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Intrinsic Motivation

The field of motivational psychology is framed around two central constructs: intrinsic motivation (the individual's desire to perform the task for its own sake) and extrinsic motivation (contingent rewards). In a seminal experiment of motivation (Deci, 1972), college students were asked to work through a series of complex puzzles either with or without pay. While it initially appeared that those who received an extrinsic motivator dedicated more time to the puzzles, their commitment to the task waned. Those in the no-reward condition played with the puzzle significantly more in a later unrewarded "free-time" period than paid subjects, and also reported a greater interest in the task. This experiment has since been replicated many times with different tasks and populations, garnering increased sup-

port for Deci's original belief that intrinsic motivation supports human learning and that external rewards actually serve as a threat to individuals' intrinsic interest. The study of motivational processes has evolved from several research traditions and, as such, an array of theory-driven constructs has been investigated.

Although motivational constructs may differ slightly in definition, they are all framed around the central premise that intrinsic motivation results in increased engagement and achievement (Schutz & Pekrun, 2007). Built on the assumption that people are actively involved in their own development with tendencies toward growth and mastery (Deci & Ryan, 1985, 2000, 2008; Ryan & Deci, 2000), Self-Determination Theory (SDT) is a widely recognized theory of human motivation. In the following section, we will discuss SDT as a motivational framework that aligns with work in self-determination in the field of intellectual and developmental disabilities (see Chap. 5).

Research in intellectual and developmental disabilities is not devoid of a focus on motivation, of course. Indeed, there has been a considerable amount of research focused on motivation systems in intellectual and developmental disabilities over the years (Switzky, Hickson, Schalock, & Wehmeyer, 2003). A significant proportion of this research, however, has focused on problems in motivation, motivation deficits, or the linkages between poor performance and motivation among people with intellectual disability. Our intent in this chapter is not to provide a comprehensive overview of the study of motivation among people with intellectual

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disability, but instead to focus on the application of one theory of intrinsic motivation, Self-Determination Theory, which is featured prominently in positive psychology.

Self-determination Theory

SDT attempts to explain how to support effective and healthy behavior through an understanding of human's basic psychological needs. As Deci wrote in an early text, *The Psychology of Self-Determination* (1980):

People have considerable capacity for self-determination, and the operation of will—that capacity to choose behaviors based on inner desires and perceptions—is the basis of self-determination (p. 5).

Since this and other early writings explicating SDT (Deci & Ryan, 1980, 1985), SDT has received attention in the field of motivational psychology and has been recognized within positive psychology since the inception of the field (Ryan & Deci, 2000). Central to SDT is the belief that humans are active organisms who are proactive and growth oriented (Deci & Ryan, 2012). SDT theorists believe that humans have the capacity to integrate their internal states with the social and environmental circumstances they encounter. SDT, in this way, differs from behavioral theories or social learning theories, which focus to a greater degree on how people are shaped by their environments (Deci & Ryan, 2012).

SDT posits that humans are motivated by three basic psychological needs that shape their growth-striving actions. These basic psychological needs are the need for autonomy, competence, and relatedness, and are described in greater detail in subsequent sections. SDT also explicitly integrates the role of the environment in supporting or hindering these needs being met. Environments that support these needs enable the development of autonomous motivation, and the self-regulation of extrinsic motivation, which is central to being self-determined.

Basic Psychological Needs

As mentioned previously, SDT posits that humans have three basic psychological needs, and that humans actively seek to meet these basic needs through engagement with their environment. The need for autonomy describes the drive people have to be able to make choices and act volitionally. The need for competence describes the desire people have to feel that they can master their environments and feel effective in their environments. The need for relatedness has to do with feeling connected to others, and feeling that you will be cared for and will have the chance to care for others (Deci & Ryan, 2012). Self-Determination Theory suggests that people are driven to address their need for autonomy, relatedness, and competence, and engage in actions to attempt to address these needs. Environments that are supportive of the attainment of these needs enable people to become energized about engaging in actions for their own sake to meet their needs (Vansteenkiste & Ryan, 2013). In such environments, people are intrinsically or autonomously motivated and are acting volitionally to address their needs. As Deci, Vallerand, Pelletier, and Ryan (1991) wrote, “social contexts that support people’s being competent, related, autonomous will promote intentional (i.e., motivated) action, and furthermore, that support for autonomy in particular will facilitate that motivated action’s being self-determined (rather than controlled)” (pp. 332–333). However, under other circumstances, where behavior is directed and controlled by others or external circumstances, people are less autonomously motivated. Self-Determination Theory acknowledges, however, that there will be circumstances under which extrinsic factors motivate behavior, but that people can also grow in the degree to which they self-regulate extrinsic motivation, recognizing the relationship between acting volitionally in the context of external demands. Thus, the ultimate goal of SDT is to enable people, including people with disabilities, to act in a

