school environment, and behavioral engagement regards participation, conduct and observable actions, cognitive engagement refers to the strategies and cognitive processing invested in learning as well as the perceptions and beliefs guiding students' performance and learning (Hart Stewart and Jimerson 2011, 68). Cognitive engagement, or engagement in learning, can be facilitated by providing students with opportunities to make choices or take control, something students have claimed to need in order to engage, and consequently learn (Harris 2011, 384). Affective engagement is usually examined as a subtype of a general



measure and, as such, does not give yield a consensus as to its role in affecting academic outcomes; yet, it can be more important than academic achievement, since it may not predict academic achievement per se, but can be an important predictor of intrinsic learning outcomes, well-being and adjustment (Sagayadevan and Jeyaraj 2012; 15, 16). Therefore, it would be interesting to examine how sensitive teachers are to their students' cognitive and affective engagement in the Greek educational context.

In addition to that, teachers' belief in themselves as efficacious individuals is another highly important factor accounting for much of the teaching practices, methods and outcomes. Self-beliefs are crucial to motivation, and a teacher's positive influence on student's beliefs about themselves and their capabilities will be reflected in their learning goals and their attitude towards challenges, which become learning opportunities (Zepke and Leach 2010, 169-170). Teacher self-efficacy is worth examining by itself, but it would be much more fruitful to examine it along with teachers' perception of student engagement, as both are directly influential in terms of teacher performance, teaching quality and strategies, and learning outcomes in the classroom.

The concept of teacher self-efficacy may be easily understood, but it is a concept hard to define, let alone measure. Self-efficacy beliefs are what fuels us and keeps us engaged in what we have decided to achieve; they are a major influence regarding the outcomes of our actions, though they should not be mistaken for the outcomes themselves, nor the judgment we exercise concerning the strategies towards the realization of the goals we have set. Our strength of belief in our capabilities and potential is the foundation of the strategies chosen and followed as well as the source of influence that determines our course of action and its outcomes. As far as teachers are concerned, self-efficacy beliefs can be understood as the projection of their skills, knowledge and potential on their teaching in terms of strategies employed to attain determined goals, classroom management, and classroom practices and methodology. Moreover, self-efficacy beliefs mediate between knowledge and behaviors at the same time as responding to environmental situations, thus being a useful source of information for knowledgeable and skillful teachers; high teacher efficacy and correct interpretation of students' self-beliefs can alter student behavior and overcome environmental challenges (Dibapile 2012, 83).

Thus they are indicative of a teacher's engagement with her profession as well as the nature and quality of student learning that their teaching can achieve. Last but not least, teacher self-efficacy is the igniting and sustaining force of student engagement, which shows how interdependent and interrelated the two concepts of teacher self-efficacy and student engagement are.

As in the case of student engagement from the teachers' perspective, teacher self-efficacy in secondary education has not been much investigated. One of the purposes of this study is to add a teachers' perspective to the understanding of student engagement. Student engagement in this study should be understood in terms of Appleton's cognitive and affective aspects of student engagement (Appleton, Christenson, Kim and Reschly, 2006; Appleton and Lawrenz, 2011). Another purpose of the present study is to examine teachers' self-efficacy beliefs, aided by the instrument developed by Tschannen-Moran and Woolfolk Hoy (2001). The third purpose of this study is to examine what the relationship between the concept of student engagement and that of teacher self-efficacy is in the particular context of Greek upper comprehensive schools in Karditsa, a city located in central Greece, and those located in the communities surrounding the city.

## 2 STUDENT ENGAGEMENT

Nowadays, when schools stress the importance of good student results and are evaluated according to their overall performance in comparison to other schools, student engagement has been placed in the limelight cast by education researchers. Not only researchers, but also educators and the students themselves have been active in contributing to research on what comprises the construct of student engagement. Measuring students' engagement is crucial in that it helps educators predict and, by amending current teaching practices and policies, avoid poor performance or even drop-out.

Student engagement with school means committing, valuing, and connecting with people, educational goal and learning outcomes desired by the school (Appleton and Lawrenz 2011, 144). For example, it may be participation in activities incorporated into the school program, while it can also be described in terms of more subtle cognitive, behavioral, and affective indicators set in specific learning tasks (Chapman, 2003). Contrary to disaffection, Skinner and Belmont (1993) explain that children's engagement with school is the degree and quality of emotional and behavioral involvement in learning activities, which are evident in a positive and active attitude towards learning opportunities that are invested with concentration, initiative-taking and personal challenge on the part of the children (Chapman, 2003). The teacher can no longer be the sole regulator of the student's progress towards learning; the educational process must be initiated by the student, according to what he needs and what can be learned. Through the involvement of the student himself in the learning process, triggered by his interest and promising participation, the pupil becomes the heart of the learning process and is partly responsible for the course of his learning as well as the quality of teaching.

According to Appleton and Lawrenz (2011), it is hard to agree upon and determine the exact set of dimensions that may be attributed to the construct of students' school engagement because of the complex interaction of diverse factors. However, before they added the subtype of academic engagement in 2006, there were initially three detected and accepted subtypes, namely behavioral,

emotional/affective and cognitive engagement. Concentration, persistence, and attention can be considered as variables affecting behavioral engagement (Sciarra and Seirup, 2008). Affective engagement concerns variables such as assurance, comfort, and pride in one's institution. Among other variables, cognitive engagement pertains to levels of effective study and homework realization as well as the significance of investing in one's own academic progress. Regarding academic engagement, it is manifest in the effort exerted on academic tasks and the completion of the credits necessary for graduation. (Appleton and Lawrenz 2011, 145).

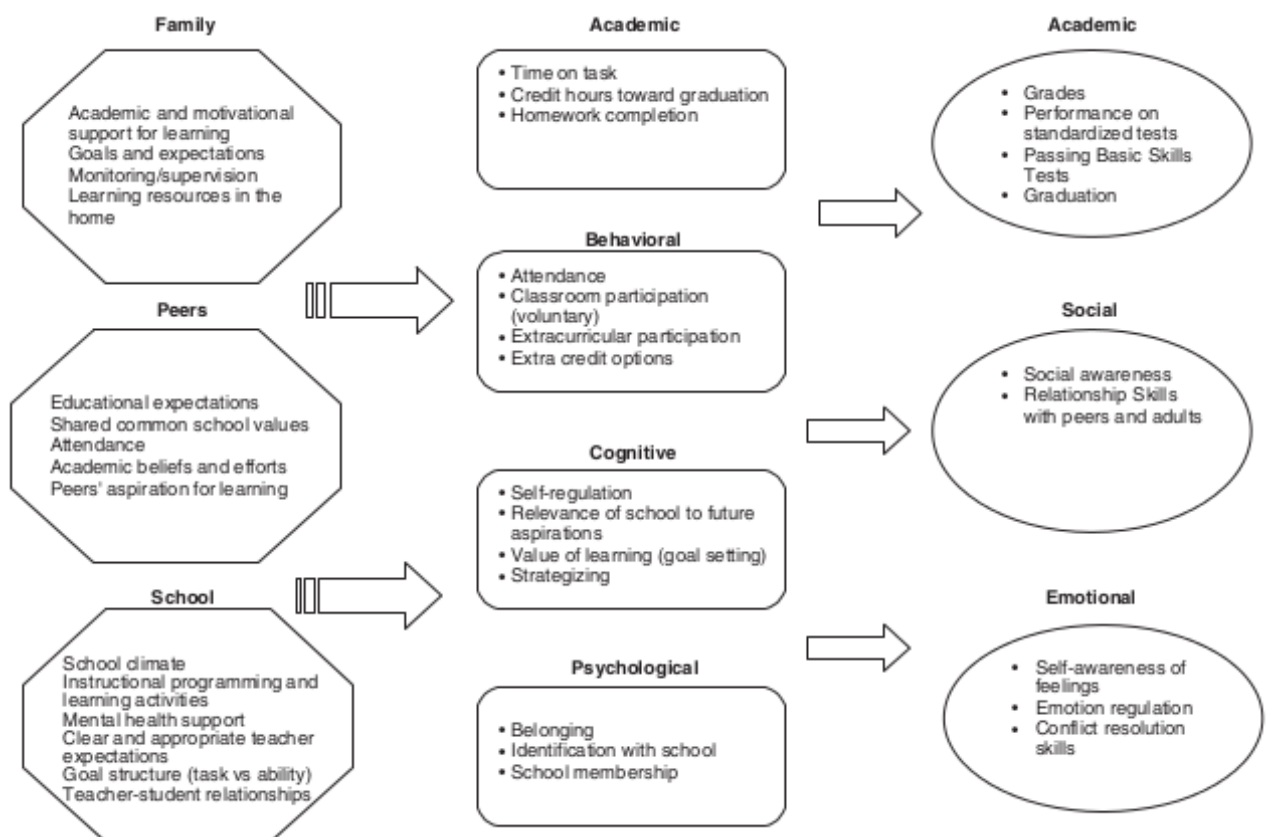


Figure 1. Engagement subtypes, indicators and outcomes.

Source: J.J. Appleton et al. (2006)

Student engagement is a multi-dimensional construct (Christenson and Thurlow 2004, 37). All subtypes refer to the intricate issue of student engagement in school settings, addressing both processes and results concerning school activities (see Figure 1). In particular, cognitive and emotional/affective engagement are the “unseen” processes that preclude, affect and are expressed

as academic and behavioral engagement respectively. Engagement is a multifaceted concept which comprises three components, namely a behavioral, an emotional/affective and a cognitive component, although there is no consensus on the simultaneous existence of all three components (Appleton and Lawrenz 2011, 145). Nonetheless, understanding how academic, social and personal issues affect students in order to allow for the development of students' skills and learning in a supportive environment as well as the promotion of the future relevance of education (Christenson and Thurlow 2004, 38).

The school environment where learning takes place requires not only the use of learning strategies, self-discipline and self-knowledge on the part of the student, but also the careful implementation of various pedagogies on the part of the teacher that mirror an understanding of student engagement. Given the importance of emotional processes and psychological needs for self-development (Connell and Wellborn 1991, 47), we could suggest that engaging students affectively by addressing such processes and needs is elemental to academic engagement. Therefore, it is crucial that we examine "the alignment of student and teacher perceptions of engagement within a given learning environment", especially when student perception and teacher influence are interdependent (Appleton and Lawrenz 2011, 143). Yet, the strength of research on student engagement is much larger than that from a teacher's standpoint; a standpoint that should be further addressed in the future in order to improve student levels of the four subtypes by means of interventions, thus improving deep processing of schoolwork, commitment to education, persistence in the face of challenge, and achievement of autonomy, a sense of belonging, and competence. However, in this study we shall examine only two subtypes of student engagement, affective and cognitive engagement.

## 2.1 Affective Engagement

The affective aspect of student engagement is elemental in understanding the concept of student engagement as a whole. In an educational context, affective engagement refers to the students' sense of belonging as well as their relationship with and value of school as an institution. In other words, affective en-

agement not only includes students' interpretations of teacher-student and peer relations, but also the students' emotional or affective relations to school. This component of student engagement relates to the students' sense of belonging at school and their feelings of assurance, safety, comfort and support in school settings.

### **2.1.1 Belonging**

Students' affective engagement can be regarded in terms of an internalized understanding of belonging, whereby they are part of the school experience and vice versa, and they value the achievement of goals set at or by the school (Finn, 1989, 123). At the same time, motivational researchers use "relatedness" to describe secure connection with and a feeling of personal worth within a social context, and stress its importance for human growth and development as well as autonomy and competence (Connell and Wellborn 1991, 51-52; Osterman 2000, 325). An emphasis on the quality of education alone does not suffice. Quality of education means quality of teaching and improvement of the classroom atmosphere so that all students can participate and learn; however, an emphasis on human relationships is complimentary, if not necessary.

Maslow's theory of human motivation was first conceptualized in his work in 1943 and has since been widely accepted. Maslow's (1943) theory posits a hierarchical organization of needs seen in terms of relative propotency (375); each lower need must be satisfied before those at a higher level, while the individual is ready to act upon the growth needs only when the deficiency needs are met (Huitt, 2007). Those needs are interrelated and regard physiological needs, such as the basic human needs of hunger, thirst, bodily comforts; safety and security; belongingness, affiliation with others, love and acceptance; self-esteem that results from achievement, competence, approval and recognition; cognitive needs related to knowledge, understanding and exploration; aesthetic needs, such as the appreciation of symmetry, order and beauty; self-actualization that pertains to self-fulfillment and realization of one's potential; self-transcendence which entails transcending one's ego and assist others in finding self-fulfillment and realize their own potential (Huitt, 2007). Thus, belonging as a basic need should be met in order for learning and consequently self-actualization to occur.

Schools lack the joy of meaningful learning, collaborative spirit, and the discovery of new horizons. The positive emotions in schools are few and limited, because among other things, educational cultures do not systematically cultivate deeper human relationships among students, between teachers and students, and between parents and teachers, which negatively affect the entire learning process. What is more, psychological distress transferred from home, due to family breakdown or reconstitution that is being poorly managed, or due to abuse or bereavement that has no healthy outlet, not only decreases the well-being of the students but may also cause mental health issues that present a challenge to both individuals and counselling services (McKenzie et al., 2011). The school is a place that needs to foster feelings of acceptance and connection based on appreciation, respect and a sense of belonging on the part of the student. A sense of belonging, and security which addresses part of the affective aspect of student engagement, is important for a child's well-being, interest in school and academic progress.

A student's sense of belonging or being valued is created and sustained in successful social relationships that are developed amongst students and teachers at school. Some factors encouraging a sense of belonging to school are the teacher's interest in students, effectiveness and fairness of discipline, and school participation (Finn 1989, 126-127). For example, a sense of belonging and mutuality arises in settings where students can voice complaints without fearing a low grade and where trust, equity and justice are maintained on the part of teachers and students alike (Bryson and Hand 2007, 358). In addition to that, belonging entails embracing the educational goals of the group and actively participating in the effort towards the accomplishment of these goals as well as the acceptance, respect, encouragement and support of the students' peers and teachers in return for that participation. That is supported by Finn's (1989) model of dropout prevention, according to which a sense of belonging is important to students, for school outcomes are mediated through students' active participation in school and classroom activities and a concomitant feeling of identification with school (129). However, belonging also occurs by means of extracurricular activities on top of or in lieu of further participation in academic work, as they result in higher self-esteem and control, academic aspirations, abilities and performance, and more participation in the school's political affairs

(Finn 1989, 128-129; Reason, Terenzini and Domingo 2006, 167). When students are so involved in their school as an institution or as a social environment where various forces are at play, belonging is not something that is fixed and stable in an individual, but susceptible to change and dependent on the environment. Belonging and student expectations as determined both by individual features and the school environment are something of particular interest to this study which regards early adolescence, a time of uncertainty and psychological unrest for an individual.

