Study on the Relationship between Teacher Leader and Proactive Behavior: Taking Workplace Spirituality and Teacher Grit as Moderator

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Abstract

In the post-pandemic era, there is an urgent need to address how to successfully implement educational reforms. And teacher leader and proactive behavior are related to the success of these reforms. Therefore, the relationship between teacher leader and proactive behavior is studied. Two research programs explore the direct and indirect (moderating) roles between teacher leader and proactive behavior, with workplace spirituality and teacher grit used as mediators.

The results show that teacher leader has a significant positive effect on proactive behavior, and workplace spirituality and teacher grit have a significant positive moderating effect teacher leader and proactive behavior. This indicates that only with both perceived inner experience and non-cognitive interest and effort, may teacher leader adequately enhance proactive behavior.

Finally, it is suggested that in the educational reform, the focus should be on the development and support of teacher leader and proactive behavior.

Keywords: Education Reform; Teacher Leader; Proactive Behavior; Workplace Spirituality; Teacher Grit

Introduction

Due to the impact of COVID-19, global education systems have been hard stricken. At the micro level, how to effectively enhance teachers' leadership and sense of duty becomes one of the key issues in implementing educational reform in the post-pandemic era (OECD, 2020). Conversely, COVID-19 is also considered a "unique" chance for reforming teaching practices (Wang, Towey, Ng & Gill, 2021).

Moreover, in the face of this "chance", there is an urgent need to explore the pathways to break the educational dilemma and seek changes, while identifying the factors that can effectively influence educational reform (Alazmi & Mahdy, 2022; Dooley et al., 2020; Buchkivska, Greskova, Sembrat, Mysyk & Marchenko, 2021).

Teacher leader (TL) is regarded as "the key to school reform" and has a positive impact on students, teachers and schools in a variety of areas (Muijs & Harris, 2006; Schott, Roekel, & Tummers, 2020). On the other hand, TL is also seen as the "fusion" of teachers and leadership, which cannot only influence the educational management of schools, but can also facilitate the improvement of teaching and learning (Quinn, 2014). Some research has found that TL has an active impact on extra responsibilities; professional development; confidence, ease in their role, and desire to influence; and supporting colleagues and external behaviors (Eckert, Ulmer, Khachatryan, & Ledesma, 2016; Moore, Latimer, & Villate, 2016; Wang, 2016; Zboon, 2016). Lee (2004) argues that TL can drive changes of schools and communities, because they hold strong commitments to change themselves and their organizations. Relatively, TL has also proven effective in reducing teachers' turnover intentions (Snoek & Volman, 2014). Snoek and Volman (2014) maintain that this is due to the fact that TL can motivate and support team members' learning, while sparking their passions, thus easing their turnover intentions. In educational reform, more effort from teachers is needed; in turn, they are also required to be more proactive in complex environments, so as to spontaneously solve the challenges faced and promote reforms (Klotz & Daniel, 1998; Crant, 2000). For this purpose, certain scholars have researched individuals' self-directed and future-focused behavior and defined such behavior as proactive behavior (PB). PB is described as "a future- and change-oriented behavior that individuals spontaneously generate to change themselves, others and the environment; and this behavior involves challenging the status quo, rather than passively adapting to it" (Crant, 2000). Similarly, Bindl and Parker (2011) also support this view of point by describing it as "individuals' self-generated, future- and change-oriented behaviors to change themselves, others and the environment; and such behaviors can positively impact individuals themselves and organizations' environment." Beyond individuals' core tasks and responsibilities, PB is associated with affective commitment, job satisfaction, and performance (Thomas, Whitman, & Viswesvaran, 2010), forming an important force in sustaining organizations' success (Cerit, 2017). Needless to say, both TL and PB deliver a significant impact on improvement in the field of education. Nevertheless, the direct link between TL and PB has yet to be explored and proven.

In this particularly challenging time, people lack meaningful life and satisfaction with organizations, and real-world interactions go away accordingly. All these factors have become obstacles to school reforms. In addition, leadership behaviors with a strong commitment and capacity for change are needed to re-establish this sense of interconnectedness with organizations. On the other hand, it is urgently needed to explore how to further promote the factors that can develop TL and results, so as to deliver to schools a better chance of success in reform. Workplace Spirituality (WS) is particularly important in organizational contexts, and it is described as "an inner experience after an individual perceives his or her own work, team and organizational value and in turn produces a sense of connectedness with the organization by going beyond himself or herself" (Milliman, Czaplewski, & Ferguson, 2003). Hassan, Nadeem, Akhter and Nisar (2016) argue that WS connects the essence of individuals to their activities and tasks, thus enhancing their satisfaction to the organizations and thereby facilitating organizations to enhancing their performance (Kolodinsky & Jurkiewicz, 2008). A research by Naseer *et al.* (2020) has shown that WS can promote the relationship between leaders' humility and their ethical behaviors. They argued that "when leaders are highly humble, the followers will receive signals (social information-processing theory, SIP); and this process will boost the perception of WS and thus promote ethical behaviors". Comparatively, WS has also been proven to have a significant mediating effect on the relationship between the ethical climate and workplace deviant behavior, because WS can create for people an ethical work environment and deliver justice and spirit to the well-being of employees, organizations and the whole community, thereby inhibiting workplace deviant behavior (Haldorai, Kim, Chang & Li, 2019). Although WS, as a powerful inner experience, has been found to have a positive facilitative effect between leadership and behavior, whether WS has an indirect facilitative effect between TL and PB has yet to be proven.

