

# Teachers' autonomy support, autonomy suppression and conditional negative regard as predictors of optimal learning experience among high-achieving Bedouin students

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**Abstract** The study is based on self-determination theory and focuses on the motivation of high-achieving Bedouin students who belong to a hierarchical-collectivist society. The study focuses on the question: What are the relations between teachers' autonomy support and control and an optimal learning experience among students? The study is unique in its population and in the distinction it draws between two types of teachers' control: autonomy suppression (explicit control), and conditional negative regard, a phenomenon examined for the first time in teachers (implicit psychological control). The study population consisted of 144 students from seven high schools (74% girls) who completed questionnaires at two time-points. Structural equation modeling analysis indicated that perceived need satisfaction was positively predicted by teachers' autonomy support, and negatively predicted by teachers' conditional negative regard, while perception of a teacher as autonomy suppressive contributed directly and negatively to autonomous motivation. In turn psychological need satisfaction positively predicted autonomous motivation in learning that in turn predicted positive emotions and engagement in learning. The hypothesized mediation model has a good fit with the data. The findings have implications concerning the optimal conditions for learning among Bedouin students in general and high-achieving students in particular, and concerning the importance of autonomy-supportive teaching and refraining from control, explicit and implicit alike.

**Keywords** Self-determination theory (SDT) · Autonomy support · Autonomy suppression · Conditional negative regard · Collectivist society · High-achieving students

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## 1 Introduction

Bedouins belong to a group with unique cultural, historical, social, and political characteristics within the Arab minority in Israel (Al-Krenawi 2010). In recent years Bedouin society has been undergoing significant change processes, which are also evident in the schools. From a closed, traditional collectivist society, Bedouins are increasingly exposed to general society and adopt new life patterns (Abu-Asbah 2007; Abu-Baker 2010; Ben-David 2004). This intercultural transition also entails exposure and attempts in Bedouin schools to assimilate theories and practices that were developed in Western societies. This raises the question: Are theories developed in the West also applicable to collectivistically oriented schools (e.g., Bedouin schools)? This question has occupied intercultural theoreticians as well as motivation researchers (Chirkov et al. 2011; Jang et al. 2010).

The general aim of the present study is to examine whether self-determination theory (SDT, Deci and Ryan 2000) is suitable for explaining motivational processes associated with learning among high-achieving Bedouin students who belong to a traditional hierarchical-collectivist society. Previous comparative studies (e.g., Chirkov et al. 2003; Chen et al. 2015) as well as studies conducted in specific cultures (e.g., Yamauchi and Tanaka 1998; Ahmad et al. 2013; Jang et al. 2009) confirmed the applicability of SDT to various cultural groups. Yet very few studies have been conducted among Arab-Bedouin students. To date, no study has focused on high-achieving Bedouin students.

According to SDT, the nutrients for optimal development are three universal basic psychological needs: autonomy, competence, and relatedness (Deci and Ryan 2000; Ryan and Deci 2006). Researchers adopting a relativistic cross-cultural approach question the universality of the need for autonomy in collectivist cultures, (Iyengar and DeVoe 2003; Rothbaum et al. 2000) and claim that those cultures do not value people's desire for volition and sense of choice. Some researchers also argue that the effects of teachers' control, i.e., not allowing students to self-regulate their experiences and actions, may not be destructive for the individual, as was found in Western cultures (e.g., Rothbaum and Trommsdorff 2007). This field of research is very limited in Bedouin society. Consequently, the present article focuses on an examination of the effects of teachers' autonomy support and control on optimal learning experience among Bedouin students, i.e., teacher's behaviors that support versus suppress students' opportunities to express and realize their need for autonomy. Teachers' control is examined in two aspects: autonomy suppression (Deci and Ryan 2000), which refers to control that is more explicit and overt, and the concept of conditional negative regard, which is based on studies grounded in SDT that examined parental practices, and refer to more implicit, manipulative and covert control (e.g., Assor et al. 2014). Previous studies referred to the concept of controlling teaching but not directly to teachers' conditional regard (Madjar et al. 2012; Soenens et al. 2012b). This concept is applied directly to teachers for the first time in the present study. The study is also unique in its study population consisting of high-achieving Bedouin students.

The article will first present SDT and the concepts of autonomy support and teachers' control, drawing a distinction between the different types of control. This will be followed by a description of the characteristics of Bedouin society. It will then present the main concepts of research from an intercultural perspective, and research on the motivation of outstanding students.

## 2 Theoretical background

### 2.1 Self-determination theory (SDT)

#### 2.1.1 *Need support and need satisfaction*

SDT is an approach to motivation that highlights people's psychological needs as inherent motivational assets (Jang et al. 2016). According to SDT, people have three basic psychological needs for relatedness, competence, and autonomy (Deci and Ryan 2000). Satisfaction of these needs contributes to students' optimal development and functioning (Deci and Ryan 2000, 2008, 2012; Ryan and Deci 2017).

The need for relatedness is the aspiration to maintain close, safe, and satisfying connections in one's social environment and feel part of it (Baumeister and Leary 1995; Deci and Ryan 2000). Relatedness support includes teacher behaviors such as expressing affection, devoting time and resources, willingness to help, and a non-competitive learning structure.

The need for competence is the desire to experience oneself as capable of realizing abilities, plans, and aims, which are not always easy to achieve, and feel a sense of efficacy. Competence support is typified by teacher behaviors such as providing optimal challenges, immediate and non-evaluative feedback, assistance in coping with failure, teaching learning strategies, and conveying messages regarding students' ability to succeed (Deci and Ryan 2000).

The needs for competence and relatedness have gained substantial attention from other theories (Baumeister and Leary 1995; White 1959). SDT is unique in the importance it accords and the research it devotes to the need for autonomy (Reeve and Assor 2011). The need for autonomy is the desire for self-determination, volition, meaning, and freedom of choice (Deci and Ryan 2000). Assor and Reeve define the need for autonomy as the individual's striving to realize and actively and exploratively form authentic and direction-giving values, goals, interests, and abilities, i.e., to construct his identity (Assor 2012; Reeve and Assor 2011).

Teachers' autonomy support includes a variety of behaviors whose efficacy has been proved in studies, e.g., allowing choice, involvement in learning processes (Assor et al. 2002; Reeve and Halusic 2009), clarifying the value or relevance of the studied material, providing a rationale (e.g., Jang 2008; Reeve 2009), enabling expression of negative feelings and doubts concerning the teaching, the learning, or their content (Assor et al. 2002), encouraging personal initiative, employing informative rather than dictating or coercive language (Assor et al. 2002; Deci and Ryan 2000; Reeve 2006, 2009), allowing students to work at their own pace (Reeve

2009; Reeve and Jang 2006), taking the students' perspective, and employing students' preferred teaching methods based on their interest (Jang et al. 2016).

Teachers' need-supportive behaviors contribute to students' learning, development, wellbeing and positive functioning and influence the students' quality of motivation for learning (Deci and Ryan 2000; Jung et al. 2009; Reeve et al. 2004a). Teachers' need-suppressive behaviors impair the quality and strength of motivation for learning and lead to negative outcomes (Deci and Ryan 2000; Vansteenkiste and Ryan 2013).

Previous studies show that in response to autonomy support, students experience various positive outcomes such as greater engagement (Assor et al. 2002; Kaplan et al. 2014; Reeve et al. 2004; Jang et al. 2016), positive emotions (Assor et al. 2002; Black and Deci 2000; Kaplan and Assor 2012; Kaplan et al. 2014), optimal social functioning (Feinberg et al. 2008; Assor et al. 2017; Kaplan and Assor 2012), and greater conceptual learning (Jang et al. 2016).

Teachers' autonomy support enhances students' positive functioning, because it nurtures and supports their sense of need satisfaction as found in previous studies (Jang et al. 2009; Jang et al. 2012, 2016; Vallerand et al. 1999). Need satisfaction has been found as predicting various outcomes such as conceptual learning (Jang et al. 2016), classroom engagement (Jang et al. 2016) and autonomous motivation (Vallerand et al. 1999). In addition, some studies examined the effects of autonomy support directly on autonomous motivation without including the variable of need satisfaction (e.g., Roth et al. 2007; Kaplan et al. 2014). The concept of autonomous motivation will be defined in the next section.

The positive effects of need-supportive environments have been found in education across all age groups and learning frameworks, e.g., elementary school, high school, and college (Deci and Ryan 2000; Reeve 2009).

