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Recommended Citation

K. Ann Renninger and S. E. Hidi. (2019). "Supporting The Development Of Interest In The Workplace". *Workforce Readiness And The Future Of Work*. 19-34. DOI: 10.4324/9781351210485-2
<https://works.swarthmore.edu/fac-education/165>

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SUPPORTING THE DEVELOPMENT OF INTEREST IN THE WORKPLACE

K. Ann and Suzanne E. Hidi

Work is an omnipresent factor in most people's lives, so it is reasonable to ask why do people remain in their jobs? Research on motivation and learning indicates that people stay in all types of jobs when they find meaning and reward in what they are doing. According to Kaye, Jordan-Evans, and Career Systems International (2014), with one possible exception, the six "stay factors" that account for why people remain in their jobs seem to have interest as an underlying component. In order of influence (based on responses from 8,454 participants), the stay factors included: exciting, challenging, or meaningful work (62.9%); supportive management/good boss (40.6%); being recognized, valued, respected (39%); career growth, learning, and development (32%); and a flexible work environment (22%). The exception was fair pay (19%); however, pay may seem to be fairer when the other five factors are in place.

The most influential stay factor "exciting, challenging, or meaningful work" characterizes the kind of work that is considered to be interesting. The second factor, "supportive management/good boss," describes conditions that enable interest to develop. The third factor, "being recognized, valued, respected," points to the development of feelings of self-efficacy, which are coordinated with the development of interest. The fourth factor, "career growth, learning and development," describes the presence of ongoing opportunities to develop job-related knowledge, which is essential to the development of both interest and future goals. The fifth factor, "a flexible work environment," describes a structural feature of workplace design that allows a person flexibility in how long, where, and when they work, and may promote the development of interests at work. It is noteworthy that Kaye et al. (2014) found that the six factors were important, regardless of gender, age, position, job function, company size, and geography.

Interests and their measurement have had an important place in both education and business settings. The same measures—for instance, the seminal Strong Interest Inventory (1943)—have been used in educational counseling to help students choose a field of study and in business for personnel selection. The tacit assumption underlying these measures has been that interests are relatively stable and unchangeable individual attributes, or traits (Rounds & Su, 2014; Su, 2019). However, research conducted by ourselves and by a number of other (mainly educational) researchers has presented a very different picture (e.g., Harackiewicz, Smith, & Priniski, 2016; O’Keefe & Harackiewicz, 2017; Renninger, Nieswandt, & Hidi, 2015). Studies of interest provide evidence that interests follow a developmental course and are educable.

A key difference between our developmental approach and studies of vocational interest involves our focus on the adjustment of the fit between the person and the environment. If there is no fit, only a developmental approach can inform how a fit might be established (e.g., Renninger & Hidi, 2019, in press). Because it tends to conceptualize interest as a trait, or set abilities, research on vocational interest does not point to ways in which it might be bolstered or supported to develop (see Renninger & Hidi, 2019, in press; Rounds & Su, 2014; Su, 2019). That interest may be supported to develop has major implications for both education and employment.

In this chapter, we consider how the development of interest can benefit both workforce readiness and job performance. *Readiness* is defined here as the likelihood that persons entering the workforce are prepared to meaningfully engage in the challenges of their workplace. Such engagement requires the ability and willingness to learn, explore, and identify work-relevant strategies. In turn, the strategies that are enabled by readiness allow workers to address relevant technical and social problems that are posed at work, identify organizational and teamwork efficiencies, and define *performance*.¹

Although there are a number of aspects of effective workplace functioning, the most important one for our consideration is that individuals may have to engage in activities over time, even if they are not interested in them. If their interest can be supported so that it can develop, it is likely to become its own intrinsic reward (e.g., Gottlieb, Oudeyer, Lopes, & Baranes, 2013). In other words, over time interest may be expected to beneficially affect performance, and external rewards would not be essential. If interest has yet to develop, or its development is not likely, then understanding how an employee, a manager, or an organization can use incentives and reward processes also becomes critical for supporting engagement.

Based on how the content of work is related to the individuals’ activities, there are at least two broad types of workplace settings. One setting involves *continuous knowledge acquisition* and may be called *mindful*. It requires the type of mental engagement from an individual that benefits from additional information search and also from ideas that continue to expand a person’s knowledge base in

ways that result in improved job performance.² The other category we call *repetitious*. Repetitious jobs do not typically require continuous (information-based) knowledge acquisition, although improvements in performance can be expected when motivation increases. In fact, these two different settings are likely to require different interventions to motivate unmotivated workers.

