

When Choice Motivates and When It Does Not

Idit Katz · Avi Assor

Published online: 31 August 2006
© Springer Science + Business Media, Inc. 2006

Abstract This article addresses the controversy regarding the value of offering choices as a teaching practice. Inconsistent of results regarding the effects of choice in various settings suggest that choice can be either motivating or de-motivating. Based on the self-determination theory of motivation (Deci & Ryan, 2000), we propose that choice can be motivating when the options meet the students' need for autonomy, competence, and relatedness. For example, choice is motivating when the options are relevant to the students' interests and goals (autonomy support), are not too numerous or complex (competence support), and are congruent with the values of the students' culture (relatedness support). Given the many factors involved, it is not surprising that in some studies choice was not found to promote engagement. However, when choice was offered in a way that met the needs of the students, it was found to enhance motivation, learning, and well-being.

Keywords Autonomy support · Provision of choice · Motivation · Self-determination theory · Psychological needs

Introduction

The debate over the benefits and drawbacks of offering choice in the classroom has intensified in recent years. The belief that choice promotes motivation and learning is still widely accepted among teachers (Flowerday & Schraw, 2000), yet the growing controversy over the advantages and disadvantages of choice may lead some teachers to withdraw choice altogether. The empirical findings concerning the benefits of choice are equivocal and confusing. Thus, an integrative conceptual framework is needed that can specify the characteristics that make choice beneficial. The present article attempts to provide such a framework, based on the self-determination theory (Deci & Ryan, 1985, 2000).

I. Katz (✉) · A. Assor
Department of Education, Ben-Gurion University, Beer Sheva, Israel
e-mail: katzid@bgu.ac.il

The inconsistent findings concerning the benefits and drawbacks of providing choice suggest that choice is a multifaceted phenomenon. Some studies demonstrate that it is associated with important positive outcomes (Assor, Kaplan, & Roth, 2002; Cordova & Lepper, 1996; Reynolds & Symons, 2001; Zuckerman, Porac, Lathin, Smith, & Deci, 1978). Others, however, indicate that it has beneficial effects on some measures but not on others (Flowerday & Schraw, 2003; Schraw, Flowerday, & Reisetter, 1998), has no impact (D'Ailly, 2004; Parker & Lepper, 1992; Reeve, Nix, & Hamm, 2003), or even has negative effects (Flowerday, Schraw, & Stevens, 2004; Iyengar & Lepper, 1999, 2000).

The concept of choice appears in several motivational frameworks. For example, the expectancy-value model of achievement motivation (Eccles & Wigfield, 1995; Wigfield & Eccles, 1992, 2000) focuses on social–psychological influences on choice and persistence. According to this theory, people's choices are influenced by perceived positive and negative task characteristics, and these are associated with benefits and costs, respectively. The cost associated with choice is thought to stem from the fact that when a choice is made, often other options are eliminated. Choice, according to this model, is an outcome of the motivational process and depends on the students' task-value beliefs and expectations of success. Similarly, Bandura (1997), in his social cognitive theory, proposes that individuals' self-efficacy is the major determinant of goal-setting, choice of activity, willingness to expend effort, and persistence. Choosing to engage in an activity and choosing a mode of engagement are conceptualized as being affected by three factors: the person's traits, the person's behavior, and the environment. For example, teachers' feedback (an environmental factor) influences students' self-efficacy (a personal factor) and leads students to choose more difficult tasks or more complex strategies (a behavioral factor). In turn, choosing to employ more complex strategies promotes acquisition of skills and can lead students to feel more efficacious, thus inducing them to choose strategies and tasks in the future with even greater complexity (Pintrich & Schunk, 2002).

Arguably, however, the theoretical perspective that best allows for a conceptualization of choice—not as a motivational outcome but as a motivating experience in and of itself—is the self-determination theory (SDT) (Deci & Ryan, 1985, 2000). Indeed, the central focus in SDT on autonomy contributing to adaptive motivation has been interpreted by many as the practice of providing choice (e.g., D'Ailly, 2004; Iyengar & Lepper, 1999). In the present article, however, we suggest that equating choice with autonomy may be erroneous. We employ SDT and its differentiated conception of the constructs of autonomy, autonomy support, and choice, to characterize situations in which providing choice may be beneficial to adaptive engagement, as well as situations in which it may not. Thus, we suggest that viewing the inconsistent results of studies of choice through the prism of SDT might help resolve some of these inconsistencies. We begin by briefly presenting the basic assumptions of SDT. We then review studies of choice through the prism of SDT principles. Finally, we consider the application of SDT to teachers' provision of need-supporting choice in the classroom.

The Self-Determination Theory of Motivation: The Central Role of Basic Needs

SDT is a macro theory of human motivation concerned with the development and functioning of personality within social contexts. According to this theory, there are three basic psychological needs that when satisfied enhance intrinsic motivation and lead to autonomous internalization of behaviors of initial extrinsic origin (Ryan & Deci, 2000). The three psychological needs posited by SDT are the need for autonomy, the need for

relatedness, and the need for competence. The need for autonomy refers to the need to feel a sense of full volition and “choicefulness” regarding one’s activities and goals, a feeling that emerges when one’s actions and goals are experienced as emanating from one’s authentic self (Deci & Ryan, 1985; Ryan, 1993). The need for relatedness refers to the need to feel closely related to other people (Deci & Ryan, 1985, 2000). The need for competence is the need to be effective in one’s interactions with the environment, and to feel that one is capable of mastering challenges (Deci & Ryan, 1985, 2000).