ow to improve teaching and development more effectively is the main issue that affects the success of teachers; and in turn, sustained effort and interest are the determining factor in the success. Research has shown that servant leader has a significant positive impact on grit (Chan, 2016), and it is believed that servant leader would, as a learner, create a positive environment and shape a growth mindset conducive to learners. In the face of adversity, grit can meet challenges with long-term determination and endeavor, and resilient people can achieve success with stamina (Duckworth, Peterson, Matthews & Kelly, 2007). In addition, teacher grit (TG) has a significant positive effect on self-efficacy and innovative behavior (Suendarti, Widodo & Hasbullah, 2020), because TG drive "them

to be committed to teaching, setting up goals, and having higher-level aspirations" (Duckworth *et al.*, 2007). On the other hand, as a moderating variable, grit also explains the negative impact on individuals' motivation under abusive supervision (Luethke, Brachle, Mcelravy & Matkin, 2020). They have found that grit has a significant interaction effect between abusive supervision of negative leader behavior and LMX (leader-member exchanges). As mentioned earlier, it is expected that there will be a significant association between positive leadership and behavior. However, as a long-term characteristic, coupled with composite traits, TG has been confirmed to have a facilitative effect the above relationships.

Researchers view TL as a provider of educational resources, an instructional specialist, a mentor or other roles, as well as an important building block to support schools' and students' success (Harrison & Killion, 2007). Lee (2004) emphasizes that TL is "a transformative process that can drive change in schools and communities". This includes: to promote learning communities and excellence in teaching and learning; to overcome barriers in school cultures and structures; and to cultivate leaders for a culture of success" (Lee et al., 2021). From this perspective, TL is an important theory to promote research and practice for leadership and reform.

In short, this study is aimed to investigate college teachers' views on TL, and their behavioral performance towards PB, as well as the facilitative effects of inner-experienced WS and composite-trait TR between the above relationships. Clarifying these relationships will identify the key factors in the management of universities and be helpful for their transformation practices.

Research Context

A report by OECD (2020) indicates that in the post-pandemic era, the education sector is facing a series of obstacles, e.g., low quality of education, weak application of teaching technology facilities and skills, and lack of network cooperation among teachers. For this reason, how to turn crisis into opportunity, to take the initiative to reform, and to create new education ecology has become an urgent issue for breakthrough now.

In the early days of COVID-19, schools in China secured teaching tasks through online learning. However, this was implemented in an "emergency" situation. "Teachers are still immature in such aspects as mindsets, practices, methodologies, habits and mastery of educational technology. With the normalization of the pandemic, the quality of teaching is difficult to be guaranteed" (Xue & Guo, 2020). In fact, "the following problems still exist: backward educational concepts, insufficient teacher-student communication and interaction, lack of autonomy, and insufficient knowledge and application of

educational tools and technologies. It is necessary to actively seek reforms and innovations as well as new ways to support quality education, in the guidance of advanced educational concepts" (Zhao & Xie, 2020). To address these challenges, OECD (2020) has suggested some strategies at the micro level, one of which is to promote teachers' sense of responsibility and leadership. In this regard, TL is a perfect illustration of the convergence of "sense of responsibility and leadership" of teachers. With outstanding capabilities in sharing and collaboration, TL is able to drive schools' reform and development more effectively. As indicated by Barr and Duke (2004), TL has the following features: (1) Sharing: elements of responsibility, accountability, and sharing; leadership thinking and pedagogical expertise; the ability to support teachers' cultivation, sharing, and collaborative development; and (2) Collaboration: elements of capacity building; TL would lead work teams, mentor other teachers and collaborate with colleagues to improve schools, work with parents and communities, and make joint force with other organizations.

Essentially, therefore, TL is to create a positive culture and a collective philosophy, which will impose a huge impact on the field of education – it is seeking continuous change and addressing challenges in "adversities". In short, with the power of creative disruption, TL will bring a new "dawn" to the domain of education, because it has already been turning crisis into opportunity and taking the initiative to meet the "challenges" it has already been implementing a "new revolution" in the field of education.

Research Objectives

1. The aim is to explore the impact of teacher leadership on forward–looking behavior

2. The aim is to explore the promoting effect of workplace spirituality and teacher perseverance between teacher leadership and proactive behavior

Literature Review and Hypothesis Development

Teacher leader

TL is regarded as a key tool for improvement and renewal of schools, and it can be facilitated through participation in external projects (Muijs & Harris, 2006). In process theory, TL is defined as "a process in which teachers, individually and collectively, influence colleagues, principals and other members of the school community to improve teaching practices, in order to enhance students' learning

and achievements" (Barr & Duke, 2004). Similarly, Lee (2004) also supports the process perspective, maintaining that TL is "a transformative process that influences others and can facilitate change in schools and communities.

