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Exploring the Professional Knowledge Competence of Middle-Level School Citizenship Education Teachers in West Gojjam Administrative Zone, Ethiopia

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Abstract

Ethiopia has incorporated citizenship education (CED) into its school curricula, recognizing the importance of fostering competent and responsible citizens. However, the subject teachers' professional knowledge competence (PKC) remains a contentious issue in the country over the years. Therefore, this study sought to explore the PKC of teachers responsible for teaching CED in the West Gojjam administrative zone of Ethiopia, taking into account some selected demographic factors. Descriptive and inferential statistics were employed to analyse quantitative data collected from 260 CED teachers working in government middle-level schools. The findings revealed that male teachers had better competence in content knowledge (CK) compared to female teachers, with a very small effect size (d = 0.18). A statistically significant difference was found among teachers' PKC and CK scores based on teaching experience, with F (3, 253) = 1.92, p = .029, and F (4, 255) = 3.00, p = .019, respectively. Experienced teachers demonstrated better CK and PKC than novice teachers. Thus, it can be concluded that gender influences teachers' CK, while years of teaching experience impact both teachers' CK and overall PKC. The study suggests encouraging training that promotes gender equity in education and establishing mentorship that pairs experienced teachers with those who are less experienced.

Keywords: citizenship education, content knowledge, pedagogical knowledge, pedagogical content knowledge

1. Introduction

Teacher competence is crucial for student learning outcomes, as it allows teachers to effectively manage their daily responsibilities and manage the complex task of teaching (Jentsch & König, 2022). Teachers who meet the requirements of professional teaching competence prepare various activities and effectively realize the desired outcomes (Dahnial et al., 2017). Professional teachers must therefore possess strong and effective competence to maximize their position and role in the

teaching-learning process (Japar & Fadhillah, 2019).

Teachers' competence is a combination of abilities, knowledge, attitudes, and values that influence their thoughts and behaviors (Caena, 2011). According to Wordu and Isiah (2020), teachers in the 21st century must possess the necessary knowledge, skills, and values to effectively promote active student participation and foster a democratic learning environment. They must also be knowledgeable about what, when, and how to teach (Shulman, 1987). Even though teachers' competence is a multifaceted concept (Baumert & Kunter, 2013), researchers and institutions (e.g., AITSL, 2011; Misra, 2021; UNESCO, 2019) have categorized it into three fundamental domains: professional knowledge (PK), professional practice (PP), and professional engagement (PE). The Ethiopian Ministry of Education has adopted these categories to establish the standards of instruction that teachers can strive to enhance high-quality and equitable education for all (MoE, 2019).

Teachers' PK has been viewed as an essential prerequisite for the professional success of a teacher (Zlatkin-Troitschanskaia et al., 2016), as it influences teachers' actions, behaviors, instructional designs, and interactions with students (Cauet et al., 2015). Teachers' PK is the set of concepts and competencies that teachers need to address classroom, pedagogical, and context-based issues (Cauet et al., 2015). On the other hand, according to Kawuryan et al. (2021), a teacher's PK consists of both subject-matter knowledge and knowledge of broad pedagogical concepts and skills. Shulman (1986), who is regarded the pioneer of teacher PK, emphasized the value of combining subject-matter knowledge and pedagogical concepts to enhance students' learning experiences. As a result, many researchers (e.g., Baumert et al., 2010; Cauet et al., 2015) have built upon the foundational ideas of Shulman (1987), specifically focusing on three components of PK: content knowledge (CK), pedagogical knowledge (PdK), and pedagogical content knowledge (PCK). According to the teachers' PK theory of Shulman (1987), the key components of being an effective teacher include CK, PdK, and PCK. This theory suggests that effective teaching in education relies on an amalgamation of CK, PdK, and an understanding of how these two areas intersect, which is referred to as PCK (Koehler et al., 2013).

When it comes to citizenship education (CED), teachers' knowledge is crucial for effective curriculum planning and development, as it influences the teaching and learning process. This understanding helps CED teachers clutch the subject matter, curriculum goals, and the key objectives behind the lessons (Nogueira & Moreira, 2012). Because CED teachers' knowledge has an immense impact on the teaching and learning process, their contribution to the advancement of CED is crucial and cannot be understated. Additionally, teachers knowledge plays a crucial role in implementing CED curricula (Latifah, 2021) and fulfilling the moral and social responsibility of preparing informed citizens (Mhlauli, 2012). Teachers' knowledge of content and pedagogy must be suited to the subject matter since CED teachers are expected to integrate different knowledge domains in their lessons or activities (Nogueira & Moreira, 2012). Additionally, the knowledge of CED teachers in three areas

of PK—CK, PdK, and PCK—plays a part in ensuring effective teaching and learner transformation, adapting teaching methods to meet student interests and promoting profound learning opportunities (Mufalo, 2021).

CK includes both knowledge derived from CED content specified in the school system and knowledge from other relevant resources not explicitly outlined in the CED syllabus. This knowledge minimizes classroom distractions and facilitates comprehension, making lessons clear and accessible to students (Mufalo, 2021). Additionally, CED teachers need to adopt PdK to facilitate an effective learning process (Latifah, 2021; Nogueira & Moreira, 2012). For CED teachers, PdK includes the ability to design lessons, use different teaching methods, understand classroom management strategies, and apply assessment techniques. This knowledge helps them identify any deficiencies in teaching and learning and implement appropriate remedial measures (Mufalo, 2021). PCK in the context of CED refers to the teachers' competence to integrate CK, PdK, and CED knowledge in ways that make the subject matter understandable and engaging for students (Mufalo, 2021). PCK is essential for CED teachers to transform a particular subject and to instruct in a way that is interesting, useful, and efficient. CED teachers' effectiveness in presenting the lesson to students comprehensibly depends on their PCK (Nogueira et al., 2010).

1.1 Context of the Study

The curiosity to cultivate responsible citizens through formal education led to renewed global attention in CED in the 1990s, particularly in Western and other world countries (Alharbi, 2017). CED in Ethiopia, as in many other parts of the world, has gained significant attention since the 1990s, largely due to major socio-political developments (Tafese, 2018). Due to its exquisite values in producing a patriot and nationalist at the same time and addressing a new concept of curriculum—unity in diversity—CED needs to become both a cