TEACHER EDUCATION & DEVELOPMENT | REVIEW ARTICLE

Effect of grit on the teaching creativity of Indonesian teachers: The mediating role of organizational commitment and knowledge management

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Abstract: This study explores the effect of grit on the teaching creativity of Indonesian teachers, mediated by organizational commitment and knowledge management. A questionnaire collected research data from 496 teachers, research participants were selected by accidental sampling. Path analysis, supported by descriptive statistics and correlation matrices, used data analysis. The results revealed that grit affects teaching creativity positively and significantly, both directly and indirectly, mediated by organizational commitment and knowledge management, thus indicating ways of improving teaching creativity. Additionally, a new model portraying the effect of grit on teaching creativity, mediated by organizational commitment and knowledge management, was confirmed. Therefore, researchers and practitioners can adapt this model to develop teaching creativity through grit, organizational commitment, and knowledge management in various contexts in the future.

Subjects: Educational psychology; Educational management; Teaching; Teacher

Keywords: Grit; organizational commitment; knowledge management; teaching creativity

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PUBLIC INTEREST STATEMENT

Teaching creativity is essential for implementing education, especially in facing changes and challenges in civilization and the industry, including in Indonesia. This study provides an alternative investigating the effect of grit on the teaching creativity of Indonesian teachers, mediated by organizational commitment and knowledge management. The findings revealed that grit positively and significantly affects teaching creativity, both directly and indirectly, mediated by organizational commitment and knowledge management. This evidence can enhance teaching creativity among teachers in various educational levels from the perspectives of grit, organizational commitment, and knowledge management, meaning that principals or school authorities in various countries can start focusing on such improvements.
1. Introduction

The existence of creativity is crucial today as it is a pillar of competition at the individual, group, organizational, domestic, regional, and global levels. As an illustration, during the Covid-19 pandemic, medical personnel required creativity to prescribe/develop the right drugs and vaccines. Businesses require creativity to overcome the financial crisis caused by the Covid-19 pandemic. In education, teachers are required to proactively find alternatives for appropriate and effective online learning. This reality shows that creativity has a strategic position in the lives of individuals, groups, and organizations, especially in dealing with various problems caused by the Covid-19 pandemic. For example, recent studies concluded that creativity not only influences self-efficacy (Mohammadi & Azizmalayeri, 2016; Pachler et al., 2019; Regier & Savic, 2019; Vally et al., 2019) but also affects innovative behavior (Neto et al., 2019; Zocche et al., 2018). Besides, Deng and Guan (2017) claimed that it influences organizational citizenship behavior. Other studies indicate that creativity impacts performance (Rohmaniyyah & Nurhayati, 2017) and professionalism (Vaganova et al., 2019). In the educational context, it has a relationship with the motivation to learn creative thinking (Al-Zu’bi et al., 2017) and realize academic achievements (Gajda et al., 2016; Nami et al., 2014). Hence, creativity has consistently been crucial for scholars, researchers, and practitioners.

Creativity reflects the ability to reformulate what we know, generally in light of new information, and develop a new concept or an original idea (Carter, 2014). It is something that arises from conscious human intervention (Ashton, 2015). Bessant and Tidd (2018) identified several kinds of creativity, including associations, incremental and radical, divergent and convergent thinking, and pattern recognition. In the educational context, studies by Baum and Newbill (2010), Dobbins (2009), and Rinkevich (2011) highlighted that creativity is essential for creative teaching. Meanwhile, other studies revealed that teaching creativity makes learning more interesting and meaningful (Rinkevich, 2011; Schacter et al., 2006), and it may also provide students more learning opportunities than routine teaching to develop creativity (Dobbins, 2009; Simonton, 2013). In practice, teaching creativity or creativity in teaching is the creativity required or demonstrated in teaching (Cheng, 2018), although, as an individual internal factor, it can change, grow, and improve. According to Rinkevich (2011), increasing creativity in teaching begins with teacher education. Specifically, the relevance and benefits of creative teaching should be stressed throughout teacher preparation programs. Creativity should be integrated not only into lesson planning but also into instructions. Besides, the notion that creativity is a “bonus” that is associated only with teachers who are innately born with creative talent should be squelched. Instead, teaching creativity needs to be linked to other relevant and adjacent variables, such as grit, organizational commitment, and knowledge management. Therefore, this study aims to investigate the effect of grit on organizational commitment, knowledge management, and teaching creativity, while exploring the mediating role of organizational commitment and knowledge management in the relationship between grit and teaching creativity. Grit in teaching creativity is essential. The tendency to maintain commitment, focus, and efforts to fight for the achievement of goals/tasks of learning as a long-term grit manifestation is needed by teachers to build teaching creativity, either directly or indirectly mediated by organizational commitment and knowledge management. In this study, teaching creativity refers to teachers’ ability to reformulate new or original ideas related to methods, approaches, technics, styles, and materials for teaching tasks in the learning process. Teaching creativity can be measured through the five characteristics: fluency, flexibility, originality, elaboration, and redefinition (Guilford, 1950). Teachers with high teaching creativity are able to adapt, elaborate, and define new situations, and create original responses to them, including “chaotic” learning situations that appear unexpectedly in schools due to the COVID-19 pandemic, requiring quick anticipation and instant reaction. Teachers with high teaching creativity will also have no difficulty, even in fluency, when, for example, they are faced with new problems in the field of teaching that arose during the COVID-19 pandemic. Of course, teaching creativity, including such abilities, does not simply happen but can be influenced by several relevant factors.
2. Literature review and hypothesis development

