AN INTERVENTION-BASED PROGRAM OF RESEARCH ON TEACHERS’ MOTIVATING STYLES

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ABSTRACT

Purpose — Our ongoing program of research works with teachers to help them become more autonomy supportive during instruction and hence more able to promote students’ classroom motivation and engagement.

Design/methodology/approach — We have published five experimentally based, longitudinally designed, teacher-focused intervention studies that have tested the effectiveness and educational benefits of an autonomy-supportive intervention program (ASIP).

Findings — Findings show that (1) teachers can learn how to become more autonomy supportive and less controlling toward students, (2) students of the teachers who participate in ASIP report greater psychological need satisfaction and lesser need frustration, (3) these same students report and behaviorally display a wide range of important educational benefits, such as greater classroom engagement, (4) teachers benefit as much from giving autonomy support as their students do from receiving it as teachers show large postintervention gains in outcomes such as
teaching efficacy and job satisfaction, and (5) these ASIP-induced benefits are long lasting as teachers use the ASIP experience as a professional developmental opportunity to upgrade the quality of their motivating style.

Originality/value — Our ASIP helps teachers learn how to better support their students’ autonomy during instruction. The value of this teaching skill can be seen in teachers’ and students’ enhanced classroom experience and functioning.

Keywords: Autonomy support; intervention; motivating style; self-determination theory; teachers

An intervention is a step-by-step plan of action to alter some existing condition. In the classroom that “existing condition” is typically a highly valued educational outcome that has proven to be difficult to produce through standard instruction. The existing condition of interest in our first classroom-based intervention study was, for instance, to increase students’ engagement (Reeve, Jang, Carrell, Jeon, & Barch, 2004), whereas in a more recent investigation it was to lessen students’ amotivation (Cheon & Reeve, 2014a). In all of our intervention studies to date, we have tested whether the students of the teachers who are randomly assigned into a condition in which they receive our intervention (experimental group) show gains in educational outcomes that do not otherwise occur with standard instruction (control group).

THEORETICAL FRAMEWORK

To enhance students’ engagement and to lessen their amotivation, our strategy has been to work with the teachers of these students. This indirect approach (i.e., to help students, we work with teachers) reflects our social psychological theoretical framework on the determinants of changes in students’ classroom motivations, which is self-determination theory in general (Ryan & Deci, 2000) and cognitive evaluation theory in specific (Deci & Ryan, 1985). Cognitive evaluation theory is one of the five mini-theories
embedded within the larger self-determination theory framework (Ryan & Deci, 2002; Vansteenkiste, Niemiec, & Soenens, 2010), and its purpose is to explain in advance what will be the downstream effects on students' motivational processes of any teacher-introduced social or environmental event. The theory specifies when an instructional event meant to motivate and engage can be expected to facilitate and catalyze students’ motivation (i.e., when it is perceived as an informational event) versus when that same instructional event can be expected to frustrate and thwart students’ motivation (i.e., when it is perceived as a controlling event). The theory has been used, for instance, to predict the beneficial versus harmful downstream motivational effects of rewards (Deci, Koestner, & Ryan, 1999), praise (Henderlong & Lepper, 2002; Ryan, 1982), rules (Koestner, Ryan, Bernieri, & Holt, 1984), feedback (Vallerand & Reid, 1984), and competition (Reeve & Deci, 1996). The main contribution of the theory is to point out that it is not the instructional event itself (e.g., reward, praise, and rule) that motivates or demotivates but is, instead, why the teacher offers that instructional event (i.e., to control behavior or to inform competence), as explained next.

**COGNITIVE EVALUATION THEORY**

Teachers introduce many different “social and environmental events” to effect a change in their students’ motivation and engagement. For instance, to spark initial engagement in a learning activity, teachers may introduce a goal, rule, explanatory rationale, choice, incentive, directive, behavioral contract, schedule, deadline, request, or standard of excellence to pursue. Once students are engaged in the learning activity, teachers may try to keep that engagement going by introducing a prompt, reminder, praise, word of encouragement, reward, criticism, feedback, suggestion for improvement, tip, hint, strategy, offer to help, or one of many different forms of coaching, mentoring, and scaffolding. Because this is so, we have found it necessary to expand cognitive evaluation theory’s focus on “social and environmental events” to include the larger category of “anything the teacher says and does during instruction to affect students’ motivation and emotion.” We summarize our expanded adaptation of the cognitive evaluation theory framework in Fig. 1.

Often, the purpose behind what teachers say and do during instruction is to influence, change, or control a student’s behavior. By uttering a
directive, for instance, the teacher seeks to make it more likely that the student will enact a prescribed behavior. Another purpose behind what teachers say and do is to inform the student about her competence or incompetence at the task by providing feedback that the student is or is not making progress to complete an assignment. Thus, cognitive evaluation theory emphasizes the ever-present dual function of what teachers say and do during instruction (i.e., control behavior and inform competence), and it refers to the first purpose as the “controlling aspect” and the second as the “informational aspect” of the instructional event (Deci & Ryan, 1985).

As shown in the upper half of Fig. 1, if the student perceives that the reason why the teacher uttered praise or offered to help was mostly to control behavior, then that act of instruction functionally ignores or by-passes the student’s inner motivational resources and, instead, environmentally pressures the student to behave in a teacher-prescribed way. Prescribing behavior and pressuring for compliance tends to thwart the student’s autonomy need satisfaction and promote dysfunctional student outcomes. In contrast, if the student perceives that the reason why the teacher uttered praise or offered to help was mostly to vitalize (energize) the student’s inner motivational resources, then that act of instruction tends to support autonomy

Fig. 1. Cognitive Evaluation Theory Analyses of the Motivational Implications of What Teachers Say and Do during Instruction.
need satisfaction and promote functional student outcomes. In predicting changes in the student’s motivation, what matters most is not so much what the teacher’s actual intention was in praising or helping but is, rather, the students’ perception of the teacher’s intent: Why did she say that? Why did she do that? Is he trying to control me? Is he praising or criticizing?

Because teachers often focus their instruction around a goal of sparking and maintaining students’ engagement (rather than motivation per se), we define what we mean by engagement. Engagement refers to the extent of a student’s active involvement in a learning activity (Christenson, Reschly, & Wylie, 2012). It is a multidimensional construct that consists of four distinct, yet intercorrelated and mutually supportive, aspects of behavior, emotion, cognition, and agency (Christenson et al., 2012; Fredricks, Blumenfeld, & Paris, 2004; Reeve, 2012, 2013; Skinner, Kindermann, Connell, & Wellborn, 2009). Behavioral engagement refers to how effortfully involved the student is in the learning activity in terms of attention, effort, and persistence (Skinner, Kindermann, & Furrer, 2009). Emotional engagement refers to the presence of positive emotions during task involvement, such as enjoyment, and to the absence of negative emotions, such as anxiety (Skinner et al., 2009). Cognitive engagement refers to how strategically the student attempts to learn in terms of using sophisticated rather than superficial learning strategies, such as elaboration and organization rather than memorization (Walker, Greene, & Mansell, 2006). Agentic engagement refers to the extent of the student’s proactive and transactional contribution into the flow of the instruction in terms of expressing preferences and letting the teacher know what one wants and needs (Reeve, 2013). Engagement is therefore a latent variable defined by the shared variance among these four aspects of active involvement (e.g., see Reeve & Lee, 2014).

Fig. 1 is important not only because it outlines the classroom application of cognitive evaluation theory, but also because it outlines the basic structure of the intervention program we employ. The focus of each of our interventions has been to help teachers promote functional student outcomes (e.g., engagement) and to decrease dysfunctional outcomes (e.g., amotivation). Our thinking is that functional outcomes emanate out of the vitalization and support of students’ inner motivational resources in general and autonomy need satisfaction in particular, and also that dysfunctional outcomes emanate out of the neglect and frustration of students’ inner motivational resources. Further, the classroom status of students’ inner motivational resources (supported vs. thwarted) can be largely explained by teachers’ motivating styles. As will be discussed in the next section, when teachers consistently try to control students’ behavior, we say
that those teachers rely on a “controlling motivating style”; when teachers consistently try to minimize control and instead identify and vitalize students’ inner motivational resources, we say that those teachers rely on an “autonomy-supportive motivating style” (Reeve, 2009). Hence, Fig. 1 makes our thinking explicit as to why we work with teachers on their motivating styles so as to promote students’ motivation and positive educational outcomes.