Alternatively to a sense of belonging, affective engagement was conceived as relatedness. For Deci, Vallerand, Pelletier and Ryan (1991), relatedness is secure and satisfying social relationships with others (327). Self-determination theory, a theory of human motivation and the effects of its intrinsic nature on an individual's choices and behavior, places relatedness among competence and autonomy as one of the three basic, psychological human needs connected to intrinsic motivation. When relatedness-, competence-, and autonomy-related needs are met in social relations, an individual's intrinsic motivation was increased, resulting in better performance and further development and a sense of belonging (Deci et al. 1991, 327, 333). More importantly, meeting and supporting these elemental needs in the classroom helps students internalize the educational agenda and become more autonomous learners (Niemic and Ryan 2009, 139), seemingly engaged independently.

### **2.1.2 Identification**

In addition to a sense of belonging or relatedness, affective engagement is characterized as identification with school. Identification with school is a sense of school membership, a sense of belonging that encompasses the bonds that the students creates with adults and peers at his school, which affect academic performance, and idea that reiterates the theory underlying Finn's Participation-Identification model (Mitchell et al. 2008, 116-117).

Being involved in school activities in an environment that shows respect, acceptance and support towards the individual enhances student engagement as it strengthens his sense of belonging, making him feel an integral part of the school community and that his experiences are largely connected to that environment (Finn 1989, 129); students feel they belong to the school and vice versa.



Given that identification is related to the student's valuing of school-related goals and outcomes, and how supported and accepted he feels in his school environment (Finn, 1989), obstacles to fostering identification, such as curriculum design, pedagogical approaches and parental involvement in school affairs, should be addressed (Mitchell, Forsyth and Robinson 2008, 121). How strongly the student identifies with school is an important factor in any student's life, since it regards her sense of belonging to a place where she spends a significant the portion of her time and her valuing of her own endeavors to achieve goals set in that place.

## 2.2 Cognitive Engagement

Despite the fact that education also concerns the socialization and emotional development of children, the school as an institution at an administrative level is highly preoccupied with academic achievement. Therefore, cognitive subtype of student engagement is worth examining, particularly in relation to the affective one. In general, cognitive engagement is defined as a student's degree of involvement in school in terms of personal effort regarding her education. It pertains to the amount of effort students are willing to invest in working on the task at hand and how long they persist and includes homework completion, class attendance, extra-curricular participation in activities, or the students' general interactions with the teachers, and how motivated they seem while engaging in classroom discussions (Rotgans and Schmidt, 2011, 467). It can also be conceptualized as self-regulation and overall investment in learning for the achievement of deeper learning experiences (Fredericks, Blumenfeld and Paris 2004, 61).

Guided by Connell's motivational model, the Reduced Self-System Process Model, Klem and Connell (2004; 263, 266, 270) conducted a student survey to examine links between teacher support, engagement, and academic success. The study used longitudinal data sets collected by the Institute for Research and Reform in Education to validate the Research Assessment Package for Schools (RAPS). In particular, data from students (RAPS-S), teachers (RAPS-T) and parents (RAPS-P) as well as school records (RAPS-R) and quality of school reform

implementation (RAPS-CF) were utilized for the purposes of examining the component of cognitive engagement in elementary-level and secondary-level students in terms of effort for, attention to and preparation for school. Moreover, the study examined teachers' reports of student engagement and how their support affects student engagement and achievement. The main findings of the research, based on both student- and teacher-reported cognitive engagement, show that high engagement is indeed a resource for the academic performance and attendance of middle school students, whereas low engagement is a liability. It is worth noting, however, that teacher-reported student engagement as opposed to that reported by students were stronger predictors of student academic success. Regarding the question of how much engagement is affected by teacher support, the study concluded that the more support there is on the part of the teacher, the more likely it is for students to engage with school. Concerning cognitive engagement, elementary students feel the lack of teacher support stronger than middle schools ones.

This study shows how important a role teachers and the support they provide play in their students' cognitive engagement and by extension student engagement in general. Students' perception of their teachers and their learning environment as caring, well-structured, with high, clear and fair expectations is more likely to engage students with school, which is seen in attendance and test scores (Klem and Connell 2004, 270). Appleton et al. (2006) suggest that, since we cannot change the student's family circumstances, we have to turn to factors like perceived competence, personal goal setting, and interpersonal relationships in order to make students optimistic about positive outcomes.

### **2.3 Teachers and Student Engagement**

Teachers and teaching are crucial to student engagement. Teacher's approachability, good preparation and sensitivity to her students' needs affect students' commitment to work, desire to profit more from classes and their willingness to express their opinion (Zepke and Leach, 2010, 170). In addition to that, teachers' educational practices, when innovative, lead to students more actively engaged with the subject taught, which in turn benefits the students in terms of learning

and cognitive skill development (Reason et al. 2006, 155). Besides the learning environment and learning relationships that the teacher helps to create, student engagement is also influenced by the teacher's own engagement and enthusiasm (Bryson and Hand 2007, 357-358, 360). Furthermore, students engage with learning when the teacher offers opportunities for deeper learning and experiences and presents academic challenges (Zepke and Leach 2010, 171). Less academically engaged students are less likely to pursue more profound learning experiences by means of reflection, evaluation, and connection of ideas (Hockings, Cooke, Yamashita, McGinty and Bowl 2008, 2/192). It is evident that teaching is fundamental to students' active and substantial learning, motivation and engagement. Yet, so much research has been conducted using the voice of the students rather than that of the teachers. This study attempts to cast some light on what beliefs teachers harbor regarding student engagement by examining the components of affective and cognitive engagement against the theoretical background of the Participation-Identification model and self-determination theory respectively.

### **2.3.1 Finn and the Participation-Identification Model**

Finn (1989) mentioned the importance of belonging for students, as is seen in his Participation-Identification model. He claimed that school outcomes are mediated through students' active participation in school and classroom activities and a concomitant feeling of identification with school. Active participation entails attendance, preparation for school, participation in school and extracurricular activities, while the affective aspect of student engagement is translated into belonging to and valuing of school. Finn's model of dropout prevention suggests that the more students value school and feel they belong to it, the better their school performance is and vice versa. On the other hand, poor performance, and a weak feeling of belonging and little valuing of school are also interrelated. Students are likely to show successful school performance when they actively participate in school activities, by consequence of which identification with school is enhanced.

### 2.3.2 Self-Determination Theory

Although nowadays motivation and engagement are viewed as different concepts in their own right, both concepts are equally important to human beings. Educators and education researchers have long been concerned with students' motivation as well as the degree and nature of student engagement. Motivation may be regarded as the force that drives the individual to perform an act, while student engagement is deemed as the students' affiliation to school, personal effort, goal setting and perseverance. This study will draw on Self-Determination theory (SDT) to address the intrinsic and extrinsic factors that affect the students' motivation, and by extension their engagement with school. SDT is a meta-theory concerned with human motivation and personality. SDT stemmed from the comparison of intrinsic and extrinsic sources of motivation in the late 1960s and early 1970s, when intrinsic motivation was identified as elemental to human understanding and inferencing, action and self-direction (Lepper, Greene and Nisbett 1973, 7/129).

SDT regards intrinsic and extrinsic motivation as two determining forces at play within the individual, the former being inherent to the human being and interplaying with an individual's basic psychological needs. Autonomy, competence and relatedness are the three psychological needs which are innate and whose satisfaction or lack thereof in social, and particularly in school environments enhances or decreases human motivation and interest, persistence, involvement and initiative-taking (Ryan and Deci 2000; 56, 58, 59, 65). Autonomy is the need of an individual to exercise her agency and volition over her life and choices in accordance with her capabilities and upon reflection, irrespective of whether actions are initiated by an internal or external source, yet always in interaction with a social context (Deci and Vansteenkiste 2004; 25, 34). Competence regards the need to feel competent, to have control over the outcomes of an individual's behavior and actions by taking the appropriate course of action (Deci et al. 1991, 327; Reiss 2004, 181). Relatedness is the feeling of belonging and need to maintain stable interpersonal bonds, in which individuals engage in pleasant relationships and express their solicitude towards one another (Baumeister and Leary 1995; 497, 500). Proactivity, optimal development and psychological health cannot exist without these universal, inherent and neces-

sary psychological needs, which allow for intrinsic motivation and goals, and facilitate integrative tendency (Deci and Vansteenkiste 2004, 25-26).

Values and behaviors are regulated by means of internalization and integration, where the former refers to “the process of taking in a value or regulation”, while the latter is “the process by which individuals more fully transform the regulation into their own so that it will emanate from their sense of self” (Ryan and Deci 2000, 60). Both processes are important in educational settings, where the internalization of extrinsic motivation, such as grades or rewards, may result in behaviors rooted in personal beliefs and values initially found in the school environment and shared by other individuals. Extrinsic motivation is required when students perform actions that are not pleasurable to them or feel that they do not match their values or ideas about the use of the task at hand. With uninterested students, rather than loading a learning opportunity with negative emotions like resentment or resistance, we should aim at the internalization of extrinsic motivation, whereby the student himself seconds the goal, accepts its value and adopts it with a sense of volition that is later reflected in his performance (Ryan and Deci 2000, 55).

Therefore, understanding how extrinsic motivation and its sources influence students’ internalization and integration processes is important to teachers, as it is the source of motivation they can affect, given that any knowledge on intrinsic motivation as an unseen source is unreliable. Teachers should invest in supporting or enhancing integrated or intrinsic behaviors, since they are regarded as self-regulated and consequently more consistent and persistent in the long run, making students feel autonomous and act despite some behaviors or experiences being devoid of pleasure (Darner 2012, 463-464). It is essential that teachers provide the impetus towards student behavior that will bring desirable outcomes and avoid amotivation.

### 3 TEACHER SELF-EFFICACY

Alongside teachers' perceptions regarding the four subtypes of student engagement, it is important that we examine teacher self-efficacy. The teacher's belief in herself and her potential is critical for their overall performance in class, thus having a direct impact on the teaching quality, the implementation and success or lack thereof of teaching practices, and students' response and performance to those practices. That belief also suggests the educator's ability to control and moderate their emotions, thoughts and resulting behavior.

School teachers are the principle means through which students become sensitive to cultural values, while they also serve as important auxiliary factors in the normal adjustment of the students to their environment and preparing them for professional training later in life (Mahar, 2004). During the school years, teachers are entrusted with an instructional mission, the accomplishment of which requires the implementation of various diagnostic, instructional, managerial, and therapeutic skills in accordance with behaviors and situations as they apply to specific contexts and needs respectively, in order to promote education principles and meet the educational needs of students, community, and society by performing her job responsibilities; a teacher's efficacy lies in the ability to identify what knowledge of hers is called for by a given moment and how, and tailor her behavior accordingly (Evertson 1976, in Peterson 1995, 228; Peterson 1995, 380). More importantly, however, it is the teacher that becomes the example for her students, exerting a strong influence over their behavior and belief in their capabilities as individuals both inside and outside educational settings.

For the purposes of this study, we shall draw on Albert Bandura's self-efficacy theory and understand the term of teacher self-efficacy as the set of self-beliefs teachers hold as individuals in general and as professionals in particular. This set of beliefs regard the degree of confidence that teachers have in their teaching practices, how they project and fulfill their outcome expectations, how effective their classroom management strategies are and whether or not they deal with difficult circumstances successfully. In addition, it regards how per-

severing teachers are in the face of adversities and instances of occupational burnout. Moreover, it concerns teachers' interpretations of her students' success or failures, their judgment about teaching or classroom strategies and their students' judgment of their own cognitive efficacy. Finally, teacher self-efficacy beliefs are related to a teacher's agency and self-regulation of emotions, thoughts and behavior towards students and colleagues alike.

Teacher self-efficacy beliefs are instrumental in understanding teaching as well as student engagement in terms of cognitive skills, motivation, goal setting and achievement, and overall academic performance. How strongly teachers believe in themselves profession-wise directly affect their work and consequently their students' own self-efficacy beliefs, academic progress and emotional development. Considering the vast amount of time that children and adolescents spend inside school institutions and on schoolwork, where knowledge is built, skills are developed and intellectual efficacy enhanced or obstructed, teacher self-efficacy is worth being examined next to teachers' beliefs on student engagement.

### **3.1 Bandura's Self-Efficacy Theory**

From the 1930s through the 1950s, psychology in the U.S. was principally preoccupied with the behavioral theory of operant conditioning, stressing consequences to determine a specific behavior or change therein. In that climate, a social learning theory and imitation was created by Bandura on the basis of the work of Neal E. Miller and John Dollard in the early 40s in an attempt to steer away from the behavior theory of that time and account for cognitive aspect to behavior. (Huitt and Monetti, in press.) Individuals do not only behave the way they have been told to do so, but also respond to stimuli in a spontaneous manner, meaning that behavior is not something necessarily acquired by reinforcement and consequently solidified, but is subject to environmental influences as well as the individual's habits and worldview. In the latter half of the 20th century, imitation was not the only route to learning; our thought processes became the key to comprehending how learning occurs, and how it shapes our personality and determines our behaviors.

Although Bandura and Walters contributed significantly to their field with their work "Social Learning and Personality Development", written in 1963, it was in the 1970s that Albert Bandura identified self-beliefs as the missing piece of the puzzle which represented the cognitive aspect of his theory, as explained in his work "Self-efficacy: Toward a Unifying Theory of Behavioral Change". Self-efficacy was introduced by Bandura in 1977, when he suggested that environmental influences, one's own behavior and internal personal factors, such as cognitive, affective, and biological processes, influence our behavior. (Tobery-Nystrom 2011, 40-41.) Nonetheless, it became prominent when in 1986 he claimed that behaviors and confidence are interrelated, interweaving a social cognitive theory of human behavior with social and personal influences. Who one is and how they behave is an outcome of an interplay between the external world, the internal world and established behavior patterns. For instance, when externally regulated, we may behave in such a way as to avoid punishment or attain a reward, while under interjected regulatory influence, when we attach our behavior to a sense of self-esteem, we try to avoid guilt or shame with our behavior (Darner 2012, 463). Similarly, how we behave and how we modify our behavior may depend on our beliefs on self-efficacy. As far as teachers are concerned, their faith in the ability to instruct and their own strength as individuals as well as professionals significantly affects student engagement with learning and schooling in general. Teachers could be the models that students follow by observation and imitation of actions, and those responsible for administering positive punishment or reinforcement to influence or solidify behavioral outcomes and boost their students sense of self-efficacy.

