Eyes towards the Future: The Effects of Teacher Rotation and Power Level on Future Time Perspective and Their Outcomes

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A Thesis Submitted to

The Education University of Hong Kong

In Partial Fulfillment of the Requirement for

The Degree of Doctor of Philosophy

July 2019

ABSTRACT

Teaching and schooling are future-oriented. This is where the phenomenon of future time perspective (FTP) has particular relevance. FTP refers to a concern for and consideration of one's future (Kooij, Kanfer, Betts, & Rudolph, 2018). It is a powerful factor in predicting academic and work performance, individual wellbeing, and planning behavior (e.g. De Volder & Lens, 1982; Kooij, et al., 2018; Morselli, 2013). However, research has offered relatively little evidence about the role of FTP at work, its antecedents and consequences. This study regards FTP as an important motivational source and path to transfer an individual's cognitive and mental resources into action. Drawing on social cognitive theory and proactive behavior model, the study hypothesized that two work-role related factors, rotation experience and power level, facilitated the formation of longer FTP. It further identified the pathway from work-role related factors to future-oriented behaviors through FTP.

Two studies were conducted from 2017 to 2019. Study 1 was a cross-sectional survey with dyadic data involving 284 valid paired in-service teachers. SEM results by Mplus 7 showed their power level and rotation experience were significant predictors of their FTP, which in turn improved their proactive behavior, including personal initiative and creativity behaviors. The mediating effects of FTP were further tested by bootstrapping. The results of the survey study revealed that teachers who experienced rotation and had a higher level of power demonstrated a longer time perspective. They undertook more proactive behavior, including creativity and personal initiative behaviors. In contrast, teachers who had not experienced rotation in school or possessed a lower level of power tended to have a shorter FTP, which constrained proactive behaviors.

Study 2 adopted a scenario experiment design through manipulating power and rotation experience to test the causal relationship between rotation experience/power and teachers' proactive behaviors. There were 149 participants involved in Study 2. However, the scenario experiment study generated two contradictory results from the research hypotheses. Specifically, rotation experience was negatively related to FTP and power reduced the willingness in proactivity.

The theoretical and practical implications were discussed. Firstly, this study extends the FTP literature by showing that work-role related factors such as rotation experience and a higher power level encourage teachers to have longer FTP. Secondly, it adds to the understanding of the intangible benefits of rotation experience, including future-oriented perception and behaviors, as important but neglected advantages of teachers' professional development. Thirdly, the current research affirms the connection between FTP and future-orientated behaviors, including personal initiative and creative behaviors. FTP as an explaining mechanism might could account for why power holders and rotators are more willing to act to make changes. This study also points out the practical implications for school leaders. It is important to help frontline teachers to experience more job roles and accumulate more cognitive resources, which could motivate them to be proactive in changing their work environment.

An abstract of 472 words

Keywords: Rotation experience, Power, Future time perspective, Creativity, Proactive behaviors.

ACKNOWLEDGMENTS

Foremost, I owe my greatest debt of gratitude to my principal supervisor, Dr. Jiafang Lu, who has been consistently supportive and encouraging, from the beginning of my Master study up to the present. Her passion and professionalism inspire me tremendously. Without her kindness, patience, and guidance, I would not have accomplished this important work and reached this milestone in my life. I am grateful for my associate supervisor, Dr. Zhenlin Wang. She has spent so much time reading, re-reading, and improving almost every sentence in my research. I am forever in debt to her for the numerous detailed, valuable suggestions. Moreover, I wish to sincerely thank my external panel members, Professor Dean Tjosvol, Dr. Lynda Jiwen Song; and internal panel members, Dr. Ronnel King for their crucial help and encouragements in making this study better. I appreciate all the support provided by the administrative teams in the EPL Department, APCLC and Graduate School.

Apart from all the support received from my official supervisor team, I am blessed to have Professor Tam King-Fai as my mentor and English writing tutor. He read my early draft of the thesis patiently and gave me lots of writing support. I would also like to thank Dr. James Ko, who is invariably helpful, kind and available when I need advice. In addition, I am deeply grateful for the support of Professor Chiu Chi-Shing, Dr. Tang, Shaobing, Mr. Zheng Longfei and Miss Teng Mingjuan during my data collection process.

Heartfelt gratitude goes to my friend Miss Guo Feng for her companionship all these years (I'm tearful even as I am writing this very short sentence). We have been through a lot together and I would never have overcome the challenges without you. I wish you all the best in your academic journey. I also wish to thank the "EdU support team" - Miss Perry Lee and Miss Yasmin Fong for

making the workplace such a fun and enjoyable place. I am grateful too, to have received much guidance from Mr. Anthony Adames who will hopefully get his Doctoral degree this same year! I wish to thank Miss Lan Wei, Vivian, her husband Mr. Song Yue, Miss Wei Xiaohong, Miss Li Luxi Lucy and Mr. Eason Li for their continuous support, patience and valuable advice at different stages of my study.

My earnest gratitude goes to my parents for their unconditional love and support as always. I also want to thank my sister Li Qianqian, and my uncle and aunt for always being supportive and positive. I am grateful for the never-failing love of my grandparents. The days back in Lanzhou with you are among the fondest memories in my life.

Apart from that, I want to give credit to Pacific Coffee on campus for the abundant supply of coffee over the years; and the Avengers, for a decade of companionship.

Finally, special thanks go to Mr. Gintoki Sakata, who is an important part of my life and my source of persistence.

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CHAPTER 1 INTRODUCTION

This chapter introduces the concept of FTP. It further discusses its potential effects in the workplace, especially in the school context. Next, this chapter identifies three research gaps regarding FTP: 1) its work-role related antecedents; 2) its work-related outcomes; and more specifically, 3) how teachers might develop a longer FTP and its benefits. Furthermore, in response to these three gaps in the literature, this chapter introduces the purposes of the current study and its potential contributions. Finally, this chapter presents the structure of the thesis and introduces the content of each chapter.

1.1 What is Future Time Perspective (FTP)?

"Time present and time past are both

perhaps present in time future.

And time future contained in time past."

---T.S. Eliot, The Four Quartets

Individuals' concept of his or her future has a decisive effect on what life that individual will live. The ability to plan ahead is a unique feature that emerges in the developmental process and is embedded in the psychological and behavioral systems of individuals (Carstensen, 2006). Unlike the objective time (clock time), the subjective perception of time, the extent to which individuals direct their attention to the past, the present, and the future, varies among individuals (Zimbardo & Boyd, 1999). Of the three, perception of the future is the primary motivational force in achieving a desired future end state (Nuttin, 2014). It could alter people's view of the world and bring beneficial outcomes in one's life through important yet often imperceptible cognitive changes.

The socioemotional selectivity theory suggests that individuals have different abilities to monitor time, adjust their time horizons, and appreciate the fact that time ultimately runs out, not only because of aging, but more importantly, due to the differences in their future time perspective (FTP) (Carstensen, Isaacowitz, & Charles, 1999). FTP refers to a general concern for, and corresponding consideration of, one's future. It is a self-contextualizing, flexible, and cognitive-motivational construct (Kooij, Kanfer, Betts, & Rudolph, 2018; Nuttin, 2014; Zacher & Frese,

2009). Acting as a driving force, FTP directs the individual to behave in a manner that helps him or her achieve benefits of the transcendental life (Boyd & Zimbardo, 1997). Everyone conceives images of the future, but not all could gain motivational force and transform the picture into reality. Examining individual differences in FTP could help us better understand why people behave differently with regard to a desired future and predict how it might affect employee outputs in the workplace.

Some of the existing literature tends to take FTP as a trait-like construct and adopt the concept interchangeably with that of future time orientation (Zimbardo & Boyd, 1999). However, empirical evidence suggests that FTP is a cognitive construct that can be modified by both environmental and individual factors (Kooij et al., 2018; Seijts, 1998a). Cultural factors, demographic factors (including age, gender, socio-economic status), socialization processes, and individual dispositions all have a role to play in constituting one's predicted FTP (Greene & DeBacker, 2004; Kooij et al., 2018; Padawer, Jacobs-Lawson, Hershey, & Thomas, 2007). Considerable research has tried to reveal the effects of FTP on adolescents and the aging population in order to study academic performance or retirement life. The studies suggested that these groups tended to have shorter FTPs for different reasons (Lens, Paixão, Herrera, & Grobler, 2012). The former group might be constrained by their cognitive processing development and economic resources, whereas the latter group tended to view the time that they have left as limited. However, there is less empirical evidence in the literature on the FTP of adults and its effects in the workplace (Seijts, 1998a).

1.2 Temporal Orientation Matters and Its Motivational Role

As a primary motivational force (Nuttin, 2014), FTP presents itself in multiple dimensions and translates into incentives and guides for actions via self-regulatory and self-motivational

mechanisms (Bandura, 1989; Miller & Brickman, 2004a). Over the past two decades, a growing amount of research in multiple disciplines has focused on the effects of differences in temporal orientation (Shipp & Cole, 2015). In environmental research for example, sustainable development requires a long-term FTP that might even extend beyond one's lifetime. One laboratory study implied that decisions made by people with longer FTP were more environmentally friendly than those of individuals with shorter ones (Joshi & Fast, 2013). In health research, FTP predicts whether an individual would have addiction problems, such as alcohol, obesity, and smoking (Critchfield & Kollins, 2001; Weller, Cook, Avsar & Cox, 2008). In settings involving choice, individuals with a longer FTP showed the ability to resist present gratification to benefit their future selves. This process is closely associated with many cognitive mechanisms, including goal setting, decision making, self-motivation, self-regulation, personal evaluation, and standard generation (Bandura, 2001; Carstensen, 2006).

FTP is also a powerful predictor not only of academic performance but also of related constructs such as learning strategy, persistence, deep learning, and several adaptive self-regulatory study strategies that lead to better academic performance (de Volder & Lens, 1982; Lens et al., 2012; Leondari, 2007; Morselli, 2013; Zimbardo & Boyd, 1999). The perception of the future also manifests its effects in the workplace (Mohammed & Nadkarni, 2014). For example, future orientation was associated with a reduced tendency towards procrastination in the workplace, the main factor leading to sub-optimal performance (Ferrari & Díaz-Morales, 2007; Gupta, Hershey, & Gaur, 2012; Sirois, 2014); the future temporal depth of CEOs also promotes their firms' competitive aggressiveness, which in turn positively predicts firm performance (Nadkarni, Chen, & Chen, 2016). Furthermore, temporal diversity at the team level, particularly when ignored by leaders, leads to counterproductive outcomes (Mohammed & Nadkarni, 2011, Chen & Nadkarni,

2017).

Overall the literature suggests that FTP may influence several cognitive processes, such as information processing (Carstensen, 2006); self-regulation, and self-motivation (Bandura, 2001)the evaluation of situations as well as of themselves. A range of empirical evidence suggests that FTP is an essential construct that, to a large extent, determines human actions. It may serve as a motivational source that drives individuals to take action by reminding them of future consequences. Individuals with longer FTP have a shorter psychological distance from their future goals/selves (Lens et al., 2012; Maglio, Trope, & Liberman, 2015). In other words, reward in the future is as close as a present reward for those seeing farther ahead. FTP also acts as a guideline to regulate individuals' behavior by helping them to envision the desired outcome. This adds more utility value to the goals and tasks at hand, leading individuals to commit more to their goals and perceive tasks at hand as more instrumental. Since they perceive a shorter distance between their present and future goals/selves, long FTP individuals are better able to balance future goals.

Teaching and schooling are work for the future. As students usually have a relatively shorter FTP due to their limited resources and cognitive developments, teachers are more influential in forming students' perceptions of time (Greene & DeBacker, 2004). FTP is an important factor in predicting teaching performance. For pre-service teachers, a longer FTP fosters a clear professional development goal as well as deeper concerns about their influences not only on their selves or the specific task but also on students. These, in turn, lead to a higher level of wellbeing (Hagger & Malmberg, 2011). Not all goals are anticipated to be completed in the here and now, especially those related to education. Hence, it is important for teachers to possess the ability to conceptualize a complex future and forthcoming career progression. Teachers with longer FTP

show greater teaching ability, more satisfaction in being a teacher, and higher intrinsic motivation, and contribute more to society (Eren & Tezel, 2010). FTP also assists teachers in aspiring towards professional development and leadership, and persist in longer-term planning (Eren, 2012).

Although there is limited evidence concerning pre-service teachers, studies suggest that FTP is important in predicting teaching-related job performance (Eren, 2012; Hagger & Malmberg, 2011). However, current studies are inadequate for us to judge its antecedents and effects in the workplace for the following reasons. First, most studies focus on pre-service teachers who are relatively inexperienced in teaching. Second, these studies are more concerned with general intentions rather than the actions in the workplace related to work performance, making it difficult to answer the questions of how and why looking further ahead could enhance work performance. Therefore, the effect of FTP on teacher behaviors, especially in-service teachers, deserves more attention, not only in terms of their influence on students but more urgently, in terms of their own actions in the workplace.

1.3 Research Gaps

1.3.1 Work-related Experiences Form one's FTP

A growing body of work suggests that job-related factors form part of a process of socialization that boosts one's FTP. Job complexity and job control are the most frequently studied job-related factors, and positively correlate with each other. These constructs might significantly promote employees' occupational FTP as they offer important situational resources for employees (Zacher & Frese, 2009). FTP is an important work motivation that could focus individuals on achieving a desired future, rather than waiting for what has already been arranged. A systematic review

suggests that FTP at work mediates the association between job characteristics, such as motivation enhancing practices, and work outcomes (Henry, Zacher, & Desmette, 2017). Further, another study suggests that workplace interventions could influence employee's proactive behaviors, which has varied effects on people with or without a future orientation (Strauss & Parker, 2018).

However, less attention has been paid to role-related factors, such as position, status, power level, and job content. Obviously, FTP as an outcome of socialization process could be augmented through learning, jobs, and other related experience (Henry et al., 2017; Seijts, 1998a). Different work roles bring different socialization processes, accompanied by different job content, social relations, knowledge, skills, and experiences. It is necessary for us to understand why and how work-experience differences could give rise to various FTPs, and the benefit of FTP in the workplace might be.

1.3.2 The Connection between FTP and Future-oriented Behaviors

FTP predicts future-related behaviors and planning-related behaviors, which highlights the common aspect of these behaviors: acting in advance.

First, an ability to consider the future significantly and positively correlates with planning behavior in the area of health, retirement, and career (Kooij et al., 2018; Strauss, Griffin, & Parker, 2012; Taber & Blankemeyer, 2015). Individuals who focus on the future are also more able to realize and insist on these plans. They perform better in self-regulation and self-motivation. Consistent findings on the negative relationship between chronic procrastination and FTP suggest that procrastination is a consequence of failing to regulate oneself due to lack of FTP (Ferrari & Díaz-Morales, 2007).People who lack FTP are prone to present rewards and joys,

which makes self-regulation more challenging for them.

Secondly, it is also well established that a longer FTP during student years promotes academic achievements. Learning is a challenging task and requires one to invest effort longitudinally. Students with longer FTP tend to adopt strategic learning and more persistence in dealing with difficult tasks, which leads to better learning outcomes (Bembenutty & Karabenick, 2004; de Volder & Lens, 1982; Shell & Husman, 2001). These studies argue that FTP motivates and regulates students to achieve learning goals to gain better control of their future.

Although the literature has begun to untangle the relationship between FTP and many future related behaviors, we still know little about its relationship with future-oriented behaviors at workplace. Future-orientated behaviors in the workplace, such as voicing, issue selling, innovation, and taking personal initiative (Bindl & Parker, 2010; Parker, Bindl, & Strauss, 2010b), focus on the future as well as on change. These are important deciding factors in measuring work performance in the 21st century, especially in schools. Proactive behaviors emphasize the same approach as FTP, which is acting in advance. FTP has a mediating effect in the workplace, enhancing both intrinsic and extrinsic motivation, affective commitment, work engagement, and job satisfaction (Henry et al., 2017). Only individuals who have a perception of the future are aware of the necessity of considering change and focusing on that future. Regrettably, despite previous study of the association between FTP and goals, as well as future-related behaviors, the relationship between FTP and future-orientated behaviors is still under-examined.

1.3.3 Neglected Research on Work Role Related Teacher Professional Development

Teacher professional development is closely linked to teaching and school effectiveness. However, in the past teacher professional development was usually conducted through short-time learning activities such as workshops or seminars (Villegas-Reimers, 2003). Only in recent years have a variety of training methods become more emphasized in teacher professional development, including the development of professional learning communities, action research, or acquisition of a degree (Villegas-Reimers, 2003). These long-term learning approaches and learning from practice are now valued by researchers and schools because of the increasing belief that teacher learning is a process within a particular context over time (Opfer & Pedder, 2011; Villegas-Reimers, 2003).

Rotation, for example, is a popular on-the-job training method that varies in forms in different regions. Regardless of its form, rotation not only improves teachers' non-teaching skills, including social and management skills, it also facilitates teacher cooperation and mutual learning. The latter two are effective indirect professional training methods and deserving of more attention.

However, the question of what teachers could learn from rotation experience, and how, still awaits an answer. In this regard, during the rotation process, we treat teachers as active learners responsible for seeking the opportunity to learn. Therefore, what could be learned in rotation is highly dependent on individual differences, which also needs to be further researched. The lack of supportive large-scale quantitative research also limits our understanding of the teacher training effects and teacher change process (Avalos, 2011).

1.4 Current Research: Work-Role Related Interventions and Future-oriented Behaviors

as outcomes

Overall, there is little agreement in the present literature on the definition and construct of FTP. Still less does the literature confirm what role it plays in the workplace and how work-related factors might affect it. This study tries to fill the gap at an individual level and reinforce the connection between work-experience factors and important work outcomes within schools. Addressing these specific gaps as identified in the literature, the purpose of this study is to further verify the motivational role of FTP, which is associated with the accumulation of cognitive resources. In particular, as Figure 1.1 illustrates, it is hypothesized that work-experience related constructs that help accumulate individual competencies would result in a longer FTP, which in turn encourages the teacher to adopt more future-oriented behaviors.

1.4.1 The Theoretical Foundations

The theoretical framework of this study built upon the proactive behavior model (Parker, et al., 2006) and supplement with social cognitive theory. Drawing on the model of proactive motivation, this study tried to identify job-level distant antecedents as well as the mediating role played by FTP. Individuals as proactive learners oriented towards growth as long as they see the necessity. Although FTP is not motivation per se, it acts as motivation and regulation offering "reason-to" and "can do" motivations for proactive behaviors. FTP has showed closely associate with intrinsic motivation, introjected and integrated regulation (Bembenutty & Karabenick, 2004; de Volder & Lens, 1982, Lens et al., 2012). Thus, this study take FTP as a motivational source that connect working experience with future-orientated behaviors.

However, the role of FTP is still not clear if solely depend on proactive behavior model. Hence,

the social cognitive theory helps to supplement the relationship between work-related experience and FTP. Further, the perspective of human agency suggests that past experience plays significant role in shaping ones' anticipation and expectation cognitively (Bandura, 2001). Therefore, two work-related factors that can largely affect working experiences were selected: power and rotation experience.

In summary, this study proposed that FTP is key to making teachers aware of the need to change. Furthermore, having enough resources and opportunities within the context is vital to developing prescience about themselves and their workplace. The proactive behavior model highlights that such behaviors need consistent motivation, which comes from work related experience. The detailed discussion of these theoretical foundations is presented in the next chapter. The basic assumption of this study is that FTP acts as a motivational mechanism to translate accumulated resources into the willingness and action to change the present situation as well as reduces discrepancies between reality and a desired future. This study aims to answer the following questions.

1.4.2 What Could Form a Longer FTP in the Workplace?

The socialization process is important in developing individuals' FTP. Work experience is one important aspect of the socialization process, which forms the value system and beliefs of employees. During the socialization process in the workplace, as they acquire information and participate in relationship building, teachers not only learn about other people and the school but also develop a better understanding of their own competence longitudinally.

Factors associated with the formation of FTP include culture (Hofstede, 2012; Chen, 2013), individual experience including chronic regulatory focus and locus of control (Kooij et al.,

2018). Work-related factors, such as enriched job content, could develop individuals' cognitive process. Rotation experience creates new contents, new tasks, and new social relationships. It helps the employees build collective organizational knowledge, a knowledge-sharing system, and problem-solving skills (Brunold & Durst, 2012; Hong & Via, 2008; Allwood & Lee, 2004). Rotators were trained to fit the organization and the industry. In line with the human agency perspective, by increasingly understand and adapt to the current situation, rotators generate positive past experience and controllable perceptions about the organization they belong. Further, according to the proactive behavior model, the changes through rotation experience encourage the "can do" attitude as well as the expectation of the desired future, which implies a "reason to do". Both are important psychological drives in order for an individual to manifest future orientated behaviors. Hence, job rotation as a little push from the organization could offers an opportunity for rotators to build or rebuild their FTPs through seeing and building up a bigger picture of the organization or future self.

While job rotation as a training method is a widely adopted and profitable approach to training the employees from an organizational perspective, rather limited attention has been paid in human resources management and the teacher professional development literature to the intangible changes, both gain, and loss, within rotators themselves. Past literature has emphasized the loss of specialization of the employees as a cost of job rotation, and that has been considered by many organizations as a common reason not to adopt rotation as a training method. However, as Huang (1999) suggests, rotation brings both the employees and the employers into "a new covenant", in which the employees gain the opportunity to develop their abilities in exchange for better long-term productivity (Waterman, Waterman, & Collard, 1994). The intangible changes of the employees make them more valuable to their organizations. Such

changes include changes in motivation, goal setting, affective commitment, prosocial behavior, and creativity (Grant, 2007).

The psychological change of the employees during and after the experience of rotation should be the focus of rotation research. Job content has changed rapidly in the past two decades, with the demand for specialization falling while the demand for flexibility rises. Therefore, in terms of long-term development, rotators acquire different attitudes, cognitive processes, and psychological states, compared with non-rotators. Bringing these factors together, it is proposed that experiencing more roles in the workplace is an essential process to encourage teachers to build up a longer FTP.

Power is a factor that profoundly affects individuals' interpretation of themselves and the external environment. Power holders tend to generate positive evaluations of themselves, rendering them more confident, sometimes overconfident in decision-making (Fast, Sivanathan, Mayer, & Galinsky, 2012); they also report more positive emotions (Anderson & Berdahl, 2002). Power holders tend to underestimate the time a task might take (Weick & Guinote, 2010), or perceive they have more available time (Moon & Chen, 2014a) as they think they have more control over their own time. This reduces their fear, as well as their anxiety about future events, even death (Belmi & Pfeffer, 2016). Taken together, these factors encourage individuals to take risks, pursue goals, take charge to control the future (Hiemer & Abele, 2012). Conversely, the lack of power leads to more procrastination (Guinote, 2007), which implies a failure of self-regulation closely related to one's FTP. Constrained by their present environmental distractions, powerless individuals tend to find it more difficult to think themselves in the future. Following this logic, it is proposed that power serves as an important antecedent of FTP. As work-experience offers individuals different mental and cognitive resources, the employees tend to

build up a belief system that the environment is under control, which makes them more able and willing to exercise foresight.

1.4.3 What Work-related Outcomes Could FTP Lead To?

As a meta-analysis suggests, FTP to a large extent determines achievement-related outcomes, healthy behaviors, and psychological wellbeing (Kooij et al., 2018). It is a strong motivational source that encourages individuals to take action to change the present and achieve a desired future. Individuals who report a longer FTP tend to make better career choices and retirement planning (Henry et al., 2017; Kooij et al., 2018); they care more about their own health (Kooij et al., 2018); and even exhibit more pro-environmental behaviors (Milfont, Wilson, & Diniz, 2012). Similarly, proactive behaviors focus on the future and is change-orientated in the workplace, which can be facilitated by envisioning a better future. According to the proactive model, positive evaluation of self and environment is necessary to encourage proactive behaviors initially, such as high in self-efficacy or control appraisals; then intrinsic and integrated motivation offers individuals a reason to be (Parker, Bindl, & Strauss, 2010b; Parker, Williams, & Turner, 2006). Individuals who integrate these two conditions tend to be more concerned about the future and try to change the present to achieve the desired future.

In summary, drawing on the social cognitive and self-determination theory, the purpose of this study is to identify the motivational role of FTP in the workplace, its work-role related antecedents, and its outcomes. This study also focusses on the school context and emphasizes the importance of teachers' FTP. The overall framework is demonstrated in the following Figure 1.1.