Before discussing teachers’ motivating styles and students’ inner motivational resources, we need to add that the information presented in the lower half of Fig. 1 may be as potentially important as the information in its upper half. Whereas the upper half information revolves around teacher-provided autonomy support, the lower half information revolves around teacher-provided structure. Structure refers to the amount and clarity of information that teachers provide to students regarding what to do and how to do it so as to develop desired skills and to achieve valued outcomes (Farkas & Grolnick, 2010; Grolnick & Pomerantz, 2009). Its opposite is chaos and confusion, as confused students do not know what to do (e.g., “What am I supposed to do? I wonder if I am performing skillfully or not”). Generally speaking, teacher-provided structure provides the effectance-based guidance and information students need to experience competence need satisfaction and hence functional outcomes, whereas teacher-provided confusion thwarts competence need satisfaction and hence promotes dysfunctional outcomes (Skinner, Zimmer-Gembeck, & Connell, 1998). We address the possibility of designing and implementing an intervention program that is both highly autonomy supportive and highly structured in the next to last section of this paper (see section, “Autonomy Support and Structure”).

**TEACHERS’ MOTIVATING STYLE AND STUDENTS’ INNER MOTIVATIONAL RESOURCES**

The two key explanatory constructs involved in the upper half of Fig. 1 are (1) what teachers say and do during instruction and (2) students’ inner motivational resources.

*Teachers’ Motivating Style*

All teachers face the instructional challenge to motivate students to engage in and benefit from the learning activities they provide. For some teachers,
the controlling aspect of what they say and do to meet this instructional challenge is particularly salient, whereas for other teachers the autonomy-supportive aspect of what they say and do is more salient. What is often most salient to students is the teacher’s tone and sentiment (i.e., pressure vs. support). When these differences in tone take on a recurring and consistent pattern, they represent a teacher’s “orientation toward control versus autonomy” (Deci, Schwartz, Sheinman, & Ryan, 1981) or, more simply, “motivating style” (Reeve, 2009). Such a style tends to be fairly consistent from one month to the next (Brekelmans, 1989; Cheon, Reeve, Yu, & Jang, 2014), and it ranges from one that is strongly prescriptive over and insistent about what students should think, feel, and do during instruction (controlling motivating style) through a neutral or mixed style to one that is highly respectful of students’ perspectives and supportive of their initiatives (autonomy-supportive motivating style) (Deci et al., 1981).

A controlling motivating style is an enduring and consistent relationship characteristic in which one person (the teacher) prescribes what another (the student) should think, feel, or act that is further accompanied by the application of pressure to make sure that the other complies with the prescription (or proscription; Assor, Kaplan, Kanat-Maymon, & Roth, 2005; Assor, Kaplan, & Roth, 2002; Reeve, 2009). It is referred to as a motivating style because controlling acts of instruction tend to be positively intercorrelated and co-occurring behaviors, including introducing extrinsic sources of motivation, relying on pressuring language, neglecting to provide explanatory rationales, pushing students to produce quickly a right or desired outcome/behavior, and countering and trying to change students’ expressions of negative affect into something more acceptable to the teacher (Reeve, 2009, 2011).

An autonomy-supportive motivating style is an enduring and consistent relationship characteristic in which one person adopts the other’s perspective, is highly respectful of the other’s initiatives, and welcomes, encourages, and invites the other’s thoughts, feelings, initiatives, and suggestions into the flow of an activity (Deci et al., 1981; Reeve, 2009). It too is referred as a motivating style because it involves a cluster of positively intercorrelated and co-occurring behaviors, including vitalizing students’ inner motivational resources, relying on informational language, providing explanatory rationales, displaying patience to allow students time to work in their own way and at their own natural pace, and acknowledging students’ expressions of negative affect and accepting that such complaining may be a valid reaction to teacher-imposed requests (Reeve, 2009, 2011).
A teacher’s motivating style is an important classroom feature because students of autonomy-supportive teachers, compared to those of controlling teachers, benefit in important and wide-reaching ways, including greater classroom engagement, conceptual learning, achievement, and psychological well-being (e.g., Assor et al., 2002; Cheon, Reeve, & Moon, 2012; Reeve, 2009; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). Teacher-provided autonomy support benefits students because it promotes psychological need satisfaction in general (Cheon et al., 2012) and autonomy need satisfaction in particular (Reeve & Jang, 2006). Experimentally designed research has shown that the facilitating effect of autonomy support on students’ motivation and outcomes is a directionally causal one (Cheon & Reeve, 2013; Cheon et al., 2012; Reeve, Nix, & Hamm, 2003). A controlling motivating style, on the other hand, directly harms students, and it does so because it frustrates students’ psychological needs (and autonomy in particular), while simultaneously arousing negative emotions such as anger and anxiety (Assor et al., 2002; Reeve & Tseng, 2011), which, in turn, foster amotivation, restrict engagement, and interfere with conceptual learning, achievement, and well-being (Cheon & Reeve, 2014a; Soenens, Sierens, Vansteenkiste, Goossens, & Dochy, 2012).

Students’ Inner Motivational Resources

An inner motivational resource is an inherent energizing and directing force that all students possess, irrespective of their age, gender, nationality, or academic ability that, when supported, vitalizes engagement (e.g., effort, exploration, challenge seeking, interest, positive affect, cognitive elaborations, strategic thinking, initiative, agency) and enhances well-being. Six such resources are highly classroom relevant, so we list those six in Table 1. In a self-determination theory analysis, these inner resources represent the ultimate source of students’ classroom engagement in learning activities (Reeve, Deci, & Ryan, 2004). Table 1 also provides one illustrative instructional strategy teachers can use to vitalize each inner motivational resource, along with a supportive reference citation.

The autonomy need is an inherent (endogenous) psychological process that, when vitalized, underlies the proactive desire to experience self-direction in the initiation and regulation of one’s behavior (Deci & Ryan, 1985). Autonomy is the need to be the origin of one’s behavior, and it is experienced as an inner endorsement of one’s goals and actions (Ryan & Deci, 2000).
The autonomy need is satisfied when the student experiences a heartfelt affirmation to questions such as “Is this what I want to do? Do I fully agree with this decision and with this course of action?” During instruction, teachers can vitalize autonomy need satisfaction by offering students an opportunity for self-direction with the learning activity (Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982; Jang, Reeve, & Halusic, 2014; Nix, Ryan, Manly, & Deci, 1999; Reeve & Jang, 2006; Reeve et al., 2003).

The competence need is an inherent psychological process that, when vitalized, underlies the proactive desire to interact effectively with one’s surroundings. It generates the willingness to seek out optimal challenges, take them on, and exert persistent effort and strategic thinking until mastering them. The competence need is satisfied when the student experiences personal growth while exercising and extending his or her capacities and skills while trying to master an optimal challenge. During instruction, teachers can vitalize competence need satisfaction by offering students an optimal challenge to strive for within a failure tolerant environment (Clifford, 1990; Harter, 1978; Keller & Bless, 2008; Shapira, 1976).

The relatedness need is an inherent psychological process that, when vitalized, underlies the desire to establish close emotional bonds and attachments with other people. It is a desire to be involved in warm relationships – ones characterized by mutual concern, liking, and acceptance (Baumeister & Leary, 1995; Ryan, 1991; Ryan & Powelson, 1991). The

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### Table 1. Six Inner Motivational Resources, Each Paired with an Instructional Strategy and Supportive Reference.

<table>
<thead>
<tr>
<th>Inner Motivational Resource</th>
<th>Instructional Strategy to Vitalize that Inner Motivational Resource</th>
<th>Supportive Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy psychological need</td>
<td>Offer students an opportunity for self-direction within the learning activity</td>
<td>Deci et al. (1982)</td>
</tr>
<tr>
<td>Competence psychological need</td>
<td>Offer students an optimal challenge to strive for</td>
<td>Shapira (1976)</td>
</tr>
<tr>
<td>Relatedness psychological need</td>
<td>Offer students an opportunity to engage in communal social interaction</td>
<td>Carvallo and Gabriel (2006)</td>
</tr>
<tr>
<td>Curiosity</td>
<td>Ask a curiosity-inducing question</td>
<td>Jang (2014)</td>
</tr>
<tr>
<td>Intrinsic goal</td>
<td>Frame the learning activity as an opportunity for personal growth or skill development</td>
<td>Vansteenkiste et al. (2005)</td>
</tr>
<tr>
<td>Self-endorsed value</td>
<td>Provide an explanatory rationale for why engagement in the learning activity is personally worthwhile</td>
<td>Jang (2008)</td>
</tr>
</tbody>
</table>
relatedness need is satisfied when the student is able to relate the self to another person in an authentic, caring, reciprocal, and emotionally meaningful way (La Guardia & Patrick, 2008; Ryan, 1993). During instruction, teachers can vitalize relatedness need satisfaction by offering students an opportunity to engage in communal social interaction (Carvallo & Gabriel, 2006; Ryan & Powelson, 1991).