Bandura dubbed his theory "cognitive" as opposed to "social learning" not only to distance it from prevalent social learning theories contemporary to his own, but also to underline how crucial cognition is regarding people's capability to construct reality, self-regulate, encode information, and perform behaviors (Pajares, 2002). His theory is a conceptual framework that encompasses the origins or sources of efficacy beliefs, their structure and function, the processes through which they produce diverse effects, and the possibilities for change (Brouwers and Tomic 2000, 240). It is a theory that shows how cognitive, behavioral and environmental determinants of human behavior interact and affect one's beliefs about capabilities to produce effects (Bandura 1977, 191-192).



Where Bandura's theory differs from other self-efficacy theories of his time is that apart from the element of personal competence, it is of contextual nature, as it is task- or situation-specific, thus requiring of the individual to exercise his judgment as well as stir his motivation and self-regulatory processes to determine a course of action and the use of resources, and attain a set goal (Pajares, 2002). We are learning, self-reflecting individuals with agency over our lives and it is our self-efficacy beliefs that fuel our efforts and sustain our persistence.

There are four primary sources of influence on self-efficacy, which also are the basis of social relations pertaining to the learning processes that result in self-efficacy (Brouwers and Tomic 2000, 240). The first one is through mastery experiences, whereby we learn to be resilient and sustain our efforts in the face of adversity or failure. The second one, vicarious experiences provided by social models, refers to how people seek proficient and competent models to mold themselves after, which are similar to themselves and by observation of which one can enhance their own belief in their capabilities to succeed. Another source of influence is social persuasion that verbally boosts one's self-efficacy, causing the development of skills and a stronger sense of personal efficacy; in effect, it is a verbal persuasion that makes individuals believe that they can achieve their goals if they use their capabilities and free themselves from doubt. Finally, the correct perception and interpretation of physiological indicators as opposed to stress and negative or false reactions to physical states also affects one's level of perceived self-efficacy. (Brouwers and Tomic 2000, 240; Pajares 2002).

In addition, the effects of self-efficacy-related beliefs on human functioning are mediated through four psychological processes (Brouwers and Tomic 2000, 240; Bandura 1993, 118). Cognitive processes concern how perceived self-efficacy relates to the goal challenges people set for themselves and the degree to which they commit to them. Motivational processes regard the goals people consciously set for themselves, the effort they expend on and the value they attribute to these goals, how long they persevere in the face of difficulties and how resilient they are to failures. They are cognitively generated and include three different cognitive motivators, namely casual attributions, outcome expectancies and cognized goals, each of which has its own theory. Affective processes have to do with controlling disturbing thought patterns and managing emotions related to goal attaining or failure, such as anxiety and depression. Last

but not least, selection processes are the choices individuals make to cultivate beneficial and manageable environments in which to develop different competencies, interests and social networks that determine life courses. (Bandura 1993; 118, 128-130, 132-133, 134-135). Cognitive processes have to do with self-regulation, while cognitive development is associated with our abilities, which are not a static attribute, but one that changes with the control we exercise (Bandura 1993, 136, 139).

In the 1980s, Albert Bandura developed the concept of reciprocal determinism, to explain a learning process that interlinked self-efficacy and self-regulation. Bandura (1999) based his concept of psychosocial functioning on a social-cognitive model comprising three elements; a triadic reciprocity is generated by personal factors in the form of cognitive processes, emotions, and biological events, in which behavior patterns and environmental factors influence each other in a bidirectional manner (23). In Bandura's theory, the exercise of control and personal agency can be accounted for by an individual's self-beliefs, while the individual is regarded as the product as well as the producer of his own environments and those of his social systems (Bandura 1993, 135; Bandura 1999, 23). Our environments and self-beliefs are significantly influenced, altered and shaped by our interpretation of the results of our own abilities and levels of competence (Bandura 1993, 123-125). Self-efficacy beliefs, for Bandura, vary according to how much the individual believes in his capabilities (magnitude), how much behaviors and situations are affected by changes in self-efficacy (generality), and how resolute the individual is in his convictions regarding his capabilities to perform (strength) (Brouwers and Tomic 2000, 240). Yet given how the environment affects an individual and despite it being naive not to believe that a balance between self-beliefs and the individual's skills and knowledge is necessary for successful outcomes, someone's personal beliefs about capabilities as well as those influenced by his social environment could determine courses of action and behavior (Pajares, 2002).

### 3.2 Teachers and Self-Efficacy

Self-efficacy is the belief in one's capabilities to organize and put into effect courses and causes of action that eventually yield certain desired results or provide aid in managing future situations, and choosing activities and settings, based on efficacy beliefs rather than response-outcome expectations (Bandura 1977, 193-194). One's beliefs as opposed to the objective truth are the foundations of one's measure or assessment of abilities and attainments, but also of the satisfaction that one gets from the outcomes of their chosen courses of action (Bandura 1993; 121, 123). It should be stressed that, while self-efficacy beliefs influence the outcomes we expect, they are not the outcomes themselves, nor the judgment we exercise regarding how to realize the goals we have envisioned; they are the principal driving force that we possess, leading us onward and keeping us engaged in what we have decided to achieve. Within and across particular contexts and in reference to our thoughts and emotions deriving from our psychological needs, we make appraisals about our competence that constitute the objective self, regulated by its own processes (Connell and Wellborn 1991, 52).

The extent to which we believe in our capabilities and potential is what underlies the strategies we opt for and follow, and influences the outcomes of our actions, although our beliefs on what we can achieve should be accompanied by corresponding skills and knowledge which we can employ to attain determined goals. How far personal goals and expectations about personal achievement can reach, regulation of one's own behavior and willingness to take and perform tasks as well as vocational decisions and motivation are dependent on individual thinking, which is partly influenced by others' perceptions of one's self (Arnold 1997, 456). Thus, self-efficacy beliefs in a social cognition framework can bear heavily on the manner and quality of teaching. For instance, as Ashton and Webb (1986) noted, the more efficient a teacher is, the more likely it is that they take risks, be persistent and open-minded, and utilize non-traditional methodologies or strategies (Olayiwola 2011, 443).

The degree of self-efficiency a teacher exhibits, according to Wolf and Hoy (1990), determines the nature and quality of students' learning (82). Being an efficient educator translates into being able to assess your capabilities and

choosing the instructional techniques that will ultimately engage students, especially challenging or unmotivated ones. Such an assessment can determine the teachers' efforts, persistence and resilience in the face of obstacles and failures respectively, and the ability to cope with the stress or depressing feelings inherent in such emotionally and cognitively demanding circumstances (Tschannen-Moran, Woolfolk Hoy and Hoy 1998, 216). Teacher efficacy is connected to teacher effectiveness, commitment and enthusiasm to teaching, teachers' motivation and persistence, teachers' instructional behavior, attitude and organizational skills, enthusiasm and more innovation in the classroom as well as to students' efficacy, achievement and interest in school work (Tschannen-Moran and Woolfolk 2002, 2; Olayiwola 2011, 444). Teacher self-efficacy and its expression bears heavily on student achievement, motivation and engagement, as the latter are dependent on how teachers communicate with student via management of their own as well as students' behavior during class, task and adaptation of positive or negative cognitions (Martin 2008, 240-243). Teacher self-efficacy also encourages the creation of a higher-level of sense of self in teachers and the development of better personal management skills as an alternative to custodial control (Caprara, Barbaranelli, Steca and Malone 2006, 474; Tschannen-Moran and Hoy 2007, 947-8). The beliefs they hold are the key to understanding their teaching practices and strategies, and the extent of their own engagement with their profession as well as the response they get in the form of the students' learning.

Klassen, Chong, Huan, Wong, Kates and Hannok (2008, 1928-1932) investigated the relationship of teachers' beliefs in their self- and collective efficacy and their perceptions of academic climate, where teachers' individual perceptions of their collective efficacy beliefs rather than at the school level were measured. In other words, they examined within-teacher motivation factors in relation to concerned with perceptions of school functioning in five different countries. They found that in Canadian secondary schools socio-demographic student characteristics influenced teachers' perceptions of their school climate the most, while teacher abilities to work as a group to reach all students was the case in Singaporean secondary schools. Moreover, teachers in both countries expressed how important it was for them that the principal support and establish the school's academic atmosphere, and agreed that a sense of collective di-

rection was elemental in building a school's academic climate and ensuring students' academic success. Climate in this study is determined as academic expectations, student engagement, and students' and teachers' pride in belonging to a particular school. Another finding was that the relationships among self- and collective efficacy, socioeconomic status, and academic climate took precedence over levels of teachers' self- and collective efficacy.

Finally, the study stresses that using sources of collective efficacy, such as past experience, observation of successful others, verbal persuasion, and group affect, can add to the collective motivation of a school staff, thus having a positive impact on student performance, including challenging teaching circumstances. In an individualistic frame of mind, professional development and efficacy is understood by teachers as focusing on themselves, rather than strengthening the interactive and collective influence of their colleagues (Klassen et al. 2008, 1932). However, teachers are part of a professional web of interpersonal and interactive relationships with colleagues who share goals and beliefs which, in turn, determine academic success and the atmosphere for development (Bandura 1993, 141). The beliefs that the teachers as a group have in common, in conjunction with the capabilities each brings to the group may enhance collective efficacy if teachers share the same goals. Despite the fact that collective efficacy per se is not one of the theories underlining this study, it is worth remembering its relation to student engagement as well as its relation to teacher self-efficacy at an individual level.

If we consider that our beliefs are supported by value systems, past experiences, teachers' assumptions, expectations and beliefs regarding education, their students and their own role are vital elements in understanding the relationship existing between teacher self-efficacy and student engagement. Teachers have the power to influence their students' learning, depending on how strongly they believe in their own capability to teach. Yet, the strength of that belief and the belief itself are intricately related to a teacher's own experiences, according to which she develops action-outcome and personal capability expectancies (Enochs and Riggs 1990, 6). Education leadership is important for instructively regulating teachers' experiences, goals and expectation, and enhancing the collective efficacy of the teaching staff. The teacher body of a school that deems itself capable is likely to result in a positive atmosphere that will foster

and develop student learning and achievement, especially when there is support from principals in terms of norms, goals and values (Bandura 1993, 141; Skaalvik and Skaalvik 2010, 1066).

Regarding teachers as professionals, high self-efficacy corresponds to high goals and a stronger willingness to face difficult situations, against which their efforts are maintained longer (Bandura 1999, 144). Additionally, teachers who have high outcome expectancy beliefs persist more in their teaching, focus more on academic instruction and vary the types of feedback in their classes (Gibson and Dembo 1984, 570 in Enochs and Riggs 1990, 7). They are also more open to new ideas and methods that concern student achievement, motivation and sense of efficacy (Tschannen-Moran and Hoy, 2001, 783; Woolfolk Hoy and Burke-Spero 2005, 344-345). They employ more problem-solving strategies and are more accurate in terms of self-evaluation (Bouffard-Bouchard 1990, 353), while they consider individual student needs and adapt their practices to them (Skaalvik and Skaalvik 2010, 1060). They are also less critical of students' errors and engage longer with struggling or difficult students (Tschannen-Moran and Hoy 2002, 2/203). Moreover, teachers with a strong sense of efficacy believe that, despite their current abilities or family background, students are capable of achieving (Woolfolk and Hoy 1990, 89). Such teachers also assume more responsibility in teaching and are more committed to their profession (Coladarci 1992, 326-327). Classroom performance, which is also interdependent with high or low self-efficacy beliefs about teaching capability, is a source of job satisfaction (Tschannen-Moran and Hoy 2007, 945). Finally, high teacher self-efficacy is responsible for the successful implementation of instructional strategies, the teacher's capability to effectively exercise her classroom management skills, and her effort to encourage all students to classroom participation (Woolfolk, Rosoff and Hoy 1990, 84).

Nonetheless, a sense of lower self-efficacy is as equally important as high teacher self-efficacy and attached to the theme of professional burnout. Brouwers and Tomic (1998) have linked a rather intense sense of burnout to classroom management practices as implemented by teachers with lower self-efficacy, while burnout goes hand in hand with feelings of stress, ineffectiveness, emotional exhaustion, depersonalization, and reduced personal accomplishment (Brouwers and Tomic 2000, 239-241). According to Maslach, Schau-

feli and Leiter (2001), burnout is manifest in exhaustion, cynicism and inefficiency after prolonged exposure to persistent stressing factors of an emotional and interpersonal nature that eventually affect health and well-being (397). Additionally, a lack of personal achievement is also considered a dimension of burnout, albeit a contested one (Simbula and Guglielmi 2010, 302). What is more, the uncertainty a teacher experiences and the belief that she has limited control over circumstances in conjunction with situation-induced emotions she may not know how to regulate as well as the fear she may feel before questions on her expertise, judgment, status and purpose on the part of the parents generate anxiety (Chang 2009, 196), which can only add to the consequences of low self-efficacy beliefs and may be harmful for the professional development of inexperienced teachers. At the same time, the exhaustion of emotional and energy resources may lead a teacher to a cognitively indifferent or cynical attitude as a means of coping (Chang 2009; 198, 207). This may mean purposefully attributing learning or behavioral difficulties to the students themselves or their families, adopt a negative or apathetic stance toward students and colleagues alike and are not as persistent to classroom management (Oakes, Booker, Lane and Jenkins 2013, 99). One could then suggest that lower teacher self-efficacy reflects a low sense of personal accomplishment which originates from the outcomes of the teachers' actions. By extension, teaching may be deemed unsuccessful and the frustration, anger or anxiety that arises from such a perception could either put more pressure on the students regarding learning and school performance or, worse yet, demotivate them altogether. Teachers with a high sense of self-efficacy may hold themselves responsible for student achievement and positive student behavior, which are consequences of their own actions and feelings of personal accomplishment. Within an educational framework, students' self-efficacy is instrumental in affecting achievement and behavior. At the same time, teachers' self-efficacy beliefs are also significant as they influence student achievement, and are highly dependent on the teachers' confidence regarding their classroom management skills and outcomes as well as the effectiveness of their instruction. Thus, they are vital to the quality of education, since they guide teachers in the educational process in general and the instructional activities in particular.