SDT places a particularly heavy emphasis on the role the need for autonomy in promoting intrinsic motivation (Deci & Ryan, 2000; Ryan & Deci, 2000). SDT-based research has shown that autonomy-supportive contexts enhance both intrinsic motivation and well-being (Deci, 1971; Deci & Ryan, 2000; Deci, Ryan, & Williams, 1996; Grolnick & Ryan, 1987; Ryan & Deci, 2000). In SDT, provision of choice is considered a practice aimed at supporting autonomy. Yet, theoretical definitions of the need for autonomy highlight aspects other than choice as fundamental. In this theory and its related studies, the need for autonomy is equated with the striving for self-realization and self-determination (Deci & Ryan, 2000; Lindley, 1986; Ryan, 1993). Thus, meeting this need relates to actions that support these properties.

Viewing Previous Research on Choice through the Prism of SDT Principles

As mentioned above, SDT views the provision of choice as a practice that supports the need for autonomy, and is therefore cognitively and emotionally beneficial. Yet Ryan and Deci (2000) also posit that intrinsic or autonomous motivation can emerge only if people feel that all three needs suggested by SDT are being satisfied. It follows, then, that for choice to have beneficial effects, it has to be provided in a manner in which all three needs are met to a meaningful degree.

In this article we retrospectively examine the need-satisfying or need-frustrating attributes of choice, as reflected in the procedures of various studies. We suggest that both the mode in which choices are offered and the structure/content of the options can be either need-frustrating or need-satisfying; this can explain the differences in the research results regarding the effect of choice on motivation. We mainly evaluate the characteristics of the structure and content of the options (choice structure; e.g., the content of the options and how many options there are). Yet in addition, we address characteristics of the interpersonal mode in which choice is provided (provision mode; i.e., in what atmosphere and context choice is provided).

This section is organized according to the three basic needs distinguished by SDT. We start by differentiating between studies that have provided autonomy-supportive choice and those that have not. Then we focus on the needs for competence and relatedness, and examine the extent to which the choices offered in various studies support or frustrate those needs.

Autonomy-Enhancing Choice

According to SDT, people feel autonomous when they feel and/or understand the value or relevance of the task in which they are engaged, and therefore can identify with it. Feelings of autonomy are particularly strong when the task is perceived as being closely connected to the values, interests, and goals that constitute the core of one’s authentic self and identity

(see Assor, Cohen-Melayev, Kaplan, & Friedman, 2005; Katz & Assor, 2003; Reeve, Nix, & Hamm, 2003; Ryan, 1993). Deci and Ryan (1985) note that self-determined choices are those “based on an awareness of one’s organismic needs and a flexible interpretation of external events” (p. 38).

Consistent with this view, several recent studies suggest that what students perceive as being highly valuable is probably not the mere act of choosing, but mostly the value of the options to the participants’ self and personal goals. For example, in a correlational study, Assor, Kaplan, & Roth, (2002) assessed the types of teachers’ behaviors that are particularly important in predicting engagement variables in third- through eighth-graders. They concluded that clarification of relevance to students’ goals predicts positive affect and engagement better than the amount of choice given to students. Katz and Assor (2003) then showed in two experiments, that tasks that are consistent with the students’ individual interests strongly enhance their sense of autonomy and intrinsic motivation. In this study, seventh-graders who were assigned to a class consistent with their known interests experienced the same level of autonomy and intrinsic motivation as the students who were allowed to choose the class themselves. Reynolds and Symons (2001) assessed the motivational effect of topic-choice and response-format choice on eight-year-old children in an information-search task. They found that choice of topic facilitated both the performance and search sequence in an information search task, whereas choice of response-format facilitated only process measures. In line with our emphasis on the importance of interests, it is reasonable to assume that a choice of topic was beneficial because it was relevant to participants’ interests. In their 2003 study, Reeve, Nix, and Hamm gave undergraduates “action choices” (e.g., how to allocate their time) or “option choices” (e.g., which puzzle to solve). They found that action choices have a stronger impact on the sense of psychological freedom and volition than do option choices. They concluded that “action types of choices did... engender an experience capable of affecting perceived self-determination and hence, intrinsic motivation” (p. 387). In a study evaluating the relative importance of various autonomy-supportive teachers’ behaviors as predictors of students’ sense of self determination, Reeve, Nix, and Hamm found that internal locus of causality and volition were better predictors of sense of self determination than was choice.

Flowerday *et al.* (2004), separated the effect of choice on motivation from the effect of interest. They evaluated undergraduates’ interest in a variety of reading topics and then let the students choose between two packets of essays without knowing the contents. They concluded that situational interest, not choice, was the variable that influences learning.