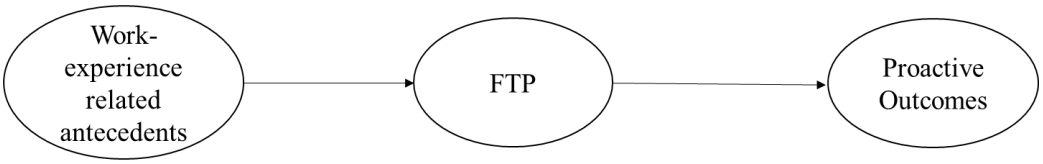

Figure 1. 1 The Proposed Relationship between FTP and Work-related factors.

1.5 Potential Contributions

Drawing on the social cognitive theory, self-determination theory and the proactive behavior model, this study posits that once individuals form personal expectations and standards, they tend to proactively change the environment and themselves to approach the desired future. This research investigates what precedes FTP and how variations in FTP could give rise to future orientated behaviors.

This study should contribute to the literature in three important ways. First, it posits FTP as an important mechanism that transfers capabilities to action in the workplace. Time perspective research, although it has a long history, has yet to become a mainstream research topic in the behavioral and psychological fields. Individual differences in time perspective are related to academic and workplace outcomes, such as academic achievements and learning goals (eg: Zimbardo & Boyd, 1999), and workplace performance and wellbeing (Kooij et al., 2018). By considering FTP as a mediator, this study helps to better understand why accumulating resources and abilities could lead to action. For instance, previous literature suggests that rotation experience could facilitate creativity (N. Madjar & Oldham, 2006). Power has the same effect because it frees individuals from other influences (Galinsky, Rucker, & Magee, 2015). Nonetheless, there has not been sufficient research to offer a clear explanation of the mechanism. This study shows that FTP acts as the key element in deciding future-orientated behavior. Both

rotation and power enhance individuals' ability and confidence to control, create, or transform their future, as well as their perception of how much they could do so. This changes an individual's FTP, which brings about proactive behavior.

Second, this study highlights the psychological benefits of rotation experience as an important but neglected strategy for personal development. Beyond tangible performance improvement, rotation as one of the common on-the-job training methods also provides benefits in encouraging changes in cognitive processes and mental states. This study adopts an individual perspective to investigate the psychological and behavioral consequences of job rotation. Research about job rotation at the individual level is surprisingly rare and most of it focuses on the advantages from an economic and productive perspective (e.g., Arya & Mittendorf, 2004; Jaturanonda, Nanthavanij, & Chongphaisal, 2006). However, the literature is relatively uninformed about the individual employees' changes accompanying this experience. This study fills this knowledge gap by focusing on the long-term psychological changes of rotators versus non-rotators.

Third, adopting an integrated model, this study advances our understanding of FTP as an essential proximal antecedent of proactive behavior. Aimed to change and prevent potential problems, proactive behaviors are among the most beneficial behaviors in organizations (Bindl & Parker, 2010). Only employees with foresight are aware of the necessity of proactive behaviors. Several meta-analyses and reviews have summarized the proximal antecedent as perceived capacity, including that of role breadth self-efficacy, positive affect, and challenge appraisal (Ohly & Fritz, 2010; Parker et al., 2010a, 2006). This study further highlights FTP as one of the antecedents to predict proactive behaviors.

In addition to these three key potential theoretical contributions, this study also shed light on the practical implications for teachers' professional development. It shows how job rotation could

benefit or hinder proactive behaviors for teachers in both primary and secondary schools. The findings provide guidance to the adoption of personnel training methods. By adding the consequent behaviors of FTP, this study also helps practitioners to realize the importance of cultivating teachers' FTP.

1.6 Dissertation Outline

This study investigates the mediating role might played by FTP, and its connections to work-related experience and future-orientated behaviors. Addressing the social cognitive theory and other theoretical foundations, it proposes a theoretical model to explain the psychological effect of work-role related constructs based on the proactive behavior model. This study hypothesizes that by accumulating resources, individuals could anticipate the more distant future, set longer goals, and become motivated by these goals, which leads to more future-oriented actions. Two paths of accumulating resources are proposed: rotation experience and power level. The first allows individuals to accumulate resources by letting them acquire extra skills, knowledge, and abilities. The second allows them to accumulate resources socially and psychologically.

In chapter two, the definition and construct of FTP are introduced. Three theoretical foundations are introduced in this chapter: social cognitive theory, social determination theory, and the proactive behavior model, to provide an overarching theoretical framework. Theoretical foundations are followed by a detailed literature review that includes the definition of power, job rotation, creativity, personal initiative behaviors, and FTP, and previous related research. Further, I consolidate the theoretical arguments and explanation to justify the proposed theoretical framework by combining literature and theory. A theoretical model that outlines two ways of accumulating resources and generating proactive behaviors is introduced. More specifically, it is

proposed that FTP serves as the key to transfer the resources into actions.

Chapter three and four introduces two empirical studies testing the hypothesized model. In study 1, a large-scale survey is adopted to test the hypothesized mediating effects. In study 2, a scenario experiment design is conducted to verify the causal relationships between power/rotation and proactive behavior. the direct and indirect effects among variables. Chapter five discusses the limitations of this study, its potential theoretical and practical contribution, and directions for future research.

CHAPTER 2 LITERATURE REVIEW

This chapter reviews the related literature and constructs an integrated model. First, it reviews the literature defining FTP. Second, it utilizes three motivational theories, including the social cognitive theory, the self-determination theory, and the proactive behavior model, to justify the proposed model. Last, based on the integrated model, this chapter develops the hypotheses of FTP in relation to rotation experience, power, and proactive behaviors.

"The qualities most useful to ourselves are…… self-command, by which we are enabled to abstain from present pleasure or to endure present pain, in order to obtain a greater pleasure or to avoid a greater pain in some future time"

-- Adam Smith

2.1 Future Time Perspective (FTP)

2.1.1 The Definition of FTP

Whether FTP is a unitary or multidimensional construct is debatable, with regard to either its definition or approach to measuring it (Padawer et al., 2007). This study began with a search of the literature over the past 30 years via the online database of Google Scholar. Keyword terms used to capture this concept were *time perspective, future time orientation, and future time perspective.* Papers in the area of psychology, education, management journals were included in the literature review, following a reverse search based on the reference sections of review. The key literature is summarized as follows.

Nuttin and Lens (1985, 2014) first identified FTP as a cognitive-motivational resource. Time perspective as a construct is distinguished from time attitude and orientation, including its extension, density, degree of structuration, and level of realism. It includes both time perspective toward the past and that toward the future. FTP is measured by the temporal localization of the objects and events in the future. Nuttin and Lens argued that FTP represents the state that is "not yet achieved", in other words, that in the future. Nevertheless, these cognitive goals offer

regulations for present behaviors. A long, active, and realistic FTP leads to planning behaviors and facilitates the realization of projects and anticipations.

Zimbardo and Byod (1998) consider time perspective as a relatively stable process but can be learnt to change. They develop a scale to measure individual differences in time perception called Zimbardo Time Perspective Index. Based on American undergraduate students' responses, the measure identified five distinguished sub-factors of time perspective: past positive, past negative, present fatalistic, present hedonistic, and future. The convergent validity reveals a positive correlation between FTP and creativity (r = .09*), as well as consideration of future consequences (r = .52***). The interview data showed that students with long FTP are better planners ($\eta^2 = .48$) with clear future goals ($\eta^2 = .38$). This study not only devises a valid measurement of FTP, it also highlights its relationship with important psychological constructs of self-efficacy and anticipation.

Shell and Husman (2001) provide important evidence of FTP's motivating role played in predicting undergraduate students' study time and academic performance. This study define FTP as a person's concertation on the future and connection to that future, including dynamic and cognitive aspects. Canonical Correlation Analysis was adopted to show that both aspects of FTP re associated not only with longer study time and higher GPA, but also with contingency beliefs regarding the future. In addition, the cognitive aspect of FTP is also associated with self-efficacy. This study suggests that FTP is a distinct construct from contingency factors and functions as a motivator.

At around the same time, Seigts (1998) reviews studies on FTP and highlights its role in the workplace. The author first distinguishes FTP from future orientation and then identifies five subdimensions of FTP: extension, coherence, density, directionality, and affectivity. The first two

represent the cognitive aspects of FTP, while the latter three represent the affective and motivational aspects. This study proposes that individuals with longer FTP naturally have more distant goals, hence will develop more strategies to attain these goals. Further, proximal goals also facilitate self-regulation and assist in achieving the distant goals.

While Nuttin and Shell regard FTP as a multi-dimensional construct that includes cognitive and affective aspects, Zimbardo regards FTP as a unidimensional construct representing a general attitude. These studies all link FTP with the goal-achieving process and argue that longer FTP could boost behaviors that will bring future rewards.

Table 2.1 summarizes the key studies that defined FTP and developed measurements of FTP, including both empirical and theoretical studies. From the table, it could be inferred that earlier studies regarded FTP as a relatively stable trait. However, more recent papers tend to argue that FTP also has cognitive characteristics. Among these studies, two widely adopted definitions are: 1) Nuttin and Lens's (1982) definition of FTP as the motivational-cognitive source, and 2) Zimbardo and Byod's definition of FTP as a general attitude referring to "the depth of attention and consideration given to the future." (Husman, Brem, Banegas, Duchrow, & Haque, 2015). The former tends to take FTP as a learnable and changeable construct, whereas the latter regards FTP as a general attitude that is relatively stable and dispositional.

Plenty of studies follow this categorization and predict multiple important life outcomes, including health behavior, pro-environmental decisions, and wellbeing level (Laureiro-Martinez, Trujillo, & Unda, 2017; Milfont et al., 2012). FTP, unlike other subfactors, shows more power in predicting an individual's behavior. As Zimbardo suggests, perception about past and present is more related to the affective states, yet perception about the future tends to be associated with a more cognitive process.

A third emerging stream of literature on the definition of FTP emphasizes the role of age and relative life expectancy. Carstensen and Lang (1996) demonstrate that FTP is the feeling of how much time is left in one's life, which links FTP with one's age and limits the FTP within an individual's life. Cate and John (2007) further developed this concept into a 2-factor construct focusing on either the limitation or the opportunity. In line with this definition, FTP shows a negative correlation with the individual's age as the awareness of physical constraints grows. This study suggests that FTP is correlated with certain life events, such as having a family or approaching retirement (Cate & John, 2007).

Current studies tend to treat FTP as a multiple-dimensional cognitive construct for several reasons. First of all, Seijts (1998) suggests that it is better to take FTP as a cognitive structure since it is learnable and could be influenced by environmental factors. FTP is an outcome of the socialization process. Padawer et al. (2007) implies that the individual's career path might have an effect on FTP (Padawer et al., 2007). Although fewer studies try to identify the antecedents of FTP, it is suggested that cognitive ability and intellectual training are linked with its development (Trommsdorff & Lamm, 1975). Miller and Brickman (2004) illustrate that it is essential role of knowledge regarding possibilities and values in helping an individual setting distant goal. Incorporating internal locus of control, self-efficacy, and self-esteem, a stronger sense of personal potency, is helpful in developing a longer FTP (Kooij et al., 2018). A recent systematic review holds the view that FTP is a malleable cognitive structure that explains human behaviors above and beyond the Big Five model of personality traits (Kooij et al., 2018).

Second, FTP is the base for setting proximal and distant personal goals (Eren, 2009; Leondari, 2007). According to the social cognitive theory, proximal goals entail motivational effects more so than distant goals do. However, FTP yields not only a distant goal, but several simultaneously

consistent proximal sub-goals aiming at achieving distant goal. Therefore, compared with solely proximal goals and present rewards, FTP is a stronger motivator for action of change (Simons, Dewitte, & Lens, 2004).

In order to define FTP, several similar or overlapping concepts need to be distinguished. First, hope and optimism are considered as overlapping with FTP to some extent. However, optimism refers to a tendency to believe good things will happen. This emphasizes positive attitudes in general. FTP, on the other hand, is a more cognitive process that includes an evaluation process based on one's knowledge base and capabilities. Individuals with longer FTP tend to have an optimistic attitude, but individuals who are optimistic are not necessarily future-oriented. The second terminology is future orientation, which is used interchangeably with FTP in many studies (e.g. Carmi, 2013; Crockett, Weinman, Hankins, & Marteau, 2009). However, Seijt's (1998) argues that future orientation refers to the degree of an individual's general orientation towards the future, compared to the past and the present; while FTP is a cognitive factor associated more with planning and anticipating the future.

Following Kooij et al. (2018), this study defines FTP as a general concern for, and corresponding consideration of, one's future. It represents the degree to which an individual could anticipate and plan for future events, both as traits and as cognitive processes (Gupta et al., 2012; Seijts, 1998b). The way people treat their past or present might be dispositional and emotional, but the situation regarding the future is different. Thinking and planning for the future require many cognitive processes, which are affected by environmental factors, and thus require more cognitive resources (Nuttin, 2014).As a personal trait, the developmental process of FTP is nevertheless cognitive in nature and is activated by environmental and personal interventions (Trommsdorff & Lamm, 1975).

It is especially important for teachers to have longer FTP because by its very nature teaching involves preparing students for the future. Apart from the effect it might have on students, FTP is an important factor in influencing teaching choices and professional development plans (Eren & Tezel, 2010). Furthermore, teachers with a longer FTP show more effort and persistence in planning, and have more aspirations for their professional development and leadership (Eren, 2012). It is hypothesized that FTP predicts teachers' work outcomes.

Table 2. 1 A Summary of Key Definitions, Constructs, and Measurements of FTP

Author, year	Definition	Dimensions	State/trait	Scale
Nuttin & Lens, 1982	The future is the time quality of goal object	Multi-dimension	Cognitive-motivational	Nuttin's technique for coding FTP
De Volder & Lens, 1982	Future anticipation of future goals	Two aspects	Trait & Cognitive	Nuttin's technique for coding FTP
Lang & Carstensen,1996	Individuals' perception about remaining time to live.	Uni-dimension	State	Future Orientation scale
Seijts, 1998	Individual's cognitive understanding of the relationship between large blocks of time and expectations of the future	Multi-dimension	Ability	Theoretical Paper
Zimbardo & Boyd, 1999	Planning for and achievement of future goals; as the general orientation towards the future.	Sub-dimension of Time perspective	Trait	ZTPI
Cate & John, 2007	The feeling of how much time is left in one's life	Two-dimension	State	*Future Orientation scale* & Feeling about life Scale
Husman & Shell, 2008	The present anticipation of future goals	Multi-dimension	State	FTP Scale
Seginer, 2009	Individual tendency to engage in future thinking	Multi-dimension	Trait	Theoretical paper
Bluenore, 2002	How far ahead individuals tend to consider the future.	Past/Future temporal depth	State	Temporal depth Index
Husman, et al., 2016	The degree to which a person integrates the chronological future into the present when setting and pursuing goals	Three levels, uni-dimension	Trait to state	FTP Scale
Kooij, et al., 2018	A general concern for and corresponding consideration of one's future	Multi-dimension	Cognitive-motivational	ZTPI, FTP Scale, Future Orientation scale

2.1.2 Correlates of FTP

Individual differences in FTP. Although fewer researchers have focused on the antecedents of FTP, studies do suggest that FTP is associated with demographic factors, dispositional factors, and socialization processes. While gender and age are reported in some studies to correlate with FTP, the results are mixed. Women tend to generate more future goals than men, whereas man extent further to the future (Greene & DeBacker, 2004). While Zimbardo and Boyd (1999) reported that FTP correlate positively with age, other studies report that adolescents and the elderly demonstrate a relative shorter FTP than working-age adults (Brothers, Chui, & Diehl, 2014; Greene & DeBacker, 2004). Individuals with higher education level or from a better socio-economic background tend to have longer FTP (Trommsdorff & Lamm, 1975). One study has focused on the change in FTP of undergraduate students within a short time period, and implied that it is a malleable characteristic rather than a stable disposition factor (Eren, 2009). Cultural facets (among the strongest of socialization influences), including language (M. K. Chen, 2013) and values (Hofstede, 2003), have been shown to be connected with individuals' formation of a time perspective. Job characteristics also play an important role in the socialization process that could build or rebuild employees' perceptions about their situation and themselves.

FTP is associated with cognitive processes. Individuals with a long FTP have a stronger connection with their future self, goals, and rewards. They show the following two important features: 1) they project themselves into a more distant future than individuals who are oriented

towards present reward and punishment. Hence, they have a closer temporal proximity to their future self (Trope & Liberman, 2003). 2) They tend to add more perceived instrumentality to tasks at hand, with the purpose of better achieving the future desired states (Eren, 2009; Greene & DeBacker, 2004; Lens et al., 2012).

Not all goals are as simple as going swimming tomorrow. Many involve complex and careful planning with regard to envisioning a more distant future. Individuals with a longer FTP tend to set more distant goals and a more effective proximal goal system that helps to achieve the distant goal than those with a shorter FTP. They also add more value to, and commit more, to the desired future state. They are willing to sacrifice present joy to achieve future goals. On the contrary, those with shorter FTP discount future rewards.

A higher level of perceived instrumentality is viewed as one of the important facets of FTP that increase the utility value of present tasks (Husman & Lens, 1999; Miller & Brickman, 2004). Given its high level of perceived instrumentality, FTP allows individuals to predict occupational self-efficacy because they develop their skills and capabilities on purpose through the tasks at hand (Park & Jung, 2015).

Individuals with a longer FTP adds higher perceived instrumentality as well as more valance to present actions (Husman & Lens, 1999; Leondari, 2007). In other words, individuals with long FTP are more easily motivated to by future award. Likewise, FTP also serves as a self-regulation process by reminding individuals of future consequences. The higher perceived instrumentality of tasks in the present also reduces the fear of failure. Aiming at a desired future end state, rather than immediate rewards, individuals cast their sights on the future, which makes them adapt to

failure faster. It also reduces the stress or negative emotions when they face proximal goal failure. Guided by distant goals, individuals could better appraise and handle failure. Seijts (1998) suggests that FTP has its place in work motivation and proposes that employees who have FTP set more distant goals in nature and develop and implement goals via a broader range of strategies. Integrating these two features, it is proposed that by increasing commitment and engagement to the distant goals, individuals would add more utility value to their proximal goals.

FTP outcomes. FTP is reported to correlate with many behavioral outcomes, such as achieving higher GPAs, studying for more hours each week, creativity, less frequency of lying, and other future-related constructs (Zimbardo & Boyd, 1999). Many studies in the education field hold the view that FTP serves as an important mechanism driving students to better self-regulate their learning (Bembenutty & Karabenick, 2004); get motivated through developing a more instrumental view of tasks at hand; add more value to the distant goal; and enhance both identified and introjected regulations (de Bilde, Vansteenkiste, & Lens, 2011; Husman & Lens, 1999; Leondari, 2007). In summary, students with longer FTP are more successful in academic performance due to various cognitive processes.

Individuals with a longer FTP report more behaviors promoting a healthy life. A stronger connection with the future self encourages individuals to save more money, purchase more properties, smoke less, have safer sex, and achieve a higher level of wellbeing (M. K. Chen, 2013; Eccles & Wigfield, 2002; Husman & Lens, 1999; Kooij et al., 2018). They not only have a healthier life; they also want a healthy environment. One meta-analysis suggests that having a

longer FTP encourages individuals to make pro-environmental decisions and support sustainable development (Milfont et al., 2012).

Employees with longer FTP are also likely to perform better in the workplace. A recent systematic review reveals that FTP mediates the relationship between job characteristics (e.g. job complexity, job control; Zacher & Frese, 2009) and work outcomes, (Henry, Zacher, & Desmette, 2017). It also enhances commitment to the organization and the career (I. Park & Jung, 2015). The degree to which a CEO focuses on the future increases the competitive aggression of the company, which boosts firm performance in certain circumstances (Nadkarni et al., 2016). Shipp and Core (2015) further illustrate that employees who are more orientated to the future show a higher level of OCBs, longer planning horizons, and fewer strains in life.

2.2 Theoretical Foundations

2.2.1 Theoretical Foundation I: Social Cognitive Theory

Social cognitive theory (SCT) helps to identify work-related antecedents of FTP and build up the linkage between work-related antecedents and FTP. SCT emphasizes the triadic reciprocal relationship among behaviors, personal characteristics, and environment factors (Bandura, 1989, 1991a, 1991b, 2001). SCT suggests that the relationship between human behaviors and external environment is a dynamic and reciprocal. The outcomes of past experience act as reference points to form ones' expectations of future events cognitively in the present and those expectations are converted into motivation and regulation of actions (Bandura, 2001).

Through the process of discrepancy reduction, individuals proactively generate intentions and

actions to achieve the desired future (Bandura, 1989). Hence, SCT helps to support the linkage between work-related antecedents and FTP from the following two perspectives.

First of all, SCT points out that human agents are embedded in and in interplay with the organizational environment (Bandura, 2005). Experiencing vertically or horizontally different roles could influences one's cognitive expectation of future events. Rotation experiences enrich job content and increase job complexity by offering teachers new tasks in a different environment. It also enhances the awareness and understanding of the school organization and the teaching profession by exposing teachers to a cognitively new environment and new colleagues with whom they might collaborate. Hence, rotators, compared with non-rotators, gain more access to new information, perspectives, and social networks. This role intervention method changes individuals' perception of job tasks by reducing the unknown area of the present. Through the learning process, rotators develop better understanding of their organization, as well as themselves, including their expertise, their capabilities, as well as their interest. Therefore, with the reduced unknown of the present, rotators can afford to build up their foresights.

Secondly, SCT sheds light on how accumulated positive appraisals of the external environment and the self that guide individual to move towards the future. Power, embodied in social relationships, is the ability of influencing others. It is a strong personal characteristic that alters individual perceptions of the environment and encourages power holders to act for future benefit. Free from environmental constraints, power holders activate the disinhibiting behavior system and are more committed to their goals and more willing to take action (Galinsky, Gruenfeld, &

Magee, 2003a; Guinote, 2007; Keltner, Gruenfeld, & Anderson, 2003). Power holders are inclined to feel the context is under control and, the future needs to be controlled, whereas the powerless are exhausted by dealing with the present. In this vein, power holders are more likely to develop longer FTP. More importantly, power holders are those people who are confident with themselves (Min & Kim, 2013), report positive appraisal on themselves and social relationships with others (Kifer, Heller, Perunovic, & Galinsky, 2013), worried less about possible failure. With the identical experience, power holders tend to have a more positive appraisal which lead to spare mental resources to take longer future into consideration.

SCT argues that individuals are proactive agents who strive to gain proactive control of both themselves and their environments (Bandura, 2001, 2005). Individuals ascribe various values to the future and these values guide people to behave. The desired future drives individuals to set distant goals and regulate their actions to reduce the discrepancies between their goals and the present situation to achieve a preferred future state (Bandura, 2001). Bandura demonstrates that personal past experience shapes his or her anticipations and expectations.

2.2.2 Theoretical Foundation II: The Model of Proactive Motivation

The model of proactive motivation reinforced the linkage between work-related antecedents and FTP and, more importantly, supports the connection between FTP and proactive behaviors. This model introduced the proactive behaviors are those aiming at achieving a different future at workplace, which required one's proactive motivational states, goal generation and striving processes. (Parker, Bindl & Strauss, 2010), These behaviors are self-started, future-oriented, and

aimed at changing the environment. Proactive behaviors have a preventive role and bring great benefits to organizations (Parker et al., 2010a; Parker & Collins, 2010). Further, this model also illustrates two-level antecedents that can predict proactive behaviors. The first level, i.e. the distal antecedents, includes the individual differences: beliefs, values and SAK (skill, ability and knowledge), and contextual variables. The second level antecedent, i.e. the proximal antecedents, is cognitive-motivational constructs, which offer "the can do" , the "reason-to" and "energized to" motivations. The proactive model has been well validated and adopted to predict assorted proactive behaviors in the workplace. In this study, I try to explain the motivation role played by FTP on proactive behaviors and how FTP formed by external variables.