To date, a lot of educational research has revolved around teacher efficacy beliefs and the results bears on classroom practices and outcomes. Although the construct of self-efficacy can be described as the fuel of human agency and motivation by social cognitive theory, its methods of measurement and definition in practice have been debated by researchers, such as Ashton et al. (1984, 30-31) and Henson, Kogan and Vacha-Haase (2001, 407). After various measurements or improvements on existing ones, like that of Bandura's, and Gibson and Dembo's, Tschannen-Moran and Woolfolk Hoy (2001) designed the Teachers' Sense of Efficacy Scale (TSES) in order to examine task-specific parameters, such as instructional decision making and classroom management, thus encompassing self-efficacy on both a personal and a general plane. Similarly to Bandura, their understanding of teacher self-efficacy concerns successfully accomplishing a specific task in a particular context by following a certain course of action relates to the organizational and effective beliefs held by a teacher.

Thanks to the Teachers' Sense of Efficacy Scale, teachers' sense of efficacy has been found to be interrelated with school level, career stage, available resources, school facilities, principal leadership and support from parents, if not elsewhere, the latter considered a determinant factor for professional development in the early in-service years (Tschannen-Moran and Woolfolk 2002, 5-6; Tschannen-Moran and Woolfolk 2007, 945; 947). Moreover, regardless of years of experience, drawing on personality traits and individual creativity is the expected means to engaging motivated or unmotivated students (Tschannen-Moran and Woolfolk 2002, 6; Tschannen-Moran and Hoy 2007, 953). Meanwhile, teacher's perceptions of collective efficacy, which are not limited to students' socioeconomic status and prior achievement, account for its variance among schools (Goddard and Goddard 2001, 815). In this study, we shall adhere to the definition of the teacher self-efficacy construct as given by Tschannen-Moran et al. (1998), and as measured by Tschannen-Moran and Woolfolk Hoy (2001).



## 4 RESEARCH QUESTIONS

One of the aims of this study concerns teachers' perceptions of student engagement. It attempts to discover what the structure of teachers' beliefs regarding student cognitive and affective engagement is by examining the sumvariables of the original SEI. The second aim of this study concerns teacher self-efficacy beliefs. The extent to which teachers consider themselves efficacious as educators is examined as well as the how teachers' sense of efficacy is interrelated to the background information provided by the participants. Finally, the third aim of the study regards the possible link that may exist between the concept of student engagement as conceived by teachers and teacher self-efficacy beliefs, i.e. whether perceptions and beliefs regarding cognitive or affective student engagement are affected by how confident teachers are in their profession and to what extent they could be interrelated.

Table 1. Theoretical Framework

<b>Teachers</b>	
Student Engagement	Self-Efficacy beliefs
<ul style="list-style-type: none"> <li>• Teachers' perspective</li> <li>• Cognitive Engagement</li> <li>• Affective Engagement</li> <li>- belonging</li> <li>- identification</li> </ul>	<ul style="list-style-type: none"> <li>• Personal Efficacy (instructional strategies)</li> <li>• Teacher Efficacy (classroom management and student engagement)</li> </ul>
<i>Finn's Participation-Identification Model</i>	<i>Self-Determination Theory</i>
<i>Bandura's Efficacy Beliefs</i>	
<b>Interaction between teachers' perceptions of student engagement and teachers' sense of efficacy</b>	

Based on the theoretical framework (see Table 1) the following research questions were set:

1. What is the teachers' understanding of student engagement?
2. What is the structure of teacher's self-efficacy beliefs?

2a. What kind of differences are there according to gender, years of experience, subject, further studies, special education training, attendance of seminars on matters of special education, school location and school size?

3. How are teachers' understanding of student engagement and self-efficacy interlinked in the particular context of Greek upper comprehensive schools in Karditsa and in the communities around the city?

## 5 METHODOLOGY

### 5.1 Participants

This research focuses on teachers working in state upper comprehensive schools in Karditsa, a city in central Greece, and villages around the area, thus taking into account teachers that work in urban as well as rural education establishments. Education in state schools is free for all students, regardless of socio-economic or family background and political affiliation, and funds for education derive from the government's financial resources.

Karditsa was selected over other cities due to its central location in Greece and its student body. Not only children dwelling in the city, but also children residing in the neighboring villages and commuting daily to the city attend these schools. Therefore, teachers teach students from a wide variety of family, financial and educational backgrounds, whose engagement with school in terms of academic progress, participation, attendance and sense of belonging varies. Concerning the neighboring villages, teachers working in rural areas were chosen to complement the results from the urban schools, thus providing a more complete picture of the phenomenon that this study examines, the student engagement - self-efficacy relationship on the part of the teachers.

Both urban and rural schools in Karditsa's area were included in this study. Consequently, the returned questionnaires would be able to give the study a rather round idea pertaining to the research questions. In addition to that, there would be more certainty about the completion of a sufficient amount of returned and completed instruments for the purposes of the study and the reliability of its results.

The teachers who participated in the research taught the subject corresponding to their degree, albeit with a few exceptions, according to the needs of the school. According to Greek legislation, teachers in Greece are required to hold a Bachelor's degree. However, some of the participants had completed further studies, as 36 of them possessed a Master's degree, and the majority had accomplished some form of professional development through special educa-

tion training (13,8%) or seminars on education (92,9%). Teachers who hold a Ph.D. may be principals and, as such, are assigned responsibilities other than teaching, such as the handling of administrative matters and organization of schedules. There was only one participant with such qualifications.

Table 2. Participants

School		N of teachers	n	%	School location	
1	F	11	20	12	60 %	City
	M	1				
2	F	7	30	9	30 %	City
	M	2				
3	F	9	19	15	79 %	City
	M	6				
4	F	3	8	8	100 %	Village
	M	5				
5	F	10	25	13	52 %	City
	M	3				
6	F	15	50	21	42 %	City
	M	6				
7	F	9	25	11	44 %	City
	M	2				
8	F	13	20	17	85 %	Village
	M	4				
9	F	8	35	20	57,1 %	City
	M	12				
10	F	11	25	16	64 %	City
	M	5				
11	F	13	40	18	45 %	City
	M	5				
12	F	8	16	11	68,7 %	Village
	M	3				
13	F	5	6	6	100 %	Village
	M	1				
14	F	11	20	14	70 %	City
	M	2				
<b>TOTAL</b>		339	190	56 %		

Given the number of teachers serving in Karditsa's urban and rural upper comprehensive schools, this research initially anticipated the return of the majority of the questionnaires, although little more than half of them were returned (see Table 2). From small schools all or most of the questionnaires were returned, though from big schools few were returned. We may assume that the questionnaires either did not reach them or did not interest them. Bearing in mind the anonymity of the instrument, the return of the instruments was something that could not be controlled. Furthermore, most of the respondents were women (70%). The above-stated factors may have affected the results. Nonethe-

less, we can assume that the data is representative of upper comprehensive schools of the area.

## 5.2 Ethical Considerations

Ethical considerations were taken into account. First of all, participants were informed by a letter accompanying the questionnaires that stated the purposes and aims of this study and agreed to be part of the research on the basis of the information provided. Participation was voluntary and there is little reason to suggest that individuals of authority in the school environment forced the subjects to participate. Moreover, confidentiality was maintained as none of the participants were asked to disclose any personal information, such as their name and age. Nonetheless, they were asked to share information related to their profession and educational background that could benefit the research in terms of data interpretation. However, none of the information that was shared enabled the identification of a participant. Last but not least, the participants of this study were informed that they retain their right to withdraw at any time.

## 5.3 Data Collection

Drawing on two different theories and one model, this study takes a quantitative approach to research. Teachers' beliefs regarding student engagement and teacher self-efficacy are explored using two instruments. The Student Engagement Instrument (SEI) developed by Appleton et al. (2006), modified to suit the purposes of this research and translated into Greek was used to examine teachers' perceptions of the affective and cognitive components of student engagement. Teacher self-efficacy was examined implementing the short form of the Teachers' Sense of Efficacy Scale (TSES) as designed by Tschannen-Moran and Woolfolk Hoy (2001) to help gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. The latter instrument was developed at Ohio State University; it is therefore sometimes referred to as the "Ohio State Teacher Efficacy Scale". However, in this research "Teach-

ers' Sense of Efficacy Scale" shall be used, as per the preference of the researchers who designed it.

Initially, both instruments were in English. The SEI addressed the affective and cognitive components of student engagement from a student perspective. Therefore, it had to be modified to address the teacher perspective. Acting upon the belief that teachers might appreciate more organization and cohesion, the questions were put together under their respective subcategories and later under the two major categories they belonged, while respecting the intentions of the developers of the SEI. Nonetheless, by altering the order of the questions and grouping under their corresponding category we risked receiving false data, as it would have made participants aware of what was being tested each time, such as "Teacher/Student Relationships" or "Peer Support for Learning" to examine their perceptions of students' affective engagement. That awareness may have led to more conscious and meditated answers that would not mirror reality. As far as Tschannen-Moran and Woolfolk Hoy's (2001) TSES is concerned, the short form was used intact and whole. The long form was excluded as an option, since it would make the overall length of the final questionnaire too long, which could be a significant deterring factor regarding its completion.

Both instruments were translated into Greek, the participants' mother tongue. After having been translated, both questionnaires were proofread by a Greek language teacher and, upon suggestions, were refined. To cross-check the validity of the translation, the Greek version of the questionnaires was translated back into English by two Greek students with excellent command of English as a second language, the results matching the items of the original questionnaires. SEI and TSES were combined and presented as one instrument comprised of two parts. This may be accounted for by the fear of lack of sufficient time or unwillingness on the part of the teachers to complete the items of the questionnaires. A background information section was added at the beginning, asking for no personal information that would reveal the identity of a participant, but profession-related information that would aid the study. The final form of the instrument was shown to five teachers of an upper comprehensive school in Karditsa in the context of a pilot study, in order to check the coherence of its structure and receive any possible feedback. When any necessary changes were made and the instrument was finalized, it was sent to Karditsa, accompa-

nied by an introductory letter. Once there, it was delivered to fourteen upper comprehensive schools, where it first reached the secretary or principals of the schools and was later distributed to the teachers, none of whom was obligated or forced to complete the questionnaire, as stated in the introductory letter.

The two instruments were administered together in late April, when, after the end of the second trimester and paper grading, teachers would have more time. The instrument was collected in mid-May, allowing for a two-week period for the completion of the questionnaire. A little more than half of the administered questionnaires were returned fully completed, albeit lacking some of the general information asked of the teachers that would assist the interpretation of the final results. They were sent back to Finland, where they were saved as paper copies and where the answers were computerized and analyzed with IBM SPSS version 22. The analysis of the data was done within the theoretical framework set for this study. The paper copies and data will be preserved securely.

### **5.3.1 Instruments**

#### *The Student Engagement Instrument*

The Student Engagement Instrument (SEI) was used in a modified version to examine teachers' perceptions of students' affective and cognitive engagement. Appleton et al. (2006) stressed that the affective and cognitive indicators of student engagement are better measured by adopting a student perspective so as to avoid erroneous conclusions regarding the personal competency beliefs, desire to persist toward goals, and sense of belonging of students. Although that is a reasonable observation to make, teachers' perceptions of students' affective and cognitive engagement are also significant. Therefore, the SEI could be used taking a teacher perspective. Nevertheless, as cautioned by the developers of SEI, high or erroneous inferences of student engagement may occur, a danger inherent in situations when a perspective other than that of the person who is the focus of the research is adopted. This study aims at presenting the other aspect of the same subject and relating it to teacher self-efficacy, thus assuming that teachers' perceptions of the two subtypes of student engagement measured with SEI are equally important and relevant to teaching and learning.

Appleton and Christenson developed the SEI in 2004 after reviewing the literature on engagement, belonging, identification with school, self-regulation, academic engagement, behavioral engagement, cognitive engagement, and affective engagement using computerized databases and hand searches from reference lists for selected articles (Appleton et al., 2006, 432). The researchers constructed a scale based on the conceptualizations of cognitive and affective engagement that were found in the respective literature that was later piloted with 31 eighth-graders, ethnically diverse and randomly selected from different district schools, in order to check the clarity, understanding and perceived relevancy of the instrument's items on the basis of the students' feedback and subsequently make any necessary semantic, linguistic and structural changes (Appleton et al. 2006, 432). The refined version of the SEI now includes 35 items assessed on a four-point Likert scale where 1 means "strongly agree", 2 "agree", 3 "disagree" and 4 "strongly disagree". Concerning affective engagement, nine items refer to teacher-student relationships, six to peer support for learning and four to family support for learning. Cognitive engagement is addressed by nine items on control and relevance of school work, five on future aspirations and two on goals and extrinsic motivation.

The SEI has been validated by Appleton and colleagues (2006) as well as employed by other studies, mainly in regards to science-related school subjects like math, and translated in other languages like Portuguese (e.g., Moreira et al., 2009). However, there has been no previous validation of the modified, Greek SEI as it is used in this study. Its validation for the purposes of this study is supported by a pilot study conducted using five participants, with the intention to clarify which points need further modification and check the coherency and relevancy of the translated items. As the feedback received was positive and the translated items of the SEI were comprehended, the last, refined version of the SEI was employed in this study.

### *The Teachers' Sense of Efficacy Scale*

The Teachers' Sense of Efficacy Scale (TSES) was used to measure the self-efficacy of teachers in Greek upper comprehensive schools in the city of Karditsa. The first teacher self-efficacy instruments aimed at examining how much teachers believed that student motivation and performance lay within



their control, grounded initially in Rotter's (1966) locus of control (the Rand measure) and later on the popular attribution or self-efficacy theory, until Bandura designed his own Teacher Self-efficacy Scale in 1997 to present teachers' efficacy beliefs in a more coherent manner, without being too narrow or too specific, yet without any reliability and validity information regarding his measure (Poulou 2007, 196). Upon reviewing such measures, Tschannen-Moran and Hoy (2001) developed the Teachers' Sense of Efficacy Scale, which not only addresses classroom-related aspects of teaching, such as classroom management and teaching strategies, in conjunction with the student social relations factor and the classroom-school conceptualization of teacher self-efficacy, but also realizes the necessity to understand the construct of teacher self-efficacy in more depth and breadth, thus providing a means to the exploration of dimensions of efficacy that enable education reform (Poulou 2007, 199). The TSES is comprised of 24 items in the long version and 12 items in the short version. The latter version was utilized due to considerations of length as well as teacher eagerness to participate and availability in terms of time.