Teacher leader and proactive behavior

TL is key to school reform (Muijs et al., 2020), while PB is seen as "behavior that can improve individuals and organizations" (Crant, 2000). Both of them are beneficial to educational reform. TL is defined as "a process in which teachers, individually and collectively, influence colleagues, principals and other members of the school community to improve teaching and learning practices" (Barr & Duke, 2004), and it can influence people's behavior (Zboon, 2016). On the other hand, PB is described as a kind of "spontaneously generated, future- and change-oriented behavior of individuals to change themselves, others and their environment" (Crant, 2000), and it is influenced by positive transformational leadership (Hartog & Belschak, 2012). The way for schools to improve teachers' PB is to effectively manage positive leadership behaviors in the leadership power. Schools should nurture and develop positive leadership behaviors, because they will affect individuals' PB (Bindl & Parker, 2011). As a kind of positive leadership, TL can effectively enhance teachers' PB level by promoting teachers' learning, supporting collaboration between internal and external institutions, and actively participating in various change processes for schools' management decisions (Chen, 2022). Therefore, a hypothesis is proposed as follows:

H1: TL has a substantial effect PB effort.

The role played by workplace spirituality

To boost teacher TL's impact on PB at the micro level from the perspective of educational reform, one possible factor is WS, which is defined as "an inner experience after an individual perceives his or her own work, team and organizational value and in turn produces a sense of connectedness with the organization by going beyond himself or herself" (Milliman et al., 2003). Therefore, WS is often considered as a manifestation of psychological functioning (Milliman et al., 2003). On the other hand, internally experienced WS can be used as a persistent and stable emotional bonding mechanism to boost individuals' behavior (Naseer et al., 2020). This suggests that the interaction between positive leadership behavior and WS can effectively contribute to the formation of PB. In addition, it has also been demonstrated that as a moderating variable, WS can effectively promote different individuals' behaviors (Haldorai et al., 2019).

TL is conducive to change by intentionally building and facilitating various change processes for learning and supporting internal and external collaboration and actively participating in management, so it is a form of positive leadership (Chen, 2022). And the internal experience of interconnectedness with one's jobs, teams and organizational values (Milliman *et al.*, 2003) can contribute to the formation of PB by interacting with positive leadership behaviors. This is because if teachers recognize and perceive that the leaders have provided communication and support and thus facilitate their growth, then the positive internal experiences will boost the influence of positive leadership on behaviors. Conversely, negative inner experiences will degrade the performance of teachers' PB. Therefore, this study predicts that the internally experienced WS would play a moderating role in this relationship. So a hypothesis is proposed as follows

H2: WS has a positive moderating effect between TL and PB.

The moderator role played by teacher grit

In this age full of crises, another possible factor that can facilitate the relationship between TL and teachers' PB and contribute to educational reform is TG. As a positive non–cognitive factor, TG is considered to be "persistence and enthusiasm for achieving long–term goals, and an expression of long–term attitude and commitment" (Duckworth *et al.*, 2007). Research has found that leadership related to the field of education affect people's behavioral performance (Zboon, 2016). Positive leadership behavior can also help people gain additional resources in terms of non–cognitive factors of interest, while making work harder (Chan, 2016). The theory of self–regulation can explain these relationships, because self–regulation can guide people's thoughts, feelings, and behaviors, so as to help them achieve their goals (Bandura, 1991). Thus, self–regulation is also used to describe the process in which people strive for goals. It can provide the interest and effort associated with oneself (including the inner experience of interconnectedness with one's jobs, teams and organizational values), thus becoming an important facilitating factors between leadership and behavior. Therefore, a hypothesis is proposed as follows:

H3: TG has a positive moderating effect between TL and PB.

Conceptual Framework

This study uses TL as the independent variable, PB as the dependent variable, and WS and TG as moderating variables. Construct a research framework based on the above assumptions (Figure 1).
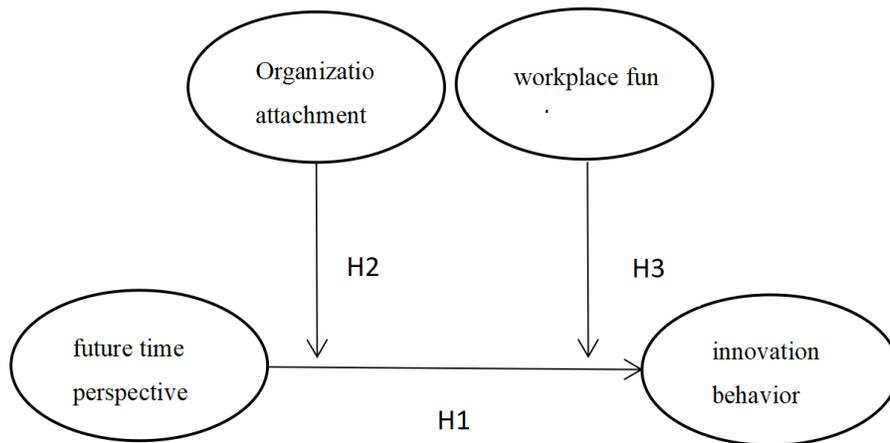

Figure 1 Research framework

Methodology

Sample and data collection procedure

The survey was conducted in September 2021 with a random sample. The interviewees' experiences and perceptions about TL, PB, WS and TG were investigated through an electronic questionnaire. Finally, a sample of 521 attendees in the workshop on educational reform and TL were acquired (with an effective rate of 66.03%). The study was started after getting consent. The distribution of demographic characteristics is shown in Table 1.

