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Tutors' chronological age and characteristics as predictors of creative nurturing behavior in the 21st-century classroom

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Introduction: The study examined tutors' characteristics and chronological age as they influenced their creativity nurturing behaviors.

Methods: The descriptive cross-sectional design was used to survey 340 tutors (male = 220, female = 120) from 16 colleges of education. The data for the study were gathered using adapted versions of teachers' characteristics and creativity nurturing behaviors scales. The data were analyzed inferentially.

Results: The study revealed that tutors' characteristics influenced their creativity nurturing behaviors and teachers with 30 years and above of teaching could influence their creativity nurturing behaviors. Differences were established in tutors' creativity nurturing behaviors based on their experience but such were not found in tutors' characteristics.

Discussion: It was concluded that tutors' characteristics and age are two key drivers of their creative abilities in the 21st century classroom. Therefore, management of teacher training institutions must cultivate an appreciable and appropriate tutor characteristics and dispositions so that they can use them to nurture trainee-teachers.

KEYWORDS

chronological age, creativity, tutor, characteristics, behavior, 21st century

1. Introduction

Just as "actions speak louder than words," tutors' practical actions have a profound effect on those they teach. The contribution of tutors' teaching to the lives of those they teach stands unabated (Soh, 2015; Chen and Yuan, 2021). The 21st-century classroom demands a shift from the traditional way of teaching because it has outlived its essence and effectiveness given the diversity and varied needs among learners in the learning environment. To cater for this diversity in the classroom and to meet the demands of contemporary classroom engagement, there is a need for tutors to engage in creativity nurturing behaviors. According to Hu et al. (2016) and Chen and Yuan (2021), tutors' creativity nurturing behaviors are important skills that can be applied effectively to improve student's learning through the development of necessary mental and affective skills. According to Davis (2013) and Sharma (2017), educational institutions nurture learners' future competitive advantage by promoting creative teaching. Similarly, Karpudewan and Chong Keat (2017) argue that the educational system must facilitate the transition process of producing a future workforce equipped with the knowledge and creative skills to meet the challenges of the 21st century. In this

context, tutors' creativity nurturing behavior is an integral component in the educational development of learners. Creative nurturing behavior is about teachers themselves being creative to cultivate students' creative potential (Apak et al., 2021). Literature shows that the creativity nurturing behavior of tutors is an important characteristic that helps young people to develop a level of adaptability so that they can become part of an effective future workforce (Fazelian and Azimi, 2013). According to Göncz (2017), several research areas in education examine various facets of the teaching profession and the characteristics of tutors. For example, according to Rosić (2011), deontology and pedeutology focus specifically on pedagogy. While deontology is concerned with tutors' responsibilities and rights in relation to their students, pedeutology deals with the characteristics of tutors as defined by their roles. Even though it is generally agreed that tutors' characteristics are the most important and complicated factors in education (Walker, 2008; Göncz, 2017; Apak et al., 2021), and because studying tutors' characteristics is the sole responsibility of psychological research, there are no research fields in education that are specifically focused on the teaching profession. Even in educational psychology, the role of tutors' characteristics is typically emphasized only in research addressing their classroom management styles (Djigic and Stojiljkovic, 2011; Barni et al., 2018; Debbag and Fidan, 2020) and school docimology (the study of how knowledge is assessed and measured in the classroom) (Lee and Liu, 2010; Kersting et al., 2012; Bailey et al., 2014).