The 12 items of the short version of TSES were assessed using the nine-point Likert-type scale, as intended by its developers. According to that continuum, 1 signifies "nothing", 3 "very little", 5 "some influence", 7 "quite a bit" and 9 "a great deal". When Tschannen-Moran and Hoy (2001) proposed their measure, they provided validity and reliability data from three separate studies. Since then, TSES has been used in Greece (e.g., Poulou, 2007) and other countries (e.g., Klassen et al., 2009) as well as in cross-validation settings (e.g., Avanzi et al., 2013). The factor analysis regards three moderately correlated factors, namely Efficacy in Student Engagement (questions 2, 3, 4, 11), Efficacy in Instructional Practices (questions 5, 9, 10, 12), and Efficacy in Classroom Management (questions 1, 6, 7, 8), which are determined via the computation of the unweighted means of the items that load on each factor (Tschannen-Moran and Hoy, 2001).

### **5.3.2 Reliability and validity of the measurement**

Both the SEI and the TSES questionnaire did not behave in the same manner as the original questionnaires in factor analysis. First of all, due to the number of participants, the communalities in factor analysis, and the fact that student en-

agement was examined from the teachers' perspective, the sumvariables of SEI had to be reconsidered. Although Appleton's SEI comprises six dimensions, the modified SEI used for the purposes of this study functioned with nine dimensions. Deleting items 1, 2, 3, 4, 11, 12, 15, 17, 20, 25, 27, 28 and 30 on the basis that the communalities were under .400, and for better results in the factor analysis as examined by the Rotated Factor Matrix, dimensions were reduced to the number of six, two of which were not composed of the same items as in the original SEI, and thus had to be named according to what the grouped items represented. The items under external motivation were exactly the same, while those under teacher-student relationship, peer support and future goals were found to be similar to the original version of the SEI. In addition, the sumvariables of social relationships and observing student development occurred, with good ( $\alpha = .769$ ) and rather poor reliability ( $\alpha = .522$ ) respectively. While the naming was not as easily distinguishable or the same as in the original SEI, the six dimensions used in this study had internal reliability ( $\alpha = .692$ ). Nonetheless, findings that regard the sumvariable "observing student development" may not be reliable, due to its reliability score. Missing data varied from 0 to 4 cases (2,4%).

The original SEI was developed for students, thus thirteen items had to be deleted because of communalities in order to have a clear factorial structure in Factor Analysis, which could be reasonably named. While the naming was not as easily distinguishable or the same as in the original SEI, the six dimensions used in this study are valid and usable for the purposes of this study.

Table 3. TSES items

<b>Woolfolk &amp; Hoy's TSES</b>		<b>TSES of this study</b>		
sumvariables	items	sumvariables	items	<i>a</i>
instructional strategies	5,9,10,12	personal efficacy	1,2,3,4,6,7,8	.835
classroom management	1,6,7,8	teacher efficacy	5,9,10,11,12	.913
student engagement	2,3,4,11			

Regarding the TSES instrument, two dimensions arose using the Rotated Factor Matrix, whereas Woolfolk and Hoy's TSES includes three dimensions (see Table 3). Instructional strategies, classroom management and student engagement were grouped under teacher ( $\alpha = .913$ ) and personal ( $\alpha = .835$ ) efficacy, two dimensions with high reliability. The communalities were high enough and

there was no need to delete any items, but simply name the dimensions that arose, according to what the items corresponding to each examined. The correlation between teacher and personal efficacy was negative ( $r = -.357$ ,  $n = 181$ ,  $p = .000$ ), meaning that if one increases the other decreases, and vice versa. In other words, the stronger the beliefs in classroom management and student engagement (personal efficacy) become, the weaker beliefs in instructional strategies get (teacher efficacy).

#### 5.4 Data Analysis

According to Muijs (2004), quantitative research is the collection of numerical data which are later analyzed using mathematically based methods in order to explore a phenomenon. Quantitative research was opted for in this case because it corresponds to the nature of the questions of this study as well as the testing of its hypotheses. Contrary to qualitative research that is more suited to an in-depth exploration of a phenomenon (Muijs, 2003), this quantitative study aims at drawing a general picture of teachers' perceptions of students' affective and cognitive engagement and teacher self-efficacy by looking at each phenomenon separately in an attempt to later discover the relationship between the two.

The numerical results yielded by the statistical analysis of the SPSS program were interpreted on the basis of the theoretical framework presented at the beginning of this study. Quantitative research, for Corbetta (2003), is conducted following a pre-established itinerary and according to predetermined procedures. The pre-established itinerary in this case is the theories supporting the data analysis, while the predetermined procedures are those that each kind of quantitative study adheres to. Unlike qualitative studies where variables are manipulated or treatments are imposed for research purposes (Punch, 2003), this study does not attempt either, as it did not regard an intervention. Upon factor analysis to determine the sumvariables corresponding to each questionnaire, T-tests and ANOVA tests ensued among the pre-set variables and the sumvariables. Correct conclusions are drawn from correct interpretation of numerical results, which are in turn based on a strong qualitative theoretical framework

(Antonius, 2003). In accord with the ethics of quantitative research and data analysis, subjectivity was emphasized.

Table 4. Tests conducted for data analysis per research question  
**Methodology**

RQ1	Factor Analysis (EFA), Correlations, Reliability Analysis, T-test, ANOVA, Cohen's <i>d</i> , Frequencies, Grouping and computing variables
RQ2	Factor Analysis (EFA), Correlations, Reliability Analysis, Frequencies, Grouping and computing variables
RQ2a	T-test, ANOVA
RQ3	Correlations, T-test, ANOVA

## 6 RESULTS

### 6.1 Teacher's understanding of student engagement

The SEI instrument used in this study is valid and six dimensions could be identified from the data. Although the instrument was expected to be valid for the teachers as well as the students, for whom it was originally developed, thirteen items had to be deleted because of low communalities, thus giving a clear six-factorial structure in Factor Analysis which could be reasonably named (see Table 5 and Table 6).

Table 5. Rotated Factor Matrix loadings for SEI items

		Factors											
		1		2		3		4		5		6	
31	,746	24	,765	6	,920	8	,821	33	,741	32	,802		
21	,729	23	,723	7	,648	9	,550	26	,424	18	,791		
5	,661	22	,562	14	,487	19	,399						
13	,564	29	,437			34	,359						
10	,532												
16	,516												
35	,491												

Extraction Method: Principal Axis Factoring, Varimax with Kaiser Normalization.

Note: The numbers corresponding to each loading refer to the item in the questionnaire.

Correlations among the SEI sumvariables were found to be positive, apart from external motivation, which was not correlated with any of the other five sumvariables (see Table 10, Appendix 2). In particular, teacher-student relationship was positively correlated with social relationships, peer support, future goals and observing student development. From a teacher's standpoint, the better their relationship with their students is, the more social relationships and peer support are enhanced, the importance of having future goals reinforced, and students' progress more easily monitored. Additionally, social relationships were correlated with peer support, future goals and observing student development, which shows how the strength of relationships developed at

school can enhance support amongst the students, affect their academic goals for the future and facilitate the observation of students' academic development. Peer support was also found to be positively correlated to future goals and observing student development. A supportive and caring environment among the student can positively influence future aims about school and studying, while it also makes it easier for the teacher to judge whether her assessment corresponds to the real capabilities of the student, and whether students' enjoying her class leads to learning is an outcome of becoming better at something. Finally, future goals were correlated with observing student development, meaning that the more teachers think that their assessment methods are pragmatic and that improving at something makes students enjoy their class, the higher or more goals are set by students.

Table 6. SEI items

SEI		Modified SEI		
sumvariables	items	sumvariables	items	<i>a</i>
teacher-student	3,5,10,13,16,21,22, 27,31	teacher-student (1)	5,10,13,16,21,27,31, 35	.844
peer support	4,6,7,14,23,24	peer support (3)	6,7,14	.758
future goals	8,11,19,30,34	future goals (4)	8,9,19,34	.732
ext. motivation	18,32	ext. motivation (6)	18,32	.766
home support	1,12,20,29	social relation- ships (2)	22,23,24,29	.769
control and rele- vance	2,9,15,25,26,28,33, 35	observing stu- dent develop- ment (5)	26,33	.522

Note: The numbers next to the modified SEI sumvariables refer to their corresponding factor, as seen in table 5.

T-test showed that teachers of either sex did not present statistically significant difference regarding teachers' perception of student engagement. Similarly, ANOVA tests did not reveal any statistically significant differences concerning subject, level of education and training in special education. However, an ANOVA test conducted with the data concerning years of experience showed that teachers' perception of student engagement was connected to their understanding of students' external motivation [ $F(3, 184) = 2.76, p = .044$ ], although details were not highlighted in the Post Hoc analysis results. Teachers with more years of experience believed less in external motivation in the form of a reward for learning from either themselves or parents. In other words, the

less a teacher has been in the profession, the more important he or she deems external motivation for student engagement. The effect size of the significant difference found regarding external motivation is average (Cohen's  $d = 0.43$ ). As far as the teacher-student relationships is concerned, further T-tests showed that school location [ $t(180) = -1.94, p = .053$ ] as well as school size [ $t(180) = -2.22, p = .027$ ] were statistically significant variables. Teachers in villages and those working at small schools regarded teacher-student relationships as more important for their students' engagement than their colleagues in bigger, city schools.

## 6.2 Teachers' Sense of Efficacy Scale

In regards to teachers' efficacy beliefs, two dimensions with high reliability were found. Teachers' sense of efficacy in this study is understood as teacher ( $\alpha = .913$ ) and personal efficacy ( $\alpha = .835$ ). The former includes instructional strategies and how much teachers believe they can assist families in helping their children do well in school, while the latter comprises classroom management and student engagement.

T-tests yielded no statistically significant difference concerning gender, seminars on education, school location and school size. Yet, a T-test revealed statistically significant difference between special education training and teacher efficacy [ $t(49.79) = 4.58, p = .003$ ], meaning that teachers with strong beliefs in their ability to management and engage students in class deemed special education training important. Years of experience and subjects taught did not present any statistical significance in efficacy beliefs. Yet, there was a statistically significant difference regarding the level of studies in teacher and personal efficacy [ $F(2, 163) = 4.19, p = .017$ ;  $F(2, 158) = 3.02, p = .051$ ]. Teachers with postgraduate studies believed stronger than other teachers that their studies affect their efficacy in classroom management and student engagement, while they also affect their instructional strategies.

### 6.3 The interrelation between teachers' understanding of student engagement and teacher efficacy beliefs

According to cumulative percentages, participants were divided into groups and the relationship between the concepts explored by the questionnaire was examined by means of two T-tests and one ANOVA test (see Table 7). Initially, participants were divided into two groups to differentiate between low and high teacher efficacy at a threshold of 6,71 (see Table 7). T-test showed statistical significance between teacher efficacy and all sumvariables identified in SEI, save external motivation. The same process was followed for personal efficacy, with high personal efficacy denoted with a threshold at 2, yielding the same results. Finally, teacher efficacy was divided into three equal groups, denoting low, medium and high teacher efficacy, in order to examine any statistically significant differences among groups not revealed by the two-group division.

Table 7. Groups of low and high efficacy

Teacher Efficacy									
3 groups			N	%	2 groups			N	%
low	2.71 - 6.30	57	0,5 - 30,3	low	2.71 - 6.71	88	0,5 - 46,8		
medium	6.43 - 7.30	70	35,1 - 67,6	high	6.86 - 8.57	100	50,5 - 100		
high	7.43 - 8.57	61	72,3 - 100						
Personal Efficacy									
2 groups			N	%					
low	1 - 2		150	1,1 - 82					
high	2.20 - 3.40		33	90,7 - 100					

As is seen in Table 8, teachers with low teacher efficacy and high personal efficacy did not believe strongly that the teacher-student relationship, social relationships developed at school, peer support, future goals and observation of student development are important for student engagement. On the other hand, teachers who believed themselves to be good at instruction and those who deemed themselves not so capable at classroom management and student engagement agreed more that these variables are important for student engagement. The former teachers appeared to believe that their in-class management and engagement capabilities may have a stronger impact on student engagement than the SEI sumvariables, while the latter seem to place accountability for student engagement more on these sumvariables rather than their own abilities.



Table 8. T-test results for high and low teacher and personal efficacy

<b>Teacher Efficacy</b>							
	efficacy level	N	Mean	SD	t	df	p
teacher-student	low	75	2.02	.317	4.29	162	.000
	high	89	1.79	.366			
peer support	low	74	2.40	.445	4.25	148	.000
	high	91	2.12	.402			
future goals	low	75	2.48	.460	4.99	164	.000
	high	91	2.10	.520			
social relation.	low	77	1.87	.383	2.90	167	.004
	high	92	1.70	.375			
observ. st. dev.	low	77	2.23	.433	3.42	158	.001
	high	93	2.01	.410			

<b>Personal Efficacy</b>							
	efficacy level	N	Mean	SD	t	df	p
teacher-student	low	148	1.82	.317	-6.79	177	.000
	high	31	2.25	.342			
peer support	low	147	2.19	.425	-3.54	177	.001
	high	32	2.48	.447			
future goals	low	148	2.16	.447	-7.99	178	.000
	high	32	2.86	.483			
social relation.	low	149	1.71	.349	-4.24	180	.000
	high	33	2.01	.454			
observ. st. dev.	low	150	2.07	.419	-3.68	181	.000
	high	33	2.37	.484			

SEI Likert scale: 1= strongly agree, 2= agree, 3= disagree, 4= strongly disagree

In addition to that, participants were divided into three even groups and ANOVA showed that teacher efficacy beliefs were connected to all sumvariables of SEI apart from external motivation (see Table 9). Regarding teacher-student relationships ( $p= .000$ ), the Post Hoc analysis revealed that teachers with high teacher efficacy beliefs regarded their relationship with students as more important for the students' emotional involvement and, by extension, their overall engagement with school. About social relationships, a statistical significance between teachers with high and low teacher efficacy beliefs ( $p= .013$ ) shows that, contrary to teachers with low teacher efficacy beliefs, teachers with confident teacher efficacy beliefs believed stronger that their instructional strategies affected students' social relationships at school, which are part of their affective engagement with school. Moreover, in peer support and future goals alike, there was statistical difference among teachers with low and medium teacher efficacy beliefs ( $p= .011$ ;  $p= .012$ ), and low and high teacher efficacy beliefs ( $p= .000$ ;  $p= .000$ ). It appears that the higher the efficacy beliefs are in terms

of instructional strategies, the more important teachers considered peer support and the student's future goals for the student's affective and academic engagement respectively. Concerning observation of student development, a statistically significant difference was found between teachers with low and high teacher efficacy beliefs ( $p = .000$ ), connoting how strongly high levels of professional confidence in teacher efficacy was linked to the importance of monitoring student development for students' engagement in terms of academic engagement.