Table 1 does not list intrinsic motivation as an inner motivational resource. Intrinsic motivation is certainly a vital inner motivational resource that all students possess, but it is omitted from Table 1 simply because we define intrinsic motivation as the motivation that arises from psychological need satisfaction (Deci & Ryan, 1985; Ryan & Deci, 2000). So, by including autonomy, competence, and relatedness need satisfaction in Table 1, we indirectly include intrinsic motivation.

Curiosity is an emotion that occurs whenever students experience an unexpected gap in their knowledge (Loewenstein, 1994; Silvia, 2008). Curiosity, which might also be labeled as interest (Silvia, 2008) or suspense (Abuhamdeh, Csikszentmihalyi, & Jalal, 2014), motivates exploratory behavior, and it is satisfied when students use exploratory behavior to acquire the information needed to remove that knowledge gap and hence generate knowledge growth, learning, and greater expertise. During instruction, teachers can vitalize students’ curiosity in numerous ways, such as asking a curiosity-inducing question (Jang, 2014), introducing suspense about what comes next (Abuhamdeh et al., 2014), and encouraging students to explore a new activity (Proyer, Ruch, & Buschor, 2013).

An intrinsic goal is a striving that produces psychological need satisfaction during the goal pursuit (Vansteenkiste, Lens, & Deci, 2006). It is an inward focus to pursue the goal of personal growth and development (vs. the outward focus of extrinsic goals to pursue fame, fortune, or public recognition) that is associated with psychological need satisfaction and adaptive educational outcomes such as engagement and well-being (Kasser & Ryan, 1996; Vansteenkiste et al., 2004; Vansteenkiste, Soenens, & Duriez, 2008). During instruction, teachers can vitalize intrinsic goals by framing the learning activity as an opportunity for personal growth or skill development (Vansteenkiste, Matos, Lens, & Soenens, 2007; Vansteenkiste, Simons, Soenens, & Lens, 2004; Vansteenkiste et al., 2008).

A value is the perceived attractiveness of a task (Eccles & Wigfield, 2002). In a self-determination theory analysis, what makes an otherwise unappealing task attractive is that it is seen as a personally useful, important, or worthwhile thing to do (e.g., “This activity will help me become the person I want to become in life.”; Ryan & Connell, 1989). This sense of
value from a perception of personal utility is associated with psychological need satisfaction and adaptive educational outcomes, such as engagement (Jang, 2008). During instruction, teachers can vitalize value (what self-determination theory refers to as “identified regulation”) by providing a rationale to explain why engagement in the learning activity is a personally useful thing for that student to do (Jang, 2008; Koestner et al., 1984; Reeve, Jang, Hardre, & Omura, 2002).

The information provided in Table 1 is important for two key reasons. First, this list operationally defines what we mean by the potentially ambiguous term, “inner motivational resource.” By being explicit about what we mean by this term, we define the focus of our intervention as the instructional effort to identify, vitalize, and support these particular motivational assets during instruction. Second, by providing a supportive reference for each instructional strategy, we identify experimental manipulations that have been used successfully to alter momentarily each of these classroom motivations. These experimental demonstrations confirm that the particular motivational states listed in the first column of Table 1 are both malleable and educationally constructive. Collectively, the six examples make the point that students’ inner motivational resources can be vitalized, supported, and strengthened (i.e., changed) through instruction.

**EXPERIMENTAL MANIPULATIONS VERSUS INSTRUCTIONAL PROGRAMS**

From a practical point of view, the short-term motivational boosts that occur during experimental manipulations are not enough. In applied classroom settings what is needed is a long-term effort to build students’ enduring motivational resources. To build these resources, one needs to go beyond the brief experimental manipulations or instructional strategy of the day to employ a long-term step-by-step intervention program. One also needs to go beyond the cross-sectional (one-shot) manipulation to focus on longitudinally based intervention programs. With a more developmental focus, the goal is not just to motivate and engage the student in today’s learning activity but, further, to build the sort of inner motivational resources listed in Table 1 that can serve as enduring motivational assets. Once developed, students become more able to motivate and engage themselves on future learning activities. That is, students become increasingly able to be self-determined in their lives.
**Autonomy-Supportive Intervention Program (ASIP)**

We refer to our teacher-focused, theory-based intervention as the autonomy-supportive intervention program, or ASIP. We created ASIP to offer a formal program to help teachers become more autonomy supportive and less controlling toward their students during instruction. Autonomy-supportive instructional behaviors are not commonly occurring classroom events, but they can be learned (Cheon et al., 2012). The intervention program we offer teachers appears in outline form in Fig. 2. The top half of the figure shows that the ASIP relies on an experimental research design and that the intervention occurs over time (usually a semester) and is hence longitudinally based. Both of these features of the research design — experimental and longitudinal — are important to test the efficacy and benefits of the ASIP.

The particular ASIP study featured in Fig. 2 recruited 21 experienced secondary Korean teachers and randomly assigned them into either the experimental or control condition (Cheon et al., 2012). For the 10 teachers in the experimental group, we delivered ASIP in three parts. As explained in the lower half of Fig. 2, Part 1 offered a 3-hour workshop that took

![Overview of the Autonomy-Supportive Intervention Program (ASIP)](image)

**Fig. 2.** Design of an Intervention to Support Students’ Psychological Needs during Instruction.
place before the semester began. During the workshop, teachers learned what autonomy support is, why it is important, and how to implement it in the classroom. Part 2 offered a 2-hour group discussion that took place one month into the semester. In this group discussion, teachers shared, critiqued, and refined their first month of autonomy-supportive instructional strategies. Part 3 offered another 2-hour group discussion, and it took place in the second half of the semester. During this peer-based discussion, teachers shared and exchanged their instructional strategies, experiences, ideas, and insights.

For teachers in the control group, they were placed on a waiting list to receive ASIP after the semester (after research study ended). In the meantime, these teachers relied on their preexisting motivating style during the semester so as to provide instruction that represented “standard practice.” The data collected in these teachers’ classrooms inform us what typically occurs in terms of teachers’ motivating styles and students’ motivation and educational outcomes. To provide a general sense of what is typical, several studies have asked trained raters to score K-12 classroom teachers’ naturally occurring motivating style during instruction and found that teachers generally tend toward a neutral (Cheon & Reeve, 2013; Cheon et al., 2012; Jang, Reeve, & Deci, 2010) or controlling (Moss, 2009; Reeve, Jang, et al., 2004; Tessier, Sarrazin, & Ntoumanis, 2008, 2010) motivating style. The data collected in the classrooms of teachers in the experimental group therefore inform us what relative student and teacher benefits can be gained from having teachers participate in ASIP.

What Do Teachers Learn during ASIP?

During the initial 3-hour workshop experience, teachers first complete a warm-up activity. They read a pair of 450-word teaching scenarios, one that describes prototypical autonomy-supportive teaching and another that describes prototypical controlling teaching (for the scenarios, see Reeve et al., 2014, table 1, p. 96). After reading each scenario, teachers answer the question, “How much does the teaching scenario describe what you do in the classroom?” The purpose of this activity is to help teachers understand autonomy-supportive and controlling teaching in a concrete and personally relevant way. Teachers next learn a self-determination theory view on the nature of student motivation, which is that students possess naturally endowed and engagement-generating inner motivational resources that can be vitalized and supported but also neglected or thwarted by instruction.
Teachers then learn what autonomy-supportive and controlling teachings are. We present empirical evidence to show the educational benefits of autonomy-supportive teaching and the educational costs of controlling teaching. Teachers are then introduced to specific instructional strategies known to support students’ autonomy, as they view PowerPoint slides and watch brief videotapes of teachers modeling various autonomy-supportive instructional behaviors.

As summarized in Fig. 3, teachers are encouraged to take their students’ perspective prior to and during the lesson and welcome and incorporate their input (thoughts, feelings, behaviors, and suggestions) into the lesson plan and instructional flow. Taking the students’ perspective involves the effort to “imagine yourself as the other person” (Myers, Laurent, & Hodges, 2014), and it can be facilitated in numerous ways including conducting a formative assessment, monitoring students’ engagement signals, and literally taking on the role of the student for oneself (e.g., visiting a colleague’s class and experiencing that class as a student). Welcoming students’ input is a transactional and conversational event (Sameroff, 2009),

1. Take the students’ perspective during instruction
2. Welcome and solicit students’ thoughts, feelings, behaviors, and suggestions into the lesson plan and flow of instruction.

Identify Students’ Lesson-Relevant Inner Motivational Resources

Vitalize and Support Students’ Lesson-Relevant Inner Motivational Resources

Promote Intrinsic Motivation
- Vitalize Inner Motivational Resources (see Table 1)

Promote Identified Regulation
- Provide Explanatory Rationales
- Rely on Informational Language
- Display Patience
- Acknowledge and Accept Students’ Expressions of Negative Affect

Fig. 3. What Teachers Learning during ASIP: Instructional Strategies to Identify and Vitalize Students’ Inner Motivational Resources.
as when the teacher says “Here is the plan for today. Does that sound like a good use of our time? Any suggestions?” During these transactional conversations, teachers listen to and incorporate students’ suggestions. Sometimes, students are hesitant to voice their preferences and to offer suggestions, so the autonomy-supportive teacher also needs to solicit such input, as through a classroom conversation or an anonymous formative assessment.