### 2.1.2 *Students' type of motivation*

SDT emphasizes different types of motivation characterized in terms of the extent to which they represent autonomous versus controlled regulations. SDT distinguishes between intrinsic motivation and various extrinsic motivations that have been internalized (Ryan and Deci 2017).

According to SDT, people have an inner inclination for growth and integration, which is manifested in intrinsic motivation (Deci and Ryan 2000). Activities that are done out of intrinsic motivation are performed for the satisfaction entailed in the activity itself. This is the archetype of inherent self-determined activity that is not the outcome of an internalization process.

However, many activities are performed out of extrinsic or internal compulsion. These activities can undergo an internalization process and become self-determined (Deci and Ryan 2000). Thus, extrinsically motivated behaviors can vary in the degree to which they are controlled versus autonomous behaviors (Ryan and Deci 2017). SDT refers to extrinsic motivation, introjected motivation, identified motivation, and integrative motivation. Individuals characterized by extrinsic motivation act out of external pressure, out of hope for material reward, or a desire to avoid punishment. Individuals characterized by introjected motivation act out of

internal pressure, a desire to gain appreciation or avoid rejection and feelings of guilt or shame. Individuals characterized by identified motivation act out of identification with the value or behavior, and recognition of the importance of the activity, or understanding of its connection with their goals. The result of the internalization process is integrated motivation in which the individual identifies with the importance of the behaviors and integrates those identifications with other aspects of the self (Deci and Ryan 2000).

According to SDT, intrinsic motivation, identified motivation, and integrative motivation are characterized by high levels of self-determination and are considered autonomous motivations. In contrast, extrinsic motivation and introjected motivation are characterized by low levels of self-determination and by a sense of pressure or compulsion, and are considered controlled motivations (Deci and Ryan 2000).

Autonomous motivation for learning flourishes in environments that support students' need satisfaction (Jang et al. 2016). Autonomous motivation reflects volitional functioning, thus need satisfaction is critical for the development of autonomously motivated activities (Vansteenkiste and Ryan 2013). Indeed previous studies revealed that psychological need satisfaction predicts autonomous motivation for learning (Jang et al. 2009; Vallerand et al. 1999). Numerous studies also revealed that engagement in autonomously motivated behaviors predicts various positive outcomes and advantages among students, such as quality engagement, positive emotions, and greater conceptual learning (see Deci and Ryan 2008; Ryan and Deci 2017).

Based on the theoretical premises of SDT many studies present a model of mediation whereby teacher behaviors support needs, and more specifically, support autonomy, advance need satisfaction which in turn advances autonomous motivation, which then advances positive outcomes (see Deci and Ryan 2008; Vansteenkiste and Ryan 2013). This model, or parts of it, is also supported by various studies (e.g., Jang et al. 2012; Jang et al. 2016; Vallerand et al. 1999). For example, Vallerand et al. (1999) found that teachers, parents, and the school administration's autonomy support toward students influence students' need satisfaction, which in turn predicted students' self-determined motivation (autonomous motivation) that eventually led to dropout behavior in the school. In a longitudinal study, Jang et al. (2012) found that perceived autonomy support increased autonomy need satisfaction that in turn increased students' engagement and course achievements.

Thus far we have described the positive effects of autonomy support on need satisfaction, autonomous motivation for learning, and various outcomes connected with the positive functioning of students. SDT also addresses the negative effects of frustration of psychological needs. Environments that thwart needs impair need satisfaction and the individual's optimal functioning (Vansteenkiste and Ryan 2013) and lead to negative outcomes (Deci and Ryan 2000). Hence it is also important to examine how teacher behaviors characterized by control influence students' motivational, emotional, and behavioral functioning (Jang et al. 2016).

The following section engages in teachers' autonomy suppression and conditional regard as two types of controlling behaviors, and their consequences.

## 2.2 Teachers' control: autonomy suppression and conditional negative regard

The distinction between explicit and implicit types of control in the present study is based on previous work in the domain of parenting, such as Grolnick's (2009) work, that distinguished between overt control like physical punishment, and a more insidious control such as love withdrawal. One of the distinctions between overt and covert parental control methods is between psychological control and behavioral control (Barber and Harmon 2002; Barber et al. 2005; Soenens and Vansteenkiste 2010). Behavioral control refers to attempts to monitor the child's behaviors by overt means. In this type of control there is contingency between the control tactics (shouting, punishing, denying rights) and the child's behavior. Autonomy suppression represents this type of control. Psychological control is a parental practice that is insensitive to the child's psychological needs. Parents behave in a way that is intrusive and manipulative regarding their child's thoughts and feelings (Barber and Harmon 2002; Soenens and Vansteenkiste 2010). There are different ways of displaying psychological control, including guilt and shame induction, instilling anxiety, ignoring the child's perspective, and constraining his independent expressions of thoughts and feelings (Barber and Harmon 2002). Conditional negative regard is a distinct method of psychological control (Soenens and Vansteenkiste 2010). Negative effects pertaining to these parental behaviors were found in adolescents in a wide range of nations and ethnic groups (Assor et al. 2004; Barber et al. 2005; Roth 2008).

Whereas most of the research in this area focuses on parenting, two SDT-based studies focused on the issue of psychologically controlling teaching (without referring directly to the concept of conditional regard). Madjar et al. (2012) found that psychologically controlling teaching and autonomy suppression were positively associated with performance-approach and performance-avoidance goals, and negatively with mastery goals. Soenens et al. (2012a) found that psychologically controlling teaching was related negatively to student' use of self-regulated strategies, which in turn was positively related to academic achievement. Various pressures that contributed to teachers' control behaviors were identified in this study.

The two concepts regarding teachers' control, autonomy suppression and conditional negative regard, will now be introduced.

### 2.2.1 Teachers' autonomy suppression

The acknowledged SDT term for teachers' control is "autonomy suppression", which expresses teachers' explicit controlling behaviors. A previous study found that young and adolescent students clearly distinguished autonomy suppressive behaviors from autonomy supportive behaviors (Assor et al. 2002). Direct and explicit autonomy suppressive behaviors are aimed at changing the students' behaviors, opinions, learning methods, level of engagement, and even emotions (Assor et al. 2005; Reeve 2009). Teachers' controlling behaviors can be directed to students' academic or social behaviors, or can be part of the teacher's teaching style.

Studies have demonstrated a variety of suppressive practices. The teacher may try to motivate students by controlling means, e.g., forcing students to perform insignificant tasks (Assor et al. 2002; Reeve 2006), preventing choice, constantly giving instructions, placing demands without explanation, and employing extrinsic motivation factors, e.g., by means of rewards (Reeve 1998), preventing students from working at a pace suited to them, blocking freedom of expression, giving judgmental, comparative, and public evaluations (Reeve and Jang 2006), preventing students from expressing emotions, objections, or opinions (Assor et al. 2005), interfering in what students do or think, and suppressing students' critical expression (Assor et al. 2002). Blatant controlling behaviors can include punishment, shouting, humiliation, pressuring, scolding, or an unpleasant tone of voice and style of communication, denial of rights, and even physical punishment (e.g., Assor et al. 2005).

SDT places particular emphasis on the destructive effects of teachers' autonomy suppression on the emotional, social, behavioral, and cognitive functioning of students of different ages (e.g., Assor et al. 2005; Reeve 2009). The negative effects of teachers' autonomy suppression have been found in various studies (Reeve 2009), e.g., teachers' autonomy suppression predicted feelings of anger and anxiety which in turn increased a-motivation and extrinsic motivation (Assor et al. 2005). Autonomy suppression was found to be negatively correlated with engagement, and positively correlated with negative emotions (Assor et al. 2002). A study conducted among Bedouin students in two age groups—junior high school and high school (Kaplan et al. 2014) found that autonomy suppression uniquely and positively contributed to the prediction of a-motivation, and negatively to the prediction of grades in different subjects (Arabic and math). In the domain of physical education Haerens et al. (2015) found that perceived controlling teaching was related primarily to controlled motivation and a-motivation through need frustration.

### 2.2.2 Teachers' conditional regard

Teachers' control can be viewed from another perspective, namely "conditional regard", a concept that has been primarily researched in the context of parental practices. A recent study examined the practice of conditional regard in romantic and best-friend relationships (Kanat-Maymon et al. 2016). The researchers proposed an examination of new contexts in which conditional regard can have an effect, such as teacher behaviors in the classroom, which the present study addresses.