Sternberg (2003) indicates that though several learning and developmental theories position learners' development as an aspect of creativity, they lose their focus on creativity and eventually learners are not nurtured in it because of insufficient encouragement and lack of school system support (Hui et al., 2015; Asih, 2019). Meanwhile, irrespective of the global acclamation and interest in nurturing creativity through teaching, some researchers argue that the learning environment does not appear to be conducive and stimulating enough for nurturing creativity in learners (Plucker et al., 2004; Beghetto and Kaufman, 2014; Richardson and Mishra, 2018; Asih, 2019). This situation is attributed to several factors including teacher-focused approaches and the exactness of students' feedback at the expense of competencies and abilities (Stojanova, 2010; Hui et al., 2015). Such findings have led to the re-focus of research on creativity among tutors in the process of nurturing creative abilities in their learners (Bocconi et al., 2012; Daskolia et al., 2012). Tutors spend a considerable amount of their occupational time with their learners, and therefore they play a critical role in enabling or impeding the creative abilities of their learners in teaching and learning engagements (Asih, 2019). Furthermore, creativity nurturing behaviors of tutors depend on their characteristics and their understanding of what creativity entails, and their age (Bramwell et al., 2011; Cropley and Cropley, 2013; Chan, 2015; Runco, 2015).

According to Hanushek (2010), teacher characteristics include personality traits, knowledge, abilities, experience, values, and beliefs in executing their professional mandate. These characteristics are very important to the success and otherwise of the teaching profession. According to Orlando (2013), to be a great teacher, one must constantly work very hard to provide a nurturing and challenging environment to their students to foster maximum learning. This is because teaching is not an easy occupation, and some tutors can never be excellent and stay at a medium level of competency in teaching. For any positive progress to be made in every educational landscape, tutors must possess the characteristics discussed above. Rosemarin (2009, p.195) states, "In order to initiate and implement a major paradigm shift from a traditional school to an effective learning community, the tutors should take the position of leaders who possess the characteristics such as creativity, efficiency, flexibility, being lifelong learners, having a sense of humor, willing to take responsible risks, and having good intrapersonal and interpersonal sense and skills."

1.1. Tutors' characteristics and creativity nurturing behaviors

Being a teacher goes beyond mastery of content, planning the teaching process, and imparting knowledge to the learners. Teaching involves the manifestation of professional attitudes, improvisation of strategies, modeling students in a novel way, and imparting knowledge in a unique and creative manner. These abilities combined are termed teacher characteristics. They are at the core of every teacher and serve enormous functions as teachers interact with students, families, community members, and professional colleagues. The teachers' role in the 21st-century classroom is unabated as they are the most effective agents for change and nurturing creativity in the classroom (Sellars, 2012; Ibrahim and Don, 2014). They are fundamental to the 21st-century education system that needs to facilitate the transition process of producing a future workforce that is equipped with innovative ideas, knowledge, and skills to face the ever-expanding challenges of the current century (Karpudewan and Chong Keat, 2017). There is a demand for the improvement of students' academic achievement, which is positively linked with teachers' characteristics and age. This demand is based on credible evidence that supports teachers' professional growth and practice in nurturing creativity and could lead to the improvement of academic and behavioral outcomes for all learners (Darling-Hammond et al., 2009; Wong and Wong, 2009; Algozzine et al., 2011). It is important to note that creative nurturing behaviors are not documented like other observed abilities because they are latent in nature. Several efforts have been made previously to understand how these undistinguishable creative abilities of teachers relate to their characteristics and dispositional factors for effective instruction in the classroom (Byers-Kirsch and Bartel, 2015).

Tutors' characteristics can stimulate their attribution processes, which can serve as a driver for the development of creative mindsets. In a study, McNatt and Judge (2004) emphasized that the expectations of others can reshape and validate individuals' views about themselves. In a similar vein, Craft and Chappell (2016) argued that tutors' creative nurturing behaviors could be influenced by their attitudes. Farmer' et al. (2003) found that individual characteristics could significantly determine tutors' creative nurturing behaviors. Tutors who experience linear and caring relationships with others in the learning settings perceive themselves with a higher level of support that improves their characteristics (personal significance). This positive orientation of tutors' characteristics, in turn, makes them more favored in their professional practice. It is believed that tutors who understand

the parameters of their authority within the learning setting are provided with opportunities to exhibit creativity spontaneously, try new things comfortably, and pursue professional goals with invigorated motivation (Hunzicker et al., 2009).