It is important to recognize that the development of employees' interest can be a benefit for both the employee and the employer. Often, the employer or organization does not recognize how important an employee's interest can be, and may mistakenly assume that interest cannot be developed. The literature on interest development, and on rewards and incentives, provides information about how workforce readiness and performance can be promoted.

In the following sections, we describe findings from studies of interest development, undertaken both in and out of school, and consider their implications for the workplace. We explain how interest can be supported to develop, even if prior experience would suggest otherwise. For purposes of illustration, we describe the case of an architect who clearly has an interest in architecture yet needs to develop a new interest in sales and become more involved in the business side of the firm. We consider the implications of findings from studies of reward and incentives when work is experienced as repetitious versus mindful. We conclude by explaining the importance of interest, reward, and self-related processing for workplace readiness, as well as the likelihood that workers will choose to stay in their jobs, be motivated to learn efficiently, and make meaningful contributions to the workplace.

Interest Development

Conceptualized as a variable that develops, interest refers to the psychological state of a person during involvement with some content (e.g., sales activities associated with the design work of an architect in a company), *and also* to the likelihood that the person will continue to want to reengage with that content over time and enjoy the challenges that continued engagement provides (Hidi & Renninger, 2006; Renninger & Hidi, 2016). In our Four-Phase Model of Interest Development (Hidi & Renninger, 2006), we drew on the existing research literature to describe interest as developing through four phases: triggered situational, maintained situational, emerging individual, and well-developed individual interest (see Table 2.1). The model explains that knowledge can develop without interest, but interest development is always accompanied by the expansion of knowledge and deepening value.

To summarize, the first phase of interest development, *triggered situational interest*, describes the initial triggering of attention by environmental features that are, for example, novel, have some personal relevance and/or capture imagination, and promote information search. These features may be observed by the individuals themselves, but attention to them may be encouraged by

TABLE 2.1 The Four Phases of Interest Development (Hidi & Renninger, 2006): Definitions and Learner Characteristics.

		<i>Phases of Interest Development</i>			
		<i>Less Developed (Earlier)</i>		<i>More Developed (Later)</i>	
		<i>Phase 1: Triggered Situational Interest</i>	<i>Phase 2: Maintained Situational Interest</i>	<i>Phase 3: Emerging Individual Interest</i>	<i>Phase 4: Well-Developed Individual Interest</i>
• Definition	<ul style="list-style-type: none"> Psychological state resulting from short-term changes in cognitive and affective processing associated with a particular class of content 	<ul style="list-style-type: none"> Psychological state that involves focused attention to a particular class of content that reoccurs and/or persists over time 	<ul style="list-style-type: none"> Psychological state <i>and</i> the beginning of relatively enduring predisposition to seek reengagement with a particular class of content over time 	<ul style="list-style-type: none"> Psychological state <i>and</i> a relatively enduring predisposition to reengage a particular class of content over time 	
• Learner Characteristics	<ul style="list-style-type: none"> Attends to content, if only fleetingly May or may not be reflectively aware of the experience May need support to engage from others and through instructional design May experience either positive or negative feelings 	<ul style="list-style-type: none"> Reengages content that previously triggered attention Is developing knowledge of the content Is developing a sense of the content's value Is likely to be supported by others to find connections to content based on existing skills, knowledge, and/or prior experience Is likely to have positive feelings 	<ul style="list-style-type: none"> Is likely to independently reengage content Has stored knowledge and stored value Is reflective about the content Is focused on their own questions Has positive feelings 	<ul style="list-style-type: none"> Independently reengages content Has stored knowledge and value Is reflective about the content Is likely to recognize others' contributions to the discipline Self-regulates easily to reframe questions and seek answers Appreciates and may actively seek feedback Can persevere through frustration and challenge in order to meet goals Has positive feelings 	

other people. For example, educators might intervene by inserting novelty or surprise into lab assignments, demonstrations, or exhibits (Nieswandt & Horwitz, 2015), and employ reflective feedback to focus attention either on why engagement is useful (Hulleman & Harackiewicz, 2009) or on specific elements of problem-solving (Renninger et al., 2014). For an interest to be triggered, the level of an individuals' content-related knowledge has only to be adequate for processing incoming information; their feelings may be either positive or negative.³