The results of the above studies demonstrate that when choice is separated from other aspects of autonomy support and self-realization (e.g., interest, values, volition, and goals), the act of choosing is not the major motivating property of choice. In contrast, when a given choice provides an opportunity for self-realization it is experienced as autonomy-supportive, and therefore as motivating.

The self realization aspect of choice is captured well by two terms proposed by Ullmann-Margalit and Morgenbesser (1997), who differentiate between “picking” and “choosing.” According to these authors, “picking” does not necessarily allow expression of the individual’s desires or preferences. In contrast, “choosing” involves an opportunity for meaningful realization of the individual’s desires or preferences. This distinction highlights the possibility that the choices provided to participants in some experiments permitted them to pick, but did not affect their sense of autonomy. Because picking—or, as it has also been termed, “choice without preferences” (Rescher, 1960)—does not affect people’s interests, volition, goals and values, it is expected to be less motivating than choosing.

Several studies indicating lack of positive effects of choice appear to involve an act of picking rather than choosing. Flowerday *et al.* (2004) provided participants an “empty choice” (choosing a packet without knowing its content). This type of choice did not involve interests, values, or goals, and as can be expected did not affect the participants’ learning or motivation. Parker and Lepper (1992), assessed the effect of embedding fantasy elements into instructional materials on children’s motivation to learn. Elementary-school children were given a choice of educational programs involving three different types of fantasy elements. Whereas some of the participants could choose among three different fantasies, others were assigned only one fantasy. Result showed no significant motivational effects of choice. In their discussion, Parker and Lepper address this issue, saying: “Had the range of options included fantasies that some students found wholly inappropriate or uninteresting, or even disturbing, or disgusting, the ability to select a fantasy of greater personal relevance or interest might have proved more important” (p. 631).

A similar finding was obtained in D’Ailly’s (2004) study, in which the author gave Canadian and Chinese eleven-year-olds an opportunity to learn the names of animals, numbers, and colors in a foreign language. Half of the participants chose the words to learn and half-learned words chosen by the teacher or a computer. Results showed that choice had no affective or cognitive impact. The author suggests that the effect of choice on learning is mainly mediated by interest, and the fact that the students in both experimental conditions reported high levels of interest in the task might explain why choice had no effect.

Overall, the results of the studies described above suggest that picking does not have a substantial motivational effect. In order for choice to have a positive effect on motivation, the options should differ markedly in terms of their importance to the participants, so that the chooser finds at least one of them to be more relevant, interesting, or important.

Given the emphasis on personal relevance, how can we explain findings demonstrating positive effects of choices involving options that seem trivial, or even illusory? For example, in a study conducted by Dember, Galinsky, and Warm (1992) with university student, half of the participants were offered the opportunity to select either a “hard” or “easy” version of a task and half were not given that opportunity. Although all participants were ultimately given the same task, the detection scores of the participants that believed they had choice, remained more stable over the course of a vigilance task than did those of the controls. Another study demonstrating the positive effects of illusory choice was conducted by Langer (1975). In her research, she showed that the opportunity to choose a lottery ticket increased participants’ confidence that they might win despite the fact that this belief had no rational basis.

Finally, Cordova and Lepper (1996) examined the effects of choice of what they define “instructionally irrelevant aspects of the task” among elementary school children involved in an educational computer activity. In their choice condition, participants could choose features such as the icon representing them on the game board, the name of their spaceship, the name of their opponent’s, and their starting point of two shortcuts. Results showed that choice did have a positive effect on learning and motivation.

We believe that although the above studies involve choices that are illusory or appear trivial, the participants in the studies did experience them as meaningful. It is possible that the subjective belief that you can determine the chances of success in a given task makes the task personally meaningful even if this belief is objectively false. It is also possible that in the Cordova and Lepper’s (1996) study, the opportunity to choose names representing the player and her/his opponent made the contest personally meaningful to the participants.

Another possible explanation for the positive effects of choices which seem trivial is the positive value associated with choice in western societies. Western societies associate

choice with highly desirable values such as freedom, human rights, democracy and happiness, and the association of any kind of choice with those important values may make choice beneficial even when it does not relate to personal interests and goals.

Competence-Enhancing Choice

Some of the evidence regarding the benefits of competence-enhancing choices comes from direct research on the effects of choice on motivation. Most, however, comes from research assessing cognitive components of decision-making processes in general.

In decision-making literature, an environment that offers many alternatives and/or requires consideration of many attributes is called a “complex decision-making environment” (Payne, 1976). A growing body of research demonstrates that such environments can lead both adults and children to rely on non-compensatory decision-making strategies, which are less complex, demand less cognitive effort, and lead to decisions that are cognitively less optimal (Bereby-Meyer, Assor, & Katz, 2004; Davidson, 1991a, b; Gregan-Paxton & John, 1995, 1997; Klayman, 1985). Various studies have shown that under complex cognitive conditions, people tend to defer decisions, choose the default option, or choose not to choose (Dhar, 1997; Iyengar, Huberman, & Jiang, 2004; Shafir & Tverski, 1992). Bereby-Meyer *et al.* (2004) and Davidson (1991a, b) have investigated these processes in children’s decision-making. Like adults, when options become more complex (i.e., include more attributes), children tend to respond by using the less complex strategies characteristic of younger children, and even resort to random selection without consideration of the options. Although the use of less complex strategies is considered adaptive when decisions are complex (Bereby-Meyer *et al.*, 2004), a constant feeling that the best one can do is to choose randomly or use non-optimal strategies presumably undermines one’s sense of competence. Iyengar *et al.* (2004) term this situation “choice overload.” They suggest that choosers may experience frustration with complex decision-making processes and might subsequently feel less satisfied with the choices they make. This may lead to a reduced willingness to commit to one choice. When choosers feel they cannot handle the choice overload, or believe that the consequences of the “wrong” choice will be negative, they instead decide not to choose, or may ask someone with more expertise to choose for them (Iyengar *et al.*, 2004).