2.1. Grit and teaching creativity

Like creativity, grit is also an interesting issue among scholars, researchers, and practitioners, and these two are inseparable. It is very beneficial for individuals in various contexts of life as it is related to work satisfaction, career performance, emotional outcomes, and motivation (Credé et al., 2017; Tang, Wang, et al., 2019). Grit also predicts important life outcomes (Eskreis-Winkler et al., 2014). In an educational context, it influences students’ academic achievements (Alhadabi & Karpinski, 2020; Hagger & Hamilton, 2019; Hernández et al., 2020; Tang, Wang, et al., 2019), academic engagement, and self-reported grades (Datu et al., 2016; Duckworth et al., 2007). Grit scores were predictive of associated college and graduate school grade point averages and achievements (Duckworth, 2016; Duckworth & Quinn, 2009). Grit is the tendency to pursue challenging long-term goals with perseverance and passion (Duckworth et al., 2011). It also refers to a psychological variable that prioritizes persistence as an indicator of long-term success and is associated with achieving high-level goals for a very long time (Duckworth, 2014; Von Culin et al., 2014). In practice, grit demonstrates hard work while dealing with challenges, and sustaining efforts, and interests over the years despite failures, resilience, and difficulties in achieving goals (Duckworth et al., 2007). According to Duckworth and Quinn (2009), grit consists of the two following indicators, consistency of interests, reflecting an individual’s tendency to maintain commitment and focus on achieving goals/tasks over a long time; and persistence of efforts, demonstrating an individual’s tendency to pursue long-term goals with sustained efforts despite obstacles and setbacks. Based on the various statements above, we describe grit as the tendency to work hard, with perseverance, and resilience for a long time in the face of challenges, difficulties, and failures to achieve high-level goals that are meaningful to an individual’s life. It is important to highlight the meaning of achieving these goals because, in reality, only important life goals are consistently pursued by most people. In the educational context, teachers feel the need to have a high level of teaching creativity because, otherwise, it is unlikely for them to deliver various subject matters effectively to students with different levels of intelligence and a variety of other unique characteristics. Hence, teaching creativity, reflected in fluency, flexibility, originality, elaboration, and redefinition, needs to be pursued through long-term hard work, perseverance, and resilience. Studies by Grohman et al. (2017) and Rojas and Tyler (2018) have also shown that grit influences teaching creativity. Therefore, the following hypothesis can be formulated (H):

H2: Grit has a direct effect on teaching creativity.

2.2. Organizational commitment and teaching creativity

Organizational commitment is an essential topic in organizational behavior, including teachers in the context of educational organizations. Organizational commitment refers to a member’s strong acceptance of organizational goals and values, as well as their willingness to devote themselves to the organization and maintain their position (Tang, Shao, et al., 2019). In organizational commitment, one’s loads and expectations are contingent upon organizational priorities and goals (Henkin & Holliman, 2009; Johnson et al., 2010). It also reflects the degree to which an employee identifies with the organization and wants to continue active participation, willing to put forth effort on its behalf (Newstrom, 2015; Noe et al., 2015). Moreover, organizational commitment is the attitudinal experience of commitment that occurs apart from, or as a consequence of, day-to-day work activities (Beardwell & Thompson, 2014). It has three indicators: affective, normative, and continuance commitment. Affective commitment involves an employee’s emotional attachment to, identification with, and involvement in the organization; normative commitment involves the employee’s feelings of obligation to stay with the organization because they should, i.e., it is the right thing to do; continuance commitment involves commitment based on the cost that the employee associates with leaving the organization (Meyer & Allen, 1991). When these indicators are high, they can enhance teaching creativity, among others, reflected in fluency, flexibility, and
elaboration. Studies also concluded that organizational commitment is related to teaching creativity (Hou et al., 2011; Parimita et al., 2020). Therefore, the following hypothesis can be formulated:

\[ H_2: \text{Organizational commitment has a direct effect on teaching creativity.} \]