Once an interest is triggered, it may or may not then develop into a *maintained situational interest*. Individuals' triggered situational interest is typically maintained when they are supported to think about the content of their interest. This can be promoted by their interactions with other people and/or by tasks (e.g., assignments) or activities (e.g., board meetings). The time and opportunity to work together with other people to solve or work on real problems that have not yet been solved, or have multiple possible solutions, has been shown to maintain interest (e.g., Azevedo, 2006; Mitchell, 1993; Renninger et al., 2014; Swarat, Ortony, & Revelle, 2012). As with a triggered situational interest, the design of tasks can be adjusted to focus attention on content. Triggers for interest can help individuals to focus on (direct attention to) specific aspects of a task or an activity. For example, triggers for interest can point a person to the utility or relevance of engaging with particular content (e.g., Gaspard et al., 2015; Hulleman & Harackiewicz, 2009), help a person discover personal connections between the content and themselves (Bernacki & Walkington, 2018; Hidi, Renninger, & Northoff, 2017), or cause a person to pay more attention to content by introducing novel information (Anderson, Shirey, Wilson, & Fielding, 1987; Hidi & Baird, 1986; Palmer, 2004).

When the content of the problem is something individuals have experience with and can connect to, this self-related information can facilitate maintained interest and continued work (Hidi, Renninger, & Northoff, 2019). Repeated opportunity to reengage meaningfully with content appears critical, as it enables a person to develop their knowledge and desire to search for content-related information (Renninger & Hidi, 2019). When a person has a maintained situational interest, then his or her feelings tend to be positive. Their content knowledge is increasing, and as they come to understand the content more fully, their value for it begins to develop as well. They can benefit from encouragement to continue engagement.

There is now substantial evidence that interest develops through phases (e.g., Jansen, Lüdtke, & Schroeders, 2016; Knogler, Harackiewicz, Gegenfurtner, & Lewalter, 2015; Lipstein & Renninger, 2007; Michaelis & Nathan, 2016; Nolen, 2007; Wang & Adescope, 2016). When people develop interest, they are likely to search for relevant information, pursue a deeper understanding of that information, have or develop value for that content, and be willing to persevere in the interest development process, even when faced with difficulty (see review,

Renninger & Hidi, 2016). They are also likely to be engaged in meaningful learning (e.g., Jansen et al., 2016), and they are attentive and effortful in doing so. They set, pursue, and realize goals (e.g., Harackiewicz, Durik, Barron, Linnenbrink, & Tauer, 2008), and they develop and effectively employ learning strategies (e.g., Jansen et al., 2016; Nolen, 2007).

In any situation, there can be multiple potential triggers for interest (e.g., opportunities to work independently, opportunities to work in a group, novel information, challenge, personal relevance; Renninger, Bachrach, & Hidi, 2019). Individuals may notice and appreciate some of these triggers of interest, but other triggers may go unnoticed. Learners in later phases of interest are also able to self-trigger ongoing engagement because as triggers push them to consider new ways to make connections to what they know, they identify additional content that leads them to learn and reflect (see Renninger & Hidi, 2019).

Importantly, all people can be supported to develop at least some interest, and the key is that they probably need support to do so, whether this support comes from other people (e.g., Bergin, 2016), and/or the design or conditions of the learning environment (e.g., Crouch, Wisittanawat, Cai, & Renninger, 2018; Renninger et al., 2014). Such supports are most likely to be effective if they make the experience of continued engagement feel doable and worthwhile and thus can provide the basis for the development of interest.

For example, if the architect who has little initial interest in sales is provided with accessible and useful information about how to engage in selling the designs she develops, and/or receives acknowledgment of her developing capacity to sell, she might develop her interest. An accompanying salary boost might be expected to encourage her continued reengagement in selling, and as she develops her knowledge and value for sales, she might become successful as a salesperson. The practice of selling could thus become a developed interest, as she works to figure out how the selling she is doing can be managed even more productively.

Advances in neuroscience provide evidence that all persons are hardwired to develop interest in some content; this means that the potential to be interested is universal. More specifically, neuroscience has established that the information search that is one of the outcomes of the triggering, or activation of interest is associated with the reward circuitry in the brain (e.g., Gottlieb, Oudeyer, & Baranes, 2013; Gruber, Gelman, & Ranganath, 2014; Panksepp, 1998). This means that once interest is triggered and maintained, engaging the content of interest becomes its own reward. That interest has a physiological basis further suggests that when people have little or maybe no interest in a particular content area or environment, they may benefit from various forms of support to make connections between what they already know and new content. This type of scaffolding can make engaging new content feel worthwhile and rewarding, in turn triggering interest and its development.