The notion that overly complex decision-making environments are problematic is directly supported in a study by Iyengar and Lepper (2000). Challenging the implicit assumption that having more choices is more intrinsically motivating than having fewer, the authors conducted three experiments in which adult participants could choose between 6 and 24 arrays of choices. They concluded that people are more likely, for example, to purchase gourmet jams or chocolates, or undertake optional class essay assignments, when offered a small array of choices. Although this study did not involve school children, its findings support the view that competence considerations should be taken into account when one offers choices.

The research surveyed so far dealt mostly with the extent to which students feel that they are able to comprehend various options and therefore make a satisfactory choice. However, choice situations might relate to students’ need for competence also by offering an opportunity to increase and/or demonstrate one’s competence in the task chosen.

One set of studies pertaining to choice as an opportunity for competence demonstration, was conducted by Burger (1987, 1989). For example, in one of these experiments (Burger, 1987), undergraduate students were either allowed or not allowed to select the response

word for a paired-associate memory task. Half of the subjects were led to believe that the experimenter would know of their choice and how well they did on the task. The other half thought that the experimenter would not know about their choice or their performance. It was found that choice improved performance on the task only when subjects believed that the experimenter would know of their choice and their performance. This study suggests that choice situations might be more motivating if participants had an opportunity to demonstrate their performance. Burger (1989), however, suggests that in some situations the level of concern about self-presentation that accompanies choice can become so intense that people will perform more poorly or “choke” under pressure (p. 250). Consistent with this observation, and based on SDT (Deci & Ryan, 1985) and studies on the negative effects of ego involvement (Butler, 1987; Ryan, 1982), it is reasonable to assume that choice which focuses participants on ability demonstration might have serious emotional and performance costs. Thus, while students’ might perform better, they might also experience considerable stress as they work on the task and would not choose to engage in it again.

Interestingly, the combination of improved performance accompanied by decreased enjoyment also characterizes the results of the second experiment reported by Flowerday and Schraw (2003). These researchers asked undergraduate students to choose how much effort and time they wanted to invest in a task, or were assigned a researcher-paced learning environment. The results suggest that choice in the form of self-pacing improved deeper learning but undermined enjoyment.

One important factor which might determent the extant to which choice is competence supporting is the degree to which the various options constitute an optimal challenge to students. A rich body of research on the achievement motive (see Weiner, 1992) suggests that most people tend to choose tasks of intermediate difficulty, as this type of task gives them the most information about their capabilities and provides an optimal opportunity to increase their sense of competence (see also Deci & Ryan, 1985; Pintrich & Schunk, 2002). In line with these views, it appears that choices that offer options of intermediate difficulty are competence-supporting and therefore motivating. In contrast, choice options that are too easy or too difficult undermine motivation.

Finally, it is interesting to observe that most studies have not addressed the possibility that their participants’ age influences the effect of choice on motivation. Two exceptions are Reynolds and Symons (2001) and Gracia and Pintrich (1996), in which age was considered a meaningful factor. Some studies have looked at college students (e.g., Flowerday & Schraw, 2003; Gracia & Pintrich, 1996; Zuckerman *et al.* 1978), some looked at adults (Iyengar & Lepper, 2000; Langer, 1989), and some looked at school-age children (Assor *et al.* 2002; Iyengar & Lepper, 1999; Katz & Assor, 2003; Reynolds & Symons, 2001). In most of the studies, the participants’ age was not mentioned as a possible explanation for the conflicting results regarding the effect of choice on cognitive or affective variables, although presumably children of different ages response to choices differently and have a different cognitive capacity to handle them (Bereby-Meyer *et al.*, 2004).

Relatedness-Enhancing Choice

The connection between satisfying the need for relatedness and the effects of choice appears less intuitive and therefore was not subject to much research. Psychosocial theories suggesting that cultural differences in the preference for independence or interdependence,

can help us understand this issue (e.g., Hernandez & Iyengar, 2001). One such theory is presented by Markus and Kitayama (1991). According to this theory, Westerners strive to perceive themselves as possessing unique attributes that enables them to stand apart and be distinct from others around them. One important normative imperative for such individuals is to become independent from others and to discover and express their unique attributes. Accordingly, they strive to achieve independence and autonomy. In contrast, Eastern individuals perceive themselves as being interconnected and interrelated with others in their social context. Thus, their focal point is not their inner self but rather their relationship with others. If we apply this cultural perspective to choice situations, Western participants view having a choice as an opportunity for demonstrating their independence from others and for discovering and expressing their unique attributes. In contrast, for Eastern participants, choice might be conflicting if their personal preferences differ from those of their in-group. Moreover, choice might threaten in-group harmony, as it might interfere with the hidden or manifest values or goals of an important membership or reference group. Presumably, then, in contexts with strong collectivist and hierarchical orientations, choice can easily challenge the sense of relatedness and belonging to one's in-group, as well as threaten the need to be accepted and loved by important authority figures.