1.2. Tutors' age and creativity nurturing behaviors

Research linking age and tutors' creativity nurturing behaviors appears to be scarce, inconclusive, and heterogeneous. Kinai (2013) surveyed Kenyan student teachers on creative teaching and the relationship between their gender, age, and teaching experience, and found no significant effect of teachers' age on their creativity in teaching. In another study of 70 Iranian teachers, Khodabandeh and Jamali (2019) investigated the relationship between their creative teaching behaviors and their age. Their study revealed that teachers' age did not affect their creative teaching behaviors. On the contrary, Ng and Feldman (2013) found that teachers' age was related to their creative teaching abilities, while Thurlings et al. (2015) observed that teachers' age was negatively related to their creative behaviors.

Anecdotal records and professional discussions appear to support that teaching experience may be a major contributor to the attitude of teachers toward creative teaching. Extant literature stresses the impact of teaching experience on teachers' creative teaching. For instance, Vasudevan (2010) examined the influence of teaching experience on teachers' creativity and found that it had positive effects. Similarly, Al-Nouh et al. (2014) investigated teachers' attitudes toward creativity and their perceptions of practice and noticed statistically significant differences in teachers' creative teaching based on their teaching experience. Likewise, Kettler et al. (2018) researched teachers' perceptions of creativity in the classroom in Alaska. Their study revealed that teachers' creative characteristics differed based on their experience.

Gendered impacts have remained topical in educational research on abilities like creativity. However, the findings on differences between male and female respondents regarding their creativity remain inconsistent and inconclusive (Abraham, 2016). While several studies have established higher levels of creative abilities among women (Kuhn and Holling, 2009; Cheung and Lau, 2010), some studies have found higher levels of creative abilities among men (Jiang et al., 2015). In yet another related study, no differences were observed between male and female respondents regarding their creative abilities (Lin et al., 2012).

2. The study context

It has consistently been acknowledged that teacher creativity is fundamental for churning out creative and innovative learners (Beghetto and Kaufman, 2014; Carmeli et al., 2014; Craft, 2015; Doyle, 2019). The stimulation of creativity in the classroom is an integral part of the tutor-student relationship (Sawyer, 2012; Sharma and Sharma, 2018) and is in consonance with the 21st-century learning environment. Therefore, enhancing and nurturing creative and critical thinking skills are important goals for 21st-century learning (Bloom and Doss, 2021). Nurturing creativity benefits not only the learner but stimulates a change in the tutor's delivery strategy and adds to an active learning environment (Justyna, 2016). Therefore, the teacher's creative ability is a key component of the educational process of every learner. Extant literature acknowledges teachers' creative influence as one of the major determinants of students' outcomes (Erwin and Garman, 2010; Hall et al., 2011), and this is partly supported by the bond created between teachers and their students (Kin et al., 2015). In as much as these are documented in the literature, the issue of teachers' creative nurturing behaviors being influenced by their characteristics and age appears to be less documented. Some empirical studies have found an appreciable level of creativity nurturing behaviors among teachers but factors responsible for such latent abilities appear under-explored (Sharma and Sharma, 2018; Mahama, 2022).

In the Ghanaian context, for example, creativity has been made one of the major components of the standard-based curriculum (Mahama, 2022; Ministry of Education, 2018; National Council for Curriculum and Assessment [NaCCA], 2019). The curriculum outlines how learners should be taught and how learners should learn and demonstrate what has been learnt through creative strategies. The introduction of creativity in the curriculum requires tutors to improvise and make room for teaching students to become creative in their learning expeditions. The demand for a creative learning environment has compelled tutors to shift lesson delivery from the traditional mode (teacher-centered) to a more open and blended approach that presents teacher trainees with the opportunity to come up with new ways of learning and teaching. The success or otherwise of such instructional shift on the part of tutors could be influenced by dispositional factors that may not be readily known. Therefore, the current study examines how tutors' characteristics and age determine their ability to nurture creativity in teacher trainees.