Conditional regard was defined as "the belief that the regard of another person depends on whether one complies with the other person's expectations" (Kanat-Maymon et al. 2016, p. 446). In comparison to autonomy suppression, conditional regard constitutes more indirect, implicit, and subtle forms of control (Assor et al. 2005; Kanat-Maymon et al. 2016; Reeve 2009). Studies demonstrate that conditional regard is a controlling practice that predicts negative outcomes in various areas, such as introjected internalization, behavioral enactment, fluctuations in self-esteem, perceived parental disapproval, resentment toward parents, emotion regulation, academic functioning (Assor et al. 2004; Assor et al. 2014; Roth et al. 2009; Roth 2008; Roth and Assor 2012), parental separation anxiety and

perfectionism, and adolescents' dependency, self-criticism and depressive symptoms (Soenens et al. 2010), children's depressive symptoms and emotion reactivity, through the mediation of children's attributions (Perrone et al. 2016).

Nowadays the literature draws a distinction between conditional positive and negative regard (Assor and Roth 2005; Assor and Tal 2012; Roth et al. 2009). Conditional positive regard includes displaying more affection, warmth, appreciation, attention, or acceptance than usual when the child behaves in a way the parent expects him to (for example, when the child receives good grades). Conditional negative regard means displaying less affection, appreciation, or attention when the child does not meet the expectations conveyed to him/her (Roth and Assor 2010). This resembles practices of psychological control and love withdrawal (Assor and Tal 2012; Barber et al. 2005; Soenens and Vansteenkiste 2010).

Studies have shown that conditional negative regard entails a psychological price (Assor et al. 2004; Assor and Tal 2012; Perrone et al. 2016; Roth et al. 2009). Negative effects are also evident in conditional positive regard (e.g., Assor and Tal 2012), although some scholars posit that this kind of parental practice is positive. For example, behavioral theoreticians are likely to refer to manipulations of affection, praise, and reinforcement as desirable (Gewirtz and Pelaez-Nogueras 1991). An extensive study on conditional regard has been conducted by Roth, Assor and their colleagues that examined the negative implications of conditional positive and negative regard among adolescents, adults, and children (e.g., Assor and Tal 2012; Assor et al. 2014; Roth et al. 2009).

According to SDT, conditional negative regard frustrates the need for autonomy since it entails pressure exerted on the individual to behave in way that is not of his choosing. It constitutes a form of manipulation by a significant figure in the individual's life that reinforces his status as possessing less influence. The parent does not provide an empathic response or unconditional acceptance of the child as he/she is. Consequently, this behavior also frustrates the need for relatedness since it conveys a message that acceptance by another is not permanent and safe, but conditional upon meeting expectations, and behaving counter to expectations will harm the relationship and lead to rejection. Conditional negative regard can also frustrate the need for competence. Since the demand is extrinsic and sometimes beyond the individual's capabilities, it does not constitute an optimal challenge.

In class, conditional negative regard can appear when students do not perform or behave in a manner the teacher views as desirable, or when they do not meet the teacher's expectations, opinions or standards (Soenens et al. 2012b)—receiving a low grade or failing a test, failing to prepare homework or give an accurate answer to a question. In these situations, the teacher conveys less acceptance or positive attitude, or displays less attention or appreciation toward the student. The teacher can do this by ignoring the student, displaying distance or coolness, preventing the student from answering a question, displaying impatience toward the student or expressing his disappointment. Teachers can also convey dissatisfaction in body language, e.g., with a piercing look or facial expressions.

Previous studies have indicated that psychological control practices such as shaming and guilt induction are more common in Asian societies in comparison to Western societies (Wu et al. 2002). It may be assumed that these characteristics are

likely to appear in Bedouin society as well, both in relationships with parents and in relationships with teachers.

In sum, autonomy suppression and conditional negative regard are two kinds of teacher's control behaviors. Following contemporary concepts on the need to address the aspects of support as well as those of need suppression, and more specifically of autonomy, (Jang et al. 2016), the present study will examine these different aspects of teachers' supportive behaviors and control.

I shall now describe the characteristics of Bedouin society as a collectivist society, which can explain some of the study's hypotheses.

### **2.3 Bedouin culture as a hierarchical-collectivist society/culture**

Bedouin society, like Arab society as a whole, is typified as a patriarchal, traditional, hierarchical-collectivist society (Al-Krenawi 1999; Sharabi 2014). Bedouin society is tribal and typified by loyalty to the membership group (family, tribe), strict observance of honor values, hierarchical structures, and a high degree of obedience to male-parental authority (especially the father), with emphasis on the aims of a group over those of an individual. Social order restricts young people and women in various life aspects (Al-Krenawi 2000). In recent years, many more women are going out to work and study, but their status is still inferior to that of men, and their freedom is restricted in various ways (Al-Krenawi 2000).

In recent decades Bedouin society is undergoing substantive changes in lifestyle. Urbanization and modernization processes have undermined the ideological, social, family, and economic foundations that typified Bedouin society. As a result, Bedouin society is beginning to lose some of its collective nature (Al-Krenawi 2000, 2010; Ben-David 2004). Despite these changes, Bedouin society can still be defined as collectivist compared to Western society (Abu-Rabia-Queder and Weiner-Levy 2010; Al-Krenawi 2010; Ben-David 2004; Katz 2003). Recent findings still support the notion that Arabs in Israel hold more communal and religious attitudes in comparison to the secular Jewish population (Sharabi 2014).

Schools in Bedouin society reflect the society and the relationship with teachers resembles relationships with authority figures in the family (Abu-Asbah 2006). The teaching methods are generally frontal and typified by transmission of information to the students, few choice opportunities and insufficient consideration of students' will (Alayan 2013), and reflect the traditional-patriarchal patterns prevalent in Arab society (Abu-Asbah 2006; Alayan 2013). A study conducted by Reeve et al. (2013) confirms this state of affairs. The researchers conducted a study with public school teachers from eight different nations that varied in collectivism–individualism dimensions. One of the collectivist groups was Bedouins. The study revealed that teachers in collectivist nations self-described a more controlling style than teachers in individualistic nations, because they believed it to be culturally normative classroom practice.

In Bedouin society education is considered a means to achieving social, economic, and political mobility, which commonly occurs in minority groups and consequently emphasis is placed in the schools on academic achievements (Mustafa

and Arar 2009). Numerous changes have taken place in Bedouin schools as well, but in general, the schools still reflect Bedouin culture (Alayan 2013).

Based on the above description the present study focuses on Bedouin teachers' autonomy suppression and conditional negative regard and not on conditional positive regard. In the Bedouin society the individual has to adapt himself to the demands of significant others such as the parent or the teacher. Disobedience leads to negative responses (Abu-Asbah 2006). Thus, the practices of conditional negative regard and autonomy suppression are likely to join practices typifying relationships in society.

It may well be that the practice of conditional positive regard will not be perceived by the students as problematic, since obedience and the positive responses attending it by means of figures of authority is a relatively common and normative pattern. However, behaviors of disobedience, or behaviors which do not meet the teacher's expectations, may be perceived as problematic and therefore lead to strong reactions of autonomy suppression or conditional negative regard. This pattern of relationships can be intensified in the unique populations of the present study. Outstanding students in the Bedouin society are required to reach achievements and fulfill both social and scholastic expectations. Since this is the first study in the context of conditional regard in Bedouin society, its chief objective was to identify the more prevalent patterns of control in the society. The study, therefore, focused on investigating the discrete contributions of autonomy suppression practices and conditional negative regard, which we hypothesize would be connected to negative outcomes. However, it is important that a future study should also examine the contributions of conditional positive regard to various outcomes, such as need satisfaction, autonomous or controlled motivation, engagement, and identification of additional control patterns typical of the society.

I shall now present an intercultural comparison with reference to teachers' autonomy support and control.

#### **2.4 Teachers' autonomy support and control: intercultural comparison**

Despite consistent findings concerning the positive effects of autonomy support, researchers adhering to the cultural-relativist approach question the universality of the need for autonomy. According to them, autonomy does not play an important role in the lives of people living in traditional-Eastern cultures that emphasize values of conformity, obedience, social harmony, and interdependence with family, rather than values of individuality and independence (Chao and Tseng 2002). Therefore, autonomy support or suppression may not have important effects among students belonging to hierarchical-collectivistically oriented cultures, which they were found to have in Western populations (Iyengar and DeVoe 2003; Rothbaum et al. 2000; Triandis 1999).