To date, the strongest empirical support for this hypothesis has been provided by Iyengar and Lepper (1999). They conducted two experiments to assess the cultural perspective of choice. In the first experiment, Asian–American and European–American children were either allowed to choose one of six activities or were told by an experimenter which activity to undertake. In the second experiment, using a paradigm based on that of Cordova and Lepper (1996), Asian–American and European–American children played a computer math game in either a personal choice condition or a no-choice condition; in the latter, either the experimenter or an in-group member made instructionally irrelevant choices for them. In these two experiments, European–American participants demonstrated more motivation when they were allowed to choose, while the Asian–American participants demonstrated higher motivation when a member of their in-group (e.g., a parent or the class) chose for them. The results concerning the Asian–Americans were interpreted by Iyengar and Lepper from a cultural perspective, suggesting that offering choices to people from highly collectivistic societies might even be detrimental, due to their construction of the self and their goal priorities.

In another study, choices were offered to secular Jewish (individualistically oriented) and Bedouin (collectivistically oriented) children (Katz & Assor, 2003). Similar to the results of Iyengar and Lepper (1999), choice was found to undermine the intrinsic motivation of the Bedouin participants. Yet, in contrast to Iyengar and Lepper, the act of choosing was not found to have any extra motivating effect on the Jewish participants. It appears, then, that in hierarchical and collectivist cultures, free choice situations might threaten children's need for relatedness.

Moreno and Flowerday (2006) gave undergraduates a choice of animated pedagogical agents (APAs) of different genders and ethnicities. These are lifelike characters designed to facilitate learning in a computer-based environment. They found that choice resulted in poorer learning and less positive attitudes toward the instructional program for students who chose APAs of their own ethnicity than for students who chose APAs of a different ethnicity. The authors suggested that when students use APAs of their own ethnicity, they focus on how the APAs represent themselves rather than on the instructional materials. They also entertained the possibility that the less positive attitude toward the program was caused by the participants' dissatisfaction with the APAs as representatives of the student's ethnicity, an experience which might have threatened participants' need for relatedness.

As suggested in the review presented above, it is of crucial importance for teachers striving to motivate students to consider the various need-related aspects of choice. The next section presents SDT-based teachers' practices suggested in the literature for making choice a need-satisfying experience.

Teachers' Support for Need-Satisfying Choice

Scholars working within the framework of SDT assume that teachers' behaviors and practices have a substantial impact on students' feelings about and engagement in learning. The theory groups teachers' behaviors and practices into three general clusters: autonomy support, competence support, and relational support. Studies show that teachers' practices and the educational settings that satisfy these psychological needs enhance students' motivation, achievement, and well-being (Alfi, Assor, & Katz, 2004; Assor & Kaplan, 2001; Assor, Kaplan, & Roth, 2002; Connell, Spencer, & Aber, 1994; Deci *et al.*, 1996; Flink, Boggiano, & Barrett, 1990; Grolnick & Ryan, 1987; Grolnick, Ryan, & Deci, 1991; Kaplan, Assor, & Roth, 2003; Reeve, Jang, Carrell, Jeon, & Barch, 2004; Skinner & Belmont, 1993). In accordance with the results of the studies discussed above, we suggest that applying the principles of SDT to the classroom setting can help teachers give students choices that are motivating. Again, we organize our suggestions according to the three psychological needs referred to in SDT.

Providing Autonomy-Enhancing Choices

Theories and research on the concept of autonomy support suggest that students' sense of autonomy increases when teachers minimize coercion and interference, show understanding for students' perspective and feelings, provide a relevant rationale for the task, and offer choice by allowing students to participate in task and goal selection and to choose their work methods and the mode of evaluation of their work. Such teachers also allow criticism and some expression of negative feelings (Alfi *et al.*, 2004; Assor, Kaplan, & Roth, 2002; Reeve *et al.*, 2004; Stefanou, Perencevich, DiCinto, & Turner, 2004). Furthermore, close surveillance and frequent intrusions undermine feelings of autonomy (Assor, Kaplan, & Roth, 2002; Assor, Kaplan, Roth, & Kanat-Maymon, 2005; Deci *et al.*, 1996). Stefanou *et al.* (2004) suggest that support for autonomy can be manifested in the classroom in at least three ways: procedurally (encouraging student ownership of form, e.g., letting students select the media in which to present ideas), organizationally (encouraging student ownership of the environment, e.g., letting students select due dates for assignments), and cognitively (encouraging student ownership of learning, e.g., asking students to generate their own paths to a solution).