According to these findings, the level of efficiency that teachers believe they have at both a professional and a personal plane is relevant to the students' cognitive and affective engagement, as low, medium and high levels of self-efficacy beliefs are connected to the importance teachers attribute to teacher-student and social relationships developed at school, peer support among students, future goals and observation of student development. However, external motivation, which is conventionally held as important factor influencing student engagement with school in terms of academic achievement and emotional involvement, was not found to be statistically correlated with either high or low teacher and personal efficacy beliefs, as far as the answers provided by the participants of this study are concerned.

Table 9. ANOVA results in groups of teacher efficacy beliefs and student engagement

sumvariables	groups	N	Mean	SD	df	F	<i>p</i>
teacher-student relationship	1	56	2.05	.337	2	15.41	.000
	2	68	1.93	.272			
	3	58	1.71	.378			
social relationships	1	57	1.87	.401	2	4.54	.012
	2	69	1.79	.348			
	3	61	1.66	.394			
peer support	1	55	2.44	.450	2	11.27	.000
	2	69	2.22	.369			
	3	59	2.08	.422			
future goals	1	55	2.55	.484	2	14.08	.000
	2	69	2.28	.447			
	3	59	2.05	.549			
observing student development	1	57	2.31	.418	2	11.16	.000
	2	69	2.12	.422			
	3	60	1.95	.415			

SEI Likert scale: 1= strongly agree, 2= agree, 3= disagree, 4= strongly disagree

## 7 SUMMARY OF THE RESULTS

As far as the teachers' perception of student engagement is concerned, the structure of the modified SEI revealed six dimensions, four of which coincided with the original SEI and two that were new, namely social relationships and observing student development. The SEI sumvariables were positively correlated with each other, apart from external motivation. Gender, subject, level of education and training in special education did not present statistically significant difference regarding teachers' perception of student engagement. Moreover, it was found that the more experienced the teacher is, the weaker the teachers' belief in rewards from parents and teachers alike as a means to boosting external motivation. School location and school size were related to the teachers' understanding of teacher-student relationship in relation to student engagement, teachers working in a village, where schools are small, believed stronger than their colleagues in city schools that the teacher-student relationship is important for student engagement.

In regards to teachers' efficacy beliefs, two dimensions were found. Teacher efficacy comprised instructional strategies and how much teachers believe they can assist families in helping their children do well in school. Personal efficacy comprised classroom management and student engagement. Gender, subject, years of experience, seminars on education, school location and school size did not present statistically significant differences. However, it was found that teachers with strong beliefs in their ability to management and engage students in class deemed special education training important. Moreover, teachers with postgraduate studies believed stronger than other teachers that their studies affect their efficacy in classroom management and student engagement, while they also affect their instructional strategies.

Concerning the interrelation between student engagement and teacher efficacy beliefs, it was found that the levels of teacher and personal efficacy beliefs were statistically correlated to all SEI sumvariables, apart from external motivation. Most importantly, teachers with low teacher efficacy and high personal efficacy did not believe strongly that the teacher-student relationship, so-

cial relationships developed at school, peer support, future goals and observation of student development are important for student engagement.

## 8 DISCUSSION

The aims of this study attempt to shed light on how teachers perceive student affective and cognitive engagement, what their own self-efficacy beliefs are on a professional plane, and how the latter relates to the former. The results pertaining to the modified SEI instrument are interpreted in the light of the participation-identification model and self-determination theory, followed by the results found from the TSES, explained within the framework of Bandura's self-efficacy theory. Understanding student engagement as a multidimensional concept means viewing school experience as complex, and addressing behaviors, emotions and cognition as central and related aspects of human development (Archambault et al. 2009; 653, 667). For teachers to tailor and contextualize prevention and intervention strategies to reduce amotivation and school dropout through their instruction, class management and student engagement techniques, it is important that teachers identify problems in students' overall engagement with school.

### 8.1 Student Engagement

#### 8.1.1 The Construct

Upon deletion of some items, the resulting six dimensions were able to give us a clearer idea about the structure of student engagement as understood by teachers, which regards the teacher-student relationship, peer support, future goals and external motivation, but also in the light of social relationships and observing student development.

It could be suggested that the two new sumvariables that occurred mirror the ones in the original SEI. While students regard part of their cognitive engagement according to the control exercised on their homework and the relevance of what they learn for themselves, teachers perceive student academic engagement in respect to measuring what students are able to do with their tests and seeing whether learning is fun for students, because they get better at

something. As for social relationships, teachers perceive student affective engagement in regards to the friendships students have, whether they enjoy talking to teachers and students at school, and whether the students' family or guardians are encouraging when things are tough at school. Thus, affective engagement is also understood as the relationships students develop with one another and teachers alike as well as family support. That may show that teachers value the influence of peer support in student engagement, but they also recognize that there is a web of relationships that encompasses peers, teachers and parents or guardians and that may affect students' emotional stance towards school.

In conclusion, the structure may not be the same as in the original SEI. Yet, it is valid and representative of the different lens through which teachers see. The two sumvariables that occurred add rather than subtract from the student engagement concept and, in conjunction with the other four sumvariables, offer us a more clear idea as to how teachers understand student cognitive and affective engagement.

### **8.1.2 External Motivation**

Motivation is what fuels the individual to pursue a certain course of action in order to attain a certain goal it has set. External motivation seems to go beyond motivation in the sense that it regards the process of setting goals and the conscious investment of effort and perseverance in attaining those goals, while feeling an affiliation towards the school environment and practices. The finding that more experienced teachers have a weaker belief in rewards from parents and teachers alike as a means to boosting external motivation is important, because it shows how experience that matures with each year in classrooms and further education on teaching can be valuable weapons in an educator's armory to be used for student engagement with school and against student amotivation by stressing external motivation and attempting to disengage the idea of external motivation from rewards.

As opposed to Eastern educational cultures, Western educational cultures seem to implicitly emphasize that part of a teacher's job is to provide external motivation to the students, thus enhancing whatever intrinsic motivation resides in the student himself. According to the self-determination theory (SDT),

intrinsic motivation and the psychological needs of autonomy, competence and relatedness are interrelated and, as such, we can assume, interdependent. Thus, being able to respond to these three fundamental and innate psychological needs translates into the ability to retain one's motivation, interest and involvement, persist in the face of adversities, and continue taking initiative on one's own behalf. Such ability is important when it comes to good school performance and external motivation surely becomes a stepping stone for intrinsic motivation in order for the student to achieve better academic results. For instance, higher levels of affective engagement can be attributed to higher levels of support experienced by individuals in positive interactions with their educator, since they may satisfy the three fundamental psychological needs to a greater extent (Sagayadevan and Jeyaraj 2012, 13-14). Teachers who are at a later stage of their career appear to realize how external motivation or lack thereof can influence students' progress at and engagement with school.

Aside from supporting, if not also advancing, intrinsic motivation, external motivation enables the internalization and integration of values and behaviors esteemed at school. For students who are highly motivated on their own, motivation from an external source is an additional force that facilitates their learning. However, for amotivated or difficult students who feel uncommitted, thus unattached, towards school, external motivation may be vital for their school performance, let alone their completion of school. In the latter case, when learning situations during class seem to go against the interests or wants of the student, but are useful nonetheless, extrinsic motivation is pivotal in initially familiarizing the student with school values, regulations and goals, and later internalizing them in order to render the student a compliant agent whose sense of self and volition within school settings is in agreement with the school's behavioral and learning objectives. In addition to effecting desired learning outcomes, external motivation may also encourage the integration of school values and ambitions by linking them to personal beliefs and values regarding school, which are also held by peers, thus creating an atmosphere of a shared value system and final goals among all participants in the teaching and learning process.

External motivation in the form of a reward was not appreciated by more experienced and educated teachers. Teachers tend to think that the more the

students mature, the more they prefer symbolic over material rewards, while teachers themselves prefer symbolic rewards, such as praise, experiencing success through an activity or parental support and approval, believing them to be conducive to self-motivation (Hufton et al. 2003, 373). In accordance with SDT, autonomy, competence and relatedness are the foundation for an individual's overall healthy development and proactive spirit; giving rewards in exchange for involvement and engagement with school can be harmful to psychological growth. First of all, rewards will become the guide for the student's efforts, weakening the strength of his own volition and applying his decision-making capabilities for the sake of the reward rather than for the learning experience itself. Second, a sense of competency will gradually cease to be about having control over one's behavior and actions to achieve certain results, and become more dependent on whether the reward was conferred or not, which entails feelings of incompetency that the student may not be capable of dealing with, and may cause disengagement with school in the long term. Third, relatedness, understood as belonging and enjoying stable and caring interpersonal bonds at school, or even in the family, will be consciously paired to attaining a reward and steer the student away from other benefits to be reaped from healthy and balanced teacher-student and parent-child relationships.

While external motivation is important to student engagement and development, for teachers with more years of experience and education, it should not take the form of rewards. It should rather be channeled towards complementing intrinsic motivation by integrating and internalizing processes, aiming at more autonomous and determined students whose behavior and progress reflect their affective and cognitive engagement with school.

### **8.1.3 The Teacher-Student Relationship**

School location and school size appeared to bear on the understanding of the teacher-student relationship in terms of student engagement on the part of the teacher. Teachers working in the city, where schools have more than 150 students, thus considered big, believed less in teacher-student relationships as important for their students' engagement. On the other hand, according to the findings of this study, for teachers working in a village, where the students enrolled rarely exceed 150, the teacher-student relationship was of consequence.



From the findings we can assume that teachers at schools in rural areas appreciate more how their relationship with their students may positively or negatively influence the students' academic progress as an immediate consequence of the latter's degree of engagement. The relationship developed between educators and students is indeed important for students' advancement in terms of learning as it can encourage or alternatively discourage how much students participate at school. In other words, a good teacher-student relationship can be fruitful for students, since it can provide a source of motivation for students to prepare themselves better for school, attend school more often, be more enthusiastic about going to school, and become interested in extracurricular activities. According to Finn's Participation-Identification model, active participation in school and classroom activities affect school outcomes. Thus, teacher-student relationships are crucial for students' involvement with school and related activities.

In addition, the Participation-Identification model suggests that students need to feel that they are part of school both as a physical and a social place for school performance to be at optimal levels. Identification with school, that is, belonging and valuing, is an internal state whose external manifestation can be enhanced by encouraging classroom participation and participation in school activities as well as academic performance and positive teacher-student interactions (Finn 1989, 127). The teacher-student relationship, which corresponds to the affective aspect of the student engagement concept, enhances the feeling of belonging and being valued at school. The quality of the teacher-student relationship may affect the students' feeling of belonging to the school as an institution as well as their feeling of being valued in class as a person and a student. Teachers believe that students' liking and respect for a teacher as well as students' feeling of being liked, having their efforts acknowledged and valued, their aspirations and feelings respected may cause students to work harder both in and outside school (Hufton et al. 2003, 372). Moreover, students who perceive teachers as involved agents in their learning are more likely to be more engaged in their schoolwork, while a sense of belonging is related to autonomous motivation, teachers' perception of effort, expectancy and value (Stroet et al. 2013, 81, 82). The better the interaction between teachers and students, the closer students feel to school and the more value students feel they have or even

attribute to themselves. Consequently, students become more engaged with school, and participation is likely to be viewed less as a drudgery and more as something voluntary to look forward to.

Considering how important the feelings of belonging and being valued are for encouragement and personal achievement, one can only imagine how positive an impact being valued at school can have on students in light of school attendance and learning. The student's degree of relatedness may indicate adjustment, adaptation and motivation problems, as it regards the interconnectedness within an individual's social, academic and emotional landscape; providing emotional security, positive relationships and a sense of belonging or relatedness are invaluable for motivation, affective and social integration, academic achievement, goal setting and goal fulfilment (Martin and Dowson 2009; 331, 335). Feelings of competence or self-efficacy within a supportive social framework that encourages choice-making and self-direction can enhance self-determination and autonomy, while relatedness stemming from secure relationships, a sense of socio-cultural belonging or identification with ideas can especially support and boost intrinsic motivation; self-determination and agency help individuals meet competence, autonomy and relational motivational needs (Zepke and Leach 2010, 170). Furthermore, students' positive self-perceptions, academic and classroom engagement, effort invested and academic expectancies are promoted through teacher-student relationships that are caring and supportive as well as through teacher instruction that supports student autonomy and proper classroom structure; teachers have the ability to encourage student engagement and motivation by enhancing relatedness to school, student-perceived competence, intrinsic motivation, and autonomy orientation (Skinner et al. 2012; 19, 31). The relationships that teachers build with their students and the importance that they invest in them can prevent dropout rates and possibly improve poor performance.

Given that relationships entail two or more parties and are of a reciprocal nature, teacher-student relationships do not leave teachers unaffected either. Positive relationships with their students affect teachers' efficacy and may reduce feelings of burnout. Besides student achievement through teacher confidence in effective classroom and instructional management, teacher self-efficacy affects job satisfaction, as it is strongly connected to teacher burn-out which

takes the form of emotional exhaustion, depersonalization, and reduced personal accomplishment (Klassen et al. 2008, 1920; Haverback and Parault 2011, 705; Federici and Skaalvik 2012, 298). Emotional exhaustion, in particular, decreases the number of enactive mastery experiences that sharpen skills and improve capabilities, thus reducing the quality of teacher performance; by extension, not only perceived self-efficacy in classroom management based on evaluation of poor performance is reduced, but also feelings of ineffectiveness and futility are amplified, perpetrating a lack of confidence in the face of unchecked disruptive behavior and an inability to reinforce order in the classroom (Brouwers and Tomic 2000, 248-249). Good cooperation between students and teachers as a result of good communication, and feelings of identification, belonging and being valued on the part of the students, facilitates teachers' work, which in turn ameliorates their competence in class, hopefully yielding better learning outcomes from the students.