Once the teacher becomes aware of the current status of students’ inner motivational resources, she then strives to deliver instruction in ways that vitalize and support, rather than neglect or frustrate, the inner resources in Table 1. Many learning activities and teacher requests are inherently uninteresting things to do (e.g., be on time, wear goggles during biology lab), so learning how to support students’ autonomy further revolves around the instructional effort to promote students’ internalization. For a detailed description and classroom examples of the five instructional strategies listed on the lower part of Fig. 3, see Reeve (2009, 2011).

During Part 1 of ASIP, we provide definitions, examples, and models (videotapes) of perspective taking and each of the five recommended autonomy-supportive instructional strategies. After gaining an understanding of what autonomy-supportive teaching is and how to do it, teachers then return to their classrooms to experiment with perspective taking and the autonomy-supportive instructional strategies. After a month of actual classroom experience, teachers return in Part 2 to report on and discuss their actual classroom experiences. In these discussions with their peers, teachers always learn new ideas and new instructional strategies to take back to their own classrooms. During Part 3, teachers use their classroom experience, peer discussions, and personal reflection to integrate the individual instructional strategies into a general autonomy-supportive style.

In conducting several ASIPs, we have learned two key lessons. First, the quality of the intervention matters. A meta-analysis conducted on various autonomy-supportive intervention studies in education and other fields (parenting, work, and sports) revealed that some interventions worked better than did others, and this analysis identified several key characteristics of the relatively more effective interventions (Su & Reeve, 2011). Table 2 lists the six characteristics of the most effective autonomy-supportive intervention studies. We have learned that ASIP produces large effect sizes on the manipulation checks and assessed variables because it includes the full range (rather than just a subset) of autonomy-supportive instructional behaviors, is delivered in multiple sessions (rather than in a single session), includes rather than excludes a group discussion component, offers
recurring support from the research team, emphasizes skill-based training at least as much as content-based knowledge, and addresses teachers’ pre-training beliefs about motivating style that otherwise might conflict with the training message.

Second, we have wrestled with the very practical question of whether Parts 2 and 3 are necessary. The impetus for this question is that it is much easier to recruit and retain a sample of teachers to participate in a one-day workshop than it is to recruit and retain a sample to participate in a two-part or three-part intervention. We have now on three separate occasions employed only a two-part ASIP (Cheon, Reeve, & Shim, 2014; Cheon et al., 2014; Reeve et al., 2004), and all three interventions have produced strong effects on the assessed variables. So, a two-part ASIP can be recommended. As to delivering ASIP in one part, we are hesitant to do (or recommend) this because we view the group discussion component as necessary to facilitate a conceptual change process. If a one-part ASIP is to be attempted, it would need to be an all-day workshop in which teachers participate in the workshop during the morning, return in the early afternoon to experiment with, rehearse, and refine the new autonomy-supportive instructional strategies, and then spend the late afternoon engaged in a group discussion with peers and guest speakers.

To date, we have designed, implemented, and evaluated six teacher-focused ASIPs. We list those six intervention studies in Table 2 to summarize

<table>
<thead>
<tr>
<th>Table 2. Common Characteristics of the Most Effective Autonomy-Supportive Teacher Intervention Programs.</th>
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<tbody>
<tr>
<td>1. Offer a workshop experience that features all (rather than only a subset) of the following categories of autonomy-supportive instructional behaviors:</td>
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<tr>
<td>• Take the students’ perspective during instruction,</td>
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<td>• Vitalize inner motivational resources,</td>
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<tr>
<td>• Rely on noncontrolling, informational language,</td>
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<td>• Provide explanatory rationales for requests,</td>
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<td>• Display patience to allow time for self-paced learning to occur,</td>
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<td>• Acknowledge, accept, and even welcome negative affect as okay.</td>
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<tr>
<td>2. Deliver the training experience in multiple sessions (rather than in a single session).</td>
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<td>3. Include a group discussion component where teachers can express their concerns, doubts, and reservations and also share ideas and exchange instructional strategies.</td>
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<td>4. Offer teachers ongoing support throughout the intervention’s semester-long implementation.</td>
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<td>5. Emphasize not only content (what to do) but also skill-based training (how to do it).</td>
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<td>6. Address teachers’ pretraining beliefs about motivating style that might otherwise conflict with the training message.</td>
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<table>
<thead>
<tr>
<th>Intervention Study (Reference Citation)</th>
<th>Participants and Procedure</th>
<th>Key Findings (Scores from Participants in Experimental Group &gt; Scores from Participants in Control Group)</th>
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<tbody>
<tr>
<td>Reeve et al. (2004)</td>
<td>20 High-school math, economics, science, and English teachers randomly assigned into a two-part ASIP experimental or a wait-list control condition Part 1: Workshop informational session Part 2: Independent study on study-specific website Two-semester three-wave longitudinal design as raters scored students’ classroom engagement at beginning (T1) and middle (T2) of the semester plus during the middle of the next semester (T3) with new students</td>
<td>Manipulation Checks Rater-scored autonomy-supportive instructional behaviors increased Educational Benefits for Current Semester Students Rater-scored behavioral engagement increased Rater-scored agentic engagement increased Educational Benefits for Next-Semester Students Rater-scored behavioral engagement increased Rater-scored agentic engagement increased</td>
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<tr>
<td>Cheon et al. (2012)</td>
<td>21 Middle-school and high-school PE teachers and their 1,158 students randomly assigned into a three-part ASIP experimental or a wait-list control condition Part 1: Workshop informational session Part 2: Group discussion Part 3: Group discussion One semester three-wave longitudinal design as self-report-dependent measures assessed at beginning (T1), middle (T2), and end (T3) of the semester</td>
<td>Manipulation Checks Rater-scored autonomy-supportive instructional behaviors increased Student-reported autonomy-supportive teaching increased Student-reported controlling teaching decreased Students’ Motivational Benefits Psychological need satisfaction increased (autonomy, competence, and relatedness) Autonomous motivation increased Amotivation decreased Students’ Educational Benefits Classroom engagement increased Skill development increased Future intentions in the subject matter increased Academic achievement increased</td>
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Table 3. (Continued)

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<tr>
<th>Intervention Study (Reference Citation)</th>
<th>Participants and Procedure</th>
<th>Key Findings (Scores from Participants in Experimental Group &gt; Scores from Participants in Control Group)</th>
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<td>Cheon and Reeve (2013)</td>
<td>17 Middle-school and high-school PE teachers and their 953 students randomly assigned into a three-part ASIP experimental or a wait-list control condition Part 1: Workshop informational session Part 2: Group discussion Part 3: Group discussion One semester three-wave longitudinal design as self-report-dependent measures assessed at beginning (T1), middle (T2), and end (T3) of the semester</td>
<td><strong>Manipulation Checks</strong> Rater-scored autonomy-supportive instructional behaviors increased Student-reported autonomy-supportive teaching increased Student-reported controlling teaching decreased <strong>Students’ Motivational Benefits</strong> Psychological need satisfaction increased (autonomy, competence, and relatedness) Autonomous motivation increased Amotivation decreased <strong>Students’ Educational Benefits</strong> Classroom engagement increased Skill development increased Future intentions in the subject matter increased Academic achievement increased ($p &lt; 0.07$)</td>
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<tr>
<td>Cheon, Reeve, Yu, and Jang (2014)</td>
<td>27 Elementary-school, middle-school, and high-school PE teachers and their 1,229 students randomly assigned into a three-part ASIP experimental or a wait-list control condition Part 1: Workshop informational session Part 2: Group discussion Part 3: Group discussion One semester three-wave longitudinal design as self-report-dependent measures assessed at beginning (T1), middle (T2), and end (T3) of the semester</td>
<td><strong>Manipulation Checks</strong> Rater-scored autonomy-supportive instructional behaviors increased Student-reported autonomy-supportive teaching increased Student-reported controlling teaching decreased <strong>Students’ Motivational Benefits</strong> Psychological need satisfaction increased (autonomy, competence, and relatedness) Psychological need frustration decreased (autonomy, competence, and relatedness)</td>
</tr>
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Students' Educational Benefits
Classroom engagement increased
Future intentions in the subject matter increased
Emotional—physical exhaustion (burnout) decreased
Academic achievement increased

Teachers' Motivational Benefits
Psychological need satisfaction increased
(autonomy, competence, and relatedness)
Autonomous motivation to teach increased
Controlled motivation to teach decreased
Intrinsic goal to develop teaching skill increased
Harmonious passion to teach increased

Teachers' Educational Benefits
Teaching efficacy for instructional strategies increased
Teaching efficacy for student engagement increased
Vitality during teaching increased
Job satisfaction increased
Emotional—physical exhaustion (burnout) decreased

Cheon and Reeve (2014a) conducted a study involving 16 middle-school and high-school PE teachers and their 598 students randomly assigned into a two-part ASIP experimental or a wait-list control condition. The study followed a one-semester three-wave longitudinal design as self-report-dependent measures assessed at beginning (T1), middle (T2), and end (T3) of the semester.