Based on these principles, we suggest that in order to make choice intrinsically motivating, teachers should offer options that seem valuable to the students because they enable students to work on subjects and tasks that interest them and allow them to achieve their goals (Flowerday & Schraw, 2000; Katz & Assor, 2003). In addition, teachers may allow some freedom in the choice of methods of performing the task, modes and dates of evaluation, and ways of presenting the work (Reeve, Nix *et al.*, 2003). When offering a choice of various tasks, it would be advantageous for teachers to demonstrate and explain the relevance of those tasks to the personal goals and interests of their students (Assor, Kaplan, & Roth, 2002; Reeve, Jang, Hardé, & Omura, 2002). In presenting the choices, it

is important to avoid a controlling locution and to allow students to express negative feelings and criticism (Assor, Kaplan, & Roth, 2002). Finally, while students are working on their chosen task, it is important that undue interruptions or attempts to provide unsolicited help are avoided (for more detailed descriptions of an “autonomy-supportive teacher,” see Alfi *et al.*, 2004; Assor, Kaplan, & Roth, 2002; Reeve, Jang, Carrell *et al.*, 2004; Stefanou *et al.*, 2004).

Providing Competence-Enhancing Choices

According to SDT-based studies (see Alfi *et al.*, 2004; Deci *et al.*, 1996; Ryan & Deci, 2000; Skinner & Belmont, 1993), teachers can support students’ sense of competence by conducting an initial assessment of students’ knowledge and then setting optimally challenging tasks. They can then help students to plan work on their task, and provide continual, informative, non-comparative feedback that instructs them regarding components of the task that they have mastered and other components that they could master with some additional practice.

Given that choice can be motivating when it is not too difficult and complex, it is important for teachers who provide choices to attempt to match the complexity and difficulty of the task (number of alternatives and attributes, difficulty level) to their students’ age, cognitive abilities, and perceived competence in the domain in which the choice is offered. The idea of matching choices with developmental level is closely related to Vgotsky’s (1978) concept that teaching is most effective when directed toward the student’s zone of proximal development.

As for the context in which choice is offered, the teaching mode and classroom environment should support the development of a firm sense of competence (see Alfi *et al.*, 2004; Connell & Wellborn, 1991; Flowerday & Schraw, 2000). For example, the teacher may do well to consider the type of feedback provided to students (see Butler, 1987). Feedback that provides information for judging progress, correcting mistakes, and redirecting efforts is more beneficial than feedback comparing the student’s ability with that of other students (Brophy, 1981). In such competence-supporting contexts, students can devote themselves to the task they have chosen, without worrying about their performance level and the possibility of negative evaluations.

Providing Relatedness-Enhancing Choices

In order to enhance the sense of relatedness, teachers can encourage peer acceptance and empathy in the classroom and minimize social comparisons and competition, thereby creating a context that serves as a secure base for learning and exploration (Alfi *et al.*, 2004; Battistich, Solomon, Watson, & Schaps, 1997).

Specifically in multicultural contexts, research suggests that when offering a choice the need for relatedness must be taken into account (see Katz & Assor, 2003). Thus, in contexts with strong collectivist and hierarchical orientations—typical of students from certain ethnic groups—choice can easily threaten the sense of relatedness and belonging to one’s in-group, as well as the need to be appreciated and loved by important authority figures. Therefore, in such contexts it is important to offer options that do not conflict with important values of the students’ in-group and culture of origin, and perhaps to meet the need for autonomy by relating to students’ interests and goals instead of offering a choice (Katz & Assor, 2003).

Interestingly, choice can pose a threat to the need for relatedness in more individualistic societies as well. This can happen in contexts and situations in which choosers are apprehensive that their choices may lead to social rejection, humiliation, or teasing. It follows, then, that teachers who want to make choice beneficial for children should create a context that is accepting, warm, and empathic. Various ways in which teachers can foster a caring and accepting climate in the classroom are described by Battistich *et al.* (1997), who suggest an intervention designed to enhance pro-social development. This intervention (called the Child Development Project, or CDP) offers students numerous opportunities to collaborate with one another, to give meaningful help to others and receive help when it is needed; to discuss and reflect on the experiences of others so as to gain an understanding and appreciation of others' needs, feelings, and perspectives; to discuss and reflect on their own behavior and the behavior of others as they relate to fundamental pro-social values of fairness, concern, and respect for others; to develop and practice important social competencies and exercise autonomy; to participate in decision-making about classroom norms, rules, and activities; and to take responsibility for appropriate aspects of classroom life.

Conclusions

The present article identifies motivating and non-motivating attributes of choice based on SDT. In the first section of this article, studies on the effect of choice on motivation and cognition were reviewed through the prism of the SDT principles. We demonstrated how the degree to which the choices offered in the various studies were need-satisfying, can explain the contradicting results regarding the effects of choice. Thus, choice was found to be a motivating factor in studies in which the three basic psychological needs were satisfied, or at least not ignored. Therefore, when offering choices, teachers should construct options that meet their students' needs. In particular, options should be constructed that are relevant to students' interests and goals (autonomy support), are not too numerous or complex yet not too easy (competence support), and are congruent with the values of the students' families and culture of origin (relatedness support). It is also important that these choices be offered in a manner and context that meets students' needs, or at least does not threaten those needs. For example, it is important that choice be offered in a non-controlling accepting atmosphere. When these conditions are met, choice is likely to contribute positively to the students' functioning and development.