3. Materials and methods

The researchers surveyed tutors from various colleges of education using a cross-sectional design. The design was appropriate as it offered the researchers the opportunity to gather the needed data from different locations simultaneously (Ary et al., 2018). The respondents comprised both male and female tutors from 16 out of 48 public colleges of education in Ghana. The sample for the study was 340 tutors (men = 220 and women = 120). The stratified-proportionate sampling procedure was used to achieve a fair representation of participants from each selected college. In addition, the simple random technique (table of random numbers) procedure was used to select the individual participants from each college.

The tutors' characteristics were assessed with an adapted 36-item multidimensional teachers characteristics scale (teacher-student interaction = 13 items; teaching profession = 12 items; humanistic and justice = 11 items) (Yaratan and Muezzin, 2016). The teachers' creativity nurturing behavior was measured using an adapted 15-item multidimensional creativity scale (abstraction = 5 items; inquisitiveness = 3 items; motivation = 3 items; critical thinking = 4-items) (Sharma and Sharma, 2018). A pre-test was conducted with 50 participants who were selected from

two colleges that were exempted from the study sample. The purpose of this exercise was to ascertain the usability of the adapted scales in the Ghanaian context and the satisfaction of internal consistency requirements. The internal consistencies were established using Cronbach's alpha, where an index of 0.87 for teachers' characteristics and 0.85 for creative nurturing behaviors was obtained. The data gathered were cleaned for outliers and inconsistencies. In addition, statistical assumptions such as normality, linearity, multicollinearity, autocorrelation, homoscedasticity, and homogeneity of variance were tested and satisfied before the main analyses were performed.

4. Results

Several regression assumptions were considered, and all were satisfied. For instance, the normality assumption was met as cases were concentrated along the 0 point in the scatter plot. In terms of the linearity assumption, the normal probability plot produced a straight line from the bottom left part of the curve to the upper right part of the curve. Multicollinearity assumptions were met for the two independent variables as neither of them exceeded a correlation coefficient of 0.9. The homoscedasticity assumption was met with an alpha value greater than 0.05. With the autocorrelation assumption, no autocorrelation was identified as the Durbin Watson statistic ranged between 1.6 and 2.3 (Pallant, 2020).

4.1. H_1: tutors' characteristics will predict their creative nurturing behavior in teaching teacher trainees

This hypothesis focused on whether the characteristics of tutors made them engage in teaching and learning activities that facilitated the transfer of knowledge leading to trainee tutors becoming creative tutors in their future teaching profession. The predictor variable was tutors' characteristics, and the criterion variable was creative nurturing behavior.

Table 1 presents the regression results of the teacher characteristics and their creative nurturing behaviors. The results depicted a positive interaction between the constructs; there was a significant positive effect between the tutors' characteristics and their creative nurturing behaviors [$F(1,338) = 91.91$, $p < 0.000$, $R^2 = 0.214$, $R^2_{\text{adjusted}} = 0.211$]. The regression coefficient was further examined [$\beta = 0.307$, $t = 9.59$, 95% CI (0.244, 0.370)] and it showed that teacher characteristics was a significant predictor in the model. The results suggest that an increase in teacher characteristics could lead to an improvement in teachers' creative nurturing behavior with a variance contribution of 21.4%.

4.2. H_2: tutors' age will predict their creative nurturing behaviors in teaching teacher trainees

This hypothesis focused on whether the age of the tutors leads them to nurture creativity among trainee tutors for their future teaching profession. The age of the tutors was made continuous as they were asked to write their exact age. The average age of the tutors was $M_{age} = 41.79$ and $SD_{age} = 6.74$. In this test, the predictor variable was the age of the tutors while the criterion variable was creative nurturing behavior.