Table 1 The distribution of demographic characteristics

Variable	Category	n	%
Sex	Male	157	30.13%
	Female	364	69.87%
Age	25 and below	48	9.21%
	26–30	224	42.99%
	31–35	158	30.33%
	36–40	76	14.59%

Variable	Category	n	%
	41–45	15	2.88%
	46–50	0	0.00%
	51 and above	0	0.00%
Years of teaching	1–4	138	26.49%
	5–6	203	38.96%
	7–9	146	28.02%
	10 and above	34	6.53%
Degree	Bachelor	13	2.50%
	Master	412	79.08%
	Doctor	96	18.43%

Note: n=521

Females are predominant in the sample (364 females and 157 males); the ages 26–30 years are predominant (224; 42.99%); the teaching experience of 5–6 years is predominant (203; 38.96%); and the degree of Master is predominant (412; 79.08%). This indicates that the sample is dominated by young teachers and suitable for this study.

Measures

TL scale: prepared by Chen (2022) using Barr and Duke's (2004) definition of TL, because it can describe the structure of TL in a comprehensive, concise and precise manner. It includes 5 dimensions: promoting professional learning (a=.78); focusing on learning process (a=.82); encouraging collegial collaboration) (a=.86); engaging in decision-making (a=.79); and liaising with external affiliations (a=.73). Each dimension contains 5 questions, with 25 questions in total. Chen's (2022) scale was used in this study to measure TL.

PB scale: prepared by Griffin, Neal and Parker (2007), for assessing proactive behavior aimed at initiating change in one's team or work unit, with 25 questions in total (a=.92).

WS scale: prepared by Milliman *et al.* (2003). It includes 3 dimensions: meaning of work (5 questions), sense of community (7 questions), and consistent values (5 questions). And a values of the 3 dimensions are .88,.91, and.94, respectively, with 17 questions in total.

TG scale: prepared by Duckworth *et al.* (2007) It includes 2 dimensions: consistency of interests (6 questions), and perseverance of effort (6 questions). And a values of the 2 dimensions are .84 and .78, respectively, with 12 questions in total.

Gender, age, years of teaching experience, and degree are used as demographic variables, and other variables are measured in the 5–point method, based on self–reported information.

Researcher Results

Model fitness

Model fitness is shown in Table 2.

Table 2 Fitness analysis table

Indicator Category	Statistical Test	Fitness Criteria or Critical Values	TL	PB	WS	TG	Overall Model
Absolute Fitness Index	χ^2		1019.563	245.817	70.988	68.757	3357.713
	df		660	119	26	27	2542
	P	≥0.05	0.000	0.000	0.000	0.000	0.000
	RMR	≤0.05	0.050	0.032	0.034	0.027	0.045
	SRMR	≤0.05	0.038	0.024	0.024	0.024	0.035
	RMSEA	≤0.08	0.032	0.045	0.058	0.054	0.025
	GFI	≥0.90	0.914	0.946	0.974	0.973	0.859
	AGFI	≥0.90	0.904	0.930	0.954	0.954	0.850
Value–added Fitness Index	NFI	≥0.90	0.917	0.957	0.975	0.975	0.871
	RFI	≥0.90	0.912	0.951	0.965	0.967	0.866
	IFI	≥0.90	0.969	0.977	0.984	0.985	0.965
	TLI	≥0.90	0.967	0.974	0.977	0.980	0.964
	CFI	≥0.90	0.969	0.977	0.984	0.985	0.965
	PGFI	≥0.50	0.814	0.736	0.562	0.584	0.808

Indicator Category	Statistical Test	Fitness Criteria or Critical Values	TL	PB	WS	TG	Overall Model
Reduced Fitness Index	PNFI	≥0.50	0.861	0.837	0.704	0.732	0.842
	PCFI	≥0.50	0.910	0.855	0.710	0.739	0.934
	CN	≥200	370	309	286	305	414
	χ^2/df	≤3.00	1.545	2.066	2.730	2.547	1.321

Note: Teacher leader, TL; proactive behavior, PB; workplace spirituality, WS; teacher grit, TG.

The $\chi 2/df$ value of the reduced fitness index of the overall model is <3; RMSEA was <0.08; and all other indices also meet the criteria, indicating a good fitness.

Correlation analysis

The averages of the variables and correlations are shown in Table 3:

Table 3 Averages and correlations

Variables	M	SD	1	2	3	4	A	CR
1. Teacher leader	3.57	0.70	**0.748**				03.95	0.864
2. Proactive behavior	3.65	0.84	0.250***	**0.739**			0.92	0.923
3. Workplace spirituality	3.58	0.86	0.333***	0.381***	**0.817**		0.90	0.801
4.Teacher grit	3.56	0.84	0.480***	0.434***	0.467***	**0.756**	0.95	0.953
AVE			0.559	0.546	0.668	0.572		

Note: ***$P < 0.001$; *the values in the diagonal are AVE*

The correlation matrix shows that TL is significantly correlated with BP, WA and TG (0.250**, 0.333**, and 0.480**; p<0.01), indicating a significant positive correlation between TL and all other variables.