What is more, the more students feel valued and identify with school as a result of positive teacher-student relationships, the more we can expect such relationships to enhance teachers' self-esteem and self-efficacy. Teacher behavior and student behavioral and affective engagement are mutually influenced by means of perceptions of student engagement and direct behavior from either side, existing and future patterns of interaction, emotions and perspectives (Skinner and Belmont 1993, 577-580). Thus, reflecting students' feelings regarding school attendance, preparation, and participation, feelings of being valued as an educator may also arise on the part of the teachers, which result in better teaching performance and further identification with school on their part. Feeling that one is part of the school, and sharing the values and goals of the school is important for teachers in order for them to be effective in their work, while their efficacy will be mirrored in their students' engagement, the vehicle being the teacher-student relationship. Extending Finn's model a little further to include the teachers, we could suggest that feelings of success deriving from active participation and good performance at school can significantly affect teachers and students alike as well as affect the relationship existing between the two parties, thus reducing or enhancing feelings of burnout, the desire to drop out or further engage with school and the activities taking place therein.

## 8.2 Teachers' Sense of Efficacy

According to Tschannen-Moran and Woolfolk's Teachers' Sense of Efficacy Scale (TSES), teacher self-efficacy beliefs engage in an interplay with factors like grade taught, years of experience, available resources, school facilities, school management on the part of the principle and support on the part of the parents. At the same time, personality and creativity took precedence over career stage as a parameter affecting the engagement of students. This study examined the data from the TSES questionnaire in relation to sex, education, career stage, school subject, special education training and education seminar attendance, school location and school size. Yet, from a statistical standpoint, the level of studies and special education training were the two determining factors that emerged concerning teacher efficacy.

Most teachers participating in this study had a Bachelor's degree, while some had a Master's degree and only one had completed doctoral studies. From the results we can conclude that teachers with postgraduate studies believe that their studies affect their efficacy as teachers, not their personal efficacy, which in turn affects the instructional strategies they use. This is an interesting finding, because one would expect personal efficacy beliefs, that is, classroom management and student engagement, to be affected as well. Nonetheless, it was the aspect of teacher efficacy in this study that surfaced as improvable through further education. We could assume that, with better instructional strategies, classroom management and student engagement tactics may be improved at a later stage.

Seen through the theoretical lens of self-efficacy theory, and according to the statistical differences in this study, teachers with high teacher efficacy beliefs can improve students' learning. Teachers' strong belief in their instructional strategies can influence the expectations teachers have of their students regarding behavior and learning outcomes and the motivation they provide for students to be more actively and willingly engaged in performing learning tasks. Teacher efficacy is important not only because it may influence the goals set for the learning context, but also because it can channel the effort and persistence invested in tasks (Fives and Looney 2009, 182). Given that Bandura's theory regards contextualized personal competencies, high teacher efficacy beliefs

mean better use of judgment, channeling of motivation and self-regulation to achieve the set learning goals. Moreover, we could link high teacher efficacy beliefs to a raised awareness concerning stress and a higher commitment to challenges present in the classroom. Although, according to SDT, motivation and engagement are heavily influenced by student perceptions as to the teacher's involvement and the degree to which autonomy and competence as needs are met at school, concrete teaching behavior could be a significant influence (Stroet et al. 2013, 73, 84). Teachers confident in choosing their instructional methodology and style can be more aware of their expenditure of energy and resources, can regulate their behavior and negative emotions, direct their own motivation, and, through cognitive processes, exercise decision-making and consciously resist against emotionally and mentally straining classroom situations. Moreover, teacher behavior, such as immediacy and clarity, can heighten student cognitive and emotional interest with course content and its future relevance, channel their selective attention, help them built internal connections among content and reflect, consequently enhancing emotional and cognitive engagement (Mazer 2013, 93). Having these qualities, and regardless of the level of formal education, a teacher with high teacher efficacy beliefs can strengthen her personal efficacy beliefs by means of encouraging results through planned and strategic instruction.

Similarly to the level of education, teacher efficacy was statistically linked to special education training. Teachers who had knowledge of special education issues had higher teacher efficacy beliefs, which, we can assume, rendered them more comfortable with a variety of instructional strategies and more capable of choosing the most suitable one. Teachers with high teacher efficacy can better respond to students with special education needs (Haverback and Parault 2011, 705). In Bandura's theory, self-beliefs, control and agency are interrelated in a social context that transforms and is transformed by the individual. In the case of students with special or learning needs, where the environment at school and the teacher's attitude toward them is of great relevance to their learning and overall engagement with school, high teacher efficacy can provide an encouraging learning atmosphere as well as enhance students' belief in their abilities and competence through selected activities, consequently leading to positive interpretations of their action's outcomes.

In light of the student engagement aspect of teacher efficacy in this study, the teacher efficacy beliefs of teachers with special education training is important for students who face learning difficulties, have special needs or are difficult to manage, engage or motivate, because they guide teachers in providing these students with the opportunity to learn how to be self-efficacious themselves. Teachers with strong teacher efficacy beliefs may be more confident in offering more mastery experiences for maintaining effort and persisting against failed attempts at learning something. Additionally, the teacher herself may become the example or the competent model that the student can observe and imitate, thus exposing the student to vicarious experience via her own actions. What is more, social persuasion being one of the ways with which self-efficacy can be built, a teacher familiar with special education issues can be more sensitive towards certain circumstances and employ verbal encouragement to effect skill development, reduce self-doubt and eventually achieve meaningful learning or cultivate appropriate behaviors. Self-efficacy beliefs, while individualistic, can also be considered as a socially influenced process; self-efficacy beliefs as well as the way they change and affect motivation and achievement are subject to a student's social domain (Martin and Dowson 2009, 336), involving emotions experienced, relationships developed, positive communication, role models and vicarious experience, the value attributed to educational outcomes and academic performance, and peer, teacher and parent support. Lastly, they may be more aware of and correctly interpret a particular student's physiological state so as to provide additional help in abating negative emotions or stress associated with the learning process.

Higher teacher efficacy beliefs, in this study statistically connected to the level of education and special education training, and understood as instructional strategies and the extent to which they can help parents with their child's academic performance, are important for students' learning and teacher performance alike. From the theoretical framework set for the TSES, we can suggest that teachers with a strong sense of efficacy in their profession can evaluate their own capabilities as well as those of their students, exercise self-regulation to contain or cope with otherwise overbearing emotions, remain committed to and find purpose in her work, and can find more effective ways to engage or manage students in the classroom. Teacher efficacy is important for influencing

learning outcomes, maintaining student interest and engaging students with school as it regards a teacher's past experiences, current organizational abilities and efficacy beliefs as an educator, outcome expectations that are in harmony with a particular context, and the teacher's understanding of her capabilities and limitations.

### **8.3 The interrelation between teachers' understanding of student engagement and teacher efficacy beliefs**

One of the purposes of using the modified SEI questionnaire alongside the TSES was to see the connections between the two concepts. The results show that student engagement is indeed linked to a teacher's sense of efficacy in terms of both teacher and personal efficacy. In particular, how effective a teacher considers her instructional and classroom management strategies to be as well as her ability to engage students were found to be statistically connected to the cognitive and affective aspects of engagement save for external motivation.

Teachers with high teacher and personal efficacy differ as to their view on student engagement. Teachers who believed stronger in their classroom management and student engagement skills, and less in their instructional strategies, denoted a weaker belief that factors like teacher-student relationship, social relationships developed at school, peer support, future goals and observation of student development affect student engagement. This is interesting, because the occurrence or enhancement of student engagement was interpreted more on the basis of their personal efficacy, while teachers with a stronger belief in their instructional decisions and implementation, as well as in the provision of parental aid, may rely more on the above-mentioned factors.

It is difficult to suggest whether high personal efficacy could be more important than high teacher efficacy for student engagement. Personal efficacy regards emotions experienced in the classroom as well as with the practical aspect to teaching involving classroom management, both of which influence a student's feelings and attitude towards the classroom environment and the learning opportunities offered therein, thus strengthening engagement with school as a physical space and institution. The agency an educator exercises and

the conscious decisions he or she makes to further engage students are very important for the improvement of the educational context in which certain learning outcomes are expected to occur. Teachers' beliefs in their abilities may indicate future behavior, decisions, and classroom organization (Fives and Looney 2009, 182). Students may feel the need to find support in the teacher or might reflect the teacher's enthusiasm about the subject in their own studying and learning. How personal efficacy beliefs are evident in the classroom can be seen in the teacher's confidence in the steps she takes towards a more unified classroom, in which students behave appropriately and are genuinely interested in the tasks or lesson. High personal efficacy beliefs can lead a teacher to feel more competent in motivating her students and to recognize that, in accordance with Bandura's theory on self-efficacy, students need to be active agents in the learning process.

High teacher efficacy teachers seem to place more emphasis on the SEI sumvariables examined for student engagement. Teacher efficacy in this study regards efficacy in instructional practices and the extent to which teachers believe that they can assist families in helping their children do well at school, which was an item under efficacy in student engagement in the original TSES sumvariables. The manner teachers teach a subject can ignite or smother the interest of the students, and influence cognitive skill development. For instance, having a gamut of pedagogical techniques to choose from, such as inductive teaching and case studies, can help avoid students' ambiguity caused by routine class structure, make students more active and participatory agents in their learning, offer opportunity for experiential learning, and facilitate the assessment of student understanding and application of knowledge (Kiener 2009, 25). Yet, it is important that teachers confident in their teaching practices also be confident in their personal efficacy. In an environment fostering connective instruction characterized by a sense of support and warmth, where the teacher encourages student autonomy and is perceived as caring, accepting and involved, affective, cognitive and behavioral engagement occur; students are more persistent and effortful, happier and more enthusiastic about learning (Skinner and Belmont 1993, 578; Martin and Dowson 2009, 344). Rather than relying on external factors for student engagement, teachers should develop their resilience in the face of hurdles and against overwhelming emotions that



may obstruct classroom management and disengage students, while persisting in their goals and adjusting their expectations to classroom reality. That way, teachers may enhance the emotional involvement of students with school, teachers and peers, as well as their willingness to comply with class rules, teacher's class-related requests and learning goals.

At the same time, teachers with high teacher efficacy believed more strongly that peer support and social relationships at school could affect student engagement. Peer groups, when acting collectively in forming a social identity within the classroom or school premises, can either promote student engagement or exacerbate existing disengagement, by emphasizing respectively either pro-school behavior and success, or an anti-school value-system (Kelly 2009, 459). For students to be affectively engaged with school, they need to feel that they are valued in an environment they belong to. Balanced relationships developed at school can encourage a sense of security, support, confidence and comfort that comprise student affective engagement. Teachers with high personal efficacy seem to be more self-reliant in their ability to provide such balance. Upper comprehensive school students, who have a good perception of their effort and motivation, can be in the position to suggest ways in which teachers can help students who are not trying hard, such as talking, encouraging and showing respect towards such students as well as find ways to help their classmates; at an age when peer pressure is felt keenly and academic achievement is not 'cool', teacher-student interaction as well as peer support can counter a lack of effort on the part of the unengaged students, thus enhancing the group's motivation, orientation to learning, capability to fulfill collective or individual goals (Sullivan, Tobias and McDonough 2006, 91; 96; 98). However, social affiliation and approval goals and academic engagement are not systematically related (King et al. 2012, 769). Yet, since people tend to compare to those doing better or worse (Kitchel et al. 2012, 34), comparing upward can inspire students to become better and positive teacher-student can offer models to mold oneself after, without causing envy or negative feelings about one's self. Teacher attunement and dependability, use of resources and affectionate stance affects students' perception of how much their needs for relatedness, competence and self-determination are being met (Skinner and Belmont 1993, 577).

In addition to that, teachers with low efficacy beliefs in managing their classroom and engaging students with school activities or schoolwork believed in the students' future goals and observing student development as a means to further engage students with school. In the case of high teacher efficacy, if the students' future aspirations are relevant to the course and there is timely observation of the students' academic progress, the former may affect student cognitive engagement by urging the student to seek more profound learning opportunities and the latter can help regulate feelings of amotivation so as to avoid dropout in timely fashion. However, regarding high personal efficacy, it may be the case that teachers believe more that, with their classroom management and student engagement techniques, they are more capable of directing students in terms of future goals or that such goals are set by the student himself. Students who are more responsible about their learning as well as about assessing the content of a class, its presentation and integration, could see how relative a course is not only to other courses but also their career aspirations (Kiener 2009, 24). Additionally, they may consider observing student development as a matter of evaluation inherent in the teaching process and that, in itself, does not add to student academic engagement.

External motivation was statistically linked to none of the levels distinguished for the purposes of this study (low, medium and high), meaning that for teachers of any teacher efficacy level cognitive engagement is unrelated to motivation not of an intrinsic nature, or at least motivation in the form of reward. It has been mentioned that external motivation boosts intrinsic motivation and facilitates the processes of internalization and integration, thus making learning goals and expectations as well as school rules, values and behaviors part of the student. Such processes consequently lead to more motivation and possibly to further student affective and cognitive engagement. Therefore, one would expect external motivation to be considered by the teachers as important for students' overall engagement with school. Yet, for teachers of any level of teacher and personal efficacy, that is, efficacy in instructional strategies, classroom management and student engagement, external motivation was irrelevant. However, it must be noted that items pertaining to external motivation regarded rewards given to the students for their learning from either parents or teachers.

We can only assume that for the participating teachers, student progress should not occur with a reward as the ultimate objective. It might be the case that these teachers want student development, personal effort and academic accomplishments to be related to a student's own interests, expectations, aspirations and capabilities, rather than to rewards of a material or monetary nature conferred by parents or by the school. In effect, learning and feeling an affiliation to school should originate from factors other than rewards, such as the external motivation inherent in a teacher's approach towards student, her methodology, her encouragement, the student's social and familial environment, peer support and acknowledgement of the efforts exerted. To participate in and identify with school as well as cultivate determination and a sense efficacy in students, external motivation should not be disregarded altogether, since it bears on student engagement. Rather, it should not be understood in the terms of rewards, but sought in other motivating sources that can not only boost but also sustain student affective and cognitive engagement with school in the long run.