Because we are physiologically wired to experience interest, a person does not have to learn to be interested in an activity, situation, or idea. A person

does not need to learn to have a situational interest triggered, but instead may need support to develop individual interest from such triggering. Once interest is triggered, the related information search will serve as an intrinsic reward that activates the reward circuitry and thus supports further engagement. For example, the architect who recognizes the essential relation of sales to her design and becomes interested in sales, may then search for ways to improve her sales tactics, a search she would find rewarding on its own merits.

Reward and Self-Related Information Processing

Using a 2×3 between-subjects design, Kosfeld, Neckermann, and Yang (2016) examined how monetary incentives, symbolic incentives of recognition (such as a smiley button), and the meaningfulness of a task affect workers' performance. In the low-meaning condition, workers were told that their data will only be used for a quality check and that "those data will most likely never be used" (p. 2), whereas in the high-meaning condition, workers were told that their work was important for a research project. The results showed that both monetary incentive and meaningfulness of the task had positive and independent effects on performance. In contrast, recognition incentives only increased performance when workers received the low-meaning instructions, suggesting that recognition incentives can provide meaning only to a meaningless task as they may have a compensatory effect.

Kosfeld et al.'s (2016) study has implications for understanding how unmotivated learners can be supported to be motivated. That is, if the interest of unmotivated learners does not seem to develop, they may benefit from financial incentives and from help to recognize the importance of their work. In order to explain the facilitative effects of monetary compensation and meaning, we need to consider what is understood about both reward and self-related information processing. In doing so, we are able to suggest ways in which workforce readiness and performance can be improved.

Reward

The reward circuitry of the brain includes cortical and subcortical regions and is fueled by dopamine. It is activated either by the anticipation or the receipt of reward and has been shown to motivate approach and consummatory behavior. It has both affective and cognitive benefits, such as the increases in performance following monetary reward as demonstrated in the Kosfeld et al. (2016) experiment, as well as increases in attention and learning (see Della Libera & Chelezzini, 2009; Hidi, 2016; Lee & Shomstein, 2014).

Early neuroscientific research studies focused on the benefits of activating the reward circuitry using extrinsic reward; more recent investigations have clarified that intrinsic reward, such as searching for information, activates the

same areas of the reward circuitry as extrinsic reward (e.g., Gottlieb et al., 2013; Gruber et al., 2014; Kang, Hsu, Krajbich, Loewenstein, McClure, et al., 2009) and has similar benefits for outcomes.⁴ These findings indicate that the relation between information search and the activation of the reward circuitry is central to explaining the powerful and beneficial effects of interest on performance and learning (Ainley & Hidi, 2014; Renninger & Hidi, 2016).

Thus, although it has been demonstrated that both intrinsic and extrinsic rewards can provide similar support for motivation, research now clarifies that the functional role of intrinsic and extrinsic rewards differs depending on the phase of a person's interest development. That is, extrinsic reward seems to be more essential in the earlier phases when a person may require support to trigger and maintain interest (Hidi & Renninger, 2006). In the later phases, seeking information becomes intrinsically rewarding and is likely to lead to self-generation of further engagement.

Hundreds of studies have questioned the benefits of reward and suggested that they undermine intrinsic motivation (e.g., Deci, 1971; see Ryan & Deci, 2017), although researchers now agree that reward does not undermine behavior when no motivation for an activity exists (e.g., Hidi, 2016; Marsden, Ma, Deci, Ryan, & Chiu, 2014; Ryan & Deci, 2017).⁵ Findings indicate that undermining intrinsic motivation only occurs in limited situations, such as giving tangible reward for activity that is driven by interest, and subsequently withdrawing the reward. Interestingly, the unexplained withdrawing of reward has been related to psychological pain and found to result in modification of activation in the brain (see Flaherty, 1996; Papini, Fuchs, & Torres, 2015).

Our consideration of reward focuses on the role it can play for individuals who are not intrinsically motivated, and we suggest that extrinsic reward is important in such cases. Yet, there is also an unresolved question about how intrinsically motivated individuals who are engaged in long-term activities maintain their motivation without external rewards/incentives.

Self-Related Information Processing

We suggest that Kosfeld et al.'s (2016) high-meaning condition may have led participants to associate tasks with themselves, as they were given information that their work was important. In other words, emphasizing the importance of the task in that study was likely to result in self-related processing. Other studies report that the neural processing of reward is associated with self-related information, as researchers have demonstrated that there exists a neural overlap of reward and self-relatedness in brain activation (e.g., Carter, McInnes, Huettel, & Adcock, 2009; de Greck et al., 2008; Ersner-Hershfield, Wimmer, & Knutson, 2009).