2.3. Knowledge management and teaching creativity

In the last two decades, the importance of knowledge management has increased, especially in highly competitive, uncertain, and rapidly changing organizational situations, including educational organizations. Like business organizations, educational organizations also face a double challenge, in facing increasingly massive competition and fulfilling the actual needs of the world of work that continues to change rapidly. This reality encourages scholars, researchers, and practitioners to pay special attention to and continuously update various knowledge management issues. The expression of this concern, among others, appears in various definitions and perspectives of knowledge management. For example, Gloet and Terziorski (2004) defined knowledge management as the formalization of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value. Meanwhile, Palacios et al. (2009) stated that knowledge management is a management tool characterized by a set of principles and a series of practices and techniques through which the principles are introduced, creating, converting, disseminating, and utilizing knowledge. Besides, also refers to a process comprising knowledge creation, sharing, acquisition, transfer, and application with infrastructures, skills, and top management support that encourage and enhance such processes (Gold et al., 2001; H. Lee & Choi, 2003). Knowledge management does not involve data or process, or the exploitation of knowledge assets; it is the manipulation and control of what counts as knowledge (Davenport & Horton, 2007), and comprises storing and sharing the wisdom, understanding, and expertise accumulated in an organization about its processes, techniques, and operations (Armstrong, 2009). More than that, it is a process of enhancing company performance by using tools, processes, systems, and cultures to improve the creation, sharing, and use of knowledge (Noe et al., 2015). Knowledge management involves recognizing, generating, documenting, distributing, and transferring useful information, know-how, and expertise to improve organizational effectiveness (Slocum et al., 2008). Therefore, knowledge management is crucial for school organizations, especially for developing teaching creativity.

Davenport (1997) identified ten principles of knowledge management that emphasize people, processes, and concepts. The people refer to the inherent implementation of knowledge management in one’s need to be an organizational knowledge manager; the use and sharing of knowledge —is not easy or natural, and knowledge management requires human and technological hybrid solutions. The process refers to enhancing or transforming existing knowledge on work processes and, access to knowledge, with continual change and development. Finally, the concept refers to the fact that knowledge management is costly and, requires a knowledge contract, inherently recognizing intellectual property as a thorny concept. These principles, if realized in practice, can potentially stimulate teaching creativity among teachers in the school organization, reflecting fluency, flexibility, originality, elaboration, and redefinition. Several studies have shown that knowledge management affects teaching creativity (Lee, 2018; Rafiee & Khorasgani, 2018; Rhee & Choi, 2016; Shahraki & Khestegar, 2016; Sung & Choi, 2012; Tehranineshat & Rakhshan, 2018). Therefore, the following hypothesis can be formulated:

\[ H_3: \text{Knowledge management has a direct effect on teaching creativity.} \]

2.4. Grit and organizational commitment

Besides influencing knowledge management and teaching creativity, organizational commitment is also affected by grit. The indicators of grit, such as consistency of interests manifested in maintaining commitment and focus on achieving goals/tasks, and persistence of sustained efforts reflected in pursuing long-term goals despite obstacles and setbacks (Duckworth & Quinn, 2009), if adequate and stable for a long time, can increase teachers’ organizational commitment, particularly, affective commitment manifested in emotional attachment to, identification with, and
involvement in the organization (Meyer & Allen, 1991). Studies conducted by Nisar et al. (2020), Tang, Wang, et al. (2019), and Widodo and Chandrawaty (2020) showed that grit has a significant effect on organizational commitment. Therefore, the following hypothesis can be formulated:

H₄: Grit has a direct effect on organizational commitment.