Validation of hypotheses

Regression and moderating analysis are shown in Table 4.

Table 4 Regression and moderating analysis

	PB					
	M1	M2	M3	M4	M5	M6
Sex	0.062	0.056	0.056	0.050	–0.012	0.015
Education level	–0.035	–0.012	–0.012	–0.003	0.042	0.027
Position level	0.054	0.042	0.021	0.005	–0.083	–0.094
Age	–0.026	–0.083	–0.066	–0.063	0.056	0.032
TL		0.485***	0.401***	0.403***	0.373***	0.364***
WS			0.331***	0.343***		
TL×WS				0.219***		
TG					0.346***	0.363***
TL×TG						0.226***
R^2	0.010	0.242	0.344	0.391	0.347	0.397
$Adj\ R^2$	0.000	0.233	0.335	0.382	0.338	0.388
ΔR^2		0.232	0.102	0.048	0.105	0.050
F	1.021	27.419***	38.508***	41.271***	39.050***	42.315***

Note: ***$P < 0.001$. teacher leader, TL; proactive behavior, PB; workplace spirituality, WS; teacher grit, TG.

As shown in the table, M2 is the regression analysis model for TL on PB, with control variables added; and the model has an explanation degree of 24.2%, with an F–value of 27.419***, indicating that it is a significant regression model. The regression analysis shows that TL has a significant positive effect on PB with β=0.485***, p<0.001, so H1 is supported. Then, M4 is the regression analysis model for TL on PB and for TL×WS on PB, with control variables added; and the model has an explanation degree of 39.1%, with an F–value of 41.271***, indicating a significant regression model. The regression

analysis shows that the regression coefficient of TL×WS is β=0.219***, p<0.001. It indicates that WS has a significant positive moderating effect between TL and PB, so H2 is supported. Finally, M6 is the regression analysis model for TL on PB and for TL×TG on PB, with control variables added, and the model has a degree of explanation of 39.7%, with an F-value of 42.315***, indicating a significant regression model. The regression analysis demonstrates that the regression coefficient of TL×TG is β=0.226***, p<0.001. It indicates that WS has a significant positive moderating effect between TL and PB, so H3 is supported (Aiken & West, 1991).

Discussion

This study investigated educators' experiences and perceptions of TL and PB, as well as the association of WS and TG between the two. The research results indicate that TL has a significant positive effect on PB. Therefore, positive TL is very important for teachers' proactive behavioral performance in the context of change in universities. TL in universities is a key concept for improvement and renewal (Muijs & Harris, 2006), because it can guide people's thoughts, feelings and behaviors. Relatively, it can also reduce negative intentions or thoughts. At present, the field of education is facing an unprecedented pandemic crisis, so there is an urgent need to find ways to reform, so as to meet the challenges. Now, with strongly committed TL, they are building and facilitating various change processes for learning, collaborating, and engaging in management, in order to drive change in colleges and universities in the face of adversity (Lee, 2004; Chen, 2022). Thus, maintaining the transformational capacity of leadership is beneficial for enhancing teachers' forward-looking behavior a spontaneous behavioral manifestation that has the potential to change themselves, others, and the environment. This is the first time it has been demonstrated, and it deserves further exploration in the future.

In addition, in the context of educational reform, teachers' WS proves to have a facilitative effect between TL and PB. When teachers experience the interconnectedness with their own work, teams and organizational values, such a positive inner experience can interact with teachers' process change capacity, so as to better guide teachers' striving spirit and promote spontaneous behavior. Accordingly, their workplace deviant behavior can be diminished. Specifically, WS can serve as an effective psychological mechanism. The results show that when teachers feel positive inner experiences in the workplace and when their leaders drive personal and collective growth, the fusion of these two scenarios

would further sublimate people's inner experiences, thus more effectively boosting TL's performance on PB. This phenomenon has been demonstrated for the first time, and it is an interesting finding.

The results further demonstrate that TG has a facilitative effect between TL and PB. In particular, TG can explain why teachers' spontaneous behavioral performance at work will have a stronger acting mechanism in the leadership that has process change capacity. This may be because TG will create and facilitate the integration between interest and effort and the process change capacity, thus enhancing individual teachers' spontaneous behavioral performance. This is because TG is seen as a "guide" and has the inherent characteristics that can support and promote growth. Conversely, the support and assistance provided by leadership can also avoid triggering negative behaviors of teachers. In terms of providing spontaneity, TG with the ability has an important motivational role, since the process change has a protecting and boosting effect. Leadership with a strong process change capacity can improve the existing perceived and non-cognitive factors, while serving as a process change capacity with both facilitative and preventive capabilities to effectively increase spontaneous behavior in extreme environments.