According to SDT, psychological needs are universal. In other words, they are innate, not acquired, and are manifested in all cultures, at every stage of development, and among boys and girls alike. The way to satisfy these needs and their specific means of expression may vary according to cultural context, but their

core nature will not change (Chirkov et al. 2003; Deci and Ryan 2008; Ryan and Deci 2000).

Various studies have corroborated the importance of the need for autonomy in different societies, and shown that the psychological mechanisms connecting basic psychological needs and motivation are similar across different cultures (Chen et al. 2015). Thus, students from various cultural groups may differ in their sense of autonomous motivation, but those who perceive greater need support are more likely to report more autonomous motivation within the same context (Chirkov et al. 2003). For example, a study conducted among students in South Korea, Russia, Turkey, and the US found that despite internalization of different cultural practices, perceived autonomy predicted wellbeing (Chirkov et al. 2003). Chen et al. (2015) found that psychological need satisfaction uniquely contributed to predicting wellbeing (life satisfaction and vitality), whereas need frustration contributed to predicting ill-being (depressive symptoms). These findings were found to be equivalent across four countries. Similar findings were obtained in China (Vansteenkiste et al. 2005), Taiwan (Hardre et al. 2006), Japan (Yamauchi and Tanaka 1998), Jordan (Ahmad et al. 2013), South Korea (Jang et al. 2009), and other countries.

Regarding the phenomena of control, researchers holding a relativistic cross-cultural perspective argue that control will not lead to negative outcomes in societies typified by interdependent relationships (Chao and Aque 2009), and it may not be possible to generalize the negative effects of psychological control found in Western societies to collectivist cultures (Rothbaum and Trommsdorff 2007). For example, some contend that when there is congruence between controlling practices and the society's collectivist values, e.g., values of loyalty and dependence (Markus and Kitayama 2003), control will have a less severe effect, and perhaps even contribute to the children's wellbeing (e.g., Rothbaum and Trommsdorff 2007). Others argue that children from Western cultures may interpret controlling behaviors as hostile and intrusive, whereas children from collectivist societies are likely to perceive such practices as expressing parental involvement and caring (Chao and Aque 2009).

SDT researchers claim that controllingness frustrates the universal need for autonomy and will therefore lead to negative outcomes across all cultures. They argue that there are also similar controlling mechanisms in different cultures (Soenens and Vansteenkiste 2010; Soenens et al. 2012a).

Very few studies confirm the applicability of SDT to students belonging to the Arab-Bedouin culture. These studies focused on elementary school students (Katz 2003) and high school students (Kaplan et al. 2014; Kaplan and Madjar 2015). In light of the paucity of research among Bedouin students, who belong to a hierarchical-collectivist culture, and the disagreement that still exists in the literature concerning the importance of the need for autonomy and the meaning of controllingness in collectivist cultures, the present study examined the relations between teachers' autonomy support and controllingness and students' optimal learning experience.

Regarding the unique characteristics of Bedouin society as well as the characteristics of the schools that reflect the society (Reeve et al. 2013), it is

interesting to examine whether SDT is applicable to this society. It may be argued that in a culture with such hierarchical-collectivist orientation, autonomy support will not have such clear effects as those found in Western societies and that students are likely to perceive control methods employed by teachers as legitimate and will therefore willingly accept them.

## 2.5 The unique study population: high-achieving Bedouin students

The study population consists of high-achieving students (top 25%) studying in classes that primarily focus on the sciences. The literature contains different definitions and classifications of students in the top percentiles of ability and achievements. Thus, some studies focus on high-ability learners (Garn and Jolly 2014), high-achieving students (Ritchotte et al. 2016), and gifted students (Al-Dhamit and Kreishan 2016; Marzooghi et al. 2009).

High abilities and excellence are generally bound up with concepts of intelligence and cognitive ability. There is also reference to exceptional achievements in various areas of expertise. Motivation constitutes one of the main areas associated with this population (Israel Ministry of Education Division for Gifted and Outstanding Students 2005; Renzulli 1977).

The students participating in the present study did not undergo assessments, but were primarily classified on the basis of their achievements as reported by their teachers. A previous study revealed that the psychosocial self-perceptions of high-achieving students and identified gifted students were comparable (Ritchotte et al. 2016), thus it is important to refer to the general picture of the motivation of these two populations.

SDT-based studies on motivation among high-achieving or gifted students are few and far between (Garn and Jolly 2014; Ryan and Deci 2016, p. 106). A review of the literature revealed only a handful, some of which focused on parents (Al-Dhamit and Kreishan 2016; Garn et al. 2010) and others on the school (Garn and Jolly 2014; Miserandino 1996; Vallerand et al. 1994). An SDT-based study (Vallerand et al. 1994) and studies based on other theories (e.g., Gottfried et al. 2015; Ritchotte et al. 2016) indicate that gifted students possess higher intrinsic motivation and sense of competence in comparison with regular students. Miserandino (1996) found that students with above average ability who scored high in perceived competence and autonomous motivation reported more positive affect and engagement in comparison to high ability students who scored lower in the motivation variables.

The issue of low motivation among gifted students is discussed in the literature, attended by the understanding that school intervention is required to address it (Matthews and Mcbee 2007; Siegle and McCoach 2005). There is consensus that outstanding students have educational–academic, social, and developmental needs, and consequently require an environment that supports these needs (Al-Dhamit and Kreishan 2016). A qualitative study (Garn et al. 2010) found that parents hold negative views of the school’s motivational climate; consequently, further research is required to examine the conditions necessary to support the optimal development of these students, and the present study seeks to meet this need.

Many outstanding students invest considerable efforts in their studies in order to achieve good grades and impress their parents or teachers, and are subject to extensive pressure from the environment, which prevents them from learning out of pleasure (Garn and Jolly 2014; Garn et al. 2010; Marzooghi et al. 2009). Marzooghi et al. (2009) studied a collectivistically oriented population and indicated that gifted Iranian students are typified by more performance goal orientations in comparison with regular students, and place greater emphasis on achievements (Marzooghi et al. 2009). A study conducted by Al-Dhamit and Kreishan (2016) demonstrated that Jordanian students display high motivation, both extrinsic and intrinsic. In a qualitative study (Garn and Jolly 2014) the students reported a variety of motivations for learning. They also reported high expectations from their environment for high achievements and expressed a desire for interest-based learning, with choice and personalized learning. Teachers who facilitated this kind of environment supported their autonomy.

No studies have examined the motivation of high-ability Bedouin students from an SDT perspective. Bedouin students belong to a minority society that views education as a path toward integration into general society (Mustafa and Arar 2009). Education is considered valuable in the Arab minority in Israel (Al-Haj 2003). However, Bedouins still face numerous barriers to entering higher education institutions (low achievements in high school, culturally biased screening exams, and more) (Abu-Saad 2001). With the change processes in Bedouin society, the rate of girls' attending school, attaining high achievements, and integrating into higher education, has grown (Mustafa and Arar 2009). In light of this, high-achieving students are held in high regard in Bedouin society, which also puts considerable pressure on them to achieve and be accepted into higher education institutions. Thus, the present study is also unique due to the study population, and its findings can have important implications for intervention programs to improve this population's wellbeing and positive development.

## 2.6 The present study

The study engaged in the motivation of high-achieving Bedouin high school students, and focused on the question: What are the relations between teachers' autonomy support and control by means of autonomy suppression and conditional negative regard, and students' optimal learning experience?

Acknowledged conceptualizations of the concept of optimal learning experience refer to motivational, cognitive, emotional, and behavioral aspects (APA 1997). In the present study, the *motivational* aspect includes perceived need satisfaction and autonomous motivation, the *behavioral* aspect includes engagement in learning, and the *emotional* aspect includes positive emotions toward learning.

We hypothesized that perceived autonomy support will positively predict perceived need satisfaction that in turn will positively predict autonomous motivation, whereas teachers' perceived autonomy suppression and conditional negative regard will negatively predict perceived need satisfaction and autonomous motivation. Autonomous motivation will in turn positively predict positive emotions

and engagement in learning. We also hypothesized direct paths between the independent and dependent variables.

Figure 1 presents the hypothesized structural model.