2.5. Grit and knowledge management
Besides teaching creativity, knowledge management is also affected by grit. The indicators of grit, such as the consistency of interests, especially in maintaining commitment and focus on achieving goals/tasks, and persistence of efforts, for example, pursuing long-term goals with sustained efforts despite obstacles and setbacks (Duckworth & Quinn, 2009), if adequate and stable for a long time, can encourage teachers to support and be actively involved in enforcing and realizing the principles of knowledge management in schools, particularly, the use and sharing of knowledge, transforming existing knowledge on work processes, and access to knowledge, with continual change and development (Davenport, 1997). The urge arises mainly as teachers’ efforts to fight for and achieve long-term goals. So far, studies that specifically focus on the effect of grit on knowledge management are not only very limited, but also difficult to find. However, adjacent research has been carried out. Sharkey et al. (2017) and Traino et al. (2019) showed that grit has a significant relationship with management skills. Meanwhile, the study by C. S. Lee and Jang (2018) indicated that grit affects self-directed learning. These studies indicate that grit influences knowledge management. Therefore, the following hypothesis can be formulated:

H₅: Grit has a direct effect on knowledge management.

2.6. Grit and teaching creativity mediated by organizational commitment
Besides influencing knowledge management and teaching creativity, organizational commitment also mediates the effect of grit on teaching creativity. The indicators of grit manifested in maintaining commitment and focus on achieving goals/tasks, and pursuing long-term goals with sustained efforts despite obstacles and setbacks (Duckworth & Quinn, 2009), if adequate and stable for a long time, can enhance teacher’s organizational commitment, especially, affective commitment manifested in emotional attachment to, identification with, and involvement in the organization (Meyer & Allen, 1991). It then impacts the teaching creativity, among others, manifested in fluency, flexibility, and elaboration (Guilford, 1950). The recent studies by Nisar et al. (2020), and Widodo and Chandrawaty (2020) revealed that grit influences organizational commitment, while other studies concluded that organizational commitment also affects teaching creativity (Hou et al., 2011; Parimita et al., 2020). However, previous studies have not specifically examined the effect of grit on teaching creativity, mediated by organizational commitment. Such research requires empirical confirmation that promises novelty. Therefore, based on the arguments and studies above, the following hypothesis can be formulated:

H₆: Grit has an indirect effect on teaching creativity when mediated by organizational commitment.

2.7. Grit and teaching creativity mediated by knowledge management
Various results from the above research indicate that knowledge management mediates the effect of grit on teaching creativity. The indicators of grit, such as consistency of interests, especially maintaining commitment and focus on achieving goals/tasks, and persistence of efforts, for example, pursuing long-term goals with sustained efforts despite obstacles and setbacks (Duckworth & Quinn, 2009), if adequate and stable for a long time, can realize principles of knowledge management, such as the use and sharing of knowledge, transforming existing knowledge on work processes, and access to knowledge, with continual change and development (Davenport, 1997). It then implicates the teaching creativity reflected in fluency, flexibility, originality, elaboration, and redefinition (Guilford, 1950). Studies by Sharkey et al. (2017), and C. S. Lee and Jang (2018) show that grit influences knowledge management, while several studies by Lee (2018), and Rafiee and Khorasgani (2018) indicate that knowledge management affects teaching
creativity. However, previous have not specifically examined the effect of grit on teaching creativity, mediated by knowledge management, thus requiring scientific confirmation. Therefore, based on the arguments and studies above, the following hypothesis can be formulated:

H2: Grit has an indirect effect on teaching creativity when mediated by knowledge management.

2.8. Theoretical framework
Based on the above literature review, these indicators can be identified as measurement parameters for this research variable. Grit consists of two indicators: the consistency of interests and the persistence of efforts (Duckworth & Quinn, 2009). Organizational commitment consists of three dimensions: affective commitment, normative commitment, and continuance commitment (Meyer & Allen, 1991). Knowledge management consists of the following ten principles that emphasize the people, processes, and concept: the need to be an organizational knowledge manager, knowledge sharing is not easy or natural, requirement human and technological hybrid solutions, transforming existing knowledge work processes, access to knowledge, continual change and development, knowledge management is very expensive, requirement of a knowledge contract, and the thorny concept of inherent recognition of intellectual property (Davenport, 1997). Teaching creativity, includes fluency, flexibility, originality, elaboration, and redefinition (Guilford, 1950). The relationships between these variables can be seen from the results of previous research conducted by scholars and researchers, for example, the relationship between grit and teaching creativity (Grohman et al., 2017; Rojas & Tyler, 2018), organizational commitment and teaching creativity (Hou et al., 2011; Parimita et al., 2020), knowledge management and teaching creativity (Lee, 2018; Rafiee & Khorasgani, 2018; Tehraninesh & Rakshan, 2018), grit and organizational commitment (Nisar et al., 2020; Widodo & Chandrawaty, 2020), and grit and knowledge management (C. S. Lee & Jang, 2018; Sharkey et al., 2017). From the results these previous studies’, we can develop a theoretical framework (Figure 1) that includes direct and indirect effects among research variables.