#### **8.4 Limitations**

The study has been specific to Greek upper comprehensive schoolteachers and calls for further research. It should be noted that the results refer to upper comprehensive schoolteachers working in Karditsa, Thessaly, and some of the villages in the municipality. Thus, they cannot be generalized to include all upper comprehensive schoolteachers, for which research on a wider scale should be conducted; it might be the case that results in larger cities vary considerably. For a clearer picture of teachers' personal and teacher efficacy beliefs, further research could encompass students' views of their own engagement as a response to their views of their teachers' teaching, management and engagement strategies. Students' views may be important in gaining a deeper understanding of the matter. Moreover, future research could compare students' perception of student engagement and teacher self-efficacy beliefs to those of the teachers' to discover whether students' or teachers' perceptions are more powerful indicators and facilitators of student engagement. Last but not least, since

beliefs and perceptions are of subjective nature, a qualitative approach could be adopted in future research with teachers to examine teacher efficacy in relation to student engagement more minutely. The quantitative approach of this study gives a general idea of the relationship between teachers' efficacy beliefs and student engagement.

## 8.5 Conclusion

This study found that the concepts examined by the modified SEI and the TSES are related; teachers' perception of student affective and cognitive engagement is related to teacher and personal efficacy. Teachers' beliefs in their efficacy in instructional strategies, classroom management and student engagement affects their understanding of students' commitment and investment in school in terms of personal effort and emotional involvement, and vice versa. The importance of this result lies in the fact that it might make teachers more aware of their choices in teaching and managing students, so as to be more conscious of how and if they engage their students with school and its activities, goals and values. In addition to that, it may help them make class-related decisions that aim at enhancing student affective and cognitive engagement as well as improve their own teacher and personal efficacy, and strengthen their belief in their overall self-efficacy as educators. The thoughts provoked by the findings of this study may add to the teachers' sense of teacherhood and identity, help teachers become more reflective practitioners, and further their agency in educational settings.

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## 9 APPENDICES

### 9.1 Appendix 1

#### Student Engagement Instrument

What is your opinion regarding the following statements considering the importance for the students to support learning? For each statement, please mark the response that best describes you.

		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	The student's family/guardian(s) are there for him/her when he/she needs them.	1	2	3	4
2.	After finishing their schoolwork, my students check it over to see if it is correct.	1	2	3	4
3.	I am there for my students when they need me.	1	2	3	4
4.	My students like me the way I am.	1	2	3	4
5.	Adults at my school listen to the students.	1	2	3	4
6.	Students at school care about one another.	1	2	3	4
7.	Students at my school are there for each other when they need them.	1	2	3	4
8.	Students' education will create many future opportunities for them.	1	2	3	4
9.	Most of what is important to know students learn in school.	1	2	3	4
10.	The school rules are fair for the students.	1	2	3	4
11.	Going to school after high school is important for the students.	1	2	3	4
12.	When something good happens at school, the students' family/guardian(s) want to know about it.	1	2	3	4
13.	Most teachers at my school are interested in students as persons, not just as students.	1	2	3	4
14.	Students here respect what they have to say.	1	2	3	4
15.	When they do schoolwork, students check to see whether they understand what they are doing.	1	2	3	4
16.	Overall, teachers are open and honest with students.	1	2	3	4
17.	Students plan to continue their education following high school.	1	2	3	4
18.	Students will learn, but only if teachers give them a reward.	1	2	3	4
19.	Students believe that school is important for achieving their future goals.	1	2	3	4
20.	When students have problems at school, their family/guardian(s) are willing to help them.	1	2	3	4

21.	Overall, adults at my school treat students fairly.	1	2	3	4
22.	Students enjoy talking to the teachers here.	1	2	3	4
23.	Students enjoy talking to other students here.	1	2	3	4
24.	Students have some friends at school.	1	2	3	4
25.	When students do well in school it is because they work hard.	1	2	3	4
26.	The tests in my classes do a good job of measuring what students are able to do.	1	2	3	4
27.	Students feel safe at school.	1	2	3	4
28.	Students feel like they have a say about what happens to them at school.	1	2	3	4
29.	Students' family/guardian(s) want them to keep trying when things are tough at school.	1	2	3	4
30.	Students are hopeful about their future.	1	2	3	4
31.	At my school, teachers care about students.	1	2	3	4
32.	Students learn, but only if their family/guardian(s) give them a reward.	1	2	3	4
33.	Learning is fun because students get better at something.	1	2	3	4
34.	What students are learning in my classes will be important in their future.	1	2	3	4
35.	The grades in my classes do a good job of measuring what students are able to do.	1	2	3	4

### Teacher Self-Efficacy Scale

The following questionnaire has been designed to help us better understand the situations that present a problem to the teachers during their school activities. For each statement, please mark the response that best describes you. Your answers are confidential.

**1= Not at all, 3= A little, 5= Some influence, 7= Enough, 9= A lot**

1.	How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8
2.	How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8
3.	How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8
4.	How much can you do to help your students value learning?	1	2	3	4	5	6	7	8
5.	To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8
6.	How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8
7.	How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8

8.	How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8
9.	How much can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8
10.	To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8
11.	How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8
12.	How well can you implement alternative strategies in your classroom?	1	2	3	4	5	6	7	8

### Πώς αντιλαμβάνεστε τη συναισθηματική και διανοητική εμπλοκή του μαθητή;

Οι ακόλουθες δηλώσεις περιγράφουν τα συναισθήματά σας. Παρακαλώ κυκλώστε τη δήλωση που σας εκφράζει περισσότερο. Οι απαντήσεις σας είναι εμπιστευτικές.

	Συμφωνώ έντονα	Συμφωνώ	Διαφωνώ	Διαφωνώ έντονα
1. Η οικογένεια/ οι κηδεμόνες του μαθητή πρέπει να είναι στο πλευρό του όταν αυτός τους χρειάζεται.	1	2	3	4
2. Όταν οι μαθητές μου τελειώνουν μια σχολική εργασία, την ελέγχουν για τυχόν λάθη.	1	2	3	4
3. Είμαι πάντα στη διάθεση των μαθητών μου, όταν με χρειάζονται.	1	2	3	4
4. Είμαι αρεστός στους μαθητές μου έτσι όπως είμαι.	1	2	3	4
5. Στο σχολείο όπου εργάζομαι, οι καθηγητές ακούνε τους μαθητές.	1	2	3	4
6. Οι μαθητές στο σχολείο νοιάζονται ο ένας για τον άλλο.	1	2	3	4
7. Οι μαθητές στο σχολείο όπου εργάζομαι είναι εκεί ο ένας για τον άλλο, όταν ένας από αυτούς το έχει ανάγκη.	1	2	3	4
8. Η εκπαίδευση των μαθητών δημιουργεί πολλές ευκαιρίες για το μέλλον τους.	1	2	3	4
9. Τα περισσότερα από αυτά που είναι σημαντικό να ξέρουν οι μαθητές τα μαθαίνουν στο σχολείο.	1	2	3	4
10. Οι κανόνες του σχολείου είναι δίκαιοι για τους μαθητές.	1	2	3	4
11. Είναι σημαντικό για τους μαθητές να συνεχίσουν την εκπαίδευσή τους και μετά το γυμνάσιο.	1	2	3	4
12. Όταν κάτι καλό συμβαίνει στο σχολείο, η οικογένεια/ οι κηδεμόνες του μαθητή πρέπει να το γνωρίζουν.	1	2	3	4
13. Οι περισσότεροι καθηγητές στο σχολείο μου ενδιαφέρονται για τους μαθητές τους όχι μόνο ως μαθητές αλλά και ως άτομα.	1	2	3	4
14. Οι μαθητές του σχολείου εκτιμούν τον λόγο των συμμαθητών τους.	1	2	3	4
15. Όταν οι μαθητές κάνουν σχολική εργασία, ελέγχουν το αν καταλαβαίνουν αυτό που κάνουν.	1	2	3	4
16. Γενικά, οι καθηγητές είναι ανοιχτοί και ειλικρινείς με τους μαθητές.	1	2	3	4
17. Οι μαθητές σκοπεύουν να συνεχίσουν την εκπαίδευσή τους και μετά το γυμνάσιο.	1	2	3	4

18.	Οι μαθητές θα μάθουν, αλλά μόνο εάν οι καθηγητές τους ανταμείβουν.	1	2	3	4
19.	Οι μαθητές πιστεύουν ότι το σχολείο είναι σημαντικό για την επίτευξη μελλοντικών τους στόχων.	1	2	3	4
20.	Όταν οι μαθητές έχουν προβλήματα στο σχολείο, η οικογένεια/ οι κηδεμόνες τους πρέπει να είναι πρόθυμοι να τους βοηθήσουν.	1	2	3	4
21.	Γενικά, οι εκπαιδευτικοί στο σχολείο όπου εργάζομαι συμπεριφέρονται δίκαια προς τους μαθητές.	1	2	3	4
22.	Στους μαθητές αρέσει να συνομιλούν με τους καθηγητές του σχολείου.	1	2	3	4
23.	Στους μαθητές αρέσει να συνομιλούν με άλλους μαθητές του σχολείου.	1	2	3	4
24.	Οι μαθητές έχουν κάποιους φίλους στο σχολείο.	1	2	3	4
25.	Η καλή σχολική επίδοση των μαθητών οφείλεται κυρίως στο διάβασμα εκ μέρους τους.	1	2	3	4
26.	Τα διαγωνίσματά μου αξιολογούν ικανοποιητικά το τι είναι ικανοί να κάνουν οι μαθητές μου.	1	2	3	4
27.	Οι μαθητές αισθάνονται ασφαλείς στο σχολείο.	1	2	3	4
28.	Στους μαθητές αρέσει να μιλούν σχετικά με το τι τους συμβαίνει στο σχολείο.	1	2	3	4
29.	Η οικογένεια/ οι κηδεμόνες των μαθητών θέλουν από τους μαθητές να συνεχίσουν τη προσπάθεια, όταν τα πράγματα είναι δύσκολα στο σχολείο.	1	2	3	4
30.	Οι μαθητές είναι αισιόδοξοι όσον αφορά το μέλλον τους.	1	2	3	4
31.	Στο σχολείο όπου εργάζομαι οι καθηγητές ενδιαφέρονται για τους μαθητές.	1	2	3	4
32.	Οι μαθητές μαθαίνουν, αλλά μόνο εάν η οικογένεια/ οι κηδεμόνες τους τους ανταμοίβουν.	1	2	3	4
33.	Η μάθηση είναι ευχάριστη στους μαθητές, επειδή βελτιώνονται σε κάτι.	1	2	3	4
34.	Αυτό που μαθαίνουν οι μαθητές μου στην τάξη μου θα είναι σημαντικό για μέλλον τους.	1	2	3	4
35.	Οι βαθμοί μου αξιολογούν ικανοποιητικά τις ικανότητες των μαθητών.	1	2	3	4

Το παρακάτω ερωτηματολόγιο έχει σχεδιαστεί ώστε να μας βοηθήσει να κατανοήσουμε καλύτερα τις καταστάσεις που δημιουργούν δυσκολίες στους καθηγητές κατά τις σχολικές τους δραστηριότητες. Παρακαλώ αναφέρετε τη γνώμη σας για κάθε μια από τις παρακάτω δηλώσεις. Οι απαντήσεις σας είναι εμπιστευτικές.

**1= Καθόλου, 3= Ελάχιστα, 5= Λίγη επιρροή, 7= Αρκετά, 9= Πάρα πολύ**

1.	Σε τι βαθμό μπορείτε να ελέγξετε συμπεριφορά που διακόπτει τη ροή του μαθήματος;	1	2	3	4	5	6	7	8
2.	Σε τι βαθμό μπορείτε να βοηθήσετε τους μαθητές σας να σκέφτονται με κριτικό πνεύμα;	1	2	3	4	5	6	7	8
3.	Σε τι βαθμό μπορείτε να ενεργοποιήσετε τους μαθητές που δείχνουν χαμηλό ενδιαφέρον για το σχολείο;	1	2	3	4	5	6	7	8

4.	Σε τι βαθμό μπορείτε να βοηθήσετε τους μαθητές σας να εκτιμήσουν την αξία της μάθησης;	1	2	3	4	5	6	7	8
5.	Κατά πόσο μπορείτε να διατυπώσετε καλές ερωτήσεις για τους μαθητές σας;	1	2	3	4	5	6	7	8
6.	Σε τι βαθμό μπορείτε να πείσετε τους μαθητές να ακολουθούν τους κανόνες της τάξης;	1	2	3	4	5	6	7	8
7.	Σε τι βαθμό μπορείτε να ηρεμήσετε έναν μαθητή που διακόπτει τη ροή του μαθήματος ή κάνει φασαρία;	1	2	3	4	5	6	7	8
8.	Πόσο καλά μπορείτε να καθιερώσετε ένα σύστημα διαχείρισης της τάξης με κάθε ομάδα μαθητών;	1	2	3	4	5	6	7	8
9.	Σε τι βαθμό μπορείτε να χρησιμοποιήσετε μια ποικιλία μεθόδων αξιολόγησης;	1	2	3	4	5	6	7	8
10.	Σε τι βαθμό μπορείτε να δώσετε μια άλλη εξήγηση ή παράδειγμα, όταν οι μαθητές σας δεν κατανοούν κάτι;	1	2	3	4	5	6	7	8
11.	Σε τι βαθμό μπορείτε να βοηθήσετε τις οικογένειες, ώστε τα παιδιά τους να βελτιώσουν την επίδοσή τους στο σχολείο;	1	2	3	4	5	6	7	8
12.	Πόσο καλά μπορείτε να εφαρμόσετε εναλλακτικές μεθόδους διδασκαλίας στη τάξη σας;	1	2	3	4	5	6	7	8

## Appendix 2

### 10. Correlations between sumvariables of the modified SEI.

		Correlations					
		teacher-st. rel.	social rela- tionships	peer supp	fut. goals	obs. stud. devel.	ext
teacher-student re- lationship	Pearson Correlation	1	,503**	,415**	,517**	,455**	
	Sig. (2-tailed)		,000	,000	,000	,000	
	N	183	182	178	178	183	
social relationships	Pearson Correlation		1	,383**	,283**	,336**	
	Sig. (2-tailed)			,000	,000	,000	
	N		189	184	184	189	
peer support	Pearson Correlation			1	,363**	,310**	
	Sig. (2-tailed)				,000	,000	
	N			185	181	185	
future goals	Pearson Correlation				1	,519**	
	Sig. (2-tailed)					,000	
	N				185	185	
observing student development	Pearson Correlation					1	
	Sig. (2-tailed)						
	N					190	
overall motivation	Pearson Correlation					,145*	
	Sig. (2-tailed)					,048	
	N					188	

\*relation is significant at the 0.05 level (2-tailed).

\*\*relation is significant at the 0.01 level (2-tailed).