Table 2 shows the results of age predicting tutors' creativity nurturing behavior. There was a positive interaction between the age of tutors and creativity nurturing behaviors. The results showed a significant positive effect between the age of tutors and creative nurturing behaviors [$F(1,338) = 14.17$, $p < 0.000$, $R^2 = 0.040$, $R^2_{\text{adjusted}} = 0.037$]. The regression coefficient was further examined [$\beta = 0.207$, $t = 3.76$, 95% CI (38.86, 48.04)] and it showed that the tutors' age was a significant predictor in the model. This implied that the older the tutors were, the better their creative nurturing behavior was, with a variance contribution of 4%.

4.3. H_3: there will be significant gender differences in tutors' characteristics and their creative nurturing behaviors

This hypothesis focused on establishing differences between male and female tutors regarding their characteristics and creative nurturing behaviors. The independent samples *t*-test was used after satisfying that the data were normally distributed and ensuring adequate sample size and equality of variance.

Table 3 shows the results of the independent samples *t*-test performed for male and female tutors to explore the differences in their characteristics as tutors and their creativity nurturing behaviors. The results indicated no differences between male and female tutors. For instance, the tutor characteristics of 220 male tutors ($M = 126.14$, SD = 11.98) compared to 120 female tutors ($M = 126.00$, SD = 7.04) were not different [$t(336,136) = 0.132$, $p > 0.895$], as statistically significant results were not observed. Similarly, the creative nurturing behavior in 220 male tutors ($M = 54.41$, SD = 7.02) compared to 120 female tutors ($M = 51.58$, SD = 6.89) was not different [$t(338) = 1.043$, $p > 0.298$], as statistically significant results were not observed. These results indicated that tutors who were engaged in training teachers for Ghanaian classrooms exhibited no gender-wise differentiation in their characteristics and their ability to nurture creativity in their teacher trainees.

4.4. H_4: there will be statistically significant differences in tutors' characteristics and their creative nurturing behaviors based on their teaching experience

The aim of this hypothesis was to test for potential differences in tutors' characteristics and their creative nurturing behaviors toward teacher trainees based on their teaching experience (1–10, 11–20, 21–30, and 31 years and above). In testing the hypothesis, the One-Way ANOVA (between groups) was performed, where assumptions were tested, and interpretations offered. See Tables 4, 5.

TABLE 1 Linear regression results.

Variables	*R*	R^2	Adj. *R*	B	S.E	*T*	*F*	Sig.	*P*
TC*CNB	0.462	0.214	0.211	0.307	0.032	9.59	91.91	0.000	0.000

CNB, creativity nurturing behavior; TC, tutors' characteristics.
*Interaction between the variables that were used for the regression analysis.

TABLE 2 Linear regression results.

Variables	*R*	R^2	Adj. *R*	B	S.E	*T*	*F*	Sig.	*P*
Age*CNB	0.201	0.040	0.037	0.207	0.055	3.76	14.17	0.000	0.000

CNB, creativity nurturing behavior.
*Interaction between the variables that were used for the regression analysis.

TABLE 3 Gender difference in tutors' characteristics and their creative nurturing behaviors.

Variable	Sample	Mean	SD	*t*	df	*F*	Sig.	*P*
Creative nurturing behavior								
Male	220	52.41	7.02	1.043	338	0.149	0.699	0.298
Female	120	51.58	6.89					
Tutors' characteristics								
Male	220	126.14	11.98					
Female	120	126.00	7.04	0.132	336.136	21.219	0.000	0.895

Table 4 shows the results of the homogeneity of variance, where the Welch F (CNB = sig. < 0.000, TC = sig. < 0.012) test was reported at the expense of ANOVA F due to the violation of the assumption. Extant literature supports the choice of the Welch F test as the most appropriate test to report for a violated homogeneity of variance assumption in the ANOVA test (Field, 2013; Pallant, 2016), hence its applicability in this study was supported. Following this step, the ANOVA results were examined for any significant difference or otherwise.