First, the proactive motivation model suggests that the core self-beliefs, life values, individual's knowledge, skills and abilities act as distal antecedents that predicts proactive behavior through motivation and goal process, which points to the relevance of the experience of rotation and of power. In line with SCT, the increase of individual ability and knowledge brought by rotation experience may serve as an important job characteristic that boost proactive behavior. Job rotation breaks previous job boundaries (Brunold & Durst, 2012), and allows employees to gain a wider range of knowledge, skills, and competencies (Kaymaz, 2010). It effectively increases the individual's working capabilities and promotes employee familiarity with the organization, which in turn impacts the employee's psychological state and facilitate future-oriented behavior. On the other hand, the experience of power activates the behavioral approach in the workplace unconsciously (Keltner et al., 2003). Employees with increasing sense of control demonstrate an increased disinhibition process. The sense of power is an individual characteristic that

significantly influences employee's perception of themselves, the environment, and the behaviors adopted. The proactive model also suggests that individuals who are confident in their ability show more proactive behavior because they believe there is a high probability of success (Griffin, Neal, Parker, Griffin, & Parker, 2007). Thus, this model supports that work-related experience are important distal antecedents that predicts the proactive motivation and goal generation and striving process.

Second, the model demonstrates cognitive-motivational states serve as the proximal antecedents of proactive behaviors (Parker et al., 2006, Parker, Bindl & Strauss, 2010), such as role breadth self-efficacy, control appraisal, change orientation, and flexible role orientation (Parker et al, 2006). The cognitive-motivational constructs suggest that proactive behaviors need to be sustainable motivated by the "can do" belief, the "reason to do" and "energized to" motivations. Individuals who report longer FTP are motivated by future consequences and willing to anticipating and planning. Future is uncertain, people who sees the future wants to reduce its ambiguity. Individuals who report longer FTP may be motivated by reducing ambiguity in the future and willing to engage in more anticipatory planning and preparation. Ambiguity is an important condition for employees to behave proactivity (Grant & Ashford, 2008).On the one hand, ambiguity is an important condition for employees to behave proactivity (Grant & Ashford, 2008). Under this psychological mechanism, individuals tend to engage in proactive behaviors because they see equivocal and unclear future alternatives.

On the other hand, FTP drives individual behaviors according to volition and autonomous motivations. Studies report a positive correlation between FTP and motivation, arguing that FTP

affects the quality of motivation and regulation process (Lens et al., 2012). Individuals who are more motivated by a hoped future take on more future-orientated actions, while individuals with short FTP are impelled by the immediate consequences. Research also revealed that a longer FTP tend to have more intrinsic motivation, a higher level of perceived instrumentality of study task (Bembenutty & Karabenick, 2004; de Volder & Lens, 1982) and exhibit greater personal control (Shell & Husman, 2001). Further, FTP is also associated with several regulation processes, including the identified and integrated regulations that keep individuals working to achieve these goals (de Bilde et al., 2011; Shell & Husman, 2001; Wininger & Desena, 2012). FTP guide individual's behaviors through "can do" and " reason-to" pathways by emphasizing the necessary of change and future rewards. Hence, I proposed here that FTP is an important motivational source that predict proactive behaviors.

In sum, this model explains that with the different individual variables, employees generate envisioned future differently, which in turn to behave various proactive behaviors (Bindl & Parker, 2010; Grant & Ashford, 2008; Parker, Bindl, & Strauss, 2010a; Parker & Collins, 2010). Therefore, based on this model, I proposed the mediating role of FTP in the theoretical framework.

2.3 Hypotheses Development

2.3.1 Rotation Experiences and FTP

Social cognitive theory suggests that situational factors are among the important interventions that motivate individuals to behave. Job characteristics train employees to alter their perceptions

and guide them to behave in an anticipated way. Regardless of former job content, rotation experience aimed at motivating and training employees to perform better in the long run enlarges their focus on the organization.

Job rotation refers to the lateral movement of an employee from one position to another position for a designated period of time (Arya & Mittendorf, 2004; Campion, Cheraskin, & Stevens, 1994; Jorgensen, Davis, Kotowski, Aedla, & Dunning, 2005; Kaymaz, 2010). It is a common method of on-the-job training aiming at increasing career-related knowledge and experience of employees across an industry. Led by the underlying mechanism of "learning by doing", rotation plays an important role in breaking down barriers within the organization, but sacrifices employee productivity and specialization (Campion, et al., 1994; Kaymaz, 2010; Lindbeck & Snower, 2000). Job rotation is usually associated with outcomes such as promotion and salary raise, hence it is welcomed and valued more by employees who have enough space to grow (Campion et al., 1994). These outcomes are an important motivation for employees to participate in a job rotation program, which offers a sign of a change in their power levels. Therefore, apart from the career-related knowledge gained during and after the experience of job rotation, employees also report higher satisfaction and motivation towards their work (Campion et al., 1994; Ragel & Ragel, 2017).

Employees are expected to gain different abilities during the rotation process according to their job characteristics and industries. Job rotation is a profitable employee learning mechanism applied in various industries all over the world, such as banking (Arya & Mittendorf, 2004; Khan, Khan, Sains, Dan, & Insan, 2014)), education (Dimmock & Tan, 2013; Reynolds, White,

Brayman, & Moore, 2008), and nursing (Chen, Wu, Chang, & Lin, 2015; Ho, Chang, Shih, & Liang, 2009). There is no universal rule on how to rotate employees across different industries. Hence, each type of organization has its own purpose and approach to rotating its employees. There are two different perspectives on the purpose of implementing rotation programs. From the employers' perspective, rotation as a training method has two major purposes: motivating employees and getting useful information on employees' performance to assign them fixed jobs (Eriksson & Ortega, 2006). From the employees' perspective, they need to learn not only relative knowledge and experience but also information about the organization and other employees to be prepared for promotion (Burke & Moore, 2000; Gallagher & Einhorn, 1976). A further consideration of implementing rotation program is its outcome. A job role creates relational and task boundaries (Grant, 2007), whereas job rotation breaks those boundaries (Brunold & Durst, 2012). Most of the literature points out that rotation brings about long-term benefit to both the organizations and rotator themselves. However, the effect of rotation programs across industries is still under discussion in the current literature.

Mixed effects of job rotation in different industries. Rotation, as one approach to professional development, generates mixed outcomes for rotators. On the one hand, rotation experience trains teachers' in effective leadership, gives teachers a broader view as well as a better understanding of the whole school, and encourages better communication skills (Turner & Sykes, 2007). It also implies a process of professional self-development (Fidler, Jones, & Makori, 2009). Teachers take rotation experience as a vehicle to develop career path and seek a potential career track. On

the other hand, there is a constant argument about whether it is profitable to rotate employees because the adaptation of a new role requires an investment of time and cognitive resources, which might lead to a proximal unproductive period (CAMPION et al., 1994; Kaymaz, 2010; Lindbeck & Snower, 2000).

Job rotation is seen as a profitable on the job training method in many organizations because it increases experience of other jobs (Gallagher & Einhorn, 1976). Therefore, aside from offering information about employee-job match issues, rotation also works as a knowledge-sharing mechanism, particularly beneficial in professional service organizations where information is prominent in organizational performance (Arya & Mittendorf, 2004).

In fact, in general, rotation acts as a knowledge-sharing mechanism in organizations (Hong & Vai, 2008). Multiple team memberships allow employees, especially knowledge workers, access to a variety of information and promote knowledge transfer (Leary, Mortensen, & Woolley, 2011). Rotators are exposed to unlimited access to different information about both the environment and people. It is also acknowledged by many practitioners that exposing employees to a wider range of problems could develop their problem-solving skills. Other than providing knowledge and learnable experience, rotation also helps employees become familiar with organizational operations and integration by increasing their experiential database (Burke & Moore, 2000; Gallagher & Einhorn, 1976).

Multi-team membership research suggests that the number and variety of team memberships play important roles in balancing individual productivity and learning in the organization (Leary et al., 2011). Given the membership of a constant number of teams, the more variety in that team's

membership, the more individuals learn. In this vein, job rotation serves as a learning mechanism offering extra information (Arya & Mittendorf, 2004; Brunold & Durst, 2012); gauging versatility (Arya & Mittendorf, 2006); gaining related knowledge and skills (Campion et al., 1994); performing better (Kampkötter, Harbring, & Sliwka, 2016); and even being more innovative (Coşgel & Miceli, 1999; N. Madjar & Oldham, 2006). At the same time, rotation also serves as a motivational approach that encourages employees to be more willing to share and cooperate (Arya & Mittendorf, 2004; Marks, Sabella, Burke, & Zaccaro, 2002); and show higher job satisfaction as well as commitment (Ho et al., 2009; Jorgensen et al., 2005; Khan et al., 2014). In short, apart from tangible benefits to rotators themselves, such as salary growth and self-development, rotation experience indeed brings unintended but predictable benefits to organizations, such as innovation (Coşgel & Miceli, 1999) and cooperation willingness.

On the contrary, some studies argue that rotation experience improves neither problem-solving skills nor productivity, as specialization might be the key to solving problems in manufacturing industries (Allwood & Lee, 2004). In such circumstances, rotation experience might serve a motivational function rather than a learning function. Furthermore, in high-tech industries, which require a high level of specialization, rotation also fails to show any advantage in terms of learning and motivation (Hsieh & Chao, 2004). Hsieh and Chao (2004) argue that employees are reluctant to participate in job rotation when the purpose is to decrease the boredom that might lead to job burnout because it will diminish their specialization (Kaymaz, 2010). Indeed, the organizational type might be the factor that generates mixed empirical results because of the different purposes of different organizations (Jaturanonda et al., 2006). Over the last decade, with

dramatic reforms of organizational structures and job requirements, employees face higher requirements and have more complex tasks to perform than ever before. This not only requires specialization but also flexibility to guarantee higher performance. Ortega (2001) set up a model of job rotation to see whether it is an efficient way to match employees to the perfect job and evaluate them. In his model, Ortega proposes that firms with new technologies are significantly more likely to use job rotation, which is a better learning mechanism and more profitable than specialization. In other words, in comparison with doing a fixed job after the rotation, employees actually allowed the bilateral exchange and generation of valuable information between the organization and themselves during the rotation process.

In addition, job rotation involves a commitment of time and the human capital of the organization. Although the experience of job rotation increases employee flexibility in a changing environment, organizations also face the potential risk of losing valuable employees at the same time. Therefore, for organizations, rotation requires careful consideration of who and how to rotate.

In short, past research on job rotation focuses on three main perspectives: the economic, organizational, and individual development perspective. At the individual level, five features of rotation have been identified by researchers: decreased monotony, increased related knowledge, preparation for promotion, determination of matching positions, and development of social relations, all of which serve to increase employee motivation (Kaymaz, 2010). Rotation also helps employees build organizational collective knowledge, a knowledge sharing system and problem-solving skills in certain circumstances (Allwood & Lee, 2004; Brunold & Durst, 2012;

Hong & Vai, 2008). In general, the rotation is an effective way of training employees by enhancing their satisfaction in their job and career, and broadening their capabilities to deal with different issues and tasks (Santos, da Silva, Baldassarre, & de Magalhães, 2017). Nonetheless, these results cannot apply to jobs that require a higher level of specialization, such as those in the high-tech industries.

Teacher rotation as an important approach to professional development. Organization types significantly determine whether and how they should rotate their employees (Jaturanonda et al., 2006). Currently, advocates of school-based reform offer principals and teacher leaders more autonomy than before, but also greater responsibilities in running the schools. Therefore, teachers now not only need to remain creative in their teaching activities, but also need to gain the ability to run an organization as well as manage a team, which requires vaguer job boundaries and more collaboration (Pounder, 2007). Identifying the best ways to implement effective teacher professional development programs in our current era has long been a focus of education literature (Avalos, 2011). However, teachers are active learners who seek opportunities to learn, and rotation as an informal approach to developing both teaching and non-teaching related skills, has received less attention from researchers. Intra-school rotation, inter-school rotation, and teacher secondment are three basic methods of rotation in the education industry (Qiang, 2012; Dimmock & Tan, 2013; Reynolds et al., 2008). From school principals to fresh teachers, rotation is a basic approach enabling them to learn and prepare for coming tasks. Principals usually rotate within the school to develop effective leadership strategies and to encourage school improvement

(Dimmock & Tan, 2013; Reynolds et al., 2008). In addition, teachers at any career stage could apply for a secondment program, a reassignment of teachers into university faculty or education bureau, for at least one semester (EDB, 2018; Badali & Housego, 2000). This professional development method is aimed at increasing teachers' competence and career transition (Badali & Housego, 2000). Furthermore, many schools adopt in-school rotation to train a potential school leadership team (Hadfield, 2007; Turner & Sykes, 2007). Despite rotation being a commonly used method in teacher training, very few studies exist on the effects of teacher rotation.

In the era of accountability, teachers' professional development needs to fulfill the requirements of holistic development of teacher and students. The attention of early career teacher professional development studies is centered on pedagogical related development: i.e., knowledge for practice, knowledge in practice, and knowledge of practice (Villegas-Reimers, 2003). However, following the reform of school-based management, teachers enjoyed more autonomy in both teaching and managing the schools. It is essential for teacher leaders, especially senior leaders, to gain a whole-school perspective when determining school policy and tackling complex problems (Turner & Sykes, 2007).

In Singapore, principals as well as senior leaders are required to rotate between schools to learn leadership skills, gain knowledge of different school cultures, and interact with new colleagues, which to some extent contributes to their school success and effective educational leadership (Dimmock & Tan, 2013). Similarly, for training potential school leaders, schools in different places have developed their own rotation schemes, such as Teacher *Lungang* and *Jiediao* in China and Hong Kong (He & Lu, 2010; MA & Jing, 2009; Wu, He & Zhu, 2006); second

headship as well as work-shadowing in UK schools (Fidler et al., 2009; Hadfield, 2007; Turner & Sykes, 2007); and principal rotation in North America (Reynolds et al., 2008).

In other industries, rotation programs focus more on helping young employees adjust better and faster to the new working environment. Unlike in other industries, most rotators in school are experienced teachers who are about to be promoted to a higher position. By increasing the range of roles that teachers take on in school, rotation offers them more knowledge and skills, and also potential psychological changes that bring long-term benefits to the school. Also, apart from productivity benefits, rotation experience as on-the-job professional development also helps rotators develop an effective way of thinking and working. In this regard, one review paper also illustrates that professional development changes teachers' cognition, belief, and practices related to student learning or self-regulation factors, even though relatively little attention has been paid to changes to the teachers themselves (Avalos, 2011).

Rotation experience is operationally defined here as the experience of latent transfer between administrating positions within or between schools (Campion, Cheraskin, Stevens, 1994). While rotators are highly likely to be promoted after the training, there is no salary raise or promotion during the rotation process (Campion, Cheraskin, Stevens, 1994).

Rotation experience and FTP. the individual-level change brought by experiencing multiple roles falls into three areas: 1) psychological changes, such as role breadth self-efficacy, commitment, and job satisfaction (Ho et al., 2009; Jorgensen et al., 2005; Khan et al., 2014); 2) improved skill, ability, and knowledge (SAK), including problem-solving ability, knowledge of

the organization, and communication skills (Arya & Mittendorf, 2004; Arya & Mittendorf, 2006; Campion, Cheraskin, & Stevens, 1994); and 3) social resources, such as a broader social network, a higher level of social exchange, and friendships. (Arya & Mittendorf, 2004; Marks et al., 2002). With these benefits, rotators are increasingly capable of cultivating a longer FTP. According to Figure 1.1, work-role related constructs are assumed to be positively associated with FTP in the workplace.

By exposing teachers to a different environment, rotation as a learning mechanism increases employee information and helps them acquire new skills and abilities, (Eriksson et al., 2010). with increasing knowledge and competencies, employees have a longer FTP. According to the social cognitive theory, once they get to know more about the organization, others, and themselves, individuals have fewer self-doubts, fewer fears of rejection and failure, and a higher level of perceived self-efficacy, which determine how they judge their environments (Bandura, 2001; Miller & Brickman, 2004a). As long as individuals hold the view that the environment is controllable, they are able to form a positive and longer FTP. SDT also illustrates that individuals tend to naturally internalize what is valued by their social group (Deci et al., 2000). With increasing understanding and relatedness to the context, teachers tend to internalize the external regulations and be more growth-orientated actively.

In summary, I hypothesize that job rotation enhances employee FTP through augmenting their SAK. Rotating to a new role in an organization means expanding the social network and gathering more information. Rotators are encouraged to perceive the future as open and full of opportunities. All these increase their experience and allow them to know more in order to gain a

bigger picture not only of the organization but also of their own future development. This knowledge also reduces the fear of the unknown and helps individual teachers feel the organizational environment is controllable. Therefore, I hypothesize the following:

Hypothesis 1: Teachers who have more rotation experience tend to have longer FTP.

2.3.2 Power and FTP

Drawing on the SCT, the experience of power plays an important role in deciding the relationship between individuals and the situation. One of the most profound individual characteristics, Power is embodied in social relationships and changes an individual's behavior through various mechanisms. Power holders demonstrate a disinhibitory behavior system that makes them more proactive in acting and changing the environment. One of the important drives in this process is the ability to envision the future (Keltner et al., 2003). Further, power holders were more self-determined (Van Dijke & Poppe, 2006). Power implies the enjoyment of autonomy and competence because it provides control over the environment and others. Hence, in the following section, by integrating SCT, I propose a positive relationship between power and FTP.

The dark and bright sides of power. Power is defined as the capacity to influence or control others (Anderson & Berdahl, 2003; Anderson, John, & Keltner, 2012; Keltner et al., 2003;

Overbeck & Park, 2001). It has a profound influence on individuals, cognitively, affectively, and behaviorally (Galinsky, Rucker, & Magee, 2015.; Sturm & Antonakis, 2015). It could strengthen or weaken certain personal traits (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008). researchers in the past decade especially focused on how power predicts human behaviors (Anderson & Berdahl, 2003; Galinsky et al., 2015).

Previous literature has suggested that power, even priming or assigned power roles, is a strong predictor of an individual's psychological state and behaviors (e.g. Galinsky, Rucker, & Magee, 2015; Sturm & Antonakis, 2015; Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008). On the one hand, plenty of evidence suggests that it is more difficult for power holders to spare their attention to other individuals or to environmental constraints. For example, power holders are less dependent on people, so that they care less about how others feel and think. For instance, social class as a source of power boosts unethical behaviors linked to one's self-interest (Dubois, Rucker, & Galinsky, 2015; Maner & Mead, 2010). People with power show more stereotypes, dehumanization, and objectification of others (Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Gruenfeld, Inesi, Magee, & Galinsky, 2008; Lammers & Stapel, 2011; Overbeck & Park, 2001). They demonstrate less need of connection, less dependence on others, and less compassion and concern for suffering (van Kleef et al., 2008; Waytz et al., 2015). They are also less able to see others' perspective (Galinsky, Magee, Inesi, & Gruenfeld, 2006a) or unwilling to take others' advice (See, Morrison, Rothman, & Soll, 2011). They even demonstrate corrupted social relationships (Inesi, Gruenfeld, & Galinsky, 2012).

The mechanism of the antisocial aspect of power had also drawn attention from researchers. In

one study, researchers have adopted the need to belong, one of the basic human needs, as a mediating mechanism in explaining the phenomenon that power holders report less loneliness and dependence on others (Waytz et al., 2015). the characteristic of immunity to constraint and distracting information from the external environment allow power holders to make decisions or act for their self-benefit (Fiske & Berdahl, 2007; Galinsky et al., 2008, Galinsky, Rucker & Magee, 2015). Similarly, from an evolutionary psychological point of view, power holders have a greater sense of control over both themselves and the surrounding environment, which could be translated into a greater chance to survive; whereas the powerless have to depend on each other to fight for the chance to survive (Belmi & Pfeffer, 2016). In this vein, power holders concentrate on their own goal achievements and neglect information unrelated to that goal, be it other individuals or environmental constraints.

However, by examining the "bright side" of power, recent studies have helped us understand power and its consequences more objectively. Power holders have different information processing styles (Hogeveen, Inzlicht, & Obhi, 2014; Overbeck & Park, 2006). This stream of literature suggests that power not only increases the ability to recall goal-relative information, but also assists an individual in interpersonal exchange. There is evidence that power increases one's interpersonal sensitivity (Mast, Jonas, & Hall, 2009), cognitive flexibility (Smith & Trope, 2006), and executive functions (Smith, Jostmann, Galinsky, & Van Dijk, 2008), which facilitate better self-regulation and task performance (DeWall, Baumeister, Mead, & Vohs, 2011; Hofmann, Schmeichel, & Baddeley, 2012). Power holders tend not to devaluing future rewards (Duan, Wu, & Sun, 2017; Joshi & Fast, 2013). The powerful are more flexible in monitoring

their social attention (Overbeck & Park, 2006).

Furthermore, activated by their approach motivation, power holders prioritize personal goals and have less tendency to consider alternative goals. power helps individuals form a positive evaluation of themselves, whereas powerless individuals exhaust their cognitive resources by considering others. studies suggest powerful individuals generate more self-confidence (Min & Kim, 2013), which facilitates them in establishing and achieving goals (Guinote, 2017a). Power holders experience more positive affect, higher self-esteem (Wojciszke & Struzynska–Kujalowicz, 2007), and more effective cognitive function in the goal-striving process.

To conclude, power alters individuals' knowledge of their environment and themselves.

Power and FTP. It is proposed here that power brings individuals several advantages that helps the individual develop a longer FTP. First, power helps individuals form a positive evaluation of themselves, whereas powerless individuals exhaust their cognitive resources by considering others. Plenty of studies suggest powerful individuals generate more self-confidence than others (Min & Kim, 2013), which facilitates them in establishing and achieving goals (Guinote, 2017a); and not to devaluing future rewards (Duan et al., 2017; Joshi & Fast, 2013). Power holders experience more positive affect, higher self-esteem (Wojciszke & Struzynska–Kujalowicz, 2007); more effective cognitive function in the goal-striving process.

Power frees individuals from external constraints. Previous studies show power as an important intervention that frees people from environmental constraints and allows them to focus on goals rather than surroundings (Fast et al., 2012; Galinsky, Gruenfeld, & Magee, 2003b; Galinsky et

al., 2008; Whitson et al., 2013). power holders emphasize self-regulation and their pursuit of goals over the hedonic tone (the trait underlying one's characteristic ability to feel pleasure) (Guinote, 2017b). In this vein, power holders perceive the environment as controllable and the present as less uncertain, which frees up cognitive resources to picture the future.

On the contrary, due to external distractions, the powerless are less able to self-regulate. The general control mechanisms that coordinate cognitive sub-processes, called executive function, are weakened by powerless states (Smith, et al., 2008). This function is a necessary cognitive process that distinguishes goal-relative information and planning future behaviors from irrelevant information. Smith and Trope (2006) also illustrate that power holders tend to adopt more abstract information processing that improves performance in planning and complex tasks. Neuropsychological research shows that power lead to greater activation of the right-hemisphere of the brain and a higher level of serotonin, which consequently activate the behavioral approach system (Galinsky, Gruenfeld, & Magee, 2003). Procrastination, as a failure of self-regulation, is more frequently found in powerless individuals in the organization (Guinote, 2007; Gupta et al., 2012; Sirois, 2014), which suggests that powerless individuals have less ability to control their own time and planning.

More importantly, powerful individuals also have different time perceptions. They perceive themselves to have more available time (Moon & Chen, 2014b), and they invariably underestimate the time a task might need (Weick & Guinote, 2010). by allowing them to control both environment and selves, power could assist individuals to better plan and imagine a more distant future. In addition, the ability to resist the tendency to devalue future reward is regarded

as an important facet of FTP (Miller & Brickman, 2004b). Power holders are reported to have less tendency to discount delayed reward in laboratory and survey results (Duan et al., 2017; Joshi & Fast, 2013; but see Zhang & Smith, 2018 for counterargument). Furthermore, power holders also report more planning behaviors, such as saving and delayed consumption (Garbinsky, Klesse, & Aaker, 2014; May & Monga, 2013).

To conclude, power, could boost the individual's positive self-evaluation of their competence and self-efficacy and free them from current environmental constraints, which encourages them to envision a more distant future.

Therefore, I hypothesize the following:

Hypothesis 2: Teachers who perceive higher power tend to have longer FTP.

2.3.3 Proactive Behaviors in the Workplace

Proactive behavior is defined as self-directed, future-orientated action in an organization, motivated by thinking that to take control is to make things happen (Bindl & Parker, 2010). This concept partly overlaps with extra-role behavior. It is identified not only as behaviors beyond prescribed requirements but also as foresight that prevents potential problems (Belschak & Den Hartog, 2010). Although proactive behaviors are not rewarded directly by the organization, they are closely related to one's job performance, career success, and individual wellbeing (Bindl & Parker, 2010; Crant, 2000).