self-determining way that promotes autonomous motivation and self-regulation of extrinsic motivation.

Applications of Self-determination Theory

Given the central role of motivation, and environments that support autonomous motivation by enabling basic psychological needs for competence, relatedness, and autonomy to be met, research and applications of SDT have focused on exploring applications of SDT to the creation of environments that promote autonomy (i.e., autonomy-supportive environments) and address the need for competence and relatedness. By creating autonomy-supportive environments, the assumption is that intrinsic motivation will be enhanced, promoting valued outcomes across multiple life domains. In a meta-analysis of research on intrinsic motivation and its impact on outcomes across domains, Deci, Koestner, and Ryan (1999) looked at the impact of extrinsic rewards on motivation. They found that, generally, tangible rewards and contingent rewards alone, restricted intrinsic motivation, likely because they were controlled by others and did not support internal needs being met. They found that positive feedback, when delivered in an autonomy-supportive way, enhanced intrinsic motivation, but if the feedback was controlling, it decreased intrinsic motivation. These findings suggest the importance of supporting people with and without disabilities to identify the reasons they are engaged in actions in their environment, and linking those to the attainment of basic needs related to autonomy, competence, and relatedness. This promotes self-driven actions and self-regulation of behavior and outcomes, while still promoting feelings of competence and relatedness when received positive feedback from others. Each of these elements enhances intrinsic motivation across multiple domains.

Self-determination Theory and Education

Early research established the impact of autonomy-supportive educational environments and teaching practices on student motivation and outcomes. For example Deci, Schwartz, Sheinman, and Ryan (1981) found that autonomy-supportive teachers, who created a learning environment that enabled students to make choices and act volitionally, were associated with students reporting higher levels of intrinsic motivation, perceived competence, and self-esteem. Other research has also linked autonomy-supportive teachers with enhanced student self-regulation, learning and achievement, and engagement (Vansteenkiste et al., 2012).

Vansteenkiste emphasized that autonomy-supportive teachers support students to focus on deep conceptual learning, rather than extrinsic goals associated with external indicators of success. Researchers have found when students understand the reasons they are learning, what they are learning, and are driven by the pursuit of an outcome that aligns with their need for autonomy, competence, and relatedness, students more actively process information and show greater conceptual learning, compared to conditions where behavior was managed through extrinsic rewards, such as grades and teacher evaluations (Grolnick & Ryan, 1987). Researchers have suggested similar impacts on motivation associated with autonomy-supportive parenting practices (Grolnick, 2009; Grolnick & Ryan, 1989; Katz, Kaplan, & Buzukashvily, 2009; Mageau, Bureau, Ranger, Allen, & Soenens, 2015; Roth, Assor, Niemiec, Ryan, & Deci, 2009; van der Kaap-Deeder et al., 2015).

Gottfried, Fleming, and Gottfried (2001) conducted one of the first studies of motivation development focusing on the continuity of academic intrinsic motivation at five time points for students ages 9 through 17 years. Results indicated that academic motivation was a stable construct over time and, more interestingly, that

the mean levels of motivation declined with age. This study used a generalized measure of academic motivation, the Children's Academic Intrinsic Motivation Inventory (CAIMI; Gottfried, 1986) that tapped students' enjoyment of learning, orientation toward mastery, curiosity, persistence, and interest in subject-specific tasks. This finding is consistent with other correlational studies that have noted a marked decrease in intrinsic motivation as students enter the upper-elementary grades and middle school (Gottfried, 1985; Guthrie, Wigfield, & Von-Secker, 2000), which may occur given the changing nature and demands of school tasks as students get older.