3. Material and methods
3.1. Instrument
This research used a quantitative approach to the survey method through a questionnaire using a Likert scale model with five options for answers to verify the hypotheses: strongly disagree (score = 1), disagree (score = 2), neutral (score = 3), agree (score = 4), and strongly agree (score = 5) (Hair et al., 2018). Because this research took place during the Covid-19 pandemic, requiring everyone to comply with health protocols, especially social distancing, the survey was conducted online using Google Forms, and was shared with the teachers’ group through the WhatsApp application. The questionnaire was prepared by the researchers themselves based on the theoretical indicators by the experts, and among others, contained grit: consistency of interests and persistence of efforts (Duckworth & Quinn, 2009), organizational commitment: affective,
normative, and continuance (Meyer & Allen, 1991), knowledge management: people, processes, and concept (Davenport, 1997), and teaching creativity: fluency, flexibility, originality, elaboration, and redefinition (Guilford, 1950). As presented in Table 1, the grit questionnaire consisted of 8 items with a corrected item-total correlation coefficient between .379–.721 and an alpha coefficient = .851. The organizational commitment questionnaire consisted of 9 items with a corrected item-total correlation coefficient between .484–.801 and an alpha coefficient = .873. The knowledge management questionnaire consisted of 10 items with a corrected item-total correlation coefficient between .639–.941 and an alpha coefficient = .948. The teaching creativity questionnaire consisted of 10 items with a corrected item-total correlation coefficient between .687–.886 and an alpha coefficient = .949. All items had a corrected item-total correlation coefficient ($r$) $>.361$, and all variables had an alpha coefficient $.7$, thus indicating its validity and reliability as a research instrument (Hair et al., 2018; Van Griethuisen et al., 2014).

3.2. Research participants
Participants were 496 Indonesian teachers located across four provinces (Jakarta, Banten, West Java, and Riau), determined by accidental sampling based on participant willingness to fill in the questionnaire during the research (Widodo, 2019), conducted from November to December 2020. The criteria for participant determination included a minimum teaching experience of two years in either primary and secondary schools, at least a diploma education. Description of the participants is shown in Figure 2. The majority of participants were males (63.91%), aged 26–35 years with (42.54%), having a bachelor’s degree (74.60%), with a teaching experience of $\leq$ five years (34.68%).

3.3. Data analysis
Data were analyzed using path analysis, supported by descriptive statistics and correlation. Significance of the direct effect was determined using the T test, and of the indirect effect using the Sobel test (Z) (Abu-Bader & Jones, 2021). Descriptive and correlational analyses were performed by the SPSS Version 26, and path analysis by the LISREL 8.80.

4. Results and discussion

4.1. Results
The results of the descriptive statistical analysis and correlations of the four research variables are presented in Table 2. The mean values of the four variables from the lowest to the highest were grit (35.06), organizational commitment (37.00), teaching creativity (38.42), and knowledge management (43.18). Meanwhile, the standard deviation values of the four variables from the lowest to the highest were also grit (2.748), organizational commitment (3.918), teaching creativity (4.715), and knowledge management (4.781). The correlation analysis results of all the variables had significant relationships with the other variables at level $p < .01$, indicating a mutual relationship among the variables.

The results of the hypothesis testing with the path analysis of grit on organizational commitment, knowledge management, and teaching creativity are summarized in Table 3 and visualized in Figures 3 and 4. As presented in Table 3, all the hypotheses were supported by ($T$ value/$Z$ value > $T$ table/$Z$ table at $\alpha = .01$). Therefore, the results of this study show that grit, organizational commitment, and knowledge management have a significant direct effect on teaching creativity. Additionally, grit has a significant direct effect on organizational commitment and knowledge management. Besides, the results also show that grit has a significant indirect effect on teaching creativity when mediated by organizational commitment (.11). Further, grit has a significant indirect effect on teaching creativity when mediated by knowledge management (.07).