Proactive behaviors require the employee to act in advance and with the intent to impact the

future, which required employees and the environment in tandem to generate “reason to do”, “can do”, and “energized to do” motivational states (Grant & Ashford, 2008; Parker et al., 2010a). The ingredients of proactive behaviors incorporate the “cold process”, i.e., the cognitive-motivation, and the “hot fuel”, i.e., the emotional motivators. Rather than focusing on emotional effects, this study tries to identify FTP as one of the cognitive-motivational antecedents that motivates this process.

A proactive personality is the dominant individual-level factor in predicting proactive behavior (Bateman & Crant, 1993; Parker et al., 2006). Likewise, dispositional factors, such as conscientiousness and tendency to consider future consequences, are predictive of proactivity at work (Parker & Collins, 2010). Apart from trait factors, individual perception of over-qualification facilitates proactive behaviors through a higher level of perceived role-breadth self-efficacy (Zhang, Law, & Lin, 2016). Commitment to the organization, team, and career also leads to different types of proactive behavior (Belschak & Den Hartog, 2010). A learning goal orientation also boosts employees’ proactive behaviors (Shin & Kim, 2015)

Job structures could also be an intervention that encourages employees to be proactive. For instance, job stressors offer an environment that needs to be refined (Fritz & Sonnentag, 2009). Job autonomy gives employees freedom to be proactive (Ohly & Fritz, 2010). Chronic time pressure positively correlates with proactive behaviors since maintaining a positive working relationship is an approach to cope with the high workload and change situational constraints (Fritz & Sonnentag, 2009; Ohly & Fritz, 2010). In addition, job resources such as feedback, variety significantly improve proactivity at work, which is fully mediated by work engagement

(Salanova & Schaufeli, 2008). In addition to individual factors, situational factors are also needed to create a safe work environment that encourages employees to be proactive. For example, leader secure-base support (C. H. Wu & Parker, 2017), transformational leadership (Den Hartog & Belschak, 2012; Parker & Wu, 2014), and a high level of leader-member exchange (Parker & Wu, 2014) all impact employee proactivity.

Both situational and individual factors, such as job control and affect, vary from day to day. a recent trend in proactive behavior studies is to focus on daily proactive performance, which examines the instantaneous response elements of proactive behavior (such as Sonnentag, 2003; Ohly & Fritz, 2010). For example, daily-level recovery and sleep quality are important factors in daily proactivity (Schmitt, Belschak, & Den Hartog, 2017; Sonnentag, 2003). Affect constructs also have an important role in predicting daily proactivity. However, this is not the main concern of this study and will not be discussed in detail here. Taking these pieces of evidence into consideration, this study posits that experience and resources offered by working environments regulate the degree to which employees are motivated to be proactive in those environments. Beyond that, the distant antecedents suggest an indirect effect on proactivity via cognitive-motivational states that serve as proximal antecedents (Parker et al., 2010a, 2006). To explore unknown areas, change-orientated behaviors challenge the status quo with the possibility of incurring both benefits and costs (George, 2007). Hence, control appraisal and challenge appraisal are two important individual perceptions that decide proactive intention. Challenge appraisal motivates individuals to action, and control appraisals allows individuals to believe they are capable of dealing with potential negative consequences of their initiating behaviors

(Parker, Williams, &Turner, 2006; Ohly & Fritz, 2009). Self-efficacy, including role breadth self-efficacy and creative self-efficacy, play a major role in mediating the relationship between the distant antecedent and proactive behaviors (Griffin et al., 2007; Jaussi & Randel, 2014; Tierney & Farmer, 2011; Zhang et al., 2016). Individuals confident in their ability show more proactive behavior because they believe there is a high probability of success (Griffin et al., 2007). In sum, it is important to instill in employees the perspective that the situation could be mastered, controlled, and more importantly, that they are capable of taking proactive action (Bindl & Parker, 2010).

As school-based management is implemented, the work of teachers becomes more dynamic and decentralized than ever before, and proactive behavior becomes more essential to improving school effectiveness. Furthermore, it is getting harder to use traditional passive performance criteria to measure teachers' effectiveness in their jobs since good teachers need to be proactive in adapting their teaching to different students, identifying potential problems, or learning necessary courses. As job boundaries blur and tasks become more interdependent, individual proactive and creative behaviors are indispensable factors in performance in today's work environment (Frese and Fay, 2001; Griffin, Neal & Parker, 2007; Ohly & Fritz, 2010).

As schools shift from test-oriented education to a student-centered, quality-orientated education, teachers are more prone to ask to be allowed to behave proactively (Cerit, 2017). Teacher behavior beyond their assigned roles has been identified as one of the most important behaviors in deciding school effectiveness in recent educational literature (Bogler & Somech, 2004; Somech, 2010; Somech & Drach-Zahavy, 2000). However, this extra-role behavior is vaguely

defined because of different perceptions teachers have of their job boundaries (Morrison, 1994). The behaviors manifest in the following forms: voice, taking charge, issue selling, innovation, and taking personal initiative (Bindl & Parker, 2010; Parker, Bindl, & Strauss, 2010). These behaviors all focus on the future and change, as they to some extent share antecedents.
In the following section, this study illustrates two specific proactive behaviors that might link to a more developed future time perspective.

Personal initiative behaviors (PI). Similar to proactive behavior, personal initiative behavior includes proactive action in pursuit of self-set goals, which requires persistence in overcoming barriers (Frese & Fay, 2001). PI implies a long-term focus, which allows employees to act in the present while focusing on the future (Frese, Garst, & Fay, 2007). Under the proactive model, both job and individual characteristics, as well as their interaction, serve as distant antecedents that predict proactive behavior through proximal psychological states (Parker, Bindl, & Strauss, 2010). This model also works for PI behaviors. For example, job complexity and control offer employees opportunities and the knowledge base that encourages them to be proactive (Frese et al., 2007). More importantly, PI requires a sense of control not only of work-related issues, but also a sense of anticipated payoffs (Frese, Garst, & Fay, 2007). PI is taxing per se and could only be maintained by motivational sources. Therefore, the "reason to do" is key to maintaining employee PI over time (Mensmann & Frese, 2019). FTP as a motivational source offers individuals a future goal to work towards rather than an empty future. It also emphasizes a changeable future-self rather than reactive acceptance of what currently exists or has been

arranged.

Proactive behavior by teachers is necessary for schools in an age of accountability (Somech, 2010). Teachers with longer FTP see the future more clearly than those who lack it and thus build more distant goals. However, facing an uncertain future, the more distant a goal is, the more difficult it is to envision this goal in any detail. Aiming towards a vague future goal associated with career or self-development, teachers might try to increase the possibility of reaching it by increasing the probability of success in the future and their own self-development (Parker, Bindl, & Strauss, 2010). In other words, longer FTP enhances the instrumentality of proactive behavior (de Bilde et al., 2011). People with long FTP enjoy instrumental tasks in the near future more because they know a more desirable future state will be achieved (Seijts, 1998). Therefore, teachers present personal initiative behavior more frequently as they become more aware of its necessity.

Creativity

"Our brain gives us extra resources to escape from here and now, the task at hand…… to play, to invent, and to be creative"

-- Michael C. Corballis, The wandering mind

Individual creativity, which refers to novelty and useful ideas, is vital to the development and survival of the organization (Amabile, 1988, Gong, et. al., 2012; Lingo & O'Mahony, 2010). Recent literature is increasingly merging the concepts of innovation and creativity. Scholars suggest that we might consider innovation to be the last step of creativity, the other three being idea generation, elaboration, and championing. Rather than studying the process of implementation and creativity separately, innovation might actually be considered a part of creativity (Perry-smith & Emory, 2017). It is a difficult requirement for an employee to produce completely new ideas every day. More frequently, ideas that are more practical although less creative are evident in the workplace, such as "upgrades of old things", and "new uses of existing methods". For this reason, improvements to old things or states of affairs also need to be treated as creative ideas. Gilson and Madjar (2011) have identified two different kinds of creativity, incremental and radical creativity, to better measure and study creative behavior in the organization. The former refers to changes to existing practices, and the latter is defined as ideas that differ substantially from existing practices (Gilson & Madjar, 2011).

Individual creativity in the workplace becomes more and more important, especially when facing a changing environment. Creativity and efficiency are inter-correlated even though both are desired end states that appear to be at odds, especially for in-service teachers who are already burdened with heavy workloads. However, teaching without creativity cannot lead to high performance in the long run. Individual-level creativity is not only an important foundation of team-level creativity and innovation, but also an organizational capability to adjust to an unknown future. Teachers with experience of creativity are more likely to adopt creativity-

fostering teaching styles (Lee & Kemple, 2014) and encourage students to perform and think in a flexible manner (Amborse, 2005), which benefits those students in the long run (Cropley, 1995). Regardless of possible beneficial outcomes, creativity involves behavior with unguaranteed or uncertain results. Individuals might give up at any stage during the trial-and-error process, leading to a failure in creativity. Therefore, this within-individual process needs to be consistently motivated (Ng & Lucianetti, 2016). Individuals are motivated not only by extrinsic motivation, but also by the intrinsic motivation to improve their own creative performance (Gong, et. al., 2017). At the same time, self-efficacy (Gong, Huang, & Farh, 2009; Tierney & Farmer, 2011), affect (To, et al., 2012), and harmonious passion (Liu, Chen, & Yao, 2011) has all have an important role in deciding whether one is creative or not.

Creativity is a complex cognitive process that requires related information, enough resources, and skills (Amabile, 1998). Similar to personal initiative behaviors, job characteristics, such as task variety or job complexity, are among the foundations for employee creativity (Hammond, Neff, Farr, Schwall, & Zhao, 2011). One study shows that cognitive exhaustion is positively correlated to creative performance because it implies that participants had used their cognitive resources fully (Nora Madjar & Shalley, 2008). However, another study suggests that the routinization of a job increases employees' creativity as it reduces the cost of cognitive resources, which implies that creativity takes up cognitive resources (Ohly, Sonnentag, & Pluntke, 2006).

Hence, cognitive resources and the willingness to utilize such resources are important for creativity. Unlike PI that requires "reason to do" to maintain it over time, creativity mostly

requires motivation. Further, it requires the capability to innovate. In a related vein, a recent study suggests that, employees are more confident and willing to devote their time and energy to every step of creativity such as idea generation, idea dissemination, and idea implementation with self-efficacy (Ng & Lucianetti, 2016).

FTP and future-oriented behaviors. FTP is an important motivational source for employee behaviors. SDT suggests that, depending on the nature of the proactive behaviors, FTP generates mixed introjected and integrated regulations that drive employees to behave, change and act. As Bindl and Parker (2010) put it: "*Proactive behavior at work is a special type of motivated behavior, which goes hand in hand with perceptions of control and capability*".

FTP increases the instrumentality of proactive behaviors by emphasizing future consequences. In this vein, proactive behaviors require the strong motivation that FTP offers. The delayed benefits of proactive behaviors attract the attention only of those able to see and plan far into the future (Joireman, Kamdar, Daniels, & Duell, 2006). Individuals who frequently consider future consequences are more motivated by future rewards and foresee the potential losses that might be generated by problems in the present. Research posits FTP as an important motivation that predicts workplace outcome (Kooij et al., 2018; Kooij, Tims, & Akkermans, 2017). As an example, employees with longer-range FTP achieve better work performance by engaging in job crafting more (Kooij et al., 2017). They also hold growth-affirming attitudes and are positive about learning and self-developed tasks.

The relationship between future construct and proactive behaviors was reported by the following

studies. Parker and Collin (2010) linked the consideration of future consequence with all proactive behaviors. They posited that individuals valued proactive behaviors because they had strong faith in future rewards. The study verified these propositions with a group of Australian managers of MBA courses (n = 303) in a self-report study. Consideration of future consequences significantly predicted most proactive behaviors, including individual innovation (.12*) and career initiative behaviors (.16**).

In another study, Strauss and colleagues (2012) linked future work-self and proactive career behaviors. The future work-self is a representation of one's hopes and aspirations in relation to work. A longitudinal study of 53 students showed that a concept of future work-self significantly predicted proactive career behavior. The effects were then re-examined via a larger sample of 233 doctoral students. More importantly, this study reported significant results by hierarchical regression analysis that predicted proactive career behaviors even after controlling for the effects of considering future consequences. It added important evidence that anticipating a work-related future self is a key motivational factor.

These two studies both added evidence about how future-related constructs connect to proactive behaviors. Both studies adopted a self-reporting method to measure proactive behaviors. The first study was based on MBA students, who already had at least a middle or high position in their companies. The second study collected data from doctoral students. The selection of the sample group cannot explain the role of working experience and context in the employee's future perception. However, these studies lay a foundation for the assertion that future thinking is one of the key antecedents in predicting proactive behaviors.

Creativity and personal initiative behaviors are future-oriented behaviors. They require an investment of time and effort and could only bring benefit in the future, whether to the organization or to the individual (Ng & Lucianetti, 2016). FTP involves an abstract form of information processing, which promotes creative idea generation and creative cognition (Förster, Friedman, & Liberman, 2004; Polman & Emich, 2011). To conclude, it is reasonable to suggest that employees with longer FTP tend to show more personal initiative and creative behavior in the workplace.

Two studies have tried to identify the relationship between FTP and creative thinking. First, Ononye and colleagues (2009) conducted a scenario survey to explore the relationship between FTP and creativity with 135 young female students. FTP was measured by a self-developed problem-solving task based on real-life problems. Examinations of correlations in this study demonstrate that creativity-adopting individuals foresee future alternatives and produce a unique response to future problems. FTP was positively correlated with creativity. Second, Chiu (2011) has conducted two studies on the relationship between future thinking and creativity. In the first study, FTP was manipulated by assigning 83 undergraduate students into 50-year thinking, 5-year thinking, and present-thinking groups. The group dedicated to thinking 50 years into the future had the highest score in creativity tasks, in terms of originality, practicality, and thinking beyond current reality. The second study considered FTP as a trait by adopting Zimbardo Time Perspective Inventory (ZTPI) and examined the effect of situation-trait fit. Of the three evaluation criteria, this study showed that those with longer future thinking perform better in creative tasks. And they perform even better when they report higher FTP. However, instead of

considering future thinking as a situational factor, it is more suitable to control the trait of future-orientation to test the effect of future manipulation.

These studies support the idea that FTP thinking amplifies the effect of creative thinking.

it is proposed here that:

Hypothesis 3a: FTP is positively related to individual creativity.

Hypothesis 3b: FTP is positively related to individual personal initiative behaviors.

2.3.4 Rotation Experience and Proactive Behaviors in School

At a cost to short-time self-interest, proactive behaviors require resources, capability, and motivational process. Work-related constructs offer this motivation. Enriched future work content or job autonomy are important distant antecedents of proactive behavior (Parker et al., 2006). These work-related structures increase employees' perceived role breadth self-efficacy (RBSE), a psychological state that plays a major role in deciding whether employees will act proactively. RBSE defines what employees believe they are capable of workplace interventions, such as redesigning work, or job enlargement (Parker & Parker, 2014).

Rotation experience, a practical and effective approach that increases one's job enrichment, is considered to have an effect on proactive behaviors by changing the work content (Strauss & Parker, 2018). First, the rotation experience boosts employees' tendency to behave proactively by reducing present uncertainties or unknowns.

Secondly, rotation experience not only helps employees better understand themselves, but also offers rich information about the organization, whether positive or negative. This information allows rotators to look further into the future and in turn increases their awareness of the need for proactivity. Further, given situational constraints, individuals with a closer connection with future selves see a more urgent need for change (Taber & Blankemeyer, 2015). Employees with a longer FTP adjust and develop themselves more actively to adapt to job, career, and environment (Kooij et al., 2017; Taber & Blankemeyer, 2015). Moreover, in one field experiment study, through undergoing training as an intervention, envisioning future work selves encouraged participants to be more proactive toward organizational members (Strauss & Parker, 2018). Third, rotators are also valuable to the organization, which increases their ability to influence the context. Rotation as on-the-job professional development for potential school leaders develops individuals to better fit their organizations (Brunold & Durst, 2012). Rotators are trained to be more familiar with and related to the organization, other employees, functions and collaboration between departments specific to the organization. By enriching their job content, rotators gain more sense of control of job-related issues and are more capable of fulfilling job requirements. At the same time, they also see more future needs to meet. Therefore, I hypothesize the following:

Hypothesis 4a: Rotation experience is positively related to individual personal initiative behaviors.

Hypothesis 4b: FTP mediates the association between rotation experience and

individual personal initiative behaviors.

By rotating job roles, employees open up access to a wider variety of tasks, which is also considered to boost employee creativity. Individuals with a polychronic orientation (able to take on multiple tasks simultaneously) exhibit more creative ideas when they rotate their tasks in one laboratory study (Nora Madjar & Oldham, 2006). Likewise, the cognitive fixation produced by fixed job design is one of the main factors that impedes thinking for creativity (Lu, Akinola, & Mason, 2017). Rotation, as a learning mechanism, reduces the work boundary and offers employees more autonomy and possibilities for cooperation, all beneficial for generating creative ideas.

FTP as a synthesized motivational and regulation source offers both the "can do" and the "reason to do" facets of proactive behavior. By enhancing SAK related to work, employees could generate a positive evaluation of the environment as well of themselves. SCT suggests that, on the one hand, FTP serves as the vehicle for transforming accumulated resources into actions and prompts individuals to fill the gap between attainments and desired future states by offering future goals (Bandura, 1991). Based on this process, individuals keep adding value to and adjusting the anticipated future, continuously generating a different discrepancy between present and desired future. Longer FTP increases the instrumentality of future-oriented behaviors, which help an individual set challenging goals, adds more value to goal mastery and perception of self-development. Individuals with longer FTP regard taking actions in the present as an instrument to achieve distant future goals, whereas those who do not have it lack this motivation source.

On the other hand, FTP also serves as a source of self-efficacy offering "the can-do belief" that motivates individuals to act to change their environment. A sense of control and the development of self-efficacy reinforce each other (Parker & Parker, 2014). Based on social cognitive theory, perceived self-efficacy plays a central role in predicting an individual's behavior, which is closely related to FTP (Park & Jung, 2015). The further into the future you see, the more you think a certain ability is necessary and learnable, which is an important perception that directly decides ones' goal achievement. On the contrary, if individuals limit their growth and development because of self-doubt, it is hard for them to have a positive perception of self-efficacy, which might lead to establishing self-hindering goals.

Furthermore, it is propose that the relationship between rotation experience and creativity is linked by FTP.

Hypothesis 5a: Rotation experience is positively related to individual creativity.

Hypothesis 5b: FTP mediates the association between rotation experience and individual creativity.

2.3.5 Power and Proactive Behaviors in School

Power holders have been found to be particularly prone to take action, solve problems, and pursue goals (Galinsky et al., 2003a; Guinote, 2007, 2017a). They take action not only for self-interest, but also in the public interest (Galinsky et al., 2003a). They perceive themselves to have more responsibility for initiating performance (Overbeck & Park, 2001). When they realize there

is a potential problem or need for improvement, power holders take actions.

Among the potential results of proactive behaviors are failure and ensuing negative consequences. For many, concern that failure may result in environmental punishment of failure hinders their desire to be proactive. Many studies suggest that power holders concentrate their attention on goals they desire to achieve. They care less about other individuals or about environment constraints (Galinsky, Magee, Inesi, & Gruenfeld, 2006b; Whitson et al., 2013). As previously mentioned, power holders are relatively free from social influences. In keeping with this characteristic, power holders worry less about negative consequences proactive behavior might bring. Proactive behaviors are behaviors focusing on change and the future, which contain a possible threat, such as social pressure. Power holders are less concerned with norms and more prone to challenge the status quo as long as they are able to retain their current position (Maner, Gailliot, Butz, & Peruche, 2007). Thus, they are also more able to fulfill their desired end state without depending on others.

Furthermore, power holders are those who are motivated to control, be it controlling themselves or he external environments. Facing competitive interaction, power holders move first, make offers, and initiate arguments (Magee, Galinsky, Gruenfeld, & Wagner, 2007). Proactive engagement in the workplace requires a sense of control, the essential component of power (Seibert, Wang, & Courtright, 2011). Likewise, action-orientated individuals are considered as having more power as their behavior represents less dependence, more control and more influence (Magee, 2009). In an organizational context in particular it is usually the power holders that vote for change from the status quo (Magee, 2009). Another laboratory study also supports

this argument, showing that power holders make riskier decisions and challenge the status quo more frequently as long as their position of power is stable and safe (Maner et al., 2007) Power holders, therefore, are disposed to engage in more proactive behaviors, not only because they see further but also because they are more motivated to exercise control over the future. Hence, I hypothesize that power holders are more willing to take control of future consequences by initiating action in the present for change.

Hypothesis 6a: Power is positively related to personal initiative behaviors.

Hypothesis 6b: FTP mediates the association between power and individual personal initiative behaviors.

Induced power shows a positive linear relationship with creativity in a lab setting (Duguid & Goncalo, 2015). Creativity is a skill that contributes to the future. Hence, I posit that FTP serves as the conduit that links power to creativity. First, FTP suggests a form of abstract thinking that encourages individuals to perform creatively. Power holders perceived a greater social distance from other individuals, which implies that power holders adopt more abstract and flexible styles of information processing, whereas the powerless have a limit focus in information processing (Magee & Smith, 2013; Smith & Trope, 2006). The powerful report a higher tolerance of ambiguity, an essential quality for individuals to be creative and innovative. They are also good at identifying goal-related information and favor global information processing, which links power and creativity (Gervain, Guinote, Allen, & Slabu, 2013).

Secondly, FTP magnifies seeking and pursuing more power in the future. Manifesting creativity, although not directly rewarded, is encouraged and appreciated by schools. The behavior system of power holders is aimed at maintaining power by active collection of relevant information, whereas the powerless are more likely to react to threats in the environment (Magee & Galinsky, 2008). More importantly, power holders are more courageous in expressing their creative thoughts as power makes them see choices rather than constraints (Galinsky et al., 2008). Particularly when their hold on power is stable, the powerful perform better in creative tasks functionally related to power (Sligte, de Dreu, & Nijstad, 2011).

Therefore, I hypothesize the following:

Hypothesis 7a: Power is positively related to individual creativity.

Hypothesis 7b: FTP mediates the association between power and individual creativity.

Figure 2.1 summarizes the discussed hypothesis and the overall relationship of variables. To conclude, drawing on the theoretical foundations, this framework first tries to identify two work role related constructs: the experience of power and rotation. These workplace interventions increase teachers' perspective on the future. More importantly, under to this model, FTP is hypothesized as a mediator that connects interventions to proactive and creative behaviors.

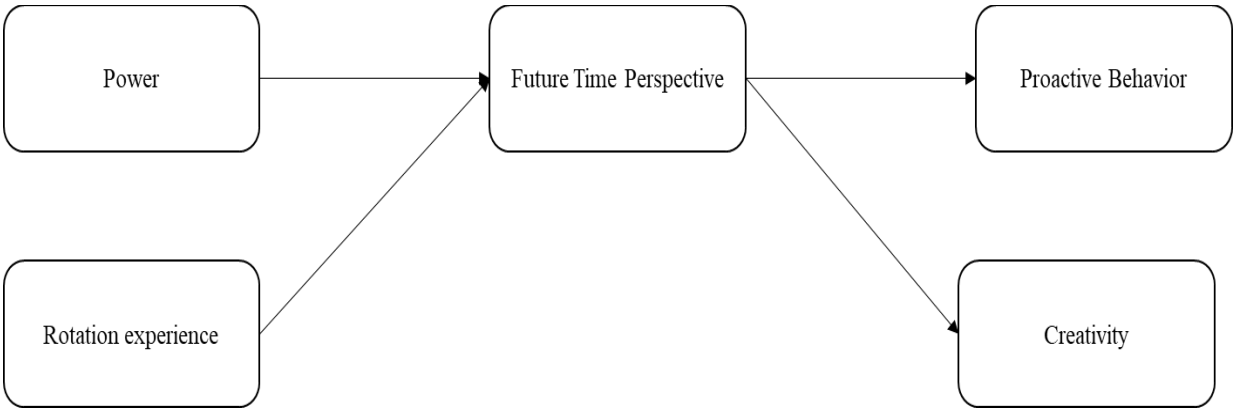

Figure 2. 1 The Integrated Theoretical Model

2.4 Research Design and Measurement issues

2.4.1 Overview of the research design

Two studies were designed to verify the hypothesis with multiple methods. First, I tested the hypothesis and general theoretical model in a field setting with a relatively large sample size. The survey method with its representative sample size is able to generalize the result to the selected population. By using valid scales with high reliability in the questionnaire, this method measured the general psychological construct. In addition, multiple source data collection reduced potential common method variance, which is one of the major threats to validity. I measured teachers' rotation experience, power, and FTP through the self-reported survey. The creativity and personal initiative behaviors were rated by peers. However, the cross-sectional design is not able to capture the change over a given time and limited in its ability to generate causal relationships.