Manipulation Checks
Rater-scored autonomy-supportive instructional behaviors increased
Student-reported autonomy supportive teaching increased
Student-reported controlling teaching decreased

Students' Motivational Benefits
Psychological need satisfaction increased
(autonomy and competence)
Amotivation decreased
(low ability, low effort, low value, unappealing task)

Students' Educational Benefits
Classroom engagement increased
<table>
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<tr>
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<th>Key Findings (Scores from Participants in Experimental Group &gt; Scores from Participants in Control Group)</th>
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| Cheon et al. (2014)                  | 4 Ski instructors and their 42 college-aged students randomly assigned into a two-part ASIP experimental or control condition Part 1: Workshop informational session plus group discussion Part 2: Skill development session with rehearsal, practice, and feedback to refine autonomy-supportive instructional strategies One-week three-wave longitudinal design as self-report-dependent measures assessed at beginning (T1), middle (T2), and end (T3) of the 5-day instructional period | **Manipulation Checks**  
Rater-scored autonomy-supportive instructional behaviors increased  
Rater-scored promotion of intrinsic goals increased  
Rater-scored controlling instructional strategies decreased  
Student-reported autonomy-supportive teaching increased  
Student-reported controlling teaching decreased  

**Students’ Motivational Benefits**  
Psychological need satisfaction increased  
(autonomy and relatedness)  
Psychological need frustration decreased  
(autonomy, competence, and relatedness)  

**Students’ Educational Benefits**  
Classroom engagement increased  
Perceived skiing skill increased |
each study’s participants, experimental procedure, dependent measures, and findings. These six datasets supply the data needed to answer the following six questions:

- Does ASIP work?
- Why does ASIP work?
- Does ASIP promote students’ psychological need satisfaction?
- Does ASIP promote students’ positive educational outcomes?
- Why does ASIP promote these positive outcomes?
- Do the ASIP-induced benefits endure over time?

Does ASIP Work?

To assess the effectiveness of ASIP, we ask whether or not the ASIP summarized in Fig. 2 is able to produce the effects that it was designed to produce. To make this determination, we have utilized two types of manipulation checks.

First, we have trained raters who are blind to the teacher’s experimental condition visit (unannounced) each classroom at mid-semester to score his or her actual autonomy-supportive versus controlling instructional strategies. Most of the time, raters have used 1–7 bipolar Likert scales, though we have more recently moved to the practice of having raters use two separate unipolar rating scales (to view the one bipolar rating sheet, see Cheon et al., 2012, p. 372; to see the two unipolar rating sheets, see Cheon, Reeve, & Shim, 2014). Interrater reliabilities have been high, probably because we provide raters with an extensive training experience prior to their classroom visits (for a description, see Cheon & Reeve, 2013, p. 511). Fig. 4 shows raters’ 1–7 scoring for each of the five autonomy-supportive instructional strategies from the Cheon et al. (2014) study. At week 6 into the semester, raters scored the teachers in the experimental (ASIP) group as relying on each of the autonomy-supportive instructional strategies to a greater extent than did the teachers in the control group. Teachers in the control group generally displayed a neutral motivating style ($M_s$ around 4 on the 1–7 rating scale), whereas teachers in the experimental group consistently scored as highly autonomy supportive ($M_s$ around 6 on the 1–7 rating scale). Effect sizes for each instructional behavior appear on the x-axis of the figure. These effect sizes are very large in magnitude, a finding that suggests teachers in the experimental group were able to teach in a qualitatively different way.
Second, we ask students to report their perceptions of their teachers’ autonomy-supportive and controlling teaching at the beginning, middle, and end of the semester. To assess perceptions of autonomy-supportive teaching, we typically use the Learning Climate Questionnaire (e.g., “My teacher encourages me to ask questions”; Williams & Deci, 1996). To assess perceptions of controlling teaching, we typically use the Controlling Teaching Questionnaire (e.g., “My teacher uses forceful language”; Jang, Reeve, Ryan, & Kim, 2009). As shown in Fig. 5, students of the teachers who participated in ASIP perceived that their teachers became increasingly autonomy supportive and decreasingly controlling as the semester progressed from week 1 (T1) through mid-semester (T2) to the end of the semester (T3). Fig. 5 presents data from the Cheon and Reeve (2013) intervention, but the findings have been highly similar across each intervention study. Teachers in the control group showed a steady level of autonomy support (4.44 at T1, 4.38 at T2, and 4.55 at T3; Fig. 3) and an increasing
level of controlling teaching (2.64 at T1, 2.91 at T2, and 3.22 at T3) over
the course of the semester. In contrast, teachers in the experimental (ASIP)
group showed a steadily increasing level of autonomy support (4.40 at T1,
5.04 at T2, and 5.35 at T3) and a steadily decreasing level of controlling
teaching (2.66 at T1, 2.12 at T2, and 2.06 at T3). Together, the data sum-
marized in Figs. 4 and 5 confirm that the intervention tends to produce its
intended effect in helping teachers provide instruction in a more autonomy-
supportive and less controlling way.

**Why Does ASIP Work?**

Although the data summarized in Figs. 4 and 5 show that ASIP works,
these data do not explain why ASIP works. ASIP-induced changes in
teachers’ motivating styles occur for three principle reasons.

First, teachers learn from ASIP new ways to fulfill the instructional chal-
lenge of motivating their students to engage in and benefit from the learning
activities they provide. What teachers take away from ASIP is a new-and-
improved repertoire of instructional strategies to support students’ auton-
omy and classroom engagement.

Second, as teachers observe students’ favorable engagement reaction
to autonomy-supportive teaching, it increases their sense of teaching
efficacy – sometimes dramatically so, as will be discussed later in this
paper. This ASIP-induced boost in teaching efficacy is important because conceptual change often follows behind and is dependent upon earlier gains in teaching efficacy (Gregoire, 2003).

Third, ASIP works because it helps teachers work through the aforementioned conceptual change process about students’ motivation and teachers’ motivating styles. Most teachers harbor a not-so-positive view of student autonomy and autonomy-supportive instructional strategies (see Turner, 2010; Turner, Warzon, & Christensen, 2011). For these teachers, conceptual change is difficult and not at all certain (Weinstein, Madison, & Kuklinski, 1995). To help teachers work through a difficult conceptual change process, Part 1 of ASIP focuses on the two pivotal teacher beliefs of (a) how effective an autonomy-supportive motivating style is believed to be and (b) how easy (vs. difficult and time-consuming) to implement an autonomy-supportive motivating style is believed to be (Reeve et al., 2014).

Using a mediation-based analysis and a longitudinal research design, we have shown that participation in ASIP increases teachers’ beliefs about how effective autonomy support is and how easy to implement it is during instruction (once one knows how to do it), and that changes in these two beliefs explain end-of-semester changes in teachers’ motivating style (Cheon & Reeve, 2014b).

Those who study conceptual change find that the task of changing a teacher’s beliefs is a very difficult thing to do (Richardson, 1990; Turner, 2010; Turner et al., 2011; Weinstein et al., 1995). This is because successful conceptual change hinges conditionally on support for professional development, opportunities for ongoing dialogue, the sharing of instructional strategies, opportunities to refine one’s classroom practice, and opportunities for reflection. Thus, ASIP works not only because it provides teachers with information and instructional strategies (characteristics 1 and 2 in Table 3), but also because it provides teachers with the necessary elements for conceptual change and professional development (characteristics 3, 4, 5, and 6 in Table 3).

More generally, learning how to become more autonomy supportive during ASIP appears to be a professional developmental accomplishment. It has been our observation that teachers’ ASIP experience creates an initial willingness to implement autonomy-supportive teaching during Part 1 with a provisional “Let’s see if this works” approach. This sentiment expresses a willingness from teachers not to change their motivating style so much as it expresses a willingness to expand their existing teaching repertoire to include a new cluster of instructional behaviors. As teachers experiment with autonomy-supportive strategies, they typically have classroom
experiences that validate autonomy-supportive teaching via students’ responsiveness in terms of improved motivation, engagement, and class-specific outcomes. By the end of the semester, teachers advance from a provisional “Let’s see if this works” willingness to a more professionally committed decision to upgrade their classroom motivating style in an enduring way. This latter sentiment expresses a conceptual change process in which the teacher moves beyond expanding or experimenting with his or her motivating style to actually changing it.