As shown in Figures 3 and 4, the test results of the fit test structural model show the significance with Chi-Square = 0.000, df = 0, p-value = 1.00000 > .05, and RMSEA = .000 < .08, indicating that the tested model is fit, and is supported by empirical data from teachers in Indonesia.
| Variables                  | Items                                                                 | r   | Alpha |
|---------------------------|-----------------------------------------------------------------------|-----|-------|
| Grit                      | 1. I will remain a teacher until I retire.                            | .689| .851  |
|                           | 2. I will continue my career as a teacher even if other jobs promise greater compensation. | .601|       |
|                           | 3. I will fight for my career to pik, even if it takes a long time.   | .648|       |
|                           | 4. I will stay focused on achieving educational goals.                 | .721|       |
|                           | 5. I try to pursue teaching as a part of the purpose of life.          | .406|       |
|                           | 6. I try to target the long-term educational goals as life orientation that needs fighting for. | .712|       |
|                           | 7. I strive to attain career achievements in a sustainable manner.     | .583|       |
|                           | 8. I will continue to strive until the educational goals are achieved. | .379|       |
| Organizational Commitment | (1) I am ready to be involved in various school activities.            | .526| .873  |
|                           | 2. I am willing to teach outside of working hours without additional compensation. | .801|       |
|                           | 3. I am willing to work hard and beyond what is expected of teachers.  | .609|       |
|                           | 4. I obey the rules that apply at school.                             | .580|       |
|                           | 5. I respect the ethical norms that apply at school.                  | .699|       |
|                           | 6. I work according to the standard operating procedures that apply at school. | .526|       |
|                           | 7. The shortcomings that still exist at school encourage me to work harder. | .716|       |
|                           | 8. I feel guilty if I have to leave school.                           | .484|       |
|                           | 9. I give my best for the betterment of the school.                   | .581|       |

(Continued)
| Variables               | Items                                                                 | r   | Alpha |
|------------------------|----------------------------------------------------------------------|-----|-------|
| Knowledge Management   | (1) I support the principal’s policy on knowledge management.        | .639| .948  |
|                        | 2. I accept the principal as a knowledge manager at school.          | .679|       |
|                        | 3. I appreciate the principal’s dedication toward encouraging the spirit of sharing knowledge. | .941|       |
|                        | 4. I am ready to be a part of the potential synergy between human resources and the built-in technology at school. | .721|       |
|                        | 5. I contribute to the knowledge transformation at school.           | .801|       |
|                        | 6. I have access to knowledge development at school.                 | .886|       |
|                        | 7. I actively support the school’s efforts toward sustainable knowledge management. | .679|       |
|                        | 8. I support the school’s efforts toward facilitating the development of new knowledge. | .941|       |
|                        | 9. I support the school policy in determining the knowledge map developed for the future. | .721|       |
|                        | 10. I support the introduction of knowledge contracts in schools for the recognition of intellectual property. | .801|       |

(Continued)
| Variables             | Items                                                                 | r    | Alpha |
|-----------------------|-----------------------------------------------------------------------|------|-------|
| Teaching Creativity   | 1. I quickly adapted to online learning during the Covid-19 pandemic. | .687 | .949  |
|                       | 2. I can adjust various learning media according to the online learning process. | .775 |       |
|                       | 3. I give students the freedom to use various learning resources.      | .787 |       |
|                       | 4. I understand a student’s mindset even if it doesn’t match mine.    | .886 |       |
|                       | 5. I try to find a new teaching approach that fits the needs of online learning. | .838 |       |
|                       | 6. I continuously update my teaching methods according to student needs. | .826 |       |
|                       | 7. I adopt various online learning methods according to actual student situations. | .730 |       |
|                       | 8. I choose a subject matter that is appropriate to the learning conditions during the pandemic. | .722 |       |
|                       | 9. I review all contents of the subject matter to ensure relevance to the pandemic conditions. | .816 |       |
|                       | 10. I re-evaluate the various learning methods that I have used so far to suit the needs of the learning process during the pandemic. | .775 |       |
Table 2. Descriptive statistics and correlation matrices of the variables

| Variables                  | Mean | Std. Deviation |
|----------------------------|------|----------------|
|                            | 1    | 2             | 3   | 4   |
| 1. Grit                    | 35.06| 2.748         | 1.00|     |
| 2. Organizational Commitment| 37.00| 3.918         | .501**| 1.00|
| 3. Knowledge Management    | 43.18| 4.781         | .506**| .592**| 1.00|
| 4. Teaching Creativity     | 38.42| 4.715         | .386**| .405**| .368**| 1.00|