Second, to verify the causal relationship of the model and establish the internal validity (Cook, & Campbell, 1979), study 2 was conducted with a scenario design with part-time postgraduate student samples. Based on this design, the main effects were tested in a controlled environment to generate causal conclusions. This study tries to examine the effects of power and rotation experience on FTP, creativity and proactive behaviors. The experiment result compensated for the limits of the cross-sectional survey in adding causal relationships although weaker in internal validity (Babbie, 1998).

Integrating the results from the two studies, this research obtained results via scenario experiment to establish internal validity, and field survey, using workplace ratings and in-service

teachers, to achieve external validity.

2.4.2 Measurement issues

The measurement of FTP developed by studies during the 1980s was low in test-retest reliability (Seijts, 1998a). As summarized in table 2.1, three major scales of measuring FTP were ZTPI (Zimbardo & Boyd, 1999), the Future time orientation scale (Cate & John, 2007) and the FTP scale (Husman & Shell, 2008). Of the three, ZTPI is the most widely used scale, with high convergent and discriminant validity and test-retest reliability (Kooij et al., 2018; Zimbardo & Boyd, 1999). ZTPI was adopted in the current study to measure the general attitude toward the future. Future temporal depth is a relatively new way to measure FTP, referring to how far ahead individuals tend to consider the future (Bluenore, 2002). This method was widely adopted in the experiment settings to manipulate or detect variations in FTP because it is able to capture the changes in a short time interval. Therefore, in study 2, the experiment design measured FTP based on the temporal depth index and tried to identify how far one could project with specific goals in mind.

The measurement of power and job rotation. In study 1, power was measured by Anderson and colleagues' (2012) sense of power scale to see to what extent teachers influenced others during their daily work. Apart from reporting one's position in the hierarchy position as a power measurement, previous studies adopted locus of control index and the extent of personal agency (Anderson, John, & Keltner, 2012; Fast & Chen, 2006; Overbeck & Park, 2001). These

measurements were low in reliability and independent of social context (Overbeck & Park, 2001; Anderson, John, & Keltner, 2012). There was an absence of a valid scale of power interpersonally until the development of a personal sense of power scale, which has since been widely used in survey research. Hence, this study adopted the most updated version of a personal sense of power scale to measure teachers' power. In study 2, power was manipulated by recall situations in which individuals had power over others or others had power over them (Galinsky et al., 2003a). This priming is consistent with the measurement of sense of power in study 1 and aims to measure the psychological change when they are able to influence, or are influenced by, others.

Rotation was measured by teachers' self-reporting of whether they had experienced such activity before in Study 1. In experiment setting, rotation usually manipulized as switching roles in team video games, or simple task (e.g. Gillespie & Richardson, 2011; Lu et al., 2017). However, to strengthen the connection with teaching and field experience, I manipulate the rotation between two departments in school context.

The measurement of Proactivity.

For study 1, I selected personal initiative behaviors for two important reasons. Other formats of proactive behavior such as voice, issue selling or taking charge require one to associate and interact with leaders or other parties in the organizations, whereas personal initiative behaviors are self-goal-orientated behaviors, including self-development and growth goals. Another reason is that this study focuses more on within-person change and behaviors, rather than interactions

with colleagues and leaders. A widely adopted scale for the personal initiative has been developed by Frese and colleagues (Michael Frese, Fay, Hilburger, Leng, & Tag, 1997). It is a well-established scale reported to have high reliability and validity across cultures in the current literature. An interview measurement was also suggested by Fay and Frese to measure personal initiative (Fay & Frese, 2001; Tornau & Frese, 2013). However, due to limited resources and time, I adopted a peer-rated approach as an evaluation of teachers' personal initiative behavior syndrome.

In study 2, a self-reported willingness to engaging in proactive behaviors was measured in each round of the tasks. The scale was adopted from an 11-item general proactive measurement scale, including different foci (Belschak & Den Hartog, 2010). Another widely used scale of proactivity in the organization is the 17-item scale that measures proactive personality (Bateman & Crant, 1993). It measures a stable tendency toward improving the environment, rather than willingness and behavior change in a short interval. Hence, to get a general picture of proactive behaviors, I adopted the former scale to measure proactive willingness in the experimental study.

The measurement of Creativity. The 13-item scale developed by Zhou & George (2001a, 2001b) has been one of the most widely used scales to measure employee creativity in previous research, also in the Chinese context. As I have previously argued, it is rare for teachers to generate to a large extent both novel and useful ideas. On most occasions, teachers generate ideas that are to some extent novel or to some extent useful. These should nevertheless be considered as creativity. Innovation was also measured by a two-dimensional scale: exploitative and

exploratory innovation (Jansen, Van Den Bosch, & Volberda, 2006). In addition, following the criteria of Amabile definition, novelty and usefulness are two parts that make up the concept of creativity (Amabile, 1998). Therefore, in both studies, the evaluation of creative ideas was based on a two-dimensional measurement. In the rating scale, I revised the creativity scale developed by Gilson and Madjar to suit a Chinese school context (Gilson & Madjar, 2011; Madjar, Greenberg & Chen, 2011). And in study 2, I also revised the creativity tasks to suit school conditions and evaluated those ideas according to their level of innovation and usefulness (Goncalo & Staw, 2006).

CHAPTER 3 STUDY 1

This chapter presents the purpose of the study 1, the sample criteria, and the selection of samples. Following the sample information, the measurements and scales' reliability, as well as validation, are presented in detail. This is followed by a description of the analytic strategies adopted. The results part initially presents the descriptive result of all measured variables and correlation coefficients, then reports the results of Structure Equation Modeling. Finally, the bootstrap results are used to detect the mediating effect of FTP in the model. A summary of results follows.

3.1 Methods of Study 1

Study 1 was designed to empirically verify the hypothesized model presented in Figure 2.1. the cross-sectional dyadic survey was designed for in-service teachers. For this study, 284 paired participants took part. The proposed conceptual model was tested with SEM analysis and the meditating effects of FTP were examined by bootstrapping analysis.

3.1.1 Participants and Sampling Procedure

Sample size was determined based on a combined consideration of two rules. Bentler and Chou (1987) suggest the principle of determining sample size: the ratio of sample size to free parameters estimated should be larger than 5:1. The free parameters in the proposed theoretical model include 4 paths, 1 curve line, 1 exogenous variable and 3 endogenous variables, which suggest a sample size should at least be larger than 45. Furthermore, Kelloway (1996) suggests that the sample should exceed 200 otherwise the parameter estimates might be inaccurate. Therefore, to guarantee a reliable SEM result, this study followed the suggestion of Kelloway (1996) and decided the sample size should be greater than 200. The survey data was collected from eight schools in Lanzhou, China during the academic year of 2017-2018. Of these eight schools, five are primary schools, and the other three are secondary schools.

Dyadic data was collected from teachers and their peers to reduce common method bias. In-service teachers were introduced to the survey as well as the purpose of this study during their

meeting time. The questionnaires were distributed to teachers who were willing to participate on a voluntary basis. The questionnaire required them to indicate a direct supervisor or a colleague who was most familiar with their working situation to fill in a second follow-up survey.

The author distributed and collected all questionnaires to ensure anonymity. After a brief introduction, teachers who were willing to participate in the research were given a sealed envelope showing only the series coding information, containing self-rated and other-rated questionnaires. A brief introduction of the study and agreement was presented in the first page of questionnaires. After reading the introduction, participants finished the self-rate questionnaire and then invited peers or the direct leader who was aware of their working performance to fill in the other-rated questionnaire. The self-rated questionnaires were returned in the envelope by participants. The other-rated questionnaires were either returned in the same envelope or direct to the author. The self-rated and other-rated surveys were paired according to the coding series numbers.

In the self-reporting questionnaire, participants were asked for their basic demographic information, such as gender, age, tenure, rotation experience, power level, and FTP. The other-rated questionnaire included evaluation of the participant's creativity as well as personal initiative behaviors. It also included demographic information on the rater. In total, 430 paired questionnaires were sent out, of which 351 questionnaires were returned (response rate = 81.62%). I excluded surveys that 1) had a low filling-up rate of the questions (lower than 20% completion; 2) contained responses that were all in the same pattern (such as all strongly agree, or all strongly disagree; 3) were missing the other rated survey, and 4) in which both self- and

other-rated surveys had been finished by one person. Ultimately, a total of 284 out of 430 valid paired responses from eight different schools were included for further analysis (response rate = 66.05%).

Of the 284 teachers, 23.3% were male teachers, which is consistent with gender distribution in the education profession. In terms of educational background, 41.2% of the participants have a Bachelor degree, 31.8% have a certification degree, 10.5% hold a Master degree or above. As for age, 9.8% teachers are under 25, 35.2 % were between 26 and 35, 32.1 % were between 36 and 45, and 16.8 % were 46 or older.

3.1.2 Measures

Surveys were delivered in Chinese. Scales were translated from English into simplified Chinese and followed back translation principles devised by the author and another graduate student whose major is in Chinese literature to ensure appropriate meaning and wording issues. The Chinese version of all following measures was created as well as rephrased to fit school settings and following the commonly used translation-back method. Scales that contained descriptions of "company" were revised as "schools". A Five-point Likert and Seven-point Likert scale were adopted to measure FTP and other variables respectively. The full questionnaire could be seen in the Appendix.

Rotation experience. The rotation operationally refers to, except for the teaching role, any change in job title or teaching department that did not coincide with a growth of salary (Campion, Cheraskin and Stevens, 1994). For this study, I measured teachers' functional roles in schools,

not their teaching roles. Teachers were asked to report their rotation experience by informing us of their current position and whether they had been in other roles in school before the current one. They were also asked the previous positions' name. The responses were then coded into three categories: 0 for no rotation experience, 1 for one rotation experience, and 2 for two or more rotation experiences.

Power. The power scale adopted a scale for measuring the sense of power from Anderson, John, & Keltner (2012). It is a 7-point Likert scale, including 8 items, ranging from 1(very much disagree) to 7 (very much agree). A sample item was "If I want to, I get to make the decisions."

FTP. The Zimbardo Time Perspective Index (Zimbardo & Boyd, 1999) is the most widely used survey scale in measuring FTP (see review Kooij, Kanfer, Betts, & Rudolph, 2018). This is a measurement of a general attitude of FTP. A four-item scale was retrieved from the short version of the ZPTI scale and has been verified by Orosz (2017). The 5-point Likert scale ranges from 1 (very unlike me) to 5 (very like me).

Other-rated Creativity. The 6-item scale developed by Madjar and her colleagues (Madjar, Greenberg, & Chen, 2011) to measure incremental and radical creativity was adopted. A sample item of incremental creativity is "Uses previously existing ideas or work in an appropriate new way." a sample item of radical creativity reads "Is a good source of highly creative ideas". (α = .90).

Personal Initiative behaviors. A seven-item scale was adopted from Frese's work (1997). " (α = .89). The participating peers were invited to evaluate the participating teachers' behaviors based on their observations. This scale has been widely adopted in the Chinese context and has

proved its reliability and validity (for example Wang, & Li, 2015; Zhao, Frese, & Giardini, 2010). A sample item is “This colleague actively attacks problems at work”.

Control variables. The previous literature on FTP includes a suggestion from Spector and Brannick (2011) that age, gender and education level might have possible confounding effects. Hence, both self and other rated surveys collected participants’ demographic variables. These included age range (1=Under 25, 2=26-30,3=31-35, 4=36-40, 5=41-45, 6=45-50, 7=above), gender (0=male, 1=female), and education background (1=Certificate, 2=Bachelor, 3=Master, and 4=Doctor) as controlled variables in the SEM model.

3.2 Results of Study 1

Analytic strategic. Separate CFAs for latent constructs, except for rotation experiences, and the complete CFA using ML estimation for the whole model were analyzed to confirm the convergent and discriminant validity of study variables.

Structural equation modeling analysis was conducted with Mplus 7. The relatedness from rotation experiences and power to FTP as a mediator and the associations from mediator to outcome variable (Individual level creativity and Personal Initiative Behaviors) were represented by path-parameters. The model was tested using ML estimation. The indices of Chi-square, Degree of freedom, Standardized root mean square (SRMR), Root mean square error of Approximation (RMSEA), Comparative fit index (CFI), and Tucker and Lewis (TLI) would be

used to determine the goodness of model fit to the data. According to the rule-of-thumb, values close to .90 of CFI and TLI were regarded as reasonable cutoff points, and values close to .95 were shown a good fit. Additionally, values of SRMR and RMSEA close to .08 were regarded as reasonable fit and values close to .06 were considered separately as "close fit" (Bentler, 1990; Hu & Bentler, 1999; Sharma, Mukherjee, Kumar, & Dillon, 2005). Moreover, with a sample size larger than 200, a ratio of 3 or smaller of Chi-square/degree of freedom is also recommended. In addition, the bias-corrected bootstrapping method was adopted to examine the mediating effects of the data (Cheung & Lau, 2008). Compared with Sobel and regression tests of mediation, the bootstrap test of indirect effect was recommended to detect different kinds of mediation (Zhao, Lynch, & Chen, 2010). Therefore, following the suggestion of Bollen and Stine (1990), I adopted the confidential interval of bootstrapping with 1,000 replications to detect the mediating effects of FTP.

3.2.2 Descriptive Results

Table 4.4 shows the descriptive statistics including mean, standard deviation, zero-order correlation coefficients, and Cronbach's alpha of scales. Education background is negatively correlated with age. It implies that lower education level is linked to lower age, consistent with the reality that only in recent decades has a Bachelor degree been required by the Chinese Educational System. As expected, rotation experience and power positively correlated with FTP respectively ($\gamma = .16, \rho < .01;\ \gamma = .12, \rho < .05$). Furthermore, power also positively correlated with creativity and personal initiative behavior as rated by peers (creativity: $\gamma = .17, \rho <$

.05; personal initiative behaviors: $\gamma = .15, \rho < .05$). Likewise, rotation experience positively correlated with other-rated creativity (: $\gamma = .23, \rho < .01$), but did not exhibit a relationship with other rated personal initiative behaviors (personal initiative behaviors: $\gamma = .12, \text{ns}$). Also, FTP was positively correlated with the other-rated personal initiative ($\gamma = .21, \rho < .01$). However, no correlation was found between FTP and other-rated creativity ($\gamma = .10, \text{ns.}$).

Based on the suggestion of Zhao et al. (2010), it is not considered necessary for significant zero-order correlations to exist before testing the mediation effects. Five types of mediation were summarized by this study and it is argued that if only the zero-order correlation is checked it might lead us to overlook potential mediating effects.

Table 3. 1 Means, Standard Deviations, Zero-order correlations, and Reliability coefficients.

	Mean	SD	1	2	3	4	5	6	7	8	9
Self-Reported Variables											
1. Gender (0=M; 1=F)	1.71	0.45									
2. Age	3.69	1.73	-.14*								
3. Education	1.74	0.65	-0.02	-.29**							
4. Tenure	3.79	1.95	-0.07	.86*	-.28**						
5. Rotation Experience	0.52	0.71	-.18**	.28**	-0.01	.27**					
6. Power	4.21	0.59	0.06	-.20**	.13*	-.14*	-0.02	(.77)			
7. FTP	3.79	0.61	0.04	0.07	0.03	.13*	.16**	.12*	(.76)		
Other Rated Variables											
8. Creativity	4.94	1.00	-0.11	-0.02	0.09	-0.01	.23**	.17**	0.10	(.91)	
9. Personal Initiative	4.87	1.05	0.01	0.02	0.11	-0.02	0.13	.15*	.21**	.70**	(.89)

Note: *N*= 284.
Reliability values are presented in parentheses.
FTP= Future Time Perspective;
$** \rho < .01, * \rho < .05, \text{two} - \text{tailed}$

Control variables. All these control variables showed no significant results on FTP and dependent variables in the SEM model but reduce the model fit index (CFI=0.884; TLI=0.867; SRMR=0.071; RMSEA=0.062; $\chi^2/df = 2.01$). Likewise, raters' demographic variables (including age, gender and education level) also showed no significant results in terms of peer rated creativity and personal initiative behaviors, which also lowered the model fit index (CFI=0.865; TLI=0.849; SRMR=0.071; RMSEA=0.065; $\chi^2/df = 1.71$). Hence, these controlled variables were not included in the SEM analysis.

3.2.1 CFA Results

The CFA result of the 8-item power scale showed a relatively bad fit to the data. Two items had negative loadings. The two items were "I think I have a great deal of power." and "I can get him/her/them to do what I want"; which meant that they measured a negative psychological state of certain constructs. The factor loadings of other two items were lower than .3. The items are "If I want to, I can make decision" and "I can let others do what I want". Therefore, these four items were excluded from further analysis. Four latent variables reported good fits, separately (Power: CFI=0.982; TLI=0.947; SRMR=0.025; RMSEA=0.096; $\chi^2/df = 4.02$; FTP:

CFI=0.990; TLI=0.969; SRMR=0.019; RMSEA=0.062; $\chi^2/df = 2.33$; Creativity: CFI=0.978; TLI=0.964; SRMR=0.023; RMSEA=0.090; $\chi^2/df = 3.30$; personal initiative behaviors: CFI=0.956; TLI=0.927; SRMR=0.034; RMSEA=0.114; $\chi^2/df = 4.67$). All the items were significantly loaded on the latent constructs in the expected direction.

Next, to test whether latent variables are distinguishable from each other, I compared the intended measurement model with alternative competing measurement models for the measures of self-reported and other-rated factors. Rotation experience is excluded for this analysis since it is not a latent variable. From Table 3.1, the four-factor model showed the best fit than any alternative model (CFI=0.885; TLI=0.867; SRMR=0.066; RMSEA=0.074; $\chi^2/df = 2.91$). Therefore, we confirmed that the measurements adopted in this study reported a high level of construct validity.

Table 3. 2 Model Fit Summary and Measure Model Comparison (N=284)

	χ^2	df	ρ	CFI	TLI	SRMR	RMSEA
M1: One factor model	1353.987	170	<.00	.566	.515	.141	.134
M2: Two factor model	1009.157	169	<.00	.692	.654	.100	.115
M3: Three factor model	755.739	167	<.00	.784	.755	.101	.077
M4: Four factor model	476.885	164	<.00	.885	.867	.066	.074

Note: χ2, chi-square; df, degree of freedom; CFI, comparative fit index; TLI, Tucker and Lewis; RMSEA, root mean square error of Approximation; SRMR, standardized root-mean-square residual;

Model 1: all the items were set to load on one factor;

Model 2: combining FTP, creativity and personal initiative behaviors;

Model 3: combining creativity and personal initiative behaviors.

3.2.3 Results of Hypotheses Testing

In general, the model presents a good fit to the data (CFI=0.910; TLI=0.897; SRMR=0.071; RMSEA=0.065; $\chi^2/df = 2.28$). Hypothesis 1, which proposes that rotation experience would be positively related to teacher FTP, was supported by the result (β=.16, ρ < .01). Hypothesis 2 anticipated the association between power and

FTP, which was also supported (β =.12, ρ < .05). Hypothesis 3a predicted that FTP could facilitate teachers' personal initiative behaviors, and this was supported by the SEM result (β = .35, ρ < .05). The results also showed that the teachers who reported longer FTP tended to be more creative, which supported the hypothesis 3b (β = .24, ρ < .05).

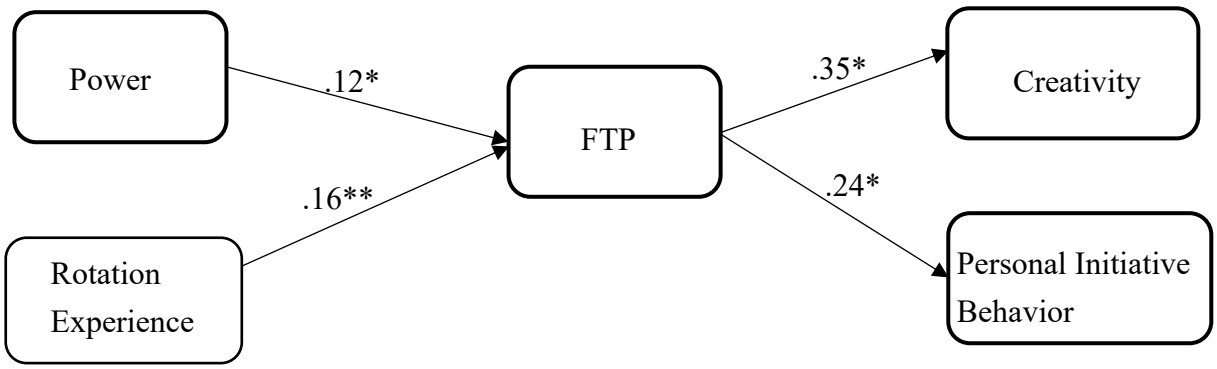

Figure 3. 1 Results of Structural Equation Modeling

*Note. *p<0.05; **p<0.1*

Mediating effects. Table 3.3 showed four mediating effects in the model. They are 1) power—FTP—creativity; 2) power—FTP—personal initiative behaviors; 3) rotation experience—FTP—creativity; and 4) rotation experience—FTP—personal initiative behaviors.

Table 3. 3 Bias confidential interval of indirect effects

	Lower2.5 %	Lower 5%	Upper 5%	Upper 2.5%
Power→FTP→Creat	-0.018	-0.009	0.014	0.061
Rotexp→FTP→Creat	-0.022	-0.013	0.016	0.064
Power→FTP→PI	-0.003	0.001	0.025	0.082
Rotexp→FTP→PI	-0.003	0.002	0.028	0.090

Note: Rotexp = Rotation experience; FTP= FTP; PI= Other-rated Personal Initiative Behaviors; Creat= Other-rated General Creativity;

Based on the analysis of the indirect effect in Table 4.5, the results show two significant mediating effects at 90% Confidential Interval (CI). There, relationships of power to personal initiative behaviors and rotation experience to personal initiative behaviors, were mediated by FTP. Hypothesis 4a and 4b together posited that the rotation experience would affect personal initiative behavior through FTP. This was marginally supported. Following Zhao's classification of mediation effects combined with the correlation results, only an indirect mediation was found between rotation experience and personal initiative behaviors (95% CI [-0.022, 0.064], 90% CI [-0.013, 0.016]; SE = .02). Likewise, hypotheses 6a and 6b, predicting the path from power to personal initiative behaviors, were supported by the bootstrapping results. FTP also showed a complementary mediation effect connecting power and personal initiative behaviors at 90% CI (95% CI [-0.018, 0.061], 90% CI [-0.009, 0.014], SE = .02). However, drawing on hypotheses 5 and 7, we cannot reject the null hypothesis. The

bootstrapping result failed to support FTP's mediating effects on creativity (power: 95% CI [-0.018, 0.061], 90% CI [-0.009, 0.014], SE = .02; rotation experience: 95% CI [-0.022, 0.064], 90% CI [-0.013, 0.016]; SE = .02). Further, the positive correlation between rotation experience and creativity was also supported by the bootstrapping result (95% CI: [.041, .250]; SE = .14). So is power (90% CI [0.008 0.319], SE=.16). Following the Zhao paper, there is a direct-only relationship between rotation experience and power in terms of creativity. In other words, there is the likelihood of an omitted mediator that links the relationship between power and rotation on creativity.

3.2.4 Discussion

Study 1 used Structure Equation Modeling to test the path coefficient and model fit of the hypothesis. Supporting our hypothesis, the model revealed a good fit. Further, the mediating results suggested that the experiences of power and rotation boost teachers' FTP, which in turn enhances their personal initiative behaviors. In contrast, teachers who haven't experience rotation in school or who possess a lower level of power reported a shorter FTP, which led to fewer proactive behaviors.