Does ASIP Promote Students’ Psychological Need Satisfaction?

Because ASIP is designed to help teachers become more autonomy supportive, it is designed to help teachers provide students with frequently occurring need satisfying classroom experiences. Despite the name of the intervention (“autonomy support”), ASIP prepares teachers not only to support students’ autonomy in specific but psychological need satisfaction more generally — that is, autonomy, competence, and relatedness need satisfaction. To evaluate ASIP, we routinely assess each of the following six dependent measures — autonomy, competence, and relatedness need satisfaction along with autonomy, competence, and relatedness need frustration. We assess both need satisfaction and need frustration because ASIP is designed not only to help teachers become more autonomy supportive and hence better able to provide need satisfying experiences but also to help teachers become less controlling and hence better able to minimize need thwarting experiences.

The effects of ASIP on the three measures of need satisfaction and the three measures of need frustration from the Cheon et al. (2014) intervention appear in Fig. 6. The three upper panels show autonomy, competence, and relatedness need satisfaction, whereas the three lower panels show autonomy, competence, and relatedness need frustration broken down by experimental condition and time of assessment. As shown in the upper left panel, students of the teachers in the control group reported a level of autonomy need satisfaction that remained largely unchanged throughout the semester, whereas students of the teachers in the experimental (ASIP) group reported a level of autonomy need satisfaction that increased from T1 to T2 before leveling off from T2 to T3. This same pattern of need satisfaction was also evident for competence and relatedness. As shown in the lower left panel, students of the teachers in the control group reported a level of autonomy need frustration that increased from T1 to T2 before
leveling off from T2 to T3, whereas students of the teachers in the experimental (ASIP) group reported a level of autonomy need frustration that decreased from T1 to T2 before leveling off from T2 to T3. This same pattern of need frustration was also evident for competence and relatedness.
Together, the six panels of data summarized in Fig. 6 confirm that the intervention helps teachers provide students with classroom experiences high in need satisfaction and low in need frustration. It also seems to produce most of these effects in the first half of the semester, a pattern of results we will return to later in this paper.

**Does ASIP Promote Students’ Positive Educational Outcomes?**

ASIPs help teachers become more autonomy supportive and to provide instruction in need satisfying ways, so a key question is whether these induced changes in teachers’ motivating styles and in students’ need satisfaction translate into positive educational outcomes. In all of our interventions, we assess a wide range of possible educational benefits that include aspects of students’ *academic motivation*, including autonomous motivation, controlled motivation, and amotivation; *positive classroom functioning*, including classroom engagement and skill development; *class-specific outcomes*, including academic achievement and future intentions to engage further in the subject matter; and *well-being*, including high vitality and low emotional and physical exhaustion.

The effect of ASIP on four class-specific educational outcomes appears in Fig. 7 (Cheon & Reeve, 2013). As shown in the upper two panels, students of teachers in the control group showed a deterioration in the quality of their classroom motivation over the course of the semester as autonomous motivation decreased while amotivation increased, whereas students of teachers in the experimental group showed an improvement in the quality of their classroom motivation as autonomous motivation increased while amotivation decreased. As shown in the lower two panels, students of teachers in the control group showed an unchanged pattern of classroom engagement and academic achievement, whereas students of teachers in the experimental group showed a pattern of steadily increasing levels of engagement and achievement. Together, the four panels of data summarized in Fig. 7 confirm that the intervention tends to promote important educational outcomes.

**Why Does ASIP Promote These Positive Outcomes?**

As stated earlier, our approach to promoting students’ positive educational outcomes follows a motivation mediation model. As illustrated in Fig. 8,
we work with teachers to help them become more autonomy supportive so as to promote students’ need satisfaction and to minimize need frustration. This early-semester change in students’ psychological need satisfaction in turn predicts and explains the T3 changes in students’ class-specific educational outcomes, including classroom engagement, skill development, academic achievement, and so on, controlling for the T1 level of these educational outcomes.

This motivation mediation model was tested explicitly in the Cheon et al. (2012) intervention (see Fig. 8, p. 387). We offer the concise model depicted in Fig. 8 rather than the full model tested in the Cheon et al. intervention because the latter included many educational outcomes and statistical controls (gender, grade level). In the test of that mediation model, the students of teachers who participated in ASIP showed significant gains in their T2 need satisfaction (controlling for T1 need satisfaction) and changes

![Fig. 7. Effect of ASIP on Four Student Educational Outcomes Broken Down by Experimental Group and Time of Assessment. Solid Lines and Triangles Represent the ASIP Experimental Group; Dashed Lines and Squares Represent the Control Group. Numbers in Parentheses are Standard Errors of Each Condition Mean.](image-url)
in T2 need satisfaction then predicted T3 changes in all six assessed educational outcomes (controlling for T1 levels of these outcomes). Further, changes in T2 need satisfaction explained more of the variance in the T3 outcomes than did even the T1 levels of these same student outcomes. Overall, this motivation mediation analysis explains that participation in the ASIP allowed teachers to provide instruction in a need satisfying way, and it was this gain in students’ psychological need satisfaction that explained why students showed such positive changes in all of their end-of-course outcomes.

**Do the ASIP-Induced Benefits Endure?**

Teachers receive a great deal of support from the research team throughout the intervention. So, it would be understandable if teachers who became highly autonomy supportive during ASIP reverted back to their pre-ASIP neutral or controlling motivating style in the absence of the formal support system that is ASIP. After all, everyday classroom teaching takes place within a context of daily pressures that tend to push teachers toward a controlling style, such as time pressures, teacher accountability for student outcomes, and the press for immediate solutions to problems such as student misconduct (Pelletier, Seguin-Lévesque, & Legault, 2002; Taylor,
Ntoumanis, & Standage, 2008). That said, we hypothesized that the earlier-observed benefits would endure, even though teachers in the experimental group received no additional (follow-up) training in how to be autonomy supportive. This was because the ASIP training experience allows teachers to become aware of — often for the first time — the benefits of autonomy support and the costs of teacher control. These benefits are readily observable in the classroom, a claim we make because the effect sizes observed in the ASIP studies are so large (ESs > 1) as to be obvious classroom occurrences. Witnessing these benefits, especially for the first time in one’s career, it would make sense for these teachers to sustain an autonomy-supportive motivating style so as to reproduce these benefits for their new students.

To test if the benefits of ASIP would endure, our research strategy was to find the teachers who participated in the Cheon et al. (2012) ASIP intervention one year later and reassess all the same manipulation checks and student outcomes from these previously trained teachers versus a matched control group. We also asked trained raters to visit the classroom of both groups of teachers to again score teachers’ autonomy-supportive versus controlling instructional behaviors. We further asked each teacher in the experimental group the following question: “Compared to last year when you completed the informational session on how to be autonomy supportive toward your students, would you say that you, this year, were more autonomy supportive, less autonomy supportive, or about the same in terms of autonomy support?” (Cheon & Reeve, 2013, pp. 511–512).

Compared with the teachers in the control group, teachers in the experimental group were scored by the raters and perceived by their students as significantly more autonomy supportive and significantly less controlling than were teachers in the control group. Each teacher in the experimental group also reported being significantly “more autonomy supportive” than a year earlier. Further, the students of the previously trained teachers (experimental group) reported greater autonomy, competence, and relatedness need satisfaction, higher autonomous motivation, lesser amotivation, greater classroom engagement, greater skill development, stronger future intentions, and higher academic achievement than did the students of the teachers in the control group. So, based on all three types of data — raters’ scores, teachers’ self-reports, and students’ perceptions, we concluded that the benefits of ASIP endured.

It is further worth pointing out that all teachers in the experimental group (100%) reported being “more autonomy supportive” than a year before and also that all teachers in the experimental group were scored by raters as highly autonomy supportive during instruction. This pattern of
findings speaks to the robust nature of ASIP across a range of teachers, and we will discuss the question of whether ASIP works for all — or only for some subset of — teachers later in this paper.

We also asked each teacher in the experimental group to author a brief anonymous essay to explain why his or her motivating style was more, less, or about the same in terms of autonomy support as it was during the ASIP year. All teachers wrote essays to explain why they were more autonomy supportive than a year earlier, and practically all teachers cited gains in their teaching efficacy and the benefits they observed for their students. An excerpt from one physical education teacher was as follows (Cheon & Reeve, 2013, p. 515):

> The quality of physical education was enhanced when I supported students’ autonomy. I felt happy and supported their autonomy when I found that students actually recognized what they truly valued and enjoyed. I was more confident in how to manage my students. Now, I always think before my class how to support students’ autonomy.