** p < .01.

Table 3. Summary of path coefficients and T/Z values

| Hypothesis | Path Coefficient | T Value/Z Value | Hypothesis Testing |
|------------|------------------|-----------------|--------------------|
| H1: Grit (X) on teaching creativity (Y3) | .21** | 4.04 | Supported |
| H2: Organizational commitment (Y1) on teaching creativity (Y3) | .23** | 4.87 | Supported |
| H3: Knowledge management (Y2) on teaching creativity (Y3) | .13** | 2.83 | Supported |
| H4: Grit (X) on organizational commitment (Y1) | .50** | 12.87 | Supported |
| H5: Grit (X) on knowledge management (Y2) | .51** | 13.04 | Supported |
| H6: Grit (X) on teaching creativity (Y3), mediated by organizational commitment (Y1) | .11** | 7.75 | Supported |
| H7: Grit (X) on teaching creativity (Y3), mediated by knowledge management (Y2) | .07** | 7.34 | Supported |

** p < .01.
4.2. Discussion
This study revealed that grit influences organizational commitment, knowledge management, and teaching creativity; while organizational commitment and knowledge management also affect teaching creativity. Besides, the results of this study also showed the indirect effect of grit on teaching creativity, mediated by organizational commitment and knowledge management. Furthermore, the results of the fit test of the structural model show the significance (fit), consistent with other results of the research, for developing the research hypothesis. However, in reality, grit has a multiplier effect on multiple aspects of school organization, including teachers' organizational commitment, knowledge management, and teaching creativity. The indicators of grit, such as consistency of interests and persistence of efforts (Duckworth & Quinn, 2009), if adequate and consistent for a long time, can stimulate teachers' organizational commitment, knowledge management, and teaching creativity. For example, teachers' organizational commitment, mainly affective commitment manifested in emotional attachment to, identification with, and involvement in the organization (Meyer & Allen, 1991) increases. Teachers' organizational commitment, especially affective commitment embodied in emotional attachment to, identification with, and involvement in the organization (Meyer & Allen, 1991), increased if the teacher had a consistency of interests as an indicator of grit manifested in a tendency to maintain commitment and focus on achieving goals/tasks over a long time. Studies conducted by Nisar et al. (2020), Tang, Wang, et al. (2019), and Widodo and Chandrawaty (2020) showed that grit positively impacts organizational commitment. A high level of grit, primarily in the strong maintenance of focus on achieving goals/tasks over a long time, can also encourage teachers to support and be actively involved in enforcing and realizing the principles of knowledge management at schools, particularly, the use and sharing of knowledge, transforming existing knowledge on work processes, and access to knowledge, with continual change and development (Davenport, 1997). The research results of C. S. Lee and Jong (2018), and Sharkey et al. (2017) also supported that grit influences knowledge management. Besides, adequate grit can encourage the enhancement of teaching creativity, reflected in fluency, flexibility, originality, elaboration, and redefinition. A teacher with a high level of grit manifested in the maintenance of commitment and focus on achieving goals/tasks and pursuing long-term goals adequately will have the capacity to adapt, elaborate, interpret, and provide original responses to actual learning conditions, including “chaotic” situations due to the Covid-19 pandemic. A high level of grit can reinforce teachers' creativity while following online learning models during the Covid-19 pandemic. Scholars, including Grohman et al. (2017), and Rojas and Tyler (2018), also concluded that grit influences teaching creativity, indicating its vitality.
for organizational commitment, knowledge management, and teaching creativity among teachers in Indonesia. As a consequence, the grit of teachers needs to be improved continuously by using the right strategy. First, teachers need to independently and consciously increase their grit capacity by reading various relevant literature. Second, school principals should initiate and facilitate teachers’ participation in training programs specifically designed to improve grit. The training programs must involve expert instructors truly competent in the field of grit; the material provided should enhance consistency of interests and persistence of effort for the accomplishment of educational goals through teaching creativity, and the methods should be used according to the needs of the training material, combining speaking, and discussions, including focus group discussions, simulations, and role-playing.

In addition, this study also proves that organizational commitment has a significant effect on teaching creativity. The evidence shows that teachers with adequate organizational commitment tend to have high teaching creativity. In other words, organizational commitment can improve teaching creativity. This finding is in line with previous studies conducted by Hou et al. (2011) and Parimita et al. (2020), showing that organizational commitment is related to teaching creativity. However, the three indicators of organizational commitment affective, normative, and continuance commitment (Meyer & Allen, 1991), are the capital or the predisposition that allows teachers to have strong fluency, flexibility, originality, elaboration, and redefinition (Guilford, 1950). For example, teachers with high affective commitment, involving their emotional attachment to, identification with, and involvement in the school organization, will tend to have higher fluency, flexibility, elaboration, and redefinition while dealing with various teaching tasks.