Finally, the results of this study demonstrated that TG has a significant effect on PB, and this study has also explored the moderating role of WS and TG between them. The findings support the above hypotheses, all of which are confirmed for the first time with an empirical study. Therefore, it is recommended that universities promote their teachers' autonomy in work behavior by developing and enhancing process change capacity. Furthermore, WS and TG could mediate the relationship between the two elements mentioned above. This may imply that universities also need to develop their teachers' WS and TG, in order to strengthen the impact of TG on PB.

New Knowledge and Contribution

In educational reform environments, the process change capacity of teachers' leadership is an important factor in promoting their spontaneous behaviors. In turn, behaviors that can quickly adapt to changing environments are also required. The results of this study suggest that TG, a kind of strong leadership, can facilitate the spontaneous behaviors of teachers. This finding is consistent with the educational field's search for change in the midst of current dilemmas, as only the capacity for process change can guide teachers and inspire them to spontaneously change the behavior of themselves,

others, and the environment. Therefore, developing and enhancing teachers' process change capacity will effectively boost PB, which will double the benefits for universities seeking educational reform. Subsequently, teachers with strong PBs will spontaneously improve the overall working conditions, which are beyond the scope of their work. Thus, it is expected that PB would contribute to the success of schools and ultimately affect their job satisfaction, performance, etc. (Thomas *et al.*, 2010; Cerit, 2017), while boosting students' learning and achievements (Barr & Duke, 2004).

Schools' transformation is a complex and long-term process, and success cannot be secured only by relying on the principals. "Collective effort" by more faculty members of universities is required to reduce barriers to educational change. TG is defined as a mindset that can convert traditional concepts, with a focus on collective responsibilities, so it is a process of collective effort (Grant, Gardner, Kajee, Moodley, & Somaroo, 2010). Under this new leadership philosophy, universities should build and develop their sense of responsibility and process change capacity, so that teachers can become composite leaders with a strong commitment (Lee, 2004), coupled with research and managerial skills, in order for them to work for the continuous change of universities in a better manner. On the other hand, TG is also adept at leveraging internal and external collaboration, while stressing the power of collective effort. As a form of "bottom-up," this has something in common with distributed leadership (Chan, 2016). Such collective power is an important part of collective wisdom in addressing challenges.

On the other hand, TG is an important force in universities. But it is not easy to make teachers' leadership more effective and productive (Wells, 2010). TG and PB have become important forces for reform. And this study finds that WS and TG have a significant facilitative effect between TG and PB. This would be valuable for driving educational reform in schools and reshaping theories. It is suggested that universities should incorporate WS and TG into their professional teaching, which would help to better enhance teachers' positive internal experiences for PB.

The practical implication of his study is that universities should focus on developing and enhancing teachers' leadership behaviors that can facilitate change. Currently, certain universities in China have implemented various programs aimed at developing and enhancing teachers' leadership behavior. Particularly, process change, spontaneous behavior, non-cognitive factors, and the sense of experience are integrated into professional development. This also proves that universities are aware of the impact of positive process change and psychological factors on teachers' spontaneous behavioral performance. The results of this study support these hypotheses for the first time, while emphasizing

the importance of developing and enhancing teachers' process change capacity in universities for reform in this particular era. Universities should understand that process change capacity is pivotal to the success of educational reform in practice, so it deserves focused support and targeted development.

Recommendations

1. General Recommendation

This study found that TL can significantly positively affect PB, and the following recommendations are made for schools. Firstly, incorporate TL into the continuous professional development plan and establish multidimensional learning activities to develop TL, such as long-term external expert guidance, regular internal and external mixed collaboration forms, and a virtual continuous professional development model to enhance TL's knowledge and capabilities. The second is to use TL as an organizational strategy to build a TL team with a "strong ability for change", in order to inspire teachers to fully immerse themselves in teaching and fully leverage their "transformational influence" to support teachers and schools in improving, thereby enhancing their PB.

This study indicates that WS has a promoting effect on TL and PB. Therefore, more suggestions were put forward for the school. Firstly, strengthen teacher value education and incorporate value education into special training plans. Training programs can enhance teachers' perceptions of their own work, team, and organizational values, enhance their inner experiences, and gradually enhance their PB. Secondly, schools should also provide WS training for teachers. WS is a deep inner experience that requires special human resource training. Schools should build and actively encourage the development and practice of WS, such as the "awakening technology" of WS, using silent exercises, meditation, and other methods to train teachers' WS, in order to further improve their PB level.

This study indicates that TG has a promoting effect on TL and PB. Therefore, suggestions are made to the school. Firstly, to strengthen the cultivation of teachers' interests and efforts, TG should be included in the continuous professional development plan. Professional development plans can stimulate the composite qualities of teachers' interest and effort, enhance their enthusiasm and determination, and gradually enhance their PB. Secondly, schools should also support the continuous professional development model of teachers' self-development, assist them in implementing learning activities with

the goal of improving TG, thereby developing and influencing teachers' interests and efforts, and further improving teachers' PB levels.

2. Recommendation for future research

First, the sample was collected in a single session, so there is a risk of bias. Second, the source of the sample was a group of teachers who participated in one workshop, so the scope of generalization was limited. Finally, the questionnaires were self-reported, with no observations implemented in support, so it was difficult to gain a complete insight into the variables involved in the study.