**Teacher Benefits**

When taken as a whole, our program of research on ASIP supports two conclusions: (1) teachers can learn how to become more autonomy supportive and less controlling toward students during instruction; and (2) the students of teachers who participate in ASIP show numerous motivational and educational benefits. But in the conduct of these studies, several teachers voiced a sentiment that may be summarized as, “It sounds like the students get all the benefits; do we benefit in any way?” At the same time that we were hearing teachers express this sentiment, Deci, La Guardia, Moller, Scheiner, and Ryan (2006) completed a study showing that, within the context of peer friendships, those giving autonomy support experienced the same benefits (in terms of psychological well-being) as did those who received it. This led us to the hypothesis that teachers might benefit from giving autonomy support in the same way that their students benefit from receiving it.

We based our teacher benefits hypothesis on three processes. First, teachers who participate in ASIP learn a range of instructional strategies that have been empirically validated to support students’ motivation and engagement during instruction. Because teachers learn effective instructional strategies, they acquire skill that can potentially promote their sense of competence, teaching efficacy, and job satisfaction. Second, ASIP is
designed explicitly to change the classroom dynamics for the better (e.g., increase students’ engagement). Improved classroom dynamics benefit students, but these same changed circumstances might also produce a reciprocal beneficial effect for teachers themselves (Jang, Kim, & Reeve, 2012). Third, correlational studies show that autonomy-supportive teachers report relatively high levels of psychological need satisfaction, autonomous motivation for teaching, and psychological well-being (Roth, Assor, Kaplan, & Kanat-Maymon, 2007; Stebbings, Taylor, & Spray, 2011; Taylor et al., 2008). Based on this line of reasoning, we conducted an ASIP study in which we assessed not only student benefits but also possible parallel teacher benefits.

Our prediction was that, compared with those who taught with their naturally occurring motivating styles (i.e., teachers in the control group), teachers who participated in ASIP would show meaningful gains in their teaching motivation, skill, and well-being. Results confirmed these hypotheses (Cheon et al., 2014). In terms of teaching motivation, ASIP teachers displayed significant longitudinal gains in psychological need satisfaction, gains in autonomous motivation to teach, declines in controlled motivation to teach, greater adoption of intrinsic teaching goals, and gains in passion for teaching. In terms of teaching skill, ASIP teachers reported significant longitudinal gains in their teaching efficacy for instructional strategies and in their teaching efficacy for student engagement. In terms of teaching well-being, ASIP teachers reported greater vitality and job satisfaction and lesser emotional—physical exhaustion (e.g., lower burnout). To illustrate the pattern of observed teacher benefits, the upper two panels of Fig. 9 show the measures of teaching efficacy and the lower three panels of Fig. 9 show the measures of teaching well-being broken down by experimental condition and time of assessment (based on Cheon et al., 2014). The conclusion is that giving autonomy support benefits teachers in much the same way that receiving it benefits students.

**Add-on Modules to ASIP**

In the design and implementation of ASIP, one critical question has been the following: What precisely is an autonomy-supportive instructional strategy? Based on (1) the theoretical writings of Richard deCharms (deCharms, 1976) and Edward Deci and Richard Ryan (Deci, 1995; Ryan & Deci, 2000), (2) Edward Deci’s early empirical work on the various elements of autonomy support (Deci, Eghrari, Patrick, & Leone, 1994;
Fig. 9. Effect of ASIP on Two Measures of Teaching Efficacy and Three Measures of Teachers’ Psychological Well-Being Broken Down by Experimental Group and Time of Assessment. Solid Lines and Triangles Represent the ASIP Experimental Group; Dashed Lines and Squares Represent the Control Group. Numbers in Parentheses are Standard Errors of Each Condition Mean.
Deci et al., 1981), and (3) our own early laboratory and classroom-based research and observations (Reeve, Bolt, & Cai, 1999; Reeve et al., 2004; Reeve & Jang, 2006), we understand autonomy supportive teaching as the effort to take the students’ perspective prior to and during instruction and then to enact the five instructional strategies listed in the lower half of Fig. 3.

Each of the six autonomy-supportive instructional strategies actually represents a category of instructional behaviors. That is, although “vitalize inner motivational resources” is a general category, it can be carried out in six specific ways during instruction, including vitalizing autonomy, competence, relatedness, curiosity, intrinsic goals, or self-endorsed values (as per Table 1). Teachers often react more favorably to recommended motivating strategies when those strategies are presented in a specific rather than in a general way (Turner et al., 2011). Recognizing this need to be specific, we supplemented our ASIP presentation of the general category of “vitalize inner motivational resources” with an additional 30-minute Part 1 add-on module of “promote intrinsic goals” (Cheon et al., 2014). We taught teachers how to introduce a learning activity to promote an intrinsic goal (e.g., “For this activity, your aim is to improve your technique. Strive for progress. Try to advance from being a novice to becoming more skilled.”). We also devoted part of Part 2 of ASIP to have teachers rehearse, practice, and receive feedback to refine their capacity to “promote intrinsic goals during instruction.” When raters later scored teachers during instruction, teachers in the experimental group were rated significantly higher than teachers in the control group on this particular autonomy-supportive instructional behavior. The important point is that ASIP can be modified and extended by including an add-on module.

As another case in point, we do not include “provide choices and options” as one of our recommended autonomy-supportive strategies. This is because “providing choices and options” is not a universally effective way to support autonomy in others, as the provision of choice sometimes supports students’ autonomy need satisfaction (Assor et al., 2002; Patall, Cooper, & Wynn, 2010; Patall, Dent, Oyer, & Wynn, 2013), other times does not support autonomy need satisfaction (Katz & Assor, 2007; Reeve et al., 2003; Schraw, Flowerday, & Reisetter, 1998), and still other times can even be undermining and de-motivating (Brooks & Young, 2011; Flowerday & Schraw, 2003). That is, like any other classroom event (e.g., rewards, feedback, praise), choice can be communicated to students in either an autonomy supportive or controlling way, which is the basic principle of cognitive evaluation theory (as discussed earlier; Fig. 1).
Our recommendation to researchers who wish to include “provide choices and options” within their ASIP is that they do so as an add-on module. If teachers are given an opportunity to rehearse, practice, and receive feedback on how to move away from a controlling tone and toward an autonomy-supportive tone, then “provide choices and options” would be expected to contribute constructively to the ASIP. This recommendation is rooted in cognitive evaluation theory, but it is also based on the empirical finding that any one individual autonomy-supportive act of instruction may not provide need satisfaction when used in isolation (Deci et al., 1994). Instead, autonomy-supportive instructional strategies produce need satisfying experiences when used collectively to produce a synergy effect. That is, the effectiveness of any of the individual strategies depends on the presence of the others (Deci et al., 1994). It is for this reason that we emphasize the teacher’s overall motivating style more than we emphasize any one particular autonomy-supportive instructional strategy.

This same logic can be extended to other instructional strategies as well. For example, the engagement-fostering instructional strategy to “promote mastery goals” is most effective when delivered in an autonomy-supportive way (rather than in a neutral or controlling way; Benita, Roth, & Deci, 2014). We believe that “promote mastery goals” could be included as an add-on module within the standard ASIP so that teachers can learn how to offer mastery goals in an autonomy-supportive way.

The add-on module that has received most of our attention, however, is “teacher-provided structure.” Teachers so often request clarity on the integration of autonomy support and structure that we devote a separate section of this paper to highlight structure as an add-on module to ASIP.

**Autonomy Support and Structure**

When they first hear a recommendation to support students’ autonomy, some teachers feel uncomfortable as they see the idea of student autonomy as “foreign” (Skinner & Belmont, 1993) or as a “free for all” (Turner, 2010). Many teachers see teacher control/authority as a fundamentally important ingredient to effective teaching. To this sentiment, we simply point out that classroom behavior does not need to be controlled, targeted, or prescribed. It may alternatively be guided, mentored, and supported. With teacher control (the opposite of autonomy support), the teacher tries to change students from “X” to “Y” (from “not cooperating with peers” to “cooperating with peers”). With guidance, mentoring, and support, the
teacher tries to help the student advance his or her way of behaving from a relatively immature, poorly functioning, and maladaptive pattern of activity toward one that is more mature, better functioning, and more adaptive. To help students advance toward a more constructive way of behaving, teachers can offer students clear expectations and high standards for behavior and achievement, set goals, make plans, offer suggestions, provide help and assistance, and make available role models to emulate. That is, teachers might provide structure.

In practice, teacher-provided structure is typically a three-step process of (a) communicating clear expectations and high standards, (b) helping students learn how to adjust their behavior in ways that can meet those expectations and standards, and (c) providing a future pathway to more effective functioning (e.g., Jang et al., 2010). To frame a learning activity (solve a math problem) or to recommend a prosocial behavior (show social skill during group interaction) within a context of high structure, a teacher might therefore (a) prepare students for learning or prosocial behavior by communicating expectations and high standards and by introducing goals, plans, a role model to emulate, or even a to-do list, (b) scaffold students’ capacity to act in prosocial ways by providing guidance, help, assistance, mentoring, coaching, examples, tips, suggestions, strategies, and explanations, and (c) diagnose students’ progress toward more adaptive functioning (i.e., prosocial behavior) by providing feedback, identifying strengths and weaknesses, and offering suggestions for improvement (Reeve, 2014).