A small body of research has examined autonomous motivation in students with disabilities, finding that students with disabilities tend to have lower autonomous motivation compared to students without disabilities (Grolnick & Ryan, 1990) and that there are also differences based on disability label, with students with emotional disabilities reporting even lower autonomous motivation (Deci, Hodges, Pierson, & Tomassone, 1992). However, it is acknowledged that students with disabilities have typically been served in more controlling environments with greater focus on external rewards. Researchers have therefore suggested the need for and potential of autonomy-supportive classrooms to enable greater intrinsic motivation and achievement in students with disabilities (Deci & Chandler, 1986). Reeve (2002) reviewed research on autonomy-supportive teaching behaviors to provide guidance for characteristics that could be used in school environments to promote autonomous motivation, concluding that autonomy-supportive teachers listen, avoid directives and criticism, provide answers less often and instead encourage students to answer, and motivate through student interest. Essentially, in autonomy-supportive classrooms students have meaningful roles, set goals, and are actively engaged in their learning, and this influences engagement (Collie, Martin, Papworth, & Ginns, 2016). It is promising to note that teachers can learn to enhance supports for autonomy provided in the classroom. Reeve,

Jang, Carrell, Jeon, and Barch (2004) examined the impact of online training on the providing autonomy-supports in the classroom, finding that after the training, long-term teachers showed increases in their ability to teach and motivate their students in more autonomously supportive ways, which led to increased student engagement. Researchers have also documented how such practices can be embedded across content areas, including science (Hagay & Baram-Tsabri, 2015).

Strategies to enhance autonomous motivation have been embedded in academic interventions for struggling learners. For example, Toland and Boyle (2008) sought to change the ways that children explained their lack of achievement to themselves. Children identified as having low self-esteem participated in group sessions and were provided with modeling of positive thinking about learning. Findings indicated that students in the intervention placed increased effort on tasks, with associated improvement in the areas of reading and spelling. Similarly, specific instructional dialogue based in motivational theory has been embedded in daily practices in Concept-Oriented Reading Instruction (CORI; Guthrie, McRae, & Klauda, 2007; Swan, 2003), with resulting increases in students' intrinsic motivation for reading. Berkeley, Mastropieri, and Scruggs (2011) embedded a modeling and self-talk approach to attributional retraining in a reading comprehension strategy intervention with adolescents with learning disabilities—also reporting an increased use of strategies by the participants. In recent work by Toste and colleagues (Toste, Capin, Vaughn, Roberts, & Kearns, 2016; Toste, Capin, Williams, & Vaughn, 2016), motivational training was embedded within a word reading intervention for upper-elementary students; students who received reading intervention alone and those with the additional motivational component outperformed the control group on measures of word reading. Further, students who received motivational retraining also outperformed the control group on measures of sentence comprehension and reading attributions. These findings further support the assumption that when

students achieve success counter to their expectations, their beliefs about their potential may shift. This enhances students' investment in academic tasks, thus promoting positive processes and academic success.

Self-determination Theory and Health and Wellness

In a recent meta-analysis of research on motivation and health, Ng et al. (2012) reports similar findings as those reported in the education domain. Specifically, when health and wellness contexts and professionals were autonomy-supportive, patients reported greater attainment of basic psychological needs as well as more positive health outcomes, including outcomes related to healthy eating (Girelli, Hagger, Mallia, & Lucidi, 2016; McSpadden et al., 2016) and physical activity (Kinnafick, Thøgersen-Ntoumani, & Duda, 2016; Mack, Gunnell, Wilson, & Wierst, 2016). Researchers have examined the impact of autonomy-supports on people with physical disabilities engaged in rehabilitation activities (Saebu, Sorensen, & Halvari, 2013), finding that during physical activities when supports for autonomy are provided, there were increases in autonomous motivation and physical activity over the course of the intervention. Similar findings have also been established in sport and physical activity more generally. For example, research on SDT and sport has shown athletes who are intrinsically motivated and self-determined in their behaviors will exude more effort (Fortier & Grenier, 1999; Li, 1999; Pelletier et al., 1995; Williams and Gill, 1995), have higher levels of concentration (Boiche & Sarrazin, 2007; Brière et al., 1995; Calvo et al., 2010; Holmberg & Sheridan, 2013; Pelletier et al., 1995), are more persistent or avoid burnout (Fortier & Grenier, 1999; Pelletier et al., 2001, 2003; Sarrazin et al., 2001) and perform better (Beauchamp et al., 1996; Pelletier et al., 2003) than athletes who rely on non-self-determined types of motivation. For example, a large body of research has examined the impact of