Study 1 revealed a positive relationship between rotation experience and FTP. Previous studies argue that job design is essential to practice behaviors, such as skill variety, job autonomy, and job complexity (Chae & Choi, 2018; Dul, Ceylan, & Jaspers, 2011; Fritz & Sonnentag, 2009; Ohly & Fritz, 2010). This study also has consistent findings that enriched job roles make individuals more proactive. By being rotated through more roles in an organization, teachers were more willing to change. Further, this study also illustrates how this connection might happen. Learned knowledge, the enlarged social network, and better understanding of the organization are critical for teachers to gain a sense of control. Drawing on self-determination theory, these are necessary elements for individuals to form a growth-orientation toward the future.

Further, in study 1, the SEM result shows that FTP significantly predicts teachers' creativity and personal initiative behaviors. These results present a positive correlation between FTP and future-oriented behaviors. They suggest that teachers who report longer range FTP are more willing to engage in more personal initiatives as well as creative behaviors in the workplace. In line with SCT and SDT, this study demonstrates that FTP motivates teachers to achieve a desired future state.

As suggested by previous studies, being a rotator enlarged teachers' knowledge base about the organization, a key ingredient for future planning and thinking (Brunold & Durst, 2012). Furthermore, future thinking and planning were essential to all proactive behaviors (Parker & Collin, 2010). This study builds up this linkage and suggests that FTP serves as the vehicle, transferring resources into actions.

This study fails to find significant mediating effects on creative performance in the workplace. Previous studies that suggested a positive relationship between power and creativity, FTP and creativity receive support from this study (Chiu, 2012; Duguid & Goncalo, 2015; Gervain et al., 2013; Ononye, Smith, & Blinn-Pike, 1993). Furthermore, this study verifies this relationship in the workplace with empirical evidence. However, no mediating effect has been found. In other words, there are other mediators yet to be identified that link the relationship between power and rotation to creativity.

This study adds empirical evidence to the theoretical model with the field data. However, the result is still limited in terms of defining the causal relationship. Therefore, in the next section, study 2 was conducted to examine the relationship among variables in a controlled environment to test how the variables are related.

CHAPTER 4 STUDY 2

This chapter presents the methods and results of study 2. It begins by describing the design of the scenario experiment and the approach used to recruit participants. Also presented in detail are the experiment's procedure, manipulation of independent variables, the measurements of outcome variables, as well as analytical approach. Two-way mixed ANOVA tests have been conducted to analyze the causal relationship between the experience of rotation and power to FTP; as well as the relationship of FTP to creativity and proactive behaviors.

4.1 Methods of Study 2

To test the causal relationship between rotation experience and power on FTP, creativity and proactive behaviors. I conducted a scenario experiment design. In this study, I tested four main effects of the proposed theoretical model in an imaginary, yet typical school setting to ascertain the effects of rotation experience and power level on FTP, proactive behaviors, and creativity.

4.1.1 Samples

Based on rule of thumb of determine sample size and the above framework, in order to detect an f in F test at α=.05, the power level at .80, each group needs at least 30 samples (Van Voorhis & Morgan, 2007). This experiment adopts a 2 × 2 mixed factorial design. Power is a Between-Subjects variable, manipulated by recalling related experience and assigning participants to either the role of department heads (high power group) or the role of teacher representatives (low power group). Job rotation is a Within-Subjects variable. It is treated by switching the work role with the imaginary colleague and finishing similar tasks specific to that colleague's department. Thus, the experiments have the result of both pre-job rotation and post-

job rotation within subjects. Therefore, the required sample size was estimated at 60 or more based on ANOVA analysis requirement.

Part-time in-service teacher students attending postgraduate programs in the Education University of Hong Kong were invited to participant in Study 2. The experiment required 20-30 minutes to finish and included 5 steps in two rounds.

I introduced the study during postgraduate courses in several programs, including professional development programs and Master of Education programs. The questionnaire was delivered by both online and printed version. Participants choose whichever was comfortable for them. For the printed questionnaire, after the introduction, students willing to participate this study were required to sign a consent form. As the participant returned the consent form, the printed questionnaire was handed to participants and each was given 20 minutes to finish it. On the anonymity principle, the questionnaire could only be identified by code numbers. For the Internet version of the questionnaire, the experiment was conducted on an online platform called *Cognito forms.* A QR code and a link were sent together via Email and Message to participants who prefer the online version. The consent form was on the first webpage, and only by clicking “Agree” could participants continue to finish the

experiment.

A total 149 out of 200 respondents were collected online as well as in hard copy form (response rate = 74.5%), excluding surveys that 1) have a relative low answer rate to the questions (lower than 20% completed); 2) contain responses that are all in same pattern (such as all strongly agree, or all strongly disagree; and in which 3) individuals only completed the Likert scale. Of the 149 teachers, 28.9% were male, a similar pattern to Study 1. In terms of age, 20.1% of participants are under 25, 39.6% 26-35, 22.8% between 36-45, and 15.4% participants over 46. As for education level, 30.9% participants have an education certificate degree, 47% teachers are Bachelors, and 16.1% participants have a Master degree, and less than 1% of participants report a Doctoral degree.

4.1.2 Experiment Procedure and Manipulation of Power and Rotation

Problem-solving tasks were created embodied in a school scenario, offering basic information and issues that might need to be addressed in an imaginary school setting. Participants were told they needed to finish two rounds of Problem-solving Tasks in the school with an imaginary colleague.

Step 1: Priming high power or low power. First, the experiment required the

participants to recall an experience in which they have power over others (or others had power over them) as power manipulation. Following procedures developed by Galinsky et al., (2013), in the high-power condition, participants were required to recall and describe a situation in which they had power over others and write down how they felt at that moment to reinforce the effect of manipulation; low-power participants were asked to describe a situation in which others had power over them and write down several sentences about how they felt at that moment.

Step 2 Knowing the task and taking up a role. After the priming task, there was a brief introduction of the imaginary school in which they worked, and a simple job description offered (in Chinese) as follows:

> *The school you work in has a long history in the local community and has accomplished many achievements in past decades. However, due to environmental change, your school is facing problems of a lack of students. In addition, teachers are also faced with high workloads and the pressure of "quality education". You and one of your colleagues take up two administration roles as department head A and B, respectively (High power condition)/teacher represented A and B, respectively (Low power condition).*

Please try your best to see yourself in the role described above and answer the following questions.

Next, participants were asked to discuss and solve two resource allocation tasks with imaginary colleagues with titles appropriate for the power condition. In the high-power group, participants were assigned the role of Head of Department A and an imaginary colleague: Head of Department B; In the low power group, participants were assigned the role of Teacher Representative for Department A and the imaginary colleague: Teacher Representative for Department B. The difference between the roles of department heads and the roles of teacher representatives was that department heads were asked to make decisions about tasks, while teacher representatives were asked to develop proposals about the tasks.

Step 3 1st round Problem-solving tasks. The pre-rotation task was offered as follows:

Apart from a teaching job, you also work in department A. Now your department is facing a problem of not having enough students enrolled in recent several academic years. You and your department want to address this issue from the perspective of external resourcing.

Two tasks need to be finished by the participants. First, according to the aforementioned school issue, participants were required to come up with a development goal and project this goal into future. The second task was a creativity task. Facing the school issue, participants were required to come up with ideas as novel and useful as they could to address the issue.

Step 4 Rotate the role and 2nd round of problem-solving tasks. The post-rotation instruction and task were offered as follows:

> *For training purposes, the school decides to switch the department to your colleague's department. Facing the same problem, the new department plans to address this issue from the perspective of teaching quality.*

The tasks were offered with same instruction as the 1st round Problem-solving tasks, but from the rotated role's perspective.

4.1.3 Measures

FTP. The projective test is adopted to measure participants' FTP in the workplace scenario. The instructions required participants to have work role related goals and estimate how far in the future the certain goal could be achieved. The 1-item question

was revised based on Bluedorn's (2002) measurement of future temporal depth to measure how far the participant could project their goals into the future.

*Creativity task. The c*reativity task was revised from Goncalo & Staw (2006) into school conditions and translated into Chinese. To guarantee the coherence of the tasks, all the tasks were revised into school conditions and related to the job roles the participants were assigned. Participants were required to come up with as many solutions as they could within 8 minutes, and the solutions needed to be as innovative and practical as possible. The round I task was how to improve the connection to an external resource to solve school problems, and the round II task was how to further improve the elite students' performance.

Following the instructions of Goncalo and Staw (2006), creativity tasks were rated by the author and another researcher in a related field. The inter-rater reliability presented by correlation a coefficient to see whether the two types of research have a coherent evaluation. Two criteria were adopted in deciding creativity performance: innovations and usefulness. In the end, I combine the flexibility and practicality scores as an overall creativity score. (such as Hoever, van Knippenberg, van Ginkel, & Barkema, 2012).

The inter-rater reliability of creativity tasks. Two raters in the related area, including the author, rated the creativity tasks before and after rotating the roles. The answers were provided on a separate working sheet and all identifying information was excluded. The score was assigned based on a 7-point Likert point scale rating the usefulness and innovation level. The Inter-correlations test result for absolute agreement tested by SPSS 25 shows a moderate and good level of consistency between two raters before and after creativity tasks, in which the inter-rater correlation reached good reliability (Table 4.1: Before ICC = .77, $p<.001$; Table 4.2: After ICC = .85 $p<.001$).

In task 1, ideas rated as highly creative include raising the school reputation by encouraging the student to participate in international competitions and collaborating with the local community to offer long-term voluntary work for the students. Ideas rated as low creativity included finding more resources to support school development and reinforcement of professional development of teachers. In task 2, examples of ideas rated as highly creative included creating mentorship between gifted students and underachieving students through which they could help and study with each other; or build up various clubs in school and encourage students to participate.

Table 4. 1 Intraclass Correlation Coefficient Before Creativity Task Rating in Study 2

	Intraclass Correlation[b]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.628[a]	.452	.745	5.058	147	147	.000
Average Measures	.772	.623	.854	5.058	147	147	.000

Two-way random effects model where both people effects and measures effects are random.
a. The estimator is the same, whether the interaction effect is present or not.
b. Type A intraclass correlation coefficients using an absolute agreement definition.

Table 4. 2 Intraclass Correlation Coefficient of After Creativity Task Rating in Study 2

	Intraclass Correlation[b]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.741[a]	.649	.810	7.121	146	146	.000
Average Measures	.851	.787	.895	7.121	146	146	.000

Two-way random effects model where both people effects and measures effects are random.
a. The estimator is the same, whether the interaction effect is present or not.
b. Type A intraclass correlation coefficients using an absolute agreement definition.

Examples of low creativity included offering after-school tutoring. The final score averaged the sum of usefulness and innovation from two ratings into a measure of the overall result for both before and after creativity tasks.

Proactive behavior was measured by the 7-Likert point scale with 11-items at the end of each round of the task and examined participants' perceived tendency to engage in proactive behaviors towards the organization, colleagues or self. The Cronbach alpha was .94, .95, and .97 separately. A sample item is "how much will you be willing to share your knowledge with colleagues in the situation you just read?"

Manipulation Check. A 1-item question was measured their power level: "to what extent do you think the situation in this scenario is under the participant's control?" A t-test between the high and low power group on this question will reveal whether the manipulation is successful.

Basic demographic information was collected at the end of the questionnaire, including gender, age, and education level. A pilot study with 12 postgraduate students in education was executed to examine the procedure and see whether there was any wording problem in the instruction or questionnaire. After the experiment, the researcher conducted an approximately ten-minute interview with each participant

talking about their feelings and suggestions. Primarily, I wanted to ensure that they didn't feel offended or uncomfortable during the experiment. Participants were not aware of what these tasks were designed for, which meant that the way tasks were assigned would not affect the experiment result. Some participants talked about the working problem of the tasks. They thought some choices were not so clear and could confuse participants. All these suggestions were followed up by modifications.

Analytical strategy. A 2 (High vs Low power groups) * 2 (Before rotation and after rotation condition) mixed ANOVA was conducted to test the impacts of power and rotation experience on participants' FTP, creativity level, and proactive behaviors. In this study, two-way ANOVA and simple linear regression with SPSS was adopted to test the main effects of this proposed model. Two-way ANOVA was used to verify the effects of manipulated interventions on FTP. Further, linear regressions were adopted to test the effects of FTP on creativity and proactive behaviors in both pre-rotation and post- rotation situations.

4.2 Result of Study 2

4.2.1 Manipulation Check

An undergraduate student blind to the experiment settings was employed to rate the conditions recalled by the participants. The 1-item question measuring power level was "to what extent do you think the participant had power in the situation he/she recalled". Based on the independent T-test in SPSS 25, the results are shown in table 3.1. Participants from two power groups report the levels of power are significantly different ($t_{(147)} = 7.72, p < .001$). The high-power group reported a mean of 4.79, with a standard deviation of 0.96. On the other hand, the low power group reported a mean of 3.26 with a standard deviation of 1.42. These results show that the manipulation of power is successful.

The example of a high-power group recall scenario is "When I worked in the University student association as a leader, I was once responsible for an interview for actors. All the interviewees were my classmates. However, when I was interviewing others, I felt powerful and superior. Anyway, the priority was to select an appropriate actor for the show." And, the example of low-power group recall condition is "When I hand in a proposal about the school's new project on the cultural festival, my proposal was rejected by my colleague. The only reason was that she is in charge of these kinds of activities."

Table 4. 3 The Result of Independent Samples T-Test of Manipulation Test (N= 147)

Power						95% Confidence Interval		
Descriptive results	**t**	**df**	**p**	**Mean difference**	**SE difference**	**Lower**	**Upper**	**Cohen's d**
$M_H = 4.79$ $Sd_H = 0.96$ $M_L = 3.26$ $Sd_L = 1.42$	-7.72	147	< .001	-1.53	0.198	-1.92	-1.14	-1.27

4.2.2 Descriptive and Inferential Results

Descriptive results of study variables by conditions are reported in Table 4.4. In the High-power group, participants placed their goals into a longer future (M = 14.07) than participants in the low power group (M = 10.11). However, the FTP score was reduced for all participants after the rotation. In addition, Table 4.4 shows that participants' willingness to engage in proactive behaviors and creativity level was increased after the rotation effects. And, participants in the low power group showed a higher tendency to undertake proactive behaviors and better creativity overall.

Table 4. 4 Study 2 Means and Standard Deviation By Conditions

	FTP		Proactive Willingness		Creativity	
	Before	After	Before	After	Before	After
1. Lp (N =71)	10.11(9.5)	10.00(9.3)	6.19(.82)	6.19(.82)	7.05(1.08)	8.53(1.73)
2. Hp (N =74)	14.07(13.14)	10.56(9.88)	5.59(1.52)	5.65(1.42)	6.70(1.56)	8.09(1.82)

Notes: 1. Hp = High Power; Lp = Low Power;

2. Standard deviations are in parentheses.

Table 4. 5 Results of Two-way ANOVA on FTP, Proactive Willingness and Creativity

	FTP	Proactive Willingness	Creativity
Power (H&L)	F = 2.19, ρ = .13	F = 9.03, ρ < .01	F = 3.57, ρ = 0.061
Rotation (Before & After)	F = 4.24, ρ < 0.05	F = .23, ρ = .063	F = 84.42, ρ < 0.01
Power*Rotation	F = 3.74, ρ = 0.055	F = .29, ρ = .059	F = .09, ρ = .75

Note: N = 147.

Hypotheses 1 and 2 expected participants in the high-power group and after rotation to report longer FTP. The 2*2ANOVA on FTP revealed an opposite result, with the hypothesis that rotation effect reduced the participants' FTP ($F_{(1,142)}$ = 4.24, P<.05, $\eta^2 = .03$), and power showed no significant effect on FTP. A marginal interaction effect was found. The FTP of high-power group participants dropped significantly after the rotation. Based on the results, high power groups were more cautious after they had taken on more roles as they perceived that they were taking on more responsibility, which might limit the development of FTP. This also suggests that FTP is a complex cognitive process that might not be increased in a short time interval.

In addition, as shown in Table 4.5, the rotation experience had a strong positive on creativity tasks, whereas it showed no significant effect in predicting willingness to be proactive. Power level had a marginal significant effect on creativity (F = 3.57, ρ = 0.061). However, in self-reporting of proactive willingness, the high-power group reported lower willingness than the low power group (F = 9.03, ρ < .01).

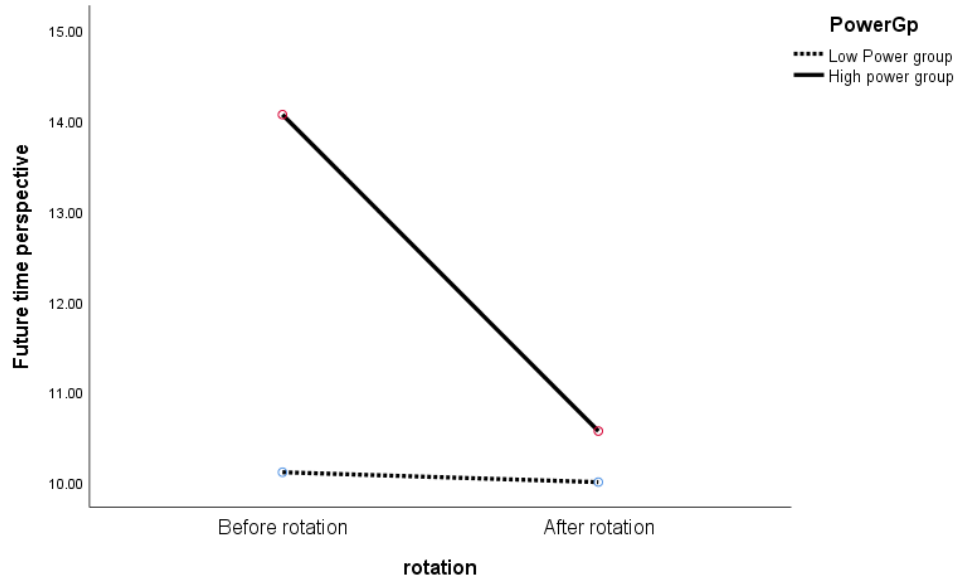

Figure 4. 1 Two-Way ANOVA Results on FTP

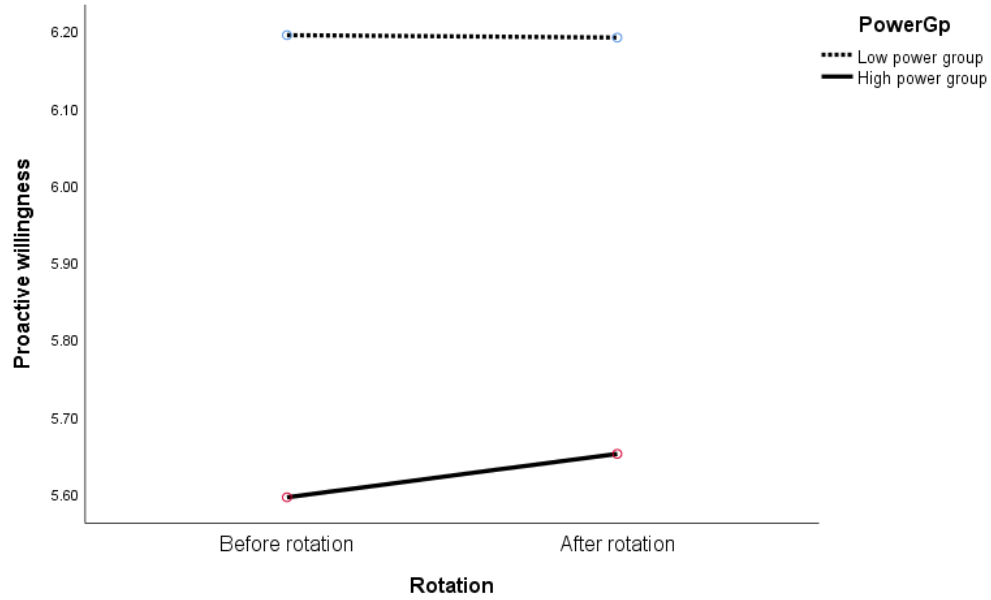

Figure 4. 2 Two-Way ANOVA Result on Proactive Willingness

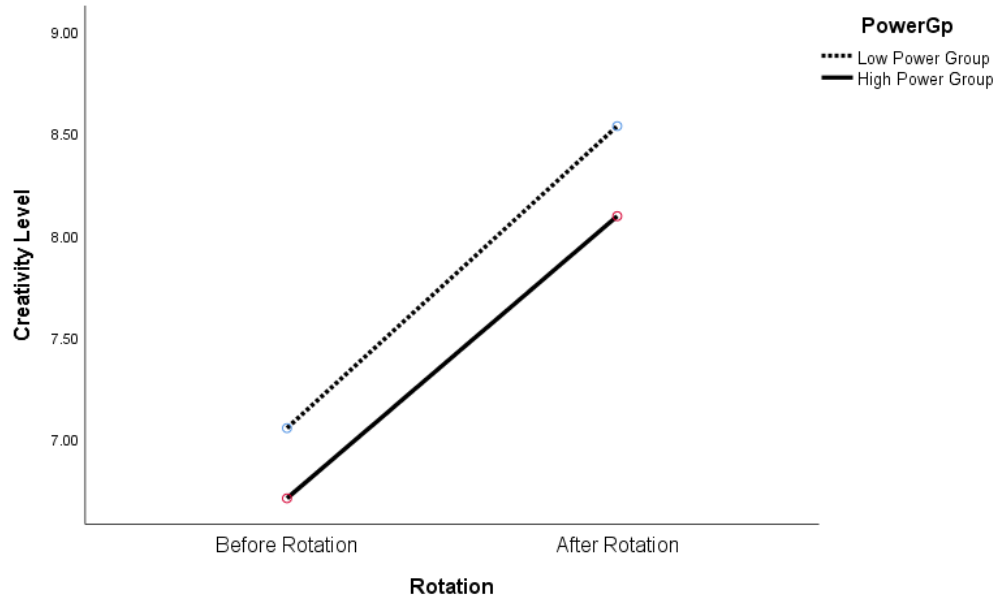

Figure 4. 3 4 Two-Way ANOVA Result on Creativity Level

To examine the relationship between FTP and outcome variables, four linear regression analyses were conducted. Pre-rotation and post-rotation FTP were adopted as independent variables to predict creativity in tasks as well as proactive willingness, respectively. In table 4.2, the proposition that FTP positively predicted proactive willingness and creativity level received partial support.

In the pre-rotation round, FTP shows no significant relationship with outcome variables. In the post-rotation round, the regression shows that FTP significantly predicts creativity level ($F = 4.32$, $p < .05$) and a marginal significant predicted proactive willingness ($F = 3.54$, $p = .062$) separately.

Table 4. 6 Result of Linear Regression of FTP on Proactive Willingness and Creativity

	Creativity_Before	Creativity_After	Proactive_Before	Proactive_After
$\boldsymbol{\beta}_{Before}$	0.02		.12	
$\boldsymbol{\beta}_{After}$		.17		.15
R^2	0	.29	.015	.24
F	.068	4.32*	2.26	3.54†

Note: †: ρ < 0.1; *: ρ < 0.5; **: ρ < 0.01.

4.2.3 Discussion

The contradictory result about rotation on Future Time Perspective. This study reexamined the proposed model via a scenario experiment design. With regard to hypothesis 1, the experiment generated contradictory results. The two-way ANOVA suggests a significant decrease of FTP for participants after rotating to another role.

In this study, the rotation is manipulated by rotating the school positions that closely related to the working context. However, only short descriptions about the job roles were offered. Participants need to solve practical problems in their positions but without social interactions and related organization knowledge.

The major cost of rotation as a training method is the short time lost in productivity (Campion, Cherskin, Stevens, 1994; Eriksson & Ortega, 2006). At this stage, rotators are spending most of their attentions in the present to learn new things, people and gain abilities about the organization. In addition, the change of FTP required the spared cognitive resources

to from, which are saved from concerning about the present. A newly rotated individual always faced with the problem of decreasing in productivity because more things need to be adapted and learn. Hence, this could be the potential reason that caused the conflicting result with Hypothesis 1.

Given this result, the manipulation of rotation in the scenario is not most ideal approach to show the effect of rotation, as a result of compromising with feasibility consideration. It is because this format increased the unknown area of participant to the experiment setting, rather than decrease it. In the future study, it is suggested that multiple rounds of rotation are necessary to reduce the unfamiliar area of the scenario experiment.