One way to help teachers become more autonomy supportive is to show them how to provide various elements of classroom structure in autonomy-supportive ways. That is, “set goals,” “set rules,” “provide guidance,” “use rewards,” etc. might all be introduced as brief add-on modules during ASIP to help teachers learn the skill of supporting students’ autonomy. As one example, the teacher may be encouraged to “set rules” but do so by first taking and appreciating the students’ perspective on the rules, welcoming students’ input on the set of rules, acknowledging and accepting students’ possible resistance to the imposed rules, relying on noncontrolling language, and by providing explanatory rationales for why following the rules would be a personally worthwhile and beneficial thing for students to do.

ASIP addresses the concerns featured in the upper half of Fig. 1 — namely, to help teachers provide autonomy-supportive instruction. What we have not yet done, which nevertheless may be an equally important undertaking, is to develop, implement, evaluate, and refine a teacher-focused intervention program for the motivational concerns featured in the lower half of Fig. 1 — namely, to help teachers provide highly structured
instruction to support students’ competence need satisfaction. Some intervention studies have been developed to do this (Tessier et al., 2010). These interventions have been generally successful, but they have not yet been refined into a “state-of-the-art” level of implementation. So, designing, implementing, evaluating, and refining a highly structured competence-supportive intervention program (CSIP) is a promising area of future research.

Limitations and Criticisms

The primary criticism teachers’ express in the early parts of ASIP can be summarized as follows, “Does giving autonomy support mean removing structure?” Because this is such a central concern of so many teachers, we devoted the earlier section to this teacher worry. Teachers are often surprised to hear that we too think that permissiveness is a poor approach to instruction (Hickey, 1997). Still, we argue that taking charge and pushing hard does not afford teachers the structured learning environment they seek. What we find is that teachers who learn how to support students’ autonomy routinely offer students more — not less — structure during instruction (Jang et al., 2010; Sierens, Vansteenkiste, Goossens, Soenens, & Dochy, 2009). That is, we find that autonomy support and structure are complementary — not conflicting — aspects of a teacher’s motivating style. Autonomy-supportive teachers, for instance, routinely introduce rules, procedures, and high expectations into the classroom, but they do so by providing explanatory rationales, relying on informational language, and acknowledging and accepting students’ resistance to rules, procedures, and high expectations (Deci et al., 1994; Koestner et al., 1984). Empirical research shows that it is actually an autonomy-supportive style — not a controlling style — that is closely associated with the provision of a structured learning environment (Jang et al., 2010; Sierens et al., 2009). So, we argue that the belief that one needs to sacrifice structure to support autonomy is simply a misconception (see Jang et al., 2010). We hope future research will clarify and resolve this debate and teacher worry.

Another criticism concerns our decision to place students’ psychological needs and inner motivational resources at the center of our thinking. This criticism raises the question of whether or not teachers need to “buy into” our portrayal of the nature of student motivation for ASIP to be effective. In one sense, we recognize that we are simply recommending teachers be empathetic toward students, be responsive to students’ concerns, cultivate
trust between teacher and student, and create a positive classroom climate. In other words, we recommend teachers develop a high-quality relationship with their students. We point out, however, that a self-determination theory approach to motivating students is built around the core goals of (1) vitalizing students’ inner motivational resources when those inner resources appear to be dormant and uninvolved in the lesson and (2) supporting students’ inner motivational resources when those inner resources appear to be present and fully capable of regulating students’ autonomous self-regulation. In this sense then, yes, teachers need to “buy into” our portrayal of the nature of student motivation for ASIP to be effective, because we specify rather explicitly which student motivations are to be identified, vitalized, and supported (i.e., Table 1).

Practically, all of our ASIP studies have utilized a relatively small sample size of teachers, typically 20–40 teachers. We limit our sample sizes partly because we expect ASIP to produce large effect sizes (therefore large statistical power is not needed) but mostly because we ask our raters to make their classroom visits to score teachers actual autonomy supportive and controlling instructional behaviors during the same week of the semester. We find that the maximum number of teachers that we can ask a team of raters to visit during a week is 40. Now that our findings have consistently shown that ASIP does indeed work (according to raters’ objective observations), we can perhaps now expand or scale-up ASIP to a larger, mass audience level. Indeed, parallel work has shown that ASIP-like programs can be carried out at the level of the school district (Connell & Broom, 2004; Deci, 2009).

One limitation that we have not yet addressed in our research is the possibility that participants in ASIP benefit from a Hawthorne effect. The Hawthorne effect refers to the tendency for people who are in an experiment to work harder and to perform better merely because of the extra attention paid to them by the researchers. In our experimental studies, teachers in the control group are asked to teach their classes in their normal way and do not receive the same sort of attention from the research team that the teachers in the experimental group do. Thus, we see the merit in this criticism, so future studies will need to provide teachers in the control group with an intervention experience that provides a comparable level of attention from the research team. One example of what needs to be done can be seen in Chatzisarantis and Hagger’s (2009) intervention in which teachers in the control group received an alternative teaching style training experience.

We have also learned the necessity of implementing ASIP with both an experimental and longitudinal research design. Random assignment to
conditions is critical to the determination of the causal effects of ASIP. That said, we acknowledge how difficult it can be to implement random assignment in the school setting. Some teachers, for instance, ask to be placed into the experimental group as a condition of their participation. Also, between-group contamination may occur when teachers in the same school are randomly assigned to different conditions. To deal with these issues, we recruit only one teacher per school or employ random assignment at the school level. If random assignment is employed at the school (rather than at the teacher) level, then multilevel data analytic strategies are necessary.

The employment of a longitudinal research design is necessary to obtain baseline measures of each dependent measure and to calculate interclass correlations (for multilevel analyses), to confirm the efficacy of the random assignment to conditions (i.e., T1 scores do not differ by condition), to chart the developmental trajectory of the dependent measures over the course of the semester, and to set up the possibility of a mediation analysis (e.g., Experimental condition → T2 change in students’ psychological needs → T3 change in students’ outcomes). The key problem with a longitudinal design, however, is that it opens the door to participant attrition problems. By implementing ASIP with a three-wave data collection schedule, the odds increase that teachers and students become unwilling or unable to participate in all waves of data collection. If attrition is too high, it undermines the generalizability of the reported results as unmotivated participants are lost from (and therefore distort) the sample. Fortunately, across all of our interventions, teacher retention has been very high (often 100%) as has student retention (often 90%).

A final limitation would be to wonder if ASIP works for all teachers or for only a subset of teachers. Other researchers find large variability in the extent to which teachers buy in to the intervention experience; these studies often show that motivation interventions work for one group of teachers while they are basically resisted or outright rejected by another group of teachers (Turner et al., 2011). We have not, however, observed this same variability in our own ASIP investigations. Rather, we consistently find that virtually every teacher in the experimental group shows a significant gain in becoming more autonomy supportive (Cheon & Reeve, 2013). That said, in all our interventions, we routinely test for a gender effect, a grade level effect, a teaching experience effect, a subject matter effect, a nationality effect, etc., in our datasets, and we do observe mean differences on the T1-dependent variables (e.g., preschool teachers are generally more autonomy supportive than are secondary school teachers; Reeve et al., 2014).
However, we rarely observe differences in the ASIP training effect across these different groups of participants. That is, although different groups of teachers often begin ASIP with varying T1 baseline levels of autonomy-supportive and controlling teaching, ASIP produces a similar main effect across all participant groups. We suspect that we find such a consistent and broad training effect because we make a concerted effort to “address teachers’ pretraining beliefs about motivating style that might otherwise conflict with the training message” (as per the 6th characteristic common to the most effective ASIPs in Table 3).

CONCLUSION

We developed, implemented, evaluated, and refined a teacher-focused ASIP that we believe represents a state-of-the-art understanding of how teachers can learn how to constructively motivate and engage their students during learning activities. By completing six intervention studies, we have shown that (1) teachers can learn how to become more autonomy supportive and less controlling toward students, (2) students of the teachers who participate in ASIP report greater psychological need satisfaction and lesser psychological need frustration, (3) these same students report and display a range of important educational benefits, such as greater classroom engagement, (4) the ASIP-induced benefits endure over time, and (5) teachers benefit as much from giving autonomy support as students do from receiving it. Given these findings, we conclude that ASIP represents a success story in education-based intervention research.

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Research on Teachers’ Motivating Styles