### 3 Method

#### 3.1 Participants

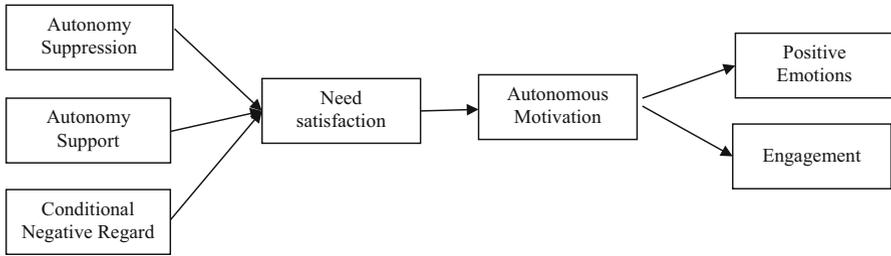
The study population consisted of 144 high school students studying in classes composed of high-achieving students (top 25% in their age group) from seven Bedouin high schools located in four central Bedouin localities in Israel's southern region. The classes in which the students study focus on a variety of specializations, primarily in the sciences, such as biology, chemistry, and math. Thirty four percent of the students are in tenth grade, 50.7% in eleventh grade, and 15.3% in twelfth grade. The students' ages range from 15 to 18, mean age 16.6 (SD = .80), 26% boys and 74% girls. From a socioeconomic standpoint, 24.5% of the students' fathers do not work, 80% of the mothers do not work. 12.2% of the fathers had no schooling at all, 12.2% have elementary schooling, 44.6% attended high school, and 31% studied in higher education or academic frameworks. 30.3% of the mothers had no schooling at all, 14.1% have elementary schooling, 35.3% attended high school, and 20.3% studied in higher education or academic frameworks.

#### 3.2 Measures

The students completed a self-reporting questionnaire in Arabic. The questionnaire was translated into Arabic by two Hebrew- and Bedouin dialect Arabic-speakers, and then retranslated into Hebrew. On all the scales, ranging from 1 (does not characterize me at all) to 6 (characterizes me to a very high degree), the students indicated the degree to which each statement characterizes them. Table 1 and the following section present a description of all the measures used in the study.

*Autonomy support* 6 items measuring different aspects of autonomy support: allowing choice (e.g., "The teachers ask us if there is something we want to change in the way we learn"), encouraging criticism (e.g., "The teachers encourage us to express our views in the classroom"), and assistance in understanding the relevance of the studied material (e.g., "The teacher talks about the connection between our studies and what happens in life"). The scale was validated in previous studies (Assor and Kaplan 2001; Kaplan 2005). Cronbach's alpha reliability was satisfactory ( $\alpha = .78$ ).

*Autonomy suppression* 5 items measuring different aspects of autonomy suppression: interference in the flow of activity, and coercion (e.g., "Sometimes I try to work on a particular subject and the teachers force me to work on another"), suppressing free expression, expressing anger (e.g., "The teacher gets angry or takes it out on students who dare to oppose his view"), interference during activity (e.g., "The teacher interrupts me before I finish saying everything I wanted to"). The



**Fig. 1** Hypothesized structural model

**Table 1** Description of the study’s measures: number of items, mean, standard deviation, and internal validity

Variable	No. items	Mean	SD	$\alpha$
Autonomy support	6	4.36	.85	.78
Autonomy suppression	5	2.21	.84	.82
Teachers’ conditional negative regard	9	2.94	1.05	.89
Perceived need satisfaction	10	4.89	.58	.78
Autonomous motivation	7	5.42	.54	.84
Positive emotions	4	4.70	1.03	.84
Engagement in learning	4	5.14	.71	.75

scale was validated in previous studies (Assor and Kaplan 2001; Kaplan 2005). Cronbach’s alpha reliability was satisfactory ( $\alpha = .82$ ).

*Teachers’ conditional negative regard* The scale is based on Roth et al. (2009) who drew a distinction between parental conditional negative and positive regard in the domains of emotion regulation and academic engagement. The tool was implemented with teachers for the first time, and was adapted to the population. It comprised 9 statements concerning the teacher’s behavior in the academic field. The academic behaviors in the statements included situations in which students receive a low grade in a particular subject/class, when they are not doing well in a lesson or at school, when they fail an exam, when they are not sufficiently engaged in their studies. Teacher reactions (from the students’ perspective) include statements like: “I feel that the teacher likes me less”; “The teacher ignores me for a while”. Example item: “If (or when) I get a low grade in class, I feel that the teacher gives me less warmth and affection than usual”.

To examine whether the *teachers’ negative conditional regard* variable possesses good structural validity, confirmatory factor analysis was performed by means of Structural Equation Modeling (SEM) using AMOS-21 software. The measuring model included one latent variable—*teachers’ negative conditional regard*—comprising 9 items. First, the fit quality of the measuring model to the data was tested. The model fit measure results show that the hypothesized measuring model has good fit quality with the data. The values are:  $\chi^2 = 48.52$ ,  $df = 27$ ,  $p < .05$ ;

$NFI = .93$ ;  $CFI = .97$ ;  $TLI = 95$ ;  $RMSEA = .06$ . Then, the factor loads were tested. Table 2 presents the factor loads.

The table shows that the nine items are significantly loaded in the factor. Consequently, it may be stated that the *teachers' negative conditional regard* variable possesses reliable internal validity ( $\alpha = .89$ ).

*Autonomous motivation* 7 items measuring intrinsic motivation (3 items, e.g., “I do the assignments and homework because I find them interesting and intriguing”), and identified motivation (4 items, e.g., “I study seriously in lessons because it will help me in the future”). The scale is based on Ryan and Connell (1989) and has gained established research support in various fields, including education (Assor et al. 2002; Miserandino 1996). Since the integrative regulation style is more advanced in developmental terms, the present scale does not include this component, but only the intrinsic motivation scale (Deci et al. 1996). Cronbach's alpha reliability was satisfactory ( $\alpha = .84$ ). The questionnaire was developed and validated in studies with a Jewish student population (Assor et al. 2005; Kaplan 2005; Kaplan et al. 2014; Roth et al. 2007).

*Basic need satisfaction* an activity-feeling states scale (AFS) questionnaire was used, which included 10 statements examining satisfaction of each of the three basic psychological needs. The scale begins with the phrase: “During lessons in this subject I feel...” Three statements measured sense of relatedness, three measured sense of competence, and four statements measured sense of autonomy. For example, sense of relatedness: “I have a relationship with close friends in class”; sense of competence: “I feel competent in class”; sense of autonomy: “I am free to decide for myself what I want to do”. Cronbach's alpha reliability was satisfactory ( $\alpha = .78$ ).

The tool was originally developed and validated by Reeve and Sickenius (1994), and was adapted to the study population. It has been used in previous studies (Jang et al. 2009; Reeve and Jang 2006; Reeve and Tseng 2011).

*Positive emotions toward learning* 4 statements measuring positive emotions of ease and calm (enjoy, good mood, calm, feel at ease), e.g., “When I learn in this class I am in a good mood most of the time”. Cronbach's alpha reliability was satisfactory ( $\alpha = .84$ ). The questionnaire was developed and validated in previous studies (Assor et al. 2002; Kaplan 2005).

**Table 2** Confirmatory factor analysis results

Item	B	CR
1	.84	5.61***
2	.47	5.61***
3	.77	10.69***
4	.84	12.36***
5	.77	10.67***
6	.54	6.69***
7	.86	12.60***
8	.75	10.27***
9	.41	4.85***

\*\*\*  $p < .001$

*Engagement in learning* 4 items measuring self-reported behavioral engagement in learning. The students reported the degree to which they make an effort to perform well in assignments, learn as much as possible on the studied subjects, invest effort, listen, and pay attentions, e.g., “In lessons in this subject I listen and pay attention to what we are learning”. Cronbach’s alpha reliability was satisfactory ( $\alpha = .75$ ). The questionnaire was developed and validated in previous studies (Assor et al. 2002).

### 3.3 Procedure

The information was gathered at two time points: the questionnaires concerning teacher perceptions (autonomy support, autonomy suppression, conditional negative regard) were administered at the end of the first semester (mid-February). The questionnaires concerning self-processes and outcomes (autonomous motivation, need satisfaction, positive emotions, and engagement) were administered toward the end of the school year (early May).

To increase the possibility for generalization of the findings, about half the students in each class completed questionnaires with reference to English (48%), and the other half completed questionnaires with reference to math (52%).

Since the respondents were questioned about two different scholastic subjects, prior to unifying the files we examined whether there were significant differences in the study’s measures between the two groups. To examine the differences between the groups a *t* test was conducted on independent samplings. The analysis findings are presented in Table 3.