Although certain research has verified the importance of TG for educational reform in particular times, related studies are mostly qualitative. Therefore, more relevant empirical studies are recommended for the future, so as to develop the theory more properly. In addition, few studies have addressed the cross–level and cross–cultural process and its mechanisms. This is another effective way to develop TG in the future.

References

Aiken, L. S. & West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions.* Sage.

Alazmi, A. A. & Al–Mahdy, Y. F. H. (2022). Principal authentic leadership and teacher engagement in Kuwait's educational reform context. *Educational Management Administration & Leadership, 50*(3), 392–412. https://doi.org/10.1177/1741143220957339

Bandura, A. (1991). Social cognitive theory of self–regulation. *Organizational Behavior and Human Decision Processes, 50*(2), 248–287. https://doi.org/10.1016/0749–5978(91)90022–L

Bindl, U. K., & Parker, S. K. (2011). Proactive work behavior: Forward–thinking and change–oriented action in organizations. In *APA handbook of industrial and organizational psychology, Vol 2: Selecting and developing members for the organization.* (pp. 567–598). American Psychological Association.

Buchkivska, G., Greskova, V., Sembrat, A., Mysyk, O. & Marchenko, N. (2021). Determination of the main ways to improve the efficiency of higher education institutions in a post–pandemic context. *Postmodern Openings, 12*(4), 282–293. https://doi.org/10.18662/po/12.4/375

Cerit, Y. (2017). The mediating effect of LMX in the relationship between school bureaucratic structure and teachers' proactive behavior. *Leadership & Organization Development Journal*, *38*(6), 780–793. https://doi.org/10.1108/LODJ–01–2016–0005

Chan, K. W. C. (2016). Servant leadership cultivates grit and growth mindset in learners. *Servant Leadership: Theory & Practice*, *3*(2), 12–22. https://www.columbusstate.edu/turner/

Chen, J. (2022). Understanding teacher leaders' behaviours: Development and validation of the teacher leadership inventory. *Educational Management Administration & Leadership*, *50*(4), 630–648. https://doi.org/10.1177/1741143220945704

Crant, J. M. (2000). Proactive behavior in organizations. *Journal of management*, *26*(3), 435–462. https://doi.org/10.1016/S0149–2063(00)00044–1

Dooley, S., Sim, A. J., Campbell, S. R., Jeans, E. B., Anderson, J. D., Tye, K. & Goodman, C. R. (2020). Opportunities to improve radiation oncology medical education in the post–pandemic era. *International Journal of Radiation Oncology, Biology, Physics*, *108*(2), 455–457. https://doi.org/ 10.1016/j.ijrobp.2020.06.038

Duckworth, A. L., Peterson, C., Matthews, M. D. & Kelly, D. R. (2007). Grit: Perseverance and passion for long–term goals. *Journal of Personality and Social Psychology,* 92(6), 1087–1101. https://doi.org/ 10.1037/0022–3514.92.6.1087

Eckert, J., Ulmer, J., Khachatryan, E. & Ledesma, P. (2016). Career pathways of teacher leaders in the United States: Adding and path–finding new professional roles. *Professional Development in Education, 42*(5), 687–709. https://doi.org/10.1080/19415257.2015.1084644

Fiedler, F. E. & Garcia, J. E. (1988). New approaches to effective leadership: Cognitive resources and organizational performance. *Academy of Management Review, 13*(2), 328–330. https://doi.org/ 10.5465/AMR.1988.4306910

Grant, C., Gardner, K., Kajee, F., Moodley, R., & Somaroo, S. (2010). Teacher leadership: A survey analysis of KwaZulu–Natal teachers' perceptions. *South African Journal of Education*, *30*(3), 401–419. https://doi.org/10.4314/saje.v30i3.60035

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*(2), 327–347. https://doi.org/10.5465/AMJ.2007.24634438

Haldorai, K., Kim, W. G., Chang, H. S. & Li, J. J. (2019). Workplace spirituality as a mediator between ethical climate and workplace deviant behavior. *International Journal of Hospitality Management, 86*(4), 102372. https://doi.org/10.1016/j.ijhm.2019.102372

Harrison, C. & Killion, J. (2007). Ten roles for teacher leaders. *Educational leadership, 65*(1), 74–77. https://doi.org/10.3102/0162373707306026

Hartog, D. N. D. & Belschak, F. D. (2012). When does transformational leadership enhance employee proactive behavior? The role of autonomy and role breadth self–efficacy. *Journal of Applied Psychology, 97*(1), 194–202. https://doi.org/10.1037/a0024903

Hassan, M., Nadeem, A., Akhter, A. & Nisar, T. (2016). Impact of workplace spirituality on job satisfaction: mediating effect of trust. *Cogent Business & Management, 3*(1), 2–8. https://doi.org/ 10.1080/23311975.2016.1189808

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American psychologist, 44*(3), 513. https://doi.org/10.1037/0003–066x.44.3.513

Klotz, J. & Daniel, L. (1998). Formatting a proactive principal preparation program in response to the national reform movement in education administrative preparation. *Academic Standards,* 2–76. https://doi.org/10.1177/87568705120310020