Over several decades, both psychological and neuroscientific research has shown the uniqueness of self-related information processing. Psychologists

have shown its benefits for basic functions like perception, emotions, and reward, as well as for higher order functions like memory (Adcock, Thangavel, Whitfield-Gabrieli, Knutson, & Gabrieli, 2006; Murayama & Kitagami, 2013). Neuroscientists using functional magnetic resonance imaging also have found that the neural correlates of encoding information in the brain are different when it is related to oneself (Hu et al., 2016; Northoff et al., 2006; van der Meer, Costafreda, Aleman, & David, 2010), that is, special patterns of brain activation (higher neural activity) are involved in the neural processing of the self (see Hidi et al., 2019; Northoff, 2016).

We note that research findings have pointed not only to the association of interest to reward, but also to self-related information processing. For example, in a study of abstinent alcoholics and pathological gamblers who showed “normalization” of reward-related activity in the reward system, deGreeck et al. (2009, 2010) found that the depletion of self-related activity reduced interest. In other words, diminished self-related activity in the reward regions appears to be an index of diminished interest in behavior. More generally, the studies suggest that without a relation to the self, stimuli may remain “indifferent” for the subject and not trigger interest.

In the section that follows, we suggest that utility-value interventions are an instance of self-related information processing (see Hidi et al., 2017, 2019), because they involve a person making links between the content and self. Utility-value interventions consist of relatively simple tasks (e.g., written reflection) that require participants to make personal connections between their lives and academic content (e.g., Gaspard et al., 2015; Hulleman & Harackiewicz, 2009).

Utility-Value Interventions

Utility-value interventions are relatively simple, low-cost, and effective educational practices that have been found to increase interest and improve performance. Interestingly, these interventions have been found to benefit certain disadvantaged groups (e.g., underrepresented minorities, women) more than others, leading researchers to wonder why this is the case (Harackiewicz et al., 2016). Hulleman and Harackiewicz (2009) note that their study of utility-value interventions was foreshadowed by Oyserman, Terry, and Bybee’s (2006) nine-week after-school “possible selves intervention” that was undertaken with African American middle school students. In Oyserman et al.’s study, participants were asked to imagine themselves as successful adults and to connect these images to current school involvements. The students who received the intervention showed many positive outcomes by the end of the year. They had more concerns about doing well in school, had better attendance records, and were judged to have more balanced perceptions of their possible selves. The Oyserman et al.’s study also suggests that the beneficial outcomes were related to the students’ making personal connections to school activity.

Hulleman, Kosovich, Barron, and Daniel (2017) suggest that an explanation for the success of the utility-value intervention is its targeting of psychological mechanisms such as thinking frequently about connections between experience and information to be acquired. In Hidi et al. (2019), we proposed a modification of this explanation, by suggesting that “the pervasiveness of the self throughout the whole array of psychological functions may be especially relevant for understanding the impact of utility value interventions” (p. 24). In other words, these functions are recruited when the basis of interest is permeated and driven by the self-relatedness of information. Once self-related information processing triggers interest, material that could otherwise feel meaningless is understood to be both self-related and interesting.

As a result, it is not surprising that the students who are most likely to benefit most from utility-value interventions are those who are not originally interested in or involved with the content and thus are at risk in terms of academic success. The reward circuitry of individuals who experience self-involvement and/or interest in their tasks is likely to already have been activated, rendering the utility-value intervention unnecessary and thus ineffective.

To the best of our knowledge, utility-value interventions have not been adopted for use in the workplace. However, given that this type of intervention has been especially successful for supporting students with low-performance expectations, it seems likely that it could prove to be effective with low performing or unmotivated workers. The explanation of the success of utility-value interventions is that they lead a person to make links to content. In so doing, they activate the reward circuitry, trigger and maintain interest, and benefit learning.

It is plausible that individuals who do not benefit from utility-value interventions have already made connections to the content (e.g., selling in the architecture firm). It is also possible that as Kosfield et al.’s study points out, the meaningfulness of what individuals are asked to work with needs further consideration.

As findings from Crouch et al. (2018) demonstrate, individuals with more developed interest may respond differently to triggers than those who have less developed interest. Adapted to provide workplace examples, they suggest that persons in the architectural firm who have more interest in selling may not need to be helped to understand why selling is useful; rather, their interest would be further developed if they were supported to continue to stretch what they know about selling. In fact, because their interest has already been triggered, they voluntarily engage in seeking information and find it rewarding to do so. The meaningfulness of the work a person does has implications for whether interest needs to be supported to develop. As the findings about why people stay in their jobs in the Kaye et al. (2014) suggested, there are a number of factors and the most influential of these seem to point to employees’ interest.