The present article has attempted to demonstrate that merely offering choice is not in itself motivating. In fact, in some cases it can even reduce motivation. In order for choice to be motivating, it has to be based on a careful match between the various options and the students' needs, interests, goals, abilities, and cultural background. In addition, considerable attention should be paid to the context and manner in which the choice is provided.

More generally, the framework proposed in this article may help advance research on the benefits and costs of choice in the classroom by replacing the global, and perhaps non-productive, question "Is choice useful?" with the more specific question "What attributes make choice useful?" Thus, we suggest a systematic investigation of the mechanisms that make choice beneficial. Further study is needed to understand the effects of different types of choices and contexts on children of various developmental levels and from different cultures. Moreover, as the context in which choice is provided is crucial to its effect on motivation, we suggest that these questions be studied in the classroom and other real-life settings.

References

- Alfi, O., Assor, A., & Katz, I. (2004). Learning to allow temporary failure: Potential benefits, supportive practices and teacher concerns. *Journal of Education for Teaching*, *30*, 27–41.
- Assor, A., Cohen-Melayev, M., Kaplan, A., & Friedman, D. (2005). Choosing to stay religious in a modern world: Socialization and exploration processes leading to an integrated internalization of religion among Israeli Jewish youth. In M. L. Maehr & S. Karabenick (Eds.), *Advances in motivation and achievement, Vol. 14: Religion and motivation* (pp. 105–150). Amsterdam: Elsevier.
- Assor, A., & Kaplan, H. (2001). Mapping the domain of autonomy support: Five important ways to enhance or undermine student's experience of autonomy in learning. In A. Efklides, J. Kuhl, & R. Sorrentino (Eds.), *Trends and prospects in motivation research* (pp. 101–120). Dordrecht: Kluwer.
- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good but relevance is excellent: Autonomy affecting teacher behaviors that predict students' engagement in learning. *British Journal of Educational Psychology*, *72*, 261–278.
- Assor, A., Kaplan, H., Roth, G., & Kanat-Maymon, Y. (2005). Directly controlling teacher behaviors as predictors of poor motivation and engagement in girls and boys: The role of anger and anxiety. *Learning and Instruction*, *15*, 397–413.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Battistich, V., Solomon, D., Watson, M., & Schaps, E. (1997). Caring school communities. *Educational Psychologist*, *32*, 137–151.
- Bereby-Meyer, Y., Assor, A., & Katz, I. (2004). Children's choice strategies: The effect of age and task demands. *Cognitive Development*, *19*, 127–146.
- Brophy, J. E. (1981). Teacher praise: A functional analysis. *Review of Educational Research*, *51*, 5–32.
- Burger, J. M. (1987). Increased performance with increased personal control: A self-presentation interpretation. *Journal of Experimental Social Psychology*, *23*, 350–360.
- Burger, J. M. (1989). Negative reactions to increases in perceived personal control. *Journal of Personality and Social Psychology*, *56*, 246–256.
- Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology*, *79*, 474–482.
- Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational risk and resilience in African American youth: Context, self, and action outcomes in school. *Child Development*, *65*, 493–506.
- Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Minnesota Symposium on Child Psychology, Vol. 23: Self processes and development* (pp. 43–77). Hillsdale, New Jersey: Erlbaum.
- Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization and choice. *Journal of Educational Psychology*, *88*, 715–730.
- D'Ailly, H. (2004). The role of choice in children's learning: A distinctive cultural and gender difference in efficacy, interest, and effort. *Canadian Journal of Behavioral Science*, *36*, 17–29.
- Davidson, D. (1991a). Children's decision-making examined with an information-board procedure. *Cognitive Development*, *6*, 77–90.
- Davidson, D. (1991b). Developmental differences in children's search of pre-decisional information. *Journal of Experimental Child Psychology*, *52*, 239–255.
- Deci, E. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, *18*, 105–115.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuit: Human needs and the self-determination theory of behavior. *Psychology Inquiry*, *11*, 227–268.
- Deci, E. L., Ryan, R. M., & Williams, G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and Individual Differences*, *8*, 165–183.
- Dember, W. N., Galinsky, T. L., & Warm, J. S. (1992). The role of choice in vigilance performance. *Bulletin of the Psychonomic Society*, *30*, 201–204.
- Dhar, R. (1997). Consumer preferences for a no-choice option. *Journal of Consumer Research*, *24*, 215–231.
- Eccles, J. S., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement task values and expectancy-related beliefs. *Personality and Social Psychology Bulletin*, *21*, 215–225.
- Flink, C., Boggiano, A. K., & Barrett, M. (1990). Controlling teaching strategies: Understanding children's self-determination and performance. *Journal of Personality and Social Psychology*, *59*, 916–924.
- Flowerday, T., & Schraw, G. (2000). Teachers' beliefs about instructional choice: A phenomenological study. *Journal of Educational Psychology*, *92*, 634–645.