autonomy-supportive coaching in sports, physical education, and physical activity interventions, generally finding that when coaches and teachers create autonomy-supportive environments, athletes are more internally motivated and perform better (Amorose & Anderson-Butcher, 2007; Gagné, Ryan, & Bargmann, 2003; Pelletier et al., 1995, 2001; Reiboth, Duda, & Ntoumanis, 2004). For example, Curran, Hill, and Niemiec (2013) found that when coaches used structural supports such as providing expectations and promoting goal direction, athletes showed greater attainment of psychological needs and behavioral satisfaction. Casey, Wang, and Boucher (2014) found that swimmers with Down syndrome who participated in community-based inclusive swimming showed higher intrinsic motivation than extrinsic motivation, suggesting the importance of community-based, autonomy-supportive experiences for youth with disabilities (Powrie, Kolehmainen, Turpin, Ziviani, & Copley, 2015). In another study, Mageau and Vallerand (2003) report there are seven behaviors that define a coach as autonomously supportive: (a) provide choice within specific rules and limits; (b) provide a rationale for tasks and limits; (c) acknowledge the other person's feeling and perspective; (d) provide athletes with opportunities for initiative taking and independent work; (e) provide non-controlling competence feedback; (f) avoid controlling behaviors (e.g., overt control, criticizing statements, tangible rewards for interesting tasks); and (g) prevent ego-involvement in athletes. These behaviors suggest that an autonomously supportive coach is more complex than just offering choices:

Autonomy-supportive coaches provide choice, but also a rationale for requested tasks, rules and limits, acknowledge athletes' feelings and perspective, provide opportunities for initiative taking and transmit non-controlling competence feedback [and] avoid controlling behaviors in the form of physical and psychological control, tangible rewards, and ego-involvement induction (Mageau & Vallerand, 2003, p. 892).

Bartholomew et al. (2009) present a taxonomy of six controlling strategies employed by coaches to motivate their athletes. The authors

acknowledge that while these strategies may induce short-term compliance or desired outcomes; evidence suggests these strategies may be more damaging long term to an athlete's psychological well-being. The six controlling strategies include: (a) tangible rewards (e.g., a coach who promises rewards to athletes for completing a task asked of them or uses the athlete's scholarship as leverage to complete a task); (b) controlling feedback (e.g., a coach only uses feedback to direct future behavior, opposed to providing information for current performance, only focuses on negative aspects of athlete's performance, and does not comment on the positives); (c) excessive personal control (e.g., authoritative demeanor and is unresponsive to their athletes' questions and ideas and commands athletes to complete tasks through the use of orders and directives); (d) intimidation behaviors (e.g., threat of punishment, embarrasses athletes in front of team if they do not complete a task as desired, and directs derogatory comments at their athletes); (e) promoting ego-involvement (e.g., evaluates athletes in front of one another, promotes an environment of competition between his or her athletes, and solely focuses on winning); (f) conditional regard (e.g., a coach says things to make athlete feel guilty or only focuses on athlete when they are winning and does not interact when they are losing). These controlling strategies lack empirical research evidence within sport (research supporting these strategies stem from parenting and educational contexts); however, the goal of illuminating this 'dark side' of coaching is for coaches to be self-reflective of the motivational strategies they employ with their athletes. Further, "over the long term, continued exposure to controlling coach behaviors will thwart athletes' psychological needs and, in turn, contribute to the development of controlled motives" (Bartholomew et al., 2009, p. 229).