Concluding Thoughts

In this chapter, we have argued that in order to optimize workforce readiness and performance, support for interest to be triggered and developed is critical. We have also pointed to two different types of workplace settings, mindful and repetitious. We note that the development of interest can be supported in each, although support to develop interest may be easier in mindful contexts as these can involve individuals in meaning-making. The benefit to developing interest is that it is a reward experience; individuals with interest will independently reengage in ways that can be generative and productive for them and for the company or organization with whom they work. It is also possible for those in what might appear to be repetitious jobs to develop an interest in their jobs; when they do, this is rewarding for them, and ensures both productivity and the likelihood that they will want to continue in their job. For example, the elevator operator or the cashier who develop an interest in the people with whom they work and through this find meaning, are not interested in their repetitious jobs, per se, but rather in associated aspects of their job in which they have developed an interest.

Regardless of whether a type of job is mindful or repetitious, reward may be a necessary motivator at least initially for those who do not find meaning in their jobs. When an individual does not have interest, reward is needed to support engagement. As self-related information processing is interest enhancing, it appears that linking content to the self may be a useful starting point in efforts to support unmotivated workers' readiness and performance. Activation of the reward circuitry not only energizes but also enhances attention, memory, and its effects tend to be long lasting. Such activation has been associated with both the delivery of reward and reward expectations.

In summary, people are hardwired to develop interest, meaning that it is possible to support the interest of all people to develop. In the earlier phases of interest development, providing support that triggers interest,⁶ creates personal connections to content, promotes utility, introduces novel content, and, can enable the person to make connections to content that become rewarding as their interest begins to develop. As engagement with content becomes rewarding, continued information search can be expected to follow. At this point, a person, like our architect, is able to self-trigger by identifying problems that need to be solved and seeking resources and opportunities to address them.

When the triggering of attention leads to repeated information search, the reward circuitry is activated, and individuals begin making connections to content that lead them to question and seek further information. Without such connections, they are not likely to be in a position to develop enough knowledge, corresponding value, and feeling to sustain meaningful engagement.

All individuals, whether they are students or workers, need to make meaningful connections to content. These connections provide a basis for continued work.

The findings from study of reward and self-related information processing provide good evidence that if a person is supported to make personally relevant (self-related), meaningful connections to content, this activates the part of the brain where the self and reward overlap, setting up the potential for all individuals' interest to develop. Leveraging the development of interest has benefits for all individuals, not only students. When interest is supported to develop and deepen, workers are likely to stay in their jobs, be motivated to learn, have improved efficiency, and make meaningful contributions to the workplace.

Acknowledgments

We thank the editors of this volume for their thoughtful suggestions on earlier iterations of this chapter. Editorial assistance provided by Richelle Robinson and Melissa Running is most appreciated. Research support from the Swarthmore College Faculty Research Fund is also gratefully acknowledged.

Notes

- 1 Our focus in this chapter on the developmental aspects of strategy use in the workplace provides background information that complements Casillas, Kyllonen, and Way's (this volume) discussion of the use of formative assessments to track soft skills (e.g., persistence) as indicators of workforce readiness.
- 2 This conceptualization focuses on how the content of work relates to the person and could be considered an additional category of "decent work," as discussed by Douglas, Duffy, England, and Gensmer (this volume).
- 3 Even though interest tends to be associated with positive feelings, negative feelings can also trigger interest which results in focused attention (Hidi & Harackiewicz, 2000; Iran-Nejad, 1987). In order to enable an interest in some content to develop, however, negative feelings have to subside. Supporting a person to experience positive affect can serve to attenuate their negative feelings.
- 4 Reeve and Lee (2016) suggest that in addition to the commonly activated areas of intrinsic and extrinsic reward in the brain, there are uniquely activated areas of each.
- 5 Generally, educational and social psychologists tended to focus on the negative aspects of reward, whereas neuroscientists, economists, and business professionals have been more concerned with evaluating the positive outcomes. For example, Anselme and Robinson (2019) report that uncertainty about the delivery of rewards has motivational properties that they refer to as Incentive Hope.
- 6 There are also limitations of context, genetic, and physical makeup that may temper how such interest unfolds (see Renninger & Hidi, 2016).

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