- Flowerday, T., & Schraw, G. (2003). Effect of choice on cognitive and affective engagement. *Journal of Educational Research*, 96, 207–215.
- Flowerday, T., Schraw, G., & Stevens, J. (2004). The role of choice and interest in reader engagement. *Journal of Experimental Education*, 72, 93–114.
- Gracia, T., & Pintrich, P. R. (1996). The effects of autonomy on motivation and performance in the college classroom. *Contemporary Educational Psychology*, 27, 477–486.
- Gregan-Paxton, J., & John, R. D. (1995). Are young children adaptive decision makers? A study of age differences in information search behavior. *Journal of Consumer Research*, 21, 567–587.
- Gregan-Paxton, J., & John, R. D. (1997). The emergence of adaptive decision making in children. *Journal of Consumer Research*, 24, 43–56.
- Grolnick, W. S., & Ryan, R. M. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology*, 52, 890–898.
- Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, 83, 508–517.
- Hernandez, M., & Iyengar, S. S. (2001). What drives whom? A cultural perspective on human agency. *Social Cognition*, 19, 269–294.
- Iyengar, S., Huberman, G., & Jiang, W. (2004). How much choice is too much? Contributions to 401(k) retirement plans. In O. S. Mitchell & S. P. Utkus (Eds.), *Pension design and structure: New lessons from behavioral finance* (pp. 83–97). Oxford: Oxford University Press.
- Iyengar, S., & Lepper, R. (1999). Rethinking the value of choice: A cultural perspective on intrinsic motivation. *Journal of Personality and Social Psychology*, 76, 349–366.
- Iyengar, S., & Lepper, R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, 79, 995–1006.
- Kaplan, H., Assor, A., & Roth, G. (2003). *Is autonomy important for all students? Evidence from a longitudinal study with children of high and low parental education*. Paper presented at the 84th annual meeting of the American Educational Research Association, Chicago.
- Katz, I., & Assor, A. (2003). *Is autonomy important for non-western students? Examining autonomy as a universal human propensity*. Paper presented at the 84th annual meeting of the American Educational Research Association, Chicago.
- Klayman, J. (1985). Children's decision strategies and their adaptation to task characteristics. *Organizational Behavior and Human Decision Processes*, 35, 179–201.
- Langer, E. (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32, 311–328.
- Langer, E. (1989). *Mindfulness: Choice and control in everyday life*. London: Harvill.
- Lindley, R. (1986). *Autonomy*. London: Macmillan.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- Moreno, R., & Flowerday, T. (2006). Students' choice of animated pedagogical agents in science learning: A test of the similarity attraction hypothesis on gender and ethnicity. *Contemporary Educational Psychology*, 31(2), 186–207 (April).
- Parker, L. E., & Lepper, M. R. (1992). Effects of fantasy contexts on children's learning and motivation: Making learning more fun. *Journal of Personality and Social Psychology*, 62, 625–633.
- Payne, J. W. (1976). Task complexity and contingent processing in decision making: An information search and protocol analysis. *Organizational Behavior Performance*, 16, 366–387.
- Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education theory, research, and applications* (2nd ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' motivation by increasing teachers' autonomy support. *Motivation and Emotion*, 28, 147–169.
- Reeve, J., Jang, H., Hardré, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotion*, 26, 183–207.
- Reeve, J., Nix, G., & Hamm, D. (2003). Testing models of the experience of self determination in intrinsic motivation and the conundrum of choice. *Journal of Educational Psychology*, 95, 375–392.
- Rescher, N. (1960). Choice without preference. *Kant-Studien*, 51, 142–175.
- Reynolds, P. L., & Symons, S. (2001). Motivational variables and children's text search. *Journal of Educational Psychology*, 93, 14–22.
- Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, 43, 450–461.
- Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy, and the self in psychological development. In J. E. Jacobs (Ed.), *Nebraska Symposium on Motivation, Vol. 40: Developmental perspectives on motivation*. Lincoln, Nebraska: University of Nebraska Press.

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist*, *55*, 68–78.
- Schraw, G., Flowerday, T., & Reisetter, M. (1998). The role of choice in reader engagement. *Journal of Educational Psychology*, *90*, 705–714.
- Shafir, E., & Tverski, A. (1992). Thinking through uncertainty: Non-consequential reasoning and choice. *Cognitive Psychology*, *24*, 449–474.
- Skinner, E. A., & Belmont, M. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85*, 571–581.
- Stefanou, C. R., Perencevich, K. C., DiCinto, M., & Turner, J. C. (2004). Supporting autonomy in the classroom: Ways teachers encourage student decision making and ownership. *Educational Psychology*, *39*, 97–110.
- Ullmann-Margalit, E., & Morgenbesser, S. (1997). Picking and choosing. *Social Research*, *44*, 757–785.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, Massachusetts: Harvard University Press.
- Weiner, B. (1992). *Human motivation: Metaphors, theories, and research*. Newbury Park, California: Sage.
- Wigfield, A., & Eccles, J. (1992). The development of achievement task value: A theoretical analysis. *Developmental Review*, *12*, 265–310.
- Wigfield, A., & Eccles, J. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, *25*, 68–81.
- Zuckerman, M., Porac, J., Lathin, D., Smith, R., & Deci, E. L. (1978). On the importance of self-determination for intrinsically motivated behavior. *Personality and Social Psychology Bulletin*, *4*, 443–446.