Self-determination Theory and Work

Researchers have also begun to examine the impact of autonomy-supportive environments on workers' motivation, finding that when work

environments enable autonomous motivation, multiple positive outcomes result (Gagné, 2014). Gagné and Deci (2005) developed a framework for understanding the role of autonomous motivation in work outcomes, suggesting that job characteristics, supervisors and work leaders autonomy-support, and job feedback predicted autonomous motivation and behavioral regulation of job activities. However, the framework also suggests that a variety of contextual factors, related to the work environment, can also influence outcomes. For example, researchers suggest that motivation as well as alignment of strengths with work activities not only influences performance but also worker attitudes, including engagement, well-being, and commitment (Guntert, 2015; Leroy, Anseel, Gardner, & Sels, 2015; Schultz, Ryan, Niemiec, Legate, & Williams, 2015; Van Den Broeck, Lens, De Witte, & Van Coillie, 2013). Researchers have also suggested the importance of building on character strengths, as described in Chap. 13, in combination with interventions to promote autonomous motivation, particularly in the work context (Kong & Ho, 2016).

Self-determination Theory and Intellectual and Developmental Disabilities

Chapter 5 detailed the research pertaining to self-determination and people with intellectual disability and provided a model linking intrinsic and autonomous motivation to the development of self-determination. While there is a substantial knowledge base with regard to the benefits of promoting the causal agency of people with intellectual and developmental disabilities, there has been only limited research on issues pertaining to the satisfaction of basic needs and autonomous motivation with this population. What does exist tends to focus on motivation in engagement in sports. For example, as discussed previously, Casey, Wang, and Boucher (2014) used SDT as a frame to examine the motives behind participation in swimming by people with intellectual disability. More autonomous

motivation predicted engagement in swimming in both people with and without intellectual disability.

The limited research applying SDT to understanding (and promoting) intrinsic motivation of people with intellectual and developmental disabilities does not, however, reflect the relative importance of such efforts. This has been well illustrated by research in the field of intellectual disability documenting the phenomenon of *outerdirectedness*. Outerdirectedness is “the term used to describe approaches in which individuals rely on external cues rather than on their internal cognitive abilities to solve a task or problem” (Bybee & Zigler, 1998, p. 435). It is, more specifically, a “motivational style of problem solving in which the child uses external cues rather than relying on his own cognitive resources” (MacMillan & Cauffiel, 1977, p. 643). Research has established that children with intellectual disability exhibit outerdirectedness at a greater rate than do typically developing children, likely due to multiple factors, including prompt dependency and overreliance, repeated experiences with failure, and task difficulty (Bybee & Zigler, 1998). This same body of research documents that outerdirectedness results in the lack of initiation of action, reduced problem solving efficacy, and poorer school performance (Bybee & Zigler, 1998). Clearly, there is a need to examine issues pertaining to intrinsic motivation and its role in promoting self-determination and more positive outcomes for people with intellectual and developmental disabilities.

Conclusions

Self-Determination Theory provides a comprehensive theory to understanding the role of autonomous or intrinsic motivation in shaping the outcomes experienced by all people, including people with intellectual and developmental disabilities. Although the research with children,

youth, and adults with intellectual and developmental disabilities is more limited than research in the general population, there is no doubt that all humans strive to meet basic psychological needs for autonomy, competence, and relatedness and that promoting intrinsic motivation requires access to autonomy-supportive environments and people in those environments. Given research that suggests that people with intellectual and developmental disabilities have restricted opportunities to access autonomy-supportive environments, particularly related to making choices and decisions and engaging in personally valued goal-directed action (Stancliffe et al., 2011; Tichá et al., 2012), this suggests the critical need for increased attention on creating autonomy-supportive environments across the lifespan.

Structuring environments to be autonomy-supportive and supporting children, youth, and adults across life domains in ways that promote intrinsic motivation by promoting choice, goal-directed behavior, a sense of mastery and connectedness, have the potential to enhance school and post-school outcomes and to foster greater well-being and engagement in work, health, learning, and social activities. In addition to research in the general population in areas ranging from education to employment to health and physical activity, a small but growing body of research has documented the role of intrinsic motivation in the lives of people with disabilities. This work has significant implications for considering how to design and deliver systems of supports across life domains as described in Chap. 3. Further, as described in Chap. 5 on Self-Determination, by combining autonomy-supportive environments with autonomy-supportive interventions that actively teach people with and without intellectual disability the skills associated with self-determined action, including goal setting, problem solving, decision-making, and self-advocacy skills this can enable the attainment of valued outcomes across the lifespan.

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