Table 5 shows the ANOVA results regarding any possible significant difference in creative nurturing behavior and tutor characteristics based on the number of years of teaching experience of the tutors. The results in Table 5 show that there were significant differences in creative nurturing behavior [$F(3,336) = 45.04$, $p < 0.000$] based on the number of years of teaching experience of the tutors but no significant differences were observed in tutor characteristics [$F(3,336) = 0.99$, $p > 0.396$]. The effect size, established using the partial eta squared, was 0.29, signifying a medium effect. Because of the possible significant differences identified in ANOVA results, it was essential to ascertain which variables were responsible, so results for the *post hoc* Multiple Comparisons were examined.

Table 6 shows the results of the *post-hoc* test. The Tukey HSD test revealed differences in creativity nurturing behavior among tutors with varying years of teaching experience. Tutors whose teaching experience was 31 years and above ($M = 64$, SD = 13.97) were the only group that had higher creativity nurturing behavior than those whose teaching experience ranged between 21 and 30 years ($M = 52.00$, SD = 1.24) and those with teaching experience between 11 and 20 years ($M = 50.56$, SD = 5.33). This implied that a longer service experience as a tutor aided in fostering creative nurturing activities among trainee tutors so that they can, in turn, recreate a creative environment in their classrooms on completion of their academic programmes.

TABLE 4 Robust tests of equality of means.

Dependent variables		Statistic	df1	df2	Sig.
Creative nurturing behavior (CNB)	Welch	11.519	3	102.652	0.000
	Brown-Forsythe	23.583	3	36.795	0.000
Tutors' characteristics (TC)	Welch	3.828	3	114.542	0.012
	Brown-Forsythe	1.365	3	197.919	0.255

5. Discussion

It is worth noting that tutor characteristics such as good teacher-student interaction, their zeal for being teachers, and humanistic and just behaviors could serve as enablers for creative ideas and strategies (e.g., abstraction, inquisitiveness, motivation, and critical thinking) in their professional life. In the current study, we found that tutors' characteristics determined their creative teaching and creativity nurturing behaviors in the teaching and learning environment. For instance, by adopting an engaging classroom presence strategy which values real-world learning, these tutors can exchange best practices and develop a lifelong love for learning among learners. As a result, these tutors can engage their students in advanced cognitive skills such as problem-solving, critical thinking, and knowledge transfer among several subjects or programmes. The finding of the current study is confirmed in the existing literature. For example, Craft and Chappell (2016) found that tutors' creative nurturing behaviors could be influenced by their attitudes and characteristics while Farmer' et al. (2003) study corroborated with the assertion that individual characteristics of tutors could influence their creative nurturing behaviors.

Furthermore, the tutors' age appears critical to their adoption of creative teaching and creative nurturing among their students,

TABLE 5 ANOVA results.

Dependent variables		Sum of squares	df	Mean square	*F*	Sig.
Creative nurturing behavior (CNB)	Between groups	4, 730.85	3	1, 576.95	45.04	0.000
	Within groups	11, 764.44	336	35.01		
	Total	16, 495.29	339			
Tutor characteristics (TC)	Between groups	328.19	3	109.40	0.99	0.396
	Within groups	37, 019.17	336	110.18		
	Total	37, 347.35	339			

TABLE 6 Multiple comparisons.

Dependent variable		(I) Years of teaching	(J) Years of teaching	Mean difference (I−J)	S.E	Sig.	95% confidence interval	
							Lower bound	Upper bound
CNB	Tukey HSD	1.00	2.00	0.78	0.76	0.739	−1.19	2.75
			3.00	−0.67	1.12	0.934	−3.57	2.24
			4.00	−12.67*	1.24	0.000	−15.89	−9.45
		2.00	1.00	−0.78	0.76	0.739	−2.75	1.19
			3.00	−1.44	1.03	0.502	−4.11	1.23
			4.00	−13.44*	1.17	0.000	−16.46	−10.43
		3.00	1.00	0.67	1.12	0.934	−2.24	3.57
			2.00	1.44	1.03	0.502	−1.23	4.12
			4.00	−12.00*	1.43	0.000	−15.69	−8.31
		4.00	1.00	12.67*	1.25	0.000	9.45	15.89
			2.00	13.44*	1.17	0.000	10.43	16.46
			3.00	12.00*	1.43	0.000	8.31	15.69

*Interaction between the variables that were used for the regression analysis.

and this is evident in the current study. This finding is supported and refuted by the available literature. For instance, Kinai (2013) has debunked the influence of tutors' age on tutors' creativity in teaching. On the other hand, the finding from Ng and Feldman (2013) study supports the current study's results where tutors' age is related to their creative teaching abilities.