The above table shows that no significant differences between the groups in the study’s measures were obtained. In light of this, the groups were unified and data analysis was conducted on both groups together.

The questionnaires were administered in each classroom by two Arabic-speaking research assistants, one male and one female (cultural consideration).

**Table 3** T-test of independent samples to examine the differences between the group of students that completed the questionnaire on math, and the group that completed the questionnaire on English

Variable	English group (N = 69) M (SD)	Math group (N = 73) M (SD)	t	p
Autonomy support	4.29 (.70)	4.20 (.70)	.76	N.S
Autonomy suppression	2.13 (.88)	2.26 (.80)	.94	N.S
Teachers’ conditional negative regard	2.84 (.99)	3.03 (1.11)	1.07	N.S
Perceived need satisfaction	4.91 (.56)	4.88 (.60)	.34	N.S
Autonomous motivation	5.35 (.59)	5.50 (.47)	1.73	N.S
Positive emotions	4.73 (1.05)	4.66 (1.03)	.40	N.S
Engagement in learning	5.16 (.70)	5.13 (.73)	.31	N.S

Socioeconomic data were obtained by means of a demographic section in the student questionnaires, and verified with the educational counselors in each school.

The questionnaires were completed in the presence of the research assistants, without the teachers present. Prior to completing the questionnaires, the teachers gave the students an explanation on the importance of the study, and assured confidentiality. The research assistants, promised confidentiality, and provided an explanation on the questionnaires. The rules of ethics concerning the participants were strictly observed, e.g., obtaining consent for participation, and protecting the dignity of the participants.

## 4 Results

First, the results of the Pearson's coefficients between the study's variables will be presented. Then, the hypothesized model will be examined by means of Structural Equation Modeling (SEM) analysis using AMOS-21 software.

### 4.1 Pearson's correlations

The correlations between the study's various measures are presented in Table 3.

As anticipated, the pattern of correlations between all the independent variables indicates a significant positive correlation between autonomy suppression and teachers' conditional negative regard, and a significant negative correlation between autonomy support and autonomy suppression and teachers' conditional negative regard. The pattern of correlations between the dependent variables (including the mediating variables) indicates statistically significant positive correlations (Table 4).

As anticipated, significant positive correlations were found between teachers' autonomy support and need satisfaction, autonomous motivation, positive emotions, and engagement in learning. In addition, significant negative correlations were found between perceptions associated with the two teacher controllingsness

**Table 4** Correlations between the study's variables

Variable	2	3	4	5	6	7
1. Autonomy support	-.39***	-.26***	.40***	.31***	.49***	.27***
2. Autonomy suppression		.41***	-.28***	-.32***	-.33***	-.30***
3. Teachers' conditional negative regard			-.34***	-.32***	-.41***	-.30***
4. Perceived need satisfaction				.48***	.43***	.37***
5. Autonomous motivation					.39***	.41***
6. Positive emotions						.65***
7. Engagement in learning						

\*\*\*  $p < .001$

measures—autonomy suppression and conditional negative regard—and need satisfaction, autonomous motivation, positive emotions, and engagement in learning.

### 4.2 Results of structural equation modeling (SEM) analysis

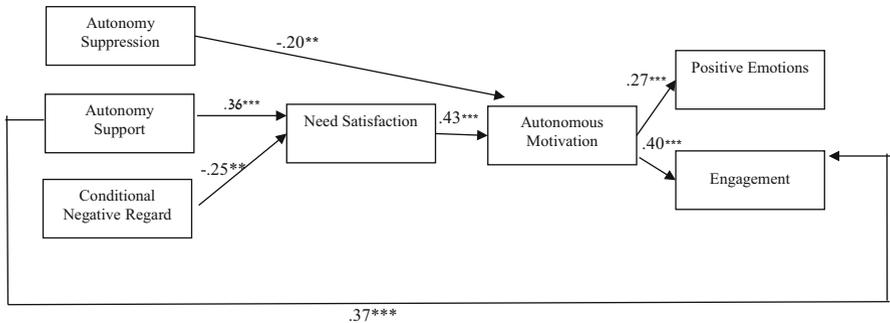
To confirm the research hypotheses and the hypothesized structural model, the model was examined by means of structural equation modeling (SEM) analysis using AMOS-21 software. We used maximum likelihood estimation with bootstrapping in order to test mediation hypothesis. Bootstrapping is useful when testing a multiple mediator model (Preacher and Hayes 2008). Furthermore, bootstrapping is necessary in order to give meaningful test results and stable estimates when using a small sample. We extracted new samples (with replacement) from our sample 4000 times with 95% Bias-corrected confidence interval bootstrap. We then calculated all direct and indirect estimates of the hypothesized model.

### 4.3 Direct effect

The model includes autonomy support, autonomy suppression, and teachers' conditional negative regard as exogenous variables; perceived need satisfaction and autonomous motivation as mediating variables; and positive emotions, and engagement in learning as dependent variables.

First, the quality of the model's fit with the data was examined. Fit index results show that the hypothesized model has good fit quality with the data. The values are:  $\chi^2 = 16.96$ ,  $df = 9$ ,  $p = .05$ ;  $NFI = .94$ ;  $CFI = .97$ ;  $RMSEA = .08$ . Then, the relations in the hypothesized model were examined. Figure 2 presents the results for the hypothesized structural model.

The results show that the hypotheses were confirmed. Autonomy support was found to predict students' and perceived need satisfaction ( $\beta = .36$ ,  $CR = 4.79$ ,  $p = .000$ ). Autonomy suppression was found to predict autonomous motivation ( $\beta = -.20$ ,  $CR = -2.71$ ,  $p < .01$ ), whereas teachers' conditional negative regard was also found to predict students' perceived need satisfaction ( $\beta = -.25$ ,



**Fig. 2** Results of structural equation modeling (SEM) analysis,  $N = 144$ ,  $*p < .05$ ,  $**p < .01$ ,  $***p = .000$ ,  $\chi^2 = 16.96$ ,  $df = 9$ ,  $p = .05$ ;  $NFI = .94$ ;  $CFI = .97$ ;  $RMSEA = .08$

CR =  $-3.29$ ,  $p < .001$ ). It was also found that students' autonomous motivation predicted their positive emotions ( $\beta = .27$ , CR =  $3.69$ ,  $p = .000$ ) and degree of engagement in learning ( $\beta = .40$ , CR =  $5.19$ ,  $p = .000$ ). Also found were significant direct relations between autonomy support and positive emotions ( $\beta = .36$ , CR =  $6.00$ ,  $p = .000$ ).

#### 4.4 Indirect effects

All of the indirect effects pathways were significant. With regard to the prospective pathways, Teacher autonomy support indirectly predicted engagement, via students' need satisfaction and students' autonomous motivation ( $\beta = .06$ ,  $SE-SE = .02$ ,  $p = .000$ ). Teacher autonomy support indirectly predicted positive feelings, via students' need satisfaction and students' autonomous motivation ( $\beta = .04$ ,  $SE-SE = .02$ ,  $p = .000$ ). Teacher autonomy suppression indirectly predicted engagement, via students' need satisfaction and students' autonomous motivation ( $\beta = -.08$ ,  $SE-SE = .04$ ,  $p < .05$ ). Teacher autonomy suppression indirectly predicted positive feelings, via students' need satisfaction and students' autonomous motivation ( $\beta = -.05$ ,  $SE-SE = .03$ ,  $p < .05$ ). Teacher conditional regard indirectly predicted engagement, via students' need satisfaction and students' autonomous motivation ( $\beta = -.04$ ,  $SE-SE = .02$ ,  $p < .01$ ). Teacher conditional regard indirectly predicted positive feelings, via students' need satisfaction and students' autonomous motivation ( $\beta = -.03$ ,  $SE-SE = .01$ ,  $p < .001$ ). The data support the hypothesized indirect effects.