The results of this study also revealed that knowledge management has a significant relationship with teaching creativity, confirming that teachers who support and are involved in the implementation of knowledge management principles in schools tend to have high teaching creativity. Subsequently, knowledge management can be a vital asset for teachers to enhance their teaching creativity. These findings confirm scholarly studies that knowledge management is related to teaching creativity (Lee, 2018; Rafiee & Khorasgani, 2018; Rhee & Choi, 2016; Tehranineshat & Rakhshan, 2018). In reality, knowledge management is an essential antecedent for teachers to build fluency, flexibility, originality, elaboration, and redefinition (Guilford, 1950). As an illustration, the teachers that supported and were actively involved in enforcing and realizing the principles of knowledge management in schools, particularly the use and sharing of knowledge, transforming existing knowledge on work processes, and access to knowledge, with continual change and development (Davenport, 1997), tended to have strong elaboration and redefinition.

This study also found that organizational commitment and knowledge management play a significant role as mediators of grit in teaching creativity, revealing the empirical fact that they need to be considered in the context of increasing teaching creativity through grit. Therefore, efforts to enhance teaching creativity will improve if they strengthen grit with organizational commitment and knowledge management. In this case, knowledge management should be a priority because it has a more dominant indirect effect on teaching creativity than organizational commitment. This implies that school principals need to prioritize the development of knowledge management through various strategic policies, especially the aspects that are relevant and reliable for improving teaching creativity, such as the use and sharing of knowledge, transforming existing knowledge on work processes, and access to knowledge, with continual change and development.

Finally, besides confirming the results of several previous studies, this study found a new empirical model of the effect of grit on teaching creativity, mediated by organizational commitment and knowledge management, based on the data collected from Indonesian teachers. Therefore, researchers and practitioners can discuss, adapt to, or adopt this model as a conceptual model of teaching creativity in various organizations in the future.
5. Conclusion
This study found that grit influences teaching creativity, organizational commitment, and knowledge management. Besides, organizational commitment and knowledge management mediate the relationship between grit and teaching creativity. This evidence introduces a new research model regarding the effect of grit on teaching creativity, mediated by organizational commitment and knowledge management, developed based on teachers in Indonesia. Therefore, researchers and practitioners can discuss, adapt to, or adopt this model as a conceptual model of teaching creativity in various organizations in the future. Furthermore, this study has practical implications where teachers, with the support of school stakeholders, especially school principals, try to improve their grit sustainably by utilizing available school resources. In addition, other educational organizations, such as universities, public organizations (government), social organizations, and business organizations, can also take advantage of the results of this research, especially for the benefit of human resource development. Meanwhile, the theoretical implication states the need for testing the model developed in this study with different settings, locations, organizations, samples, analytical tools, and other distinguishing characteristics to continue the development of models that can enrich and strengthen the study of grit concerning organizational commitment, knowledge management, and teaching creativity.

6. Limitations and study forward
This research focuses only on schools, with the units of analysis limited solely to the teachers in four provinces, namely Jakarta, Banten, West Java, and Riau. Further research should expand to different provincial and national areas and levels. Besides, this study did not use all the indicators contained in various kinds of literature. Therefore, future research can add other dimensions or indicators. Furthermore, future research can also use different analytical approaches, such as using structural equation modeling (SEM) supported by SmartPLS and adding new relevant variables.

Funding
The authors did not receive any direct funding for this research.

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Disclosure statement
No potential conflict of interest was reported by the author(s).

Citation information
Cite this article as: Effect of grit on the teaching creativity of Indonesian teachers: The mediating role of organizational commitment and knowledge management, W. Widodo & Robertus M. B. Gunawan, Cogent Education (2021), 8: 2006111.

Abu-Bader, S., & Jones, T. V. (2021). Statistical mediation analysis using the Sobel Test and Hayes SPSS process macro. International Journal of Quantitative and Qualitative Research Methods, 9(1), 42–61. https://www.ejournals.org/wp-content/uploads/Statistical-Mediation-Analysis-Using-the-Sobel-Test-and-Hayes-SPSS-Process-Macro.pdf

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