Surprisingly, differences in gender and tutors' characteristics and their creative nurturing behaviors were not observed. This finding reaffirmed several previous assertions that gender differences and professional abilities in tutors appear inconclusive. Our finding corroborated the study by Lin et al. (2012) that found no difference between male and female tutors in their characteristics and creative potential. Although differences in gender concerning their abilities may exist, such discussions should consider their context than generalize such observations (Sari and Basarir, 2016; Zaky et al., 2020). In this regard, stakeholders and academic scholars should be cautious in comparing male and female tutors when it comes to the teaching profession. Such comparisons may be unhealthy for either gender and generate unnecessary debates that may divert attention from topical issues that could enhance the teaching profession positively.

Tutors' teaching experience is one of the important factors that is considered when considering variables that could predict tutors' positive characteristics and potential to nurture students creatively. Some scholars have advocated that the longer the tutor's experience, the better the tutor's behavior when it comes to professional teaching in the 21st-century classroom. Such assertions may not be the case for all tutors' professional behaviors like their characteristics and creative teaching. For instance, in this study, we found that teaching experience influenced tutors' creativity nurturing behaviors but not their characteristics in the classroom, and even in this context only tutors with teaching experience of 31 years and above were likely to exhibit a creative potential in their teaching and not those with fewer years of teaching experience. This finding is supported by some studies which have also found teaching experience to predict the creative potential of tutors (Vasudevan, 2010; Al-Nouh et al., 2014; Kettler et al., 2018). Therefore, we recommend a cautious approach when comparing tutors' abilities with their experience as a focal point. Scholars should be aware that abilities are dynamic and experiences may sometimes be just the accumulation of years and not necessarily an accumulation of proper practice of the teaching profession. Therefore, generalized assumptions such as the teaching experiences of tutors as the best determinant of their ability to nurture the creative potential in students should be avoided.

6. Conclusion

The findings of this study have revealed that tutors' characteristics and age are two key drivers of their creative

abilities in the 21st-century classroom. Even whilst tutors exhibit appreciable dispositions and characteristics they still need to improve their ability to nurture learners or students creatively. After gaining 31 or more years of teaching experience, their zeal and motivation to nurture creativity in their learners or students would be high, as they may then have the skill to improvise and find new ways of meeting the professional requirements of their future classrooms. Though improvisation may be subtle it is one of the key promoters of the creative abilities of tutors in a dynamic 21st-century learning setting.

7. Implications for policy and practice

To equip tutors for the learning demands of the future and for learner development, senior leadership in teacher training institutions must cultivate appreciable characteristics and dispositions among their tutors so that they can use that to nurture trainee teachers. Such characteristics encourage tutors to have positive self-esteem, value themselves, and show proficiency in their profession. These qualities combined create the self-confidence, enthusiasm, and determination necessary for tutors to successfully lead the process of training contemporary teachers. The management in colleges of education should empower their tutors and encourage them to invest time in honing their skills as these could help in their creative abilities. Issues relating to job turnover should be addressed so that experienced tutors are available to nurture creativity among trainee teachers.

Data availability statement

The original contributions presented in this study are included in the article/**Supplementary material**, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the Institute of Educational Research, University of Education, Winneba. The patients/participants provided their written informed consent to participate in this study.

Author contributions

IM conceptualized the idea and shared it with DD and PE. IM wrote the draft. DD analyzed the data. PE discussed the findings. All authors worked on all the sections from the beginning to end and contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2023.1078017/full#supplementary-material

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