## 5 Discussion

The general aim of the study was to examine whether SDT, is applicable in a traditional collectivist society, specifically among Bedouin students. The answer to this question is that it is (despite the study's limitations that will be presented below). The findings show that high-achieving Bedouin students enjoy the advantages of learning in an autonomy-supportive environment, and suffer in an environment in which they experience controllingness, irrespective of the type of control. The findings demonstrate a mediation model as suggested by SDT (Vansteenkiste and Ryan 2013; Jang et al. 2016), which indicates the unique contribution of teachers' autonomy support versus teachers' control to predicting an optimal learning experience. Generally, the research hypotheses were confirmed. Thus, perception of a teacher as autonomy supportive contributes to perceived psychological need satisfaction. At the same time, different types of control employed by the teacher—direct control in the form of autonomy suppression, and more implicit control in the form of conditional negative regard—contribute to negative outcomes. Thus, perception of a teacher as autonomy suppressive contributes directly and negatively to autonomous motivation while conditional negative regard contributes negatively to perceived psychological need satisfaction. In turn psychological need satisfaction predicts autonomous motivation in learning that in turn positively predicts positive emotions and engagement in learning.

## 5.1 On the distinction between the two control practices and their effects

The study found that the two types of control examined had negative effects on students' academic and motivational functioning. The study is unique in the distinction it draws between the two types of control and its examination of the effects of conditional negative regard on students' functioning. Worth mentioning in this regard is the study conducted by Madjar et al. (2012) that demonstrated the effects of teachers' psychological control, autonomy support, and autonomy suppression on students' personal goal orientations. The study revealed a distinction between the two measures of control, but they were highly correlated. Thus, the present study demonstrates a measure of psychological control—conditional negative regard that is clearly differentiated from the measure of autonomy suppression.

The findings generally support the research hypotheses. However, the hypothesis that autonomy suppression will negatively contribute to autonomous motivation through the mediation of need satisfaction was not confirmed. Autonomy suppression contributed negatively and directly to autonomous motivation, whereas conditional negative regard predicted autonomous motivation through the mediation of need satisfaction. How can this finding be explained?

Vansteenkiste and Ryan (2013) assert that “need satisfaction and need frustration are considered to be crucial mechanisms in both optimal and nonoptimal functioning” (p. 264). They suggest a two-path model. One path runs from contextual need support to increased need satisfaction and then to increased growth and wellness. The other runs from contextual need thwarting or teachers' control to increased need frustration and then to non-optimal functioning and ill-being. This model of basic psychological need satisfaction and frustration can account for both the “dark” and the “bright” sides of people's functioning (Vansteenkiste and Ryan 2013; Jang et al. 2016). Previous research supported this dual-process model (Jang et al. 2016).

The model in the present study refers mainly to the bright side of students' optimal functioning and includes the variables of autonomy support, need satisfaction, autonomous motivation and two positive students' outcomes. The second path includes only two types of teachers' control and lacks the variables of need frustration, controlled motivation and negative students' outcome. Thus, in order to better understand the motivational processes the model in the present study should have included the entire path that refers to the dark side of students' non-optimal functioning. It might be that within an entire dual model autonomy suppression might predict need frustration that might contribute to controlled motivation and various negative outcomes. Jang, Kim and Reeve claim that in a dual-process model autonomy support strongly predicts need satisfaction but only mildly predicts low need frustration, while teachers' control strongly predicts need frustration but only mildly predicts low need satisfaction. The findings of the present study regarding the effects of autonomy support and autonomy suppression support these claims. Thus autonomy support positively predicted need satisfaction, whereas autonomy suppression did not contribute to predicting it, but it might possibly contribute to need frustration if this variable had been included in the study.

The dual model might explain why autonomy suppressing did not predict need satisfaction. However, the present study has an interesting result regarding the negative contribution of conditional negative regard to need satisfaction. It seems that conditional negative regard is a teachers' control strategy that has a strong effect even on the experience of need satisfaction.

In the classroom, conditional negative regard as a method of psychological control refers to teacher behaviors that frustrate and strongly impair students' psychological needs. The teacher employs indirect ways to compel the students to feel, think or act in a particular way by arousing feelings of guilt, shame, anxiety, or introjection (Barber 1996; Reeve 2009). It therefore seems that there are control behaviors that have a stronger influence on need satisfaction, and conditional negative regard is an example of such a behavior. Due to the manipulative character of this behavior it apparently erodes the student's motivational assets and specifically the student's basic need satisfaction.

This kind of teacher behavior is not necessarily employed consciously. Therefore, as Reeve (2009) contends, intervention is required to heighten teachers' awareness of these behaviors and the emotional price the students pay. Additionally, further research is required to examine the effects of teachers' conditional negative regard on controlled motivation, and not only autonomous motivation on which the present study focused.

When teachers employ behavioral control, they employ overt means for the purpose of extrinsically regulating the students' behaviors (Reeve 2009). In the present study the autonomy suppression variable is close to the concept of behavioral control since it entails clear and observable controlling behaviors. Although not all the behaviors, e.g. physical punishment, have been included, the statements addressed by the students included teacher behaviors, such as angry and revengeful, imposes non-relevant learning methods, interferes in choice, imposes a uniform pace, prevents free expression, and interrupts the students.

Education is considered valuable in the Arab minority in Israel (Al-Haj 2003). Conditional negative regard methods might have severe effects on students. Such practices can lead to a sense of internal compulsion, fluctuations in self-esteem, shame, anxiety before performance, low satisfaction after success, guilt after failure, depression, antisocial behavior, and more (Assor et al. 2004; Reeve 2009; Roth et al. 2009). Since the range of effects examined in the present study is limited, in future research it is important to examine these implications for students in various cultures, both collectivist and individualistic.

## 5.2 On the need for autonomy in Bedouin students

The findings do not support the argument that autonomy is less important in traditional collectivist societies, or that controllability has less negative outcomes than those found in studies conducted in Western societies (Deci and Ryan 2000). The study supports the results of various studies conducted in non-Western societies, e.g., Korea (Jang et al. 2009), China (Vansteenkiste et al. 2005), Taiwan (Hardre et al. 2006), Japan (Yamauchi and Tanaka 1998), Turkey (Chirkov et al. 2003), and Pakistan (Stewart et al. 2000).

The findings reinforce those of a previous study conducted in a Bedouin high school (Kaplan et al. 2014) which found that autonomy support uniquely and positively contributed to predicting autonomous motivation, motivation for exploration, future orientation, and positive emotions toward learning, whereas autonomy suppression was found to uniquely predict a-motivation and low grades. Thus, autonomy support is important for promoting optimal learning and motivational functioning in Bedouin students.

The argument concerning the importance of the need for autonomy among Bedouin students is reinforced by Alayan's (2013) study, who examined the characteristics of positive learning experience among graduates from schools in the Arab education system in Israel. The participants' positive learning experiences were primarily associated with the teachers' behaviors. According to the students the teachers were sensitive and attentive to their needs, gave them an opportunity to express themselves and discover their skills and abilities. These positive experiences were, according to the findings, uncommon in the schools attended by the participants, and consequently the students perceived them as something rare and meaningful (Alayan 2013). Although Alayan's study was not SDT-based, it is evident that according to the students' perception a good teacher is one who supports their psychological needs, especially the need for autonomy. According to Alayan, the Arab education system still does not devote appropriate attention to an individual student and is not attentive to his/her needs. The schools still impose an authoritarian atmosphere within them, the relationships between students and teachers are based on obedience, and the teaching methods are primarily frontal, which is associated with the collective social pattern.

### **5.3 Why do teachers in general and Bedouin teachers in particular employ controllingness?**

The study indicates the negative effects of various types of teachers' control on students' functioning. Controllingness is a common teaching style among teachers (Assor et al. 2002; Reeve and Assor 2011; Reeve et al. 2004b). Why do Bedouin teachers employ this style? There can be several reasons for this.

First, in situations that teachers call "discipline problems" or when students do not achieve expected results, teachers may feel that their own basic psychological needs are threatened. In controlling situations teachers do not take the students' perspective into account (e.g., why they are being disruptive), but react out of a sense of their own needs being frustrated (Reeve and Assor 2011). Thus, a controlling strategy constitutes a way of coping (Reeve 2009). With Bedouin teachers controllingness is liable to increase in light of the students' behavior problems or academic dysfunction, since students who do not behave appropriately in class or do not function academically as expected, challenge the cultural authority of the teacher, who is expected to function in the classroom like an authority figure in the family. Female teachers may employ controllingness as a means that can enable them to surmount their weakness as women, especially in high schools where boys' social and cultural status rises.

Second, Reeve (2009) contends that the relationship between teacher and student takes place in a predefined structure of power relations. Teachers hold power and influence due to their authority, experience, expertise, and social status. Students, who occupy a lower position in this power structure, are more vulnerable to teachers' controllingness. In the case of Bedouin students, who belong to a paternalistic culture in which adults have authority and the young are required to fulfill their expectations, power imbalance is culturally structured, and controllingness is an accepted practice in society, to the extent that teachers are expected to employ it (Alayan 2013).