Hypothesis 2 predicted a positive correlation between power and teachers' FTP. In the experiment design, the mean FTP reported by high power group (Mean = 14.07) is longer than that of the low power group (Mean = 10.11). The two-way ANOVA demonstrates a marginal interaction effect that after rotation, the high power group dropped sharply in FTP, whereas the low power group presented fewer changes (see Figure 4.1).

As Figure 4.2 shows, the results infer a marginal interaction effect ($\rho = .059$) and show that power holders have an increased willingness to be proactive after rotation, while the low power group exhibited minimal change after rotation. However, the low power group showed higher level in creative tasks and willing to be proactive.

The contradictory result of power on proactivity willingness. There is no significant result found on power to creativity. However, a significant result between power groups on proactivity willingness has been found. In other words, low power group performed higher willingness to be proactive than high power group, significantly. This result is also contradictory to the hypothesis.

In study 2, the manipulation of power level only triggerred more the sense of responsibility and concerns rather than sense of control. When power holders construe their power as responsibility, they tend to be less confident and doubt their own judgements; but, this construal of power showed no effect on the low power group (De Wit, Scheepers, Ellemers, Sassenberg, & Scholl, 2017). Moreover, an unstable perception about power lead to threats to high power group and challenges to low power group (Scheepers, Roell, & Ellemers, 2015; Sligte et al., 2011). These factors are essential elements that threatened the belief of "can do" in predicting proactive behavior willingness.

There are several example answers in high power group manipulation: one teacher described the experience she had power over others as "I will not execute power directly. It is too simple and rude. I usually offered suggestions and advises in a gentle tone. If there is any disagreement, I also will offer them opportunity to explain and discuss. It is usually an

efficient way to achieve mutual agreement"; and "There is no such condition that had power over others. We all helped each other and learn from each other. Everyone had their advantages and disadvantages, including myself."

This effect might due to two possible reasons: 1) the gender effect on the different interpretations of power; and 2) culture effects. Teacher group is usually dominant by female, which showed similar distrubution in study 2 (Female: Male = 8:2). Different from standard survey items in study 1, the discriptions of power experience about themselves were based on personal understanding of the construct. Plenty of previous literature on gender and power illustrates that female reacted differently in facing power and threat from males. For example, female leaders are considered as caring and less assertive, which likely correlate to they way they perceive their gender roles and power construction (Eagly & Carli, 2003). Another labortory reseach also showed that males presented more power seeking and dominance behavrios when they were reminded of the threat of death, whereas female illustrated a negative effect in power seeking. These contridictory effects were also explained by the way of indivdiuals notion on the identity and image of gender differences (Belmi & Pfeffer, 2016). Especially in Asian schools, teachers, who are also disciplined by the strong moral and ethical rules, are less likely to "excute power" (Walker, Hu, & Qian, 2012; Min Wu, 2012). Based on their constuals, powerful indivdiuals who excute it over others rather than seeking for mutual

agreement and harmony might considered as against the rules of collectivism and social ties (Chen, Chen, & Huang, 2013; Hwang, 1987).

This result suggested that teachers gourp might have a different contrual about the power construction. The way of indivdiual contrual their power also played important role in study consequent behaviors of power. Hence, it is also needed to study in the future research that within the teacher groups, how teachers construe their power and what the role of gender played in this construe process.

Hypothesis 3a and 3b predicts a positive relationship between FTP and creativity as well as proactive behavior. The linear regression results provide partial evidence to support the hypothesis. Post-rotation FTP significantly predicts participants creativity level ($F(1,142) = 4.32$, $p < .05$) and marginally predicts proactive willingness ($F(1,142) = 3.54$, $p < .10$). Previous studies in laboratory settings report significant positive relationships between FTP and creativity, and this study also supported that ($F(1,142) = 4.32$, $p < .05$) (Chiu, 2012; Ononye et al., 1993). Further, previous studies have presented relationships of FTP and proactive behaviors in both field survey and laboratory setting that have also received partial support from this study (Parker & Collins, 2010; Strauss et al., 2012). This study shows that in the laboratory setting, participants who could project their goals into a more distant future

are more willing to be proactive in general and show higher levels of creativity.

Two facets of FTP facilitate creativity and proactive willingness. The first is that FTP encourage individuals to see the necessity of being proactive and act in advance. Second, individuals with more long-range FTP value the delayed benefits brought by proactive behavior (Joireman, Kamdar, Daniels, & Duell, 2006). Consistent with the previsous literature, this result confirms the explanation of why FTPcouldpredict work perfomance (Kooij et al., 2017; Taber & Blankemeyer, 2015).

CHAPTER 5 GENERAL DISCUSSION

This chapter integrates and summarizes the results from my two separate studies by drawing from current literature for comparison. Second, this chapter assesses the theoretical and practical contributions of this study. Finally, it presents the limitations of the study and suggestions for future research.

5.1 Discussion

Responding to the call for more empirical studies of FTP in the workplace, this study finds that FTP acts as an essential motivation source that could facilitate employee work performance. On the bases of social cognitive theory, self-determination theory, and proactive behavior model, this study builds an integrated theoretical framework suggesting that FTP serves as an important motivation source in the workplace and generates proactive behaviors, behaviors that are particularly valuable for companies facing a changing environment.

To enhance the validity of the findings a field survey and a scenario experiment were conducted to test the proposed theoretical model. In study 1, a large-scale field survey was conducted in the school context, recruiting 284 paired teachers to participate. The SEM result supported the general theoretical framework. The bootstrapping test also reveals that FTP mediates the relationship between the experience of rotation and power to personal initiative behaviors. In the second study, a scenario experiment explored the main effects in the proposed model. Two contradictory results were found. First, rotation reduced individuals FTP. Second, low power group reported higher willingness of proactivity.

Table 5.1 summarizes the findings of the two studies. I will discuss the findings of the two studies following the structure of proposed theoretical model in the following section.

Table 5. 1 Summary of the Results in Two Studies

	Study 1			Study 2		
	Analysis	Results	Supported or not	Analysis	Results	Supported or not
H1: RotExp -> FTP	SEM	β=.16, ρ < .01	Supported	Two-way ANOVA	F = 4.24, p < .05	Opposite
H2: Power -> FTP	SEM	β=.12, ρ < .05	Supported	Two-way ANOVA	F = 2.19, ns	NS
H3a: FTP -> Creativity	SEM	β = .35, ρ < .05	Supported	Linear regression	F = 4.32, p < .05	Partial Supported
H3b: FTP -> Proactive behaviors	SEM	β = .24, ρ < .05	Supported	Linear regression	F = 3.54, p = .62	Partial supported
H4: Rotexp -> FTP -> Personal initiative Behaviors	Bootstrapping	CI [0.002, 0.028]	Supported	Not tested		
H5: Rotexp -> FTP -> Creativity	Bootstrapping	CI [-0.013, 0.016]	Not supported	Not tested		
H6: Power -> FTP -> Personal initiative behaviors	Bootstrapping	CI [0.001, 0.025]	Supported	Not tested		
H7: Power -> FTP -> Creativity	Bootstrapping	CI [-0.009, 0.014]	Not supported	Not tested		

5.1.1 Rotation Experience and FTP

First, I proposed that rotation experience increase individual's FTP. My two separate studies generate contradictory results. In study 1, by soliciting participants' actual rotation experiences, the SEM results reveal a significantly positive relationship with FTP. However, in study 2, the experiment results suggest that rotation experience reduces FTP. There might be two reasons for the contradictory result regarding the effect of rotation experience on FTP. As mentioned in Chapter 2, the important condition to form FTP is free cognitive resources from concerning the present. Through the "learning by doing" process, teachers were getting familiar with the environment they were in. The reduced area of present unknown allows teachers to think far and plan far. More importantly, previous literature had already illustrated that the rotation program leads to a short-term counterproductive period when rotators were newly rotated (Kampkötter et al., 2016). To better assess the effect of rotation for future research, one more task should be designed as after rotation evaluation in the scenario experiment.

Hence, this study suggests that the positive effect of rotation experience on FTP improves teachers' FTP in the long run because rotation experience offers sufficient information, social resources and opportunities for teachers to acquire and explore. The rotation experience has long been regarded as proficient on-the-job training in terms of productivity gain, but a

possible loss in terms of specialism (Allwood & Lee, 2004). This conclusion is drawn upon on data from high-tech industries, which require specialism. However, teaching does not require only professional development, it is also a job that requires intensive interactions with colleagues and students. Further, apart from active teaching, teachers are also responsible for school issues that evolve in tandem with every aspect of school development. A whole-school perspective is necessary for teachers who are trying to manage a leadership position in school (Turner & Sykes, 2007).

Therefore, rotation helps teachers gain opportunities to redefine and reexamine their roles and jobs from a whole-school perspective and by reducing in-group favoritism (Wagner, Grigg, Mann, & Mohammad, 2017). Several qualitative studies also demonstrate that teacher rotators could not only support a new department with their expertise, but also learn new things from the environment (Dimmock & Tan, 2013; He & Lu, 2010a; Meixian Wu et al., 2006). During this process, rotators build up confidence and are granted more responsibilities for school future developments. They were also expected to contribute to the development of original context after rotation., which contributes to a strong motivation to learn (He & Lu, 2010). All these anticipations and psychological changes help teachers acquire longer FTP with reference to their own and their schools' development. This finding adds to the rotation literature that suggests this on-the-job professional development helps teachers form a longer-

range perception of the future, which helps them become a more effective planner of their own career (Eren, 2012), develop more commitment to their work (I. Park & Jung, 2015), and report a higher level of wellbeing (Kooij et al., 2018). However, this effect could only be shown in a long-term design. Switching roles over a short time interval burdens cognitive process and leads to a reduction of FTP.

5.1.2 Power and FTP

The SEM results from the survey in study 1 support the hypothesis that power positively predicts FTP. Moreover, in study 2, the high-power group reported a higher level of FTP that reduced sharply after rotation. The low-power group showed no obvious changes in FTP in before and after rotation. These results lead to two important conclusions. First, power holders project into a longer future than the powerless. Second, the extra tasks or cognitive processes might reduce the FTP of power holders.

In the previous literature power holders report a different temporal construct than others. For example, they might underestimate the time a given task might take (Weick & Guinote, 2010), and they are more in control of their own time, which in turn suggests they perceive more time as being available (Moon & Chen, 2014b). Power facilitates generation of a positive evaluation of themselves, better self-regulation, more confidence, and even more positive affect (Galinsky & Anderson, 2006; Guinote, 2017a). More importantly, power

increases teachers' sense of control not only of themselves but also of the environment (DeWall et al., 2011; Hiemer & Abele, 2012; Moon & Chen, 2014b). These factors together enhance teachers' awareness of the school, their own ability, and future plans. By reducing the unknown in the present, teachers are able to look further into the future.

The result of the two studies supports the previous literature and extends the relationship between power and FTP. Power holders consider the future more often, are more attracted by future rewards, and more eager to control the future. Hence, they report a longer FTP.

5.1.3 FTP and Future-orientated Behaviors

In study 2, a marginally positive significant result is found to predict proactive willingness commensurate with FTP. The result also demonstrates a significant relationship with predicting creativity in tasks. Moreover, in study 1, the SEM result adds support to these propositions. Based on this result, FTP serves as an important motivational source that drives teachers to act proactively and creatively, be it toward the organization or themselves.

Teachers' proactive behaviors are needed more than ever by schools, which face increasingly ambitious but often ambiguous goals for school education (Hargreaves, 2000; Committee on Professional Development of Teachers and Principals, 2018).

Foresight makes the teacher aware of the necessity of change and creativity. In a related vein, along with the automatic nature of proactive behaviors, the results show that FTP

significantly predicts teachers' personal initiative and creative behaviors in the workplace. Theories posit a positive relationship between FTP and proactive behaviors, in which FTP is an important motivational source. Drawing on SDT, FTP is seen to produce both introjected and integrated regulations (de Bilde et al., 2011). Further, from the perspective of human agency, teachers are proactive planners and environmental creators (Bandura, 2001, 2006). Previous studies have, on the one hand, concentrated on the effect of perceived capability on proactive behaviors, such as role breadth self-efficacy and challenge appraisal (Crant, 2000; Parker et al., 2006). On the other hand, forward-thinking and change-orientation are also expected to predict proactive behaviors as such behaviors are change- and future-orientated (Bindl & Parker, 2010). However, change-orientation shows no effect in terms of mediating the relationship between distant antecedent and proactive outcomes (Parker et al., 2006). This study illustrates that thinking about the future makes the necessity of change more visible and clearer. In other words, change that does not consider the future might be of little use in predicting proactivity. In line with the study of FTP on job crafting behaviors (Kooij et al., 2017), this study implies that individuals with a long FTP are willing to make changes to their work situation and plan their own career proactively.

5.1.4 FTP mediates the relationships of rotation and power with proactive behavior

Last but not least, this study examines the mediating effect of FTP in connecting work-role

related antecedents to proactive behaviors. According to the bootstrapping results of study 1, FTP mediates the effect of power and rotation experience on personal initiative behaviors but shows no effect on creativity. The mediating effect of FTP demonstrates that with increasing power level or by experiencing different roles in schools, teachers are trained to consider future goals more, which in turn makes them more willing to develop themselves, resolve problems and refine old ways to finish their work.

In addition, according to the bootstrapping result in study 1, the mediating test shows that the experience of rotation and power also serve as distant antecedents that predict personal initiative behaviors. The experience of power and rotation are viewed as a process in which teachers obtain work-related and self-related knowledge and information. This result is consistent with the power approach theory, which suggests that power holders are more willing to take action (Galinsky et al., 2003a; Guinote, 2017b; Keltner et al., 2003). This result is also consistent with the laboratory study that in rotating tasks, participants more willing to multi-task are better in creativity (Nora Madjar & Oldham, 2006). This study verifies these results in school settings and suggests that teachers with the experience of rotation undertake more creativity behaviors.

However, the mediating effect of FTP on creativity receives only partial support. In study 1, the 90% confidential interval suggests a marginally significant relationship of these

mediating effects, which fails to reject the null hypothesis. In other words, FTP did not significantly mediate the relationship between work-role interventions and creativity. The previous literature suggests FTP is positively correlated with the level of creativity and divergent thinking (Chiu, 2012; Förster et al., 2004; Ononye, Smith, & Blinn-Pike, 1993; Zimbardo & Boyd, 1999). Moreover, the experience of power and task rotation also shows a significant correlation with the level of creativity (e.g. Guinote, 2017a; Nora Madjar & Oldham, 2006).

One possible reason for this finding is that there might be other potential mediators mediating this relationship, or potential moderators that might be moderating this relationship and rendering the mediating effect less significant. In sum, the pathway through the experience of power and rotation to creativity still needs to be addressed by more research.

In addition, although the mediating effect didn't test in study 2, two Two-way ANOVAs were conducted to examine the relationship between power and rotation on creativity and proactivity willingness, separately. But, based on the results, high power group reported lower willingness in engaging proactive behaviors. This is a surprising finding that contradict to the hypothesis that power is positive related to proactive behaviors. As explained in Chapter 4, the different understanding of power might lead to this result. Proactive behaviors are those challenge the status quo, which generated mixed result with power. On the one

hand, power holders tend to take actions (Galinsky & Anderson, 2006; Galinsky et al., 2003a). One the other hand, power holders are more conservative in decision making under different circumstances (Maner et al., 2007; Scheepers et al., 2015). The construal of power (De Wit et al., 2017), the power motivation (Maner et al., 2007), and perceived stability (Hiemer & Abele, 2012; Scheepers et al., 2015; Sligte et al., 2011) are suggested interact with power level in predicting risk-taking behaviors. Hence, it is also necessary to study how teacher group construe their power level and take school hierarchy environment into consideration in future study.

5.2 Theoretical Implications

This study contributes to the literature in at least three aspects.

First of all, this study attaches importance to the FTP literature by identifying two workplace interventions: rotation experience and power level. FTP as a beneficial cognitive construct has been proved to correlate with several demographic factors, including education level, social-economic status, age and gender (Greene & DeBacker, 2004; Kooij et al., 2018; Zimbardo & Boyd, 1999). This study also illustrates that workplace interventions could help employees build up a longer FTP.

Rotation experiences and power are two ways in which individuals in an organization could

accumulate cognitive resources. Through increasing their ability to influence others and the organization by enlarging their knowledge base, experiences, and social networks, individuals become more confident of their capability to take control of the present situation and the future, an essential step to developing a longer FTP. The contradictory findings from two studies suggested that FTP required cognitive resources free from concerning the present and time. Once it formed, can FTP played as important motivation source that encourage teachers to challenge the status quo.

Second, this study extends the understanding of FTP in the workplace. Foreseeing the future could not only motivate students for education purposes, it could also serve as a motivational source in the workplace, encouraging employees to be more proactive toward their own career or even to the organization. The majority of previous studies that regard FTP as a motivational source focused their attention on student performance, as when Bilde and colleagues reveal the positive relationship between FTP and self-regulated learning (de Bilde et al., 2011); Eren (2009) affirms that FTP could enhance undergraduate students' graded performance through increasing perceived instrumentality; or theoretically that building up FTP by associating it with mastery goals could facilitate students' intrinsic motivation (Husman & Lens, 1999). However, fewer studies try to incorporate the effect of FTP on employees and how it could affect their working performance. The results of this study reveal

that FTP as one of the proximal antecedents significantly predicts proactive behaviors in the workplace, including creativity and personal initiative behaviors.

Third, the intangible benefits that might be brought by rotation experiences are relatively neglected and rarely tested. This study supports the rotation literature by adding empirical evidence that rotation could facilitate one's conception of FTP.

As previously mentioned, rotation is a common on-the-job professional development method in education to train principals and mid-level leaders worldwide (e.g. Dimmock & Tan, 2013; Reynolds, White, Brayman, & Moore, 2008). Knowledge from business research leads us to understand that rotation is an effective way of training while, in the short term, possibly counter-productive. However, the neglect of the intangible benefits of rotation experience leads to underestimation of the overall benefits. This study shows that teachers who experience one or more rotations developed the capability to consider future goals, not only with relation to their own career but also to the organization's development. Previous literature suggests a longer FTP could increase one's commitment to the organization, and allow for a better professional development plan (Eren, 2012; Eren & Tezel, 2010; I.-J. Park & Jung, 2015). More importantly, this study also adds empirical evidence to support the benefits brought by FTP, creativity and personal initiative behaviors. These proactive behaviors are not taken generally considered in the calculation of rotation benefits (e.g.

Eriksson & Ortega, 2006; Ortega, 2001).

Finally, this study also sheds light on the proactive behaviors literature by adding FTP as a proximal antecedent that predicts future-orientated behaviors. Proactive behaviors have two common facets: change and future-orientation. Previous studies have tried to establish under what circumstance employees perform proactive behaviors, including role breadth self-efficacy (Parker et al., 2006), challenge appraisal (Ohly & Fritz, 2010), or perceptions of support from the organization (Shin & Kim, 2015). This study looks at this question from a human agency perspective and demonstrates that it is important for individuals to be motivated by the future, concerned about the future, and more importantly to reinforce their connection with their future selves. All these elements facilitate their future-oriented behaviors.

In study 1, the model suggested that the sense of power significantly boosted the personal initiative behaviors through control over the present. However, in study 2, the high-power group report less willingness in proactivity. And this contradictory result might largely due to the different construal of power generated in priming task (in the scenario experiment). Based on this finding, it is suggested that power level could enhance proactive behaviors, but, more importantly, the environment or the understanding of power played the key role in predicting it.

5.3 Practical Implications

This study has practical implications in two areas: the areas of professional development for both pre-service teacher and in-service teachers. The results suggest that teachers who have a longer time perspective are more likely to perform effective teaching innovatively and proactively. As Miller and Brickman suggest, when teachers lack related knowledge or doubt their own abilities, they might fail to develop a long FTP (Miller & Brickman, 2004a). By illustrating the importance and benefits of having a longer FTP, this study brings new insights to teacher on-the-job professional developments.

First, this study presents the idea that the experience of rotation could boost teachers' FTP, which in turn encourages them to engage more in personal initiative behaviors. Teachers who have experienced rotation evaluate the experience positively (He & Lu, 2010b). By being exposed to a relatively new environment, teachers are forced to learn, accept different tasks and seek new social relationships to facilitate collaboration. This study illustrates that rotation experience, as an approach to help them accumulate mental and cognitive resources, enhances teachers' ability and knowledge base, which helps them to form a clearer picture of a future goal. As an effective organizational intervention, rotation also helps teachers build up the notion that the abilities needed in school are learnable and the environment is controllable. However, a short-term of counterproductive period is inevitable for every

rotator.

For that reason, it's beneficial for schools to offer in-service teachers the opportunity to rotate among departments, grades, and subjects. For the pre-service teacher, it is beneficial for universities and training colleges to have such activities in order to train teaching students to get to know future work environments. More importantly, the results of two studies suggest this kind of activity should be offered consistently rather than as a one-time event.

Second, this study suggests that the experience of power also intensifies anticipation of the future. In other words, the feeling of being less dependent on others helps teachers concentrate more on the future, whether their own or the organizations. For junior teachers who are limited by resources and experiences, it is difficult to see far ahead. On the other hand, senior teachers approaching retirement also face a dramatic drop in FTP which leads to counterproductive problems. If school leaders offer teachers help in setting goals for a future career and increasing their capability, those teachers tend to have a longer FTP which improves their teaching effectiveness, personal development, and ultimately the school's development.

Teacher empowerment in schools is important in dealing with this issue. Psychological empowerment also facilitates a sense of self-determination that drives individuals to innovate (Seibert et al., 2011). Many studies demonstrate the benefits of teacher empowerment, which

include greater commitment and OCB (Organizational Citizenship Behavior) towards the school (Bogler & Somech, 2004). This study suggests that school leaders and principals need to offer an environment that considers the cultivation of teachers' FTP by encouraging them to participate in decision making or taking on more distributed leadership (Hulpia & Devos, 2010),

5.4 Limitations and Future Research Suggestions

Every study has limitations. So has this one. I hereby identify several.

First, the data from the survey studies was cross-sectional data, which limits this study to capturing the change of FTP within individuals. Thus, I have also tried to collect the data from a scenario experiment design to reduce potential problems. However, this still cannot accurately measure long-term changes of FTP during the rotation experience. Rotation experience is a long-term construct that could last from a month to years. Even though I have tried to manipulate the rotation experience by switching roles with imaginary colleagues in study 1, offering participants a short-term experience, it is still problematic for this action to capture the long-term effects and changes that happen to participants through accumulating knowledge, skills, and information. Therefore, future research should adopt a longitudinal design to better define how length of rotation affects the rotation experience.

Furthermore, the measurement of FTP is also limited by current scales. ZTPI is currently the

most widely adopted measurement for FTP (Kooij et al., 2018). However, as many researchers have illustrated, FTP is a cognitive-motivational factor that could be affected by environmental factors. In this study, the results add empirical evidence to support this idea, while the current ZTPI scale conceptualizes FTP as a stable and dispositional factor (Zimbardo & Boyd, 1999). This discrepancy is reflected in the measurement (de Bilde et al., 2011). Hence, in the scenario experiment, I tried to adopt future temporal depth to measure FTP change over a short time interval. For future research, it is necessary to have a consistent measurement of FTP corresponding to how we conceptualize it.

Second, the samples in my two separate studies were all collected from an Asian background, which limits generalization of the results to another context. Previous research has argued that FTP is to a large extent decided by cultural and socialization processes. For example gender difference in FTP might be due to perceptions that stem from cultural norms of how men and women should perform (Greene & DeBacker, 2004). Every culture interprets time in unique ways. For example, Chinese, as a language that does not differentiate tense grammatically, shows a closer connection with the future self and encourages people to prioritize more future-oriented behaviors, such as saving money, having more assets when they retire, and practice safer sex (M. K. Chen, 2013). Thus, it will be quite interesting for future research to study what cultural factors are linked with FTP formation, and how they

interact with workplace factors.

Last but not least, possible moderators have yet to be identified. The relationships verified in this study might be moderated by other factors, such as affect factors or environmental factors. According to the literature on proactivity, “energized to do” has been increasingly emphasized by researchers, including how it is affected by emotional intelligence or positive and negative emotions. In addition, environmental factors, such as cultural norms, leadership style, the individual organization fit, and job insecurity also influence how individual behaviors respond to interventions.