Kolodinsky, R. W., & Jurkiewicz, G. C. L. (2008). Workplace values and outcomes: Exploring personal, organizational, and interactive workplace spirituality. *Journal of Business Ethics, 81*(2), 465–480. https://doi.org/10.1007/sl0551–007–9507–0

Lee, C. K. (2004). Developing teacher leaders: How teacher leadership enhances school success. *Journal of Educational Administration, 42*(4), 506–508. https://doi.org/10.1108/09578230410544107

Lee, D., Ip, N., Atta, G. P., Acheampong, F., Atta–Asiamah, E. & Jamali, A. J., et al. (2021). The influence of professional learning communities on informal teacher leadership in a Chinese hierarchical school context. *Educational Management Administration & Leadership, 51*(8), 1–21. https://doi.org/10.1177/1741143220985159

Luethke, T. N., Brachle, B., Mcelravy, L. J. & Matkin, G. S. (2020). LMX & Crit: The effects of abusive supervision and member crittiness on leader–member relationships. *Journal of Leadership, Accountability and Ethics, 17*(5), 69–83.

Milliman, J., Czaplewski, A. J. & Ferguson, J. (2003). Workplace spirituality and employee work attitudes an exploratory empirical assessment. *Journal of Organizational Change Management, 16*(4), 426–447. https://doi.org/10.1108/09534810310484172

Moore, H., Latimer, R. & Villate, V. (2016). The essence of teacher leadership: A phenomenological inquiry of professional growth. *International Journal of Teacher Leadership, 7*(1), 1–16.

Muijs, D., & Harris, A. (2006). Teacher led school improvement: Teacher leadership in the UK. *Teaching and teacher education, 22*(8), 961–972. https://doi.org/10.1016/j.tate.2006.04.010

Muijs, D., & Harris, A. (2006). Teacher led school improvement: Teacher leadership in the UK. *Teaching and Teacher Education, 22*(8), 961–972. https://doi.org/10.1016/j.tate.2006.04.010

Naseer, S., Syed, F., Nauman, S., Fatima, T., Jameel, I., & Riaz, N. (2020). Understanding how leaders' humility promotes followers' emotions and ethical behaviors: Workplace spirituality as a mediator. *Journal of Positive Psychology, 15*(3), 407–419. https://doi.org/10.1080/17439760.2019.1615103

OECD (2020). *TALIS 2018 Results (Volume II): Teachers and School Leaders as Valued Professionals.* TALIS, OECD Publishing, Paris.

Quinn, D. J. (2014). Teacher leaders want to do both. *Phi Delta Kappan, 95*(7), 80–80. https://doi.org/10.1177/003172171409500722

Schott, C., Roekel, H. V. & Tummers, L. (2020). Teacher leadership: A systematic review, methodological quality assessment and conceptual framework. *Educational Research Review.* https://doi.org/10.1016/j.edurev.2020.100352.

Snoek, M. & Volman, M. (2014). The impact of the organizational transfer climate on the use of teacher leadership competences developed in a post-initial Master's program. *Teaching and Teacher Education, 37*, 91–100. https://doi.org/10.1016/j.tate.2013.10.005

Suendarti, M., Widodo, W. & Hasbullah, H. (2020). Demonstrating the effect of grit and creativity on innovative behavior of teacher's natural science: Mediating by self-efficacy. *Journal of Xian University of Architecture and Technology, 12*(6), 470–478.

Thomas, J. P., Whitman, D. S. & Viswesvaran, C. (2010). Employee proactivity in organizations: A comparative meta-analysis of emergent proactive constructs. *Journal of Occupational and Organizational Psychology, 83*(2), 275–300. https://doi.org/10.1348/096317910X502359

Wang, T. (2016). School leadership and professional learning community: Case study of two senior high schools in Northeast China. *Asia Pacific Journal of Education, 36*(2), 202–216. https://doi.org/10.1080/02188791.2016.1148849

Wang, T., Towey, D., Ng, R. Y. K. & Gill, A. S. (2021). Towards Post–pandemic Transformative Teaching and Learning. *SN Computer Science, 2*(4), 1–7. https://doi.org/10.1007/s42979–021–00663–z

Wells, C. M. (2010). *Preparing superintendents for building teacher leadership: Implications for university programs.* NCPEA Publications.

Xue, C. & Guo, Y. (2020). Reflections and Recommendations on the Reform of Online Teaching Reform in Universities. *Journal of East China Normal University (Educational Sciences), 38*(7), 65–73. https://xbjk.ecnu.edu.cn/CN/1000–5560/home.shtml

York–Barr, J. & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Educational Research, 74*(3), 255–316. https://doi.org/10.3102/00346543074003255

Zboon, E. (2016). Special education teacher leadership in Jordan: Current state and constraints. *Societies, 6*(3), 19. https://doi.org/10.3390/soc6030019

Zhao, J. & Xie, Y. B. (2020). The epidemic forces the search for a breakthrough in higher education teaching reform. *China Higher Education, 2020*(6), 22–24. https://doi.org/CNKI:SUN:ZGDJ.0.2020–06–009