Third, employing controllingness can be culturally considered a preferred style. Reeve (2009) contends that in Western society teachers who employ controlling teaching strategies are considered more competent than teachers who employ an autonomy supportive style. In hierarchical societies where the social norms do not expect or encourage autonomy, a controlling style is common (Reeve and Assor 2011). In Bedouin society, too, controlling methods are culturally valued, as Reeve et al. (2013) have found. For example, in Bedouin schools, and Arab schools in general, employing various methods of punishment, including physical punishment, is perceived as an acceptable educational method (Alayan 2013).

Fourth, schools expect teachers to attain achievements with their students. Their students' failure is perceived as their own failure. This pressure is conveyed from above by principals, who are themselves subject to demands from above, namely policymakers, to teach a particular curriculum, attain achievements in subjects such as math, and succeed in comparative examinations and evaluations that examine compliance with standards, the results of which are published in the various media outlets. When teachers are under pressure they transfer this pressure to their students by means of a controlling teaching style (Pelletier and Sharp 2009; Pelletier et al. 2002; Reeve 2009). The pressure to achieve is amplified in Bedouin society, a minority culture in which education constitutes a path toward integration into general society. Thus, pressure to achieve is exerted on teachers by parents as well (Mustafa and Arar 2009). Pressure is also put on the teachers by the Ministry of Education to improve low student achievements in the Bedouin sector (Knesset Research and Information Center 2013). Many of the teachers are themselves Bedouin and feel the cultural pressure to achieve within themselves, what Pelletier et al. (2002) call "pressure from below".

#### **5.4 Autonomy-supportive teaching among high-achieving Bedouin students**

In light of the paucity of SDT-based research among outstanding and gifted students in general and in collectivist societies in particular, the present study is of considerable importance. It presents for the first time a motivational model whereby an autonomy-supportive environment contributes to promoting perceived need satisfaction and autonomous motivation, which in turn contribute to positive emotions and engagement in learning among high-achieving Bedouin students. The study joins a previous study (Kaplan et al. 2014) that demonstrated the applicability of SDT to Bedouin high school students.

The study reinforces the findings of Garn and Jolly's (2014) study, which gave a voice to the needs of outstanding students who expressed a desire for interest-based learning in an autonomy-supportive environment. The study by Vallerand et al. (1994) indicated that gifted students perceived themselves as being more competent and intrinsically motivated toward school activities than regular students. The present study did not examine differences between high achieving and regular students, which can be addressed in future research.

Al-Dhamit and Kreishan's (2016) study was also conducted in a collectivist population, in Jordan. Interestingly, this study found correlations between autonomy support and intrinsic and extrinsic motivation. Additionally, parental support and parental controllingness were negatively correlated with a-motivation, i.e., there was no evidence of negative effects of parental controllingness. The researchers explain this phenomenon from a relativistic cross-cultural perspective. In contrast with this study, the present study found negative effects in both types of teacher controllingness, and positive effects in autonomy support. However, the present study did not include a controlled motivation measure, which should be included in future research. Furthermore, it should be borne in mind that there can be differences between collectivist societies (Schwartz 1992). Bedouin society is essentially different from general Arab society, and consequently there may be differences between a study conducted in Israel and one conducted in Jordan.

### **5.5 Implications for the education system**

The study has two main educational implications. First, working with teachers in a process that facilitates internalization of the educational approach underlying SDT and familiarization with teaching practices that support students' psychological needs is of considerable importance in different cultural groups and student populations, e.g., outstanding students. SDT literature presents educational interventions aimed at promoting students' autonomous motivation, and indicates that teachers' need-supportive behaviors can be learned, and lead to positive outcomes (e.g., Assor et al. 2009; Cheon and Reeve 2015; Feinberg et al. 2008; Reeve et al. 2004a; Su and Reeve 2011; Kaplan and Madjar 2015).

Second, previous studies (e.g., Roth et al. 2007) demonstrate that motivation for teaching among teachers predicts support for students' autonomy, which in turn predicts autonomous motivation for learning. Consequently, creating a school environment that supports the teachers' psychological needs as well is of great importance. This kind of environment will promote a sense of self-fulfillment, prevent teacher burnout processes (Roth et al. 2007), and make teachers emotionally available to support students' psychological needs.

### **5.6 Limitations of the study and ideas for future research**

The present study has several limitations indicating a number of recommendations for future research. First, the study is based on self-report data as a single source of information. The ability of people to report properly their implicit perceptions has been questioned (Fulmer and Frijters 2009) while others have suggested that within

the context of education students' perceptions are the main factor affecting their learning outcomes (Madjar et al. 2012). Students' reports can be a product of a response bias such as social desirability, that might characterize students belonging to collectivist society (Al-Krenawi 2010). The question arises of whether the students' report indeed reflect the reality of the teacher's behavior in class, since the students are asked to report on a figure of authority which, from a cultural standpoint, they must respect, and therefore not rank the figure negatively. In addition, students' own classroom functioning (e.g., engagement) might have affected their perceptions of their teachers' behaviors or even their reports of need satisfaction (Jang et al. 2009).

It should also be borne in mind that these are high-achieving students whose self-assessment and the messages they receive about their ability at home and in the society can create in them a tendency toward high self-grading in the questionnaires. Hence, although the measures are phenomenological, it is possible that additional sources of information, such as ranking by teachers or objective observers will show additional aspects that the students cannot reflect in self-reporting questionnaires.

Motivational processes and phenomena occurring in "natural" contexts are highly complex, and therefore diverse sources of information and research methods are required in order to understand them (Volet 2001). Thus it may be informative to also use qualitative methods in order to gain a deeper understanding of the motivational processes of Bedouin students. Observation tools can be used to assess actual support for students' needs by their teachers, e.g., observation tools developed by Reeve et al. (2004b), and projective tools (Katz et al. 2008). Researchers can also use reports written by teachers (e.g., regarding students' engagement) that might serve as an additional data source that is not based solely on students' self-reports and might enhance the validity of the measures used.

Second, although the questionnaires were administered at two time points, the study did not address the issue of causality and we could not draw conclusions about the causal direction of effects. To understand the dynamics of motivation and engagement, longitudinal studies and research designs incorporating repeated measures are needed in order to examine change and stability in motivation over time, including an examination of the levels of the motivational variables at the beginning of the study (Volet 2001). Future research should employ a design that meets these conditions.

Third, 74% of the sample population were girls. For statistical reasons (sample size), the present study did not differentiate between these two populations and the model fit for boys and girls was not examined. Boys and girls might differ in their motivational characteristics in Bedouin society. Thus, in future research, it is important to increase the sample of boys and to examine possible differences between these two populations.

Fourth, the present study was conducted among a sample of high-achieving Bedouin students, which is not a representative sample of all Bedouin students. In future research, it is important to compare between students from various achievement and grade levels.

Fifth, the present study did not include cross-cultural comparisons between collectivistic and individualistic/Western cultural groups or specifically between

high-achievers from various cultural groups. Although previous SDT studies that dealt with the cultural issue were, like this study, conducted in specific cultures without comparisons between various cultural groups (e.g., Jang et al. 2009), this might be considered a limitation that might restrict the ability to generalize the results of the study. It will be interesting and important to conduct a comparison study in the future.

Sixth, the study was conducted among high school students and addresses teacher behaviors. Future research should also incorporate parental behaviors and examine the unique effects of teacher behaviors in comparison with the unique effects of parental behaviors on students' motivational functioning. For example, measures pertaining to parental and teachers' conditional negative regard.

Seventh, the study focused on various teachers' controlling behaviors and their effects on a number of motivational variables. Previous studies on parenting indicate diverse negative effects of parental conditional regard, e.g., feelings of guilt, anxiety, damaged self-esteem, and more (Assor et al. 2004; Reeve 2009; Roth et al. 2009). Therefore, the present study is limited in terms of the range of effects of teachers' conditional regard that were examined, and this examination should be expanded in the future.

In conclusion, despite the above limitation the findings of the present study are very encouraging. The findings show that an autonomy-supportive teaching indeed leads to an experience of need satisfaction, autonomous motivation, and, subsequently, to engagement in learning as well as to positive emotions. Thus, SDT can serve as a theoretical framework for building an educational approach and practices that will provide students with the optimal learning environment needed for their academic and psychological growth.

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