The negative feedback model in social cognitive theory suggests that individuals with a longer FTP have, and generate, a large discrepancy between present and desired future, which is associated with a certain level of negative feelings. They also report that they gain less joy from present achievement and feel relative fewer negative emotions from present failure as their focus is on the future. In addition, FTP is also related to risk taking, as it presents a closer conceptual distance with the future self. Individuals tend not to perform proactively when they interpret behaviors aimed at changing and challenging the status quo as bearing potential risks. Hence, the way in which teachers perceive the organizational atmosphere might have a strong effect on moderating the relationship between FTP and future-oriented behaviors. Therefore, for future research in uncovering the moderating effect, there are two

directions researchers might follow. On the one hand, examining the organizational atmosphere's influence on moderating this framework is necessary, in terms, for example, of psychological safety, leader support, or LMX. All these might affect how the transfer processing might happen. On the other hand, it is also interesting to study the role played by affective factors and how they interact with FTP. For example, emotional capability and emotional intelligence signify the individual's ability to work with their emotions, which might strengthen or weaken the motivational effect of FTP.

5.5 Conclusions

This study draws on social cognitive theory and self-determination theory integrated with the proactive behavior model, to examine the connection of rotation experience and power to proactive behaviors with FTP as mediator.

It begins by introducing the concept of FTP as reflected in teacher professional development literature. This is probably the first study that suggests that the experience of power could change individuals' FTP and encourage them to see or set goals further in the future. It also finds that by experiencing rotation as on-the-job professional development, teachers could develop a longer-range FTP.

The study also added to the literature regarding productivity in the workplace by linking FTP

with personal initiative behaviors and creativity. Two important functions of FTP link the resource transferring process. One is that, by developing or envisioning future goals individuals add more utility value to tasks at hand than do those with little or no FTP. FTP intrinsically motivates individuals to act to reduce discrepancies between the present and the desired future. Externally, by accumulating work-related resources (i.e. skill, knowledge, and abilities), FTP helps individuals interpret the situation as under control by encouraging a positive evaluation of their own ability and efficacy.

The longer you could project your vision into the future, the more related information you could receive and the more distant goals you could set. As social cognitive theory suggests, distant goals, although they might have power in terms of motivating present behaviors, are a necessary prerequisite for individuals to form an effective proximal goal system that could guide current behaviors (Bandura, 2001).

To conclude, this study lays a foundation for future research to keep investigating the role played by FTP and how it connects to workplace constructs. I hope it could prompt future research into the teacher's perception of time and the importance of looking further ahead and developing a longer FTP.

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Appendix 1

Consent form for paricipating quasi-experiment (study 1)

香港教育學院 教育領導與政策學系
參與研究同意書

I _____agree to participant in the research project conducted by Wanlu Li and supervised by Dr Lu Jiafang.
本人_____同意參加由陸佳芳博士負責監督,李琬璐執行的研究項目。

I understand that this data for this project is going to be used in future research and academic publications. I have every right to protect my privacy and my information will not be disclosed.
本人理解此研究所獲得的資料可用於未來的研究和學術發表。然而本人有權保護自己的隱私, 本人的個人資料將不能洩漏。

I fully understand the procedure of this research, which has been thoroughly explained. I understand the potential threat. And I am voluntarily participated in this study.
本人對所附資料的有關步驟已經得到充分的解釋。本人理解可能會出現的風險。本人是自願參與這項研究。

I understand that I have the right to ask questions during the research process and can decide to withdraw from this research at any time. And it will not cause any adverse consequences.
本人理解我有權在研究過程中提出問題,並在任何時候決定退出研究,更不會因此引致任何不良後果。

Signature 參加者簽名: _____
Date 日期: _____

Appendix 2

Information Sheet
有關資料

Teacher Decision tasks
教师决策过程研究

You are invited to participant the research project conducted by Wanlu Li and supervised by Dr. Lu Jiafang. They are research student and academic staff in The Education University of Hong Kong.
诚邀阁下参加陆佳芳博士负责监督，李琬璐负责执行的研究计划。她们是香港教育大学教员/学生。
Purpose of the research and procedure:
研究計劃簡介：

This project aim at better understand the teacher's creativity and proactivity through conduct research on both pre-service and in-service teacher. The information you offered can help us know better about how teachers will behave.
本项目旨在通过对在校教师和教育专业学生的研究，通过多种方式增进对教师创造力和积极性的了解。您所提供的信息能够让我们更好的了解不同阶段的老师如何决策。

Following are the research method and timeline of this project; including two phase:
以下为本项目的研究方法和计划时间，数据收集包括两个阶段：

Phase one: Survey data collection (June 2018 –Dec 2018)
第一阶段：问卷调查（2018 年 1 月-2018 年 12 月）

1．200 in-service teachers will recruit to fill in a questionnaire, which takes 5-10 minutes.
1．200 名在校教师需完成网络或纸质问卷，约需时 5-10 分钟。
2. The participated teachers will invite peer to fulfil another part of the survey.
2．教师会提名一位同事联系方式，该名同事将协助完成后续调查。

Phase two: Experiment data collection (Jun 2017- - Dec 2018)

第二阶段：实验数据收集（2018 年 6 月-2018 年 12 月）

1. 120 students in the Education University of Hong Kong are going to recruit for the experiment, which will last from 30-40 minutes.

1．120 名在校教育专业学生（香港教育大学）将参与实验。每次试验需时 30 到 45 分钟。

Your participation of this research is completely voluntary. You enjoy every right to withdraw from this research at any time. Individual response will be saved only identifiable by code numbers and will not be disclosed to any other individual or organizations. There is no threat to the participant. You can withdraw from this research without take any responsibilities. The result will not be only reported in individual under any circumstance.
閣下的參與純屬自願性質。閣下享有充分的權利在任何時候決定退出這項研究,更不會因此引致任何不良後果°凡有關閣下的資料將會保密,一切資料的編碼只有研究人員得悉°本项研究将会对您提供的所有资料，即个人资料，学校以及学校领导团队的资料只以编码的形式保存每份资料。本项研究包括的所有研究方式都不会对参加者造成任何伤害，并且您有权决定随时退出本研究，而无需为此承担任何责任。研究結果並不會在任何书面或口头报告中只提汇总结果。

If you want to know more about this research, please contact researcher (Email:), or supervisor of this project ( ).
如閣下想獲得更多有關這項研究的資料,請與本人聯絡 (電郵) 或本人的導師陆佳芳博士 ( )聯絡。

If you have any questions and suggestions about your rights, please feel free to contact e Human Research Ethics Committee, EDUHK (Email:hrec@eduhk.hk, Address: Research and development office, EDUHK).
如閣下對這項研究的操守有任何意見,可隨時香港教育大學人類實驗對象操守委員會聯絡(電郵:hrec@eduhk.hk;地址:香港教育大學研究與發展事務處).

Thank you for your participating.
謝謝閣下有興趣參與這項研究。
Wanlu Li, 李琬璐
Chief Researcher, 首席研究員

Appendix 3

Quasi-experiment tasks (Example: High power group)

Introduction of the experiments

实验简介

This experiment aims at understanding the teacher's problem-solving performance. Two senecios are present in the following tasks. Please read carefully and follow the instructions to finish the tasks. This experiment will take about 30 minutes. There is no right or wrong in this experiment. Please answer the questions according to your own feelings.

本实验旨在研究教师的问题决策过程。本问卷包括两个场景， 请您仔细阅读并回答相应的问题，大约需时 30 分钟。本研究中的所有问题没有对错之分，请根据您的真实感受作答。

Before the tasks start, please recall an experience that you had power over others. Power refers to you can control over your colleagues can get what they want, or you have a higher position than others.

在问卷开始前，请您回忆一个工作时，您比您的同事更有权力的场景。权力，我们指的是您有能力可以掌控您的同事是否能得到想要的东西或者您的职位高于其他同事。

Please descript this experience in the following box (Eg. You can decide who is going to study abroad, reject others requirement, etc), including: peoples, details and your feelings.

请在下方的方框中简单描述这个场景（例如：决定同事可以去国外进修、拒绝同伴邀请、决定使用哪种教材、等），包括：相关人员，事情经过，您的感受等等。

Senecio one

场景一

The school you worked in was founded in 1981. The school create the school culture and the idea that build up a school has “quality teaching, good spirts, and modernized characteristics”. This school also promote quality education and acquire many achievements.
您所在的学校自 1981 年创办以来，坚持淳朴的校风、求实的学风，学校确定了“优质教育，优良校风，现代化特色”的办学理念，坚持“以人为本，追求卓越，求真务实，与时俱进”，积极推行素质教育，努力提高教育教学质量，取得了辉煌的成绩。
However, recently, the number of enrolled students is decreasing. Teachers are also burdened with the stress from high requirement of examination and the improvement of student capabilities. School hoped to address this issue in coming academic years.
但，近年来，学生人数逐年减少，或令学校出现收生不足的情况。教师与学生也面临着来自考试和能力要求的双重压力。学校希望在新学年里针对学校面临的问题进行改善。

Apart from teaching job, you and your colleague take up extra administration roles. You, as the department head of school affairs, mainly in charge of school development, school evaluation, and external resources.
您与您的同事在学校担任的教师职位以外，您还担任了学校教科处的主任，部门主要负责学校发展，学校自评，和对外联系等等事务。
And your colleague is the department head of teaching and learning, which is in charge with boost student’s academic performance.
您的同事是教导处的主任，部门主要负责提升管理学校学的教学工作。
Please try your best to fill in your role to answer the following questions.
请您尽可能的代入您的角色来回答以下的问题。

1. Department decision
一、部门决策
To address school problem, as department head, you wish to reinforce the external connections to solve this issue.
Please try to think as much as ideas to school in 8 minutes and make sure your ideas is as innovative and useful as you can.
针对学校的问题，作为学校教科处的主任，您建议希望通过加强对外联系来改善学校面临的问题。

请您用最多 8 分钟的时间，在下方的方框中给出您能想到尽可能多的意见和建议提供给学校。请记住，您的意见要尽可能的保证创新和实用

2. Please specify one of your department goals and how long you project into the future that this goal can be achieved (By month).
二、请写出您一个作为部门发展目标

_____

以月为单位的话，请问您计划需时多少个月来完成您的目标：_____月

3. During the previous process, to what extent you are agree with following descriptions
三．根据您刚才的考虑和决策过程，请问您多大程度上同意下列说法：

1 = Strongly disagree 非常不同意 to 7 = strongly agree 非常同意	I am willing to suggest ideas for solution for school problems 有问题的话，我愿意为学校提供解决办法
	I am willing to acquire new knowledge that will help the company. 我愿意学习能够帮助学校发展的新知识
	I am willing to optimize the organization of work to further organizational goals 我会以最好的完成学校的工作来帮助学校达到发展目标
	I am willing to share knowledge with colleagues 我愿意跟同事分享知识
	I am willing to take over colleagues' tasks when needed even though s/he is not obliged to 尽管不是分内的工作，我也愿意在同事需要时去帮忙完成他的工作
	I am willing to help orient new colleagues 我愿意帮助指导新员工
	I am willing to help colleagues with developing or implementing new ideas 我愿意帮助同事开发或者实现新想法
	I am willing to find new approaches to execute my tasks 找到更好的新方法来完成工作
	I am willing to acquire new knowledge that will help his/her career 我愿意为了我的事业学习新的知识

I am willing to realize my personal goals at work
我愿意在工作上实现我自己的目标
I am willing to take on tasks that will further my career
我愿意主动承担对我的事业有帮助的任务

Senecio one
场景二

For facilitate the working effective and as an important part of teacher professional development, school decides to rotate your administration role with your colleague. Therefore, now you're department head of teaching and learning. Your job content is to increase school's teaching and learning effectiveness.
为了更好提升学校工作质量，也是教师专业发展重要部分，学校决定调换您和您同事的行政职位。所以，您现在是教导处的主任，部门主要负责学校教学效能的提升。
Your colleague now are department head of your former department.
您的同事则调为教科处的主任，所在部门主要负责学校发展，学校自评以及对外联系。着手学习和开展学校对外联系的工作。
Your department aim to address school issue by facilitated the development of gifted students and focus on the underperformed students.
根据学校的发展计划。一方面关注资优学生的个性化培养，另一方面要跟进学业表现欠佳的学生。

Please try your best to fill in your role to answer the following questions.
请您尽可能的代入该角色回答以下问题。

1. Department tasks
一、部门决策
As mentioned above, your department aim to address school issue by facilitated the development of gifted students and focus on the underperformed students.
Please try to think as much as ideas to school in 8 minutes and make sure your ideas is as innovative and useful as you can.
新调部门有两个发展目标，一是关注资优学生个性化培养，另一个是关注学业表现欠佳的学生课余时间的利用。请您对此提出好的意见和建议来完成这两个目标。

请您用 8 分钟的时间，在下方的方框中给出您能想到尽可能多的意见和建议提供给主任参考。请记住，您的意见要尽可能的保证创新和实用。

2. please specify one of your department goals and how long you project into the future that this goal can be achieved (By month).
二、请写出您一个作为部门发展目标

_____

以月为单位的话，请问您计划需时多少个月来完成您的目标：_____月

3. During the previous process, to what extent you are agree with following descriptions
三．根据您刚才的考虑和决策过程，请问您多大程度上同意下列说法：

1 = Strongly disagree 非常不同意 to 7 = strongly agree 非常同意	I am willing to suggest ideas for solution for school problems 有问题的话，我愿意为学校提供解决办法
	I am willing to acquire new knowledge that will help the company. 我愿意学习能够帮助学校发展的新知识
	I am willing to optimize the organization of work to further organizational goals 我会以最好的完成学校的工作来帮助学校达到发展目标
	I am willing to share knowledge with colleagues 我愿意跟同事分享知识
	I am willing to take over colleagues' tasks when needed even though s/he is not obliged to 尽管不是分内的工作，我也愿意在同事需要时去帮忙完成他的工作
	I am willing to help orient new colleagues 我愿意帮助指导新员工
	I am willing to help colleagues with developing or implementing new ideas 我愿意帮助同事开发或者实现新想法
	I am willing to find new approaches to execute my tasks 找到更好的新方法来完成工作
	I am willing to acquire new knowledge that will help his/her career 我愿意为了我的事业学习新的知识
	I am willing to realize my personal goals at work 我愿意在工作上实现我自己的目标
_____	I am willing to take on tasks that will further my career

我愿意主动承担对我的事业有帮助的任务

Please circle the appropriate choice:
请勾选合适的选项：
Gender: Male Female
性别： □ 男 □ 女

Age: Under 25 26-35 36-45 46-55 above 56
年龄：□ 25 岁 以下 □ 26 到 35 □ 36 到 45 岁 □ 46 到 55 岁 □56 岁或以上

Education level: Certificate Bachelor Master Doctor
教育背景：□ 证书 □ 学士 □ 硕士 □ 博士

Appendix 4

Sample questionnaire for teachers in study 2

Consent form for self-rated questionnaire
教师决策倾向调查问卷

-----自评量表

You are invited to participant the research project conducted by Wanlu Li, and supervised by Dr. Lu Jiafang. They are research student and academic staff in The Education University of Hong Kong.
诚邀阁下参加陆佳芳博士负责监督, 李琬璐负责执行的研究计划。她们是香港教育大学的副教授和博士研究生。

This project aim at better understand the teacher's creativity and proactivity through conduct research on both pre-service and in-service teacher. The information you offered can help us know better about how teachers will behave. There is no threat to the participant. You can withdraw from this research without take any responsibilities. The result will not be only reported in individual under any circumstance.
本项目旨在通过对在校教师和师范专业学生的研究，以多种方式增进对教师专业判断和决策过程的理解。您所提供的信息能够让我们更好的了解不同阶段的老师

如何决策。本项研究包括的所有研究方式都不会对参加者造成任何伤害，并且您有权决定随时退出本研究，而无需为此承担任何责任。

If you want to know more about this research, please contact researcher ( ), or supervisor of this project ( ). If you have any questions and suggestions about your rights, please feel free to contact e Human Research Ethics Committee, EDUHK (Email:hrec@eduhk.hk, Address: Research and development office, EDUHK).

如阁下想获得更多有关这项研究的资料,请电邮本人 ( ) 或本人的导师陆佳芳博士 ( )联络。如阁下对这项研究的操守有任何意见,可随时与香港教育大学人类实验对象操守委员会联络(电邮: hrec@eduhk.hk; 地址:香港教育大学研究与发展事务处)°

- There is no right or wrong answer of this survey. All the data and analysis will be used and only used in thesis writing and academic research. All the results will not be disclosed to any organization and individuals. Please be honest in answering the survey.
- 本问卷所提出的问题并没有所谓“对”与“错”的答案，所得的资料和分析结果仅于论文撰写和学术研究使用，不会提供任何反馈给学校及个人，及绝对保密。故恳请依实回答。
- This survey needs about 5-10 minutes to finish. Please answer all the questions to make sure your survey is valid.
- 经测试，本问卷约需 5-10 分钟完成。请填答所有题目，以确保问卷的有效性。

Thank you very much to participate in this research.

谢谢阁下有兴趣参与这项研究。

博士研究生 李琬璐
亚太领导与变革研究中心
香港教育大学
:
:

Consent form for peer rated questionnaire

教师决策倾向调查问卷

-----他评量表

Dear teacher:

尊敬的老师，您好：

According to the participated teacher's recommendation, we are sincerely to invite your participated in this research and fill in the second part of the survey.

基于您同事老师的推荐，我们非常荣幸并诚恳地邀请您参与有关教师决策的研究，希望您为他/她填答后续问卷。该研究项目为陆佳芳博士负责监督, 李琬璐负责执行的研究计划。她们是香港教育大学副教授与博士研究生。

This project aim at better understand the teacher's creativity and proactivity through conduct research on both pre-service and in-service teacher. The information you offered can help us know better about how teachers will behave. There is no threat to the participant. You can withdraw from this research without take any responsibilities. The result will not be only reported in individual under any circumstance.

本项目旨在通过对在校教师和师范专业学生的研究，以多种方式增进对教师专业判断和决策过程的理解。您所提供的信息能够让我们更好的了解不同阶段的老师如何决策。本项研究包括的所有研究方式都不会对参加者造成任何伤害，并且您有权决定随时退出本研究，而无需为此承担任何责任。

If you want to know more about this research, please contact researcher ( ), or supervisor of this project ( ). If you have any questions and suggestions about your rights, please feel free to contact e Human Research Ethics Committee, EDUHK (Email:hrec@eduhk.hk, Address: Research and development office, EDUHK).

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- There is no right or wrong answer of this survey. All the data and analysis will be used and only used in thesis writing and academic research. All the results will not be disclosed to any organization and individuals. Please be honest in answering the survey.
- 本问卷所提出的问题并没有所谓"对"与"错"的答案，所得的资料和分析结果仅于论文撰写和学术研究使用，不会提供任何反馈给学校及个人，及绝对保密。故恳请依实回答。

- This survey needs about 5-10 minutes to finish. Please answer all the questions to make sure your survey is valid.
- 经测试，本问卷约需 5-10 分钟完成。请填答所有题目，以确保问卷的有效性。

Thank you very much to participate in this research.

谢谢阁下有兴趣参与这项研究。

博士研究生 李琬璐
亚太领导与变革研究中心
香港教育大学
:
:

Part 1: Self-report questionnaire

Section 1: How characteristic true is this of me?
第一部分:下列描述多大程度上能够描述真实的自己

Meeting tomorrow's deadline and doing other necessary work come before tonight's play. 完成明天要交的工作优先于今晚的娱乐活动	1 = very dislike me 非常不一致 to 5 = very like me，非常一致
I complete projects on time by making steady progress. 我用稳定的进展来完成一个项目	
I am able to resist temptation when I know that there is work to be done. 当我知道有工作必须要完成时，我能够抵制诱惑	
I meet my obligations to friends and authorities on time. 我会按时做到我答应过的事情，无论是对朋友或者其他人	

Section 2: In daily work, to what extent you understand the following descriptions:
第二部分：在日常工作中，您在多大程度上同意下列描述

I can get him/her/them to listen to what I say. 我能够让其他人听我在讲什么	1 = Strongly disagree 非常不同意 to 7 = strongly agree 非常同意
My wishes do not carry much weight. 我的意愿并没有多么重要	
I can get him/her/them to do what I want. 我能够让其他人作我想做的事情	
Even if I voice them, my views have little sway. 尽管我发表了我的意见，但是却没有被重视	
I think I have a great deal of power. 我认为，我很有权力	
My ideas and opinions are often ignored. 我的主意和观点经常被忽略	
Even when I try, I am not able to get my way. 就算我尝试，我也没办法达成目标	
If I want to, I get to make decisions. 如果我愿意的话，我就能够做出决定。	

Section three: About your working experience
第三部分 有关您的职业经历

1) your current position in school:
1). 您目前在学校的职务是: _____

2) Have you taken up other role currently? (Eg. Grade leader, subject leader, Director of discipline, etc.)
2). 您是否担任了行政职务: (例如，年级组长，科目组长，学科带头人，教导主任等)

否○　　是○;

3). If yes, please specify:
3). 如果是，请写明：_____;

4) Have you ever taken up any other roles except teaching in this or in other schools?
4). 您以前有没有在本校或者其他学校担任过其他的行政职务?
否○　　是 ○

5). If yes, please name the role you've taken:
5). 如果是，请问该行政职务是，如果担任一项以上的行政职务，请分别列出：
●_____;●_____;●_____;●_____;●_____

Section 4: The Demographics
第四部分：个人信息
1. Gender:　Male　　Female
一．性别：　○ 男　　○ 女

2. Age: Under 25　26-30　31-35　36-40　41-45　46-50　above 50
二．年龄：○ 25 岁或以下　○ 26 到 30 岁　　○ 31 到 35 岁
○ 36 到 40 岁　○ 41 到 45 岁　　○ 46 到 50 岁
○ 50 岁或以上

3.Education level：Certificate　Bachelor　　Master　　Doctor
三．最高学历：○ 证书　○ 学士学位　○ 硕士学位　○ 博士学位

4. Email**; 电子邮箱**

***Thank you very much for your participation. Please deliver another questionnaire in the envelope to your direct supervisor or a colleague who knows your work best and invite him/her to fill in the second part of the survey. (about 3 minutes)**
***非常感谢您的耐心作答，请将信封中的他评量表转交与您的直接上级或者最了解您的工作情况的一位同事，邀请他（她）填答后续问卷（需时 3 分钟）。**

Part 2. Peer rated questionnaires

According to the daily interactions and collaboration with this colleague (the one who invite you to participate in this study), please select the appropriate descriptions about your colleague.

请您根据您与该同事（转交该问卷与你的同事）在平时工作中的互动和交流，阅读下列描述。请问您在多大程度上同意下列描述

This employee: **这位同事：**	**1 = Strongly disagree 非常不同意 to 7 = strongly agree 非常同意**
Is a good source of highly creative ideas **总是提出很有创意的主意**	
Demonstrates originality in his/her work. **总是在工作中展示原创性**	
Suggests radically new ways for working. **总是提出全新的方式来工作**	
Use previously existing ideas or work in an appropriate new way **总是有新的方式来应用已有的想法或者工作**	
Is very good at adapting already existing ideas **擅长将一些已有的想法改进的更好**	
Easily modifies previously existing work processes to suit current needs. **可以轻易的改进已有的工作方式来适应新的需求**	
Actively attack problems **积极的解决工作中的问题**	
Whenever something goes wrong, he/she search for solutions immediately **如果有什么问题发生，他马上寻找解决办法**	
Take initiative immediately even when other don't **会马上掌握主动权，尽管别人不这么做**	
Whenever there is a chance to get actively involved, he will take it	

一旦有机会能够参与进各种工作，他都会抓住	
Use opportunities quickly in order to attain my goals **会很快的把握机会来达到他的目标**	
Usually do more than asked to do **通常会做的比要求的多**	
Particularly good at realizing ideas. **尤其善于实现想法**	

Section 2: The Demographics
第二部分：个人信息

1. Gender: Male Female
一．性别： ○ 男 ○ 女

2. Age: Under 25 26-30 31-35 36-40 41-45 46-50 above 50
二．年龄： ○ 25 岁或以下 ○ 26 到 30 岁 ○ 31 到 35 岁
○ 36 到 40 岁 ○ 41 到 45 岁 ○ 46 到 50 岁
○ 50 岁或以上

3.Education level: Certificate Bachelor Master Doctor
三．最高学历： ○ 证书 ○ 学士学位 ○ 硕士学位 ○ 博士学位

4. Email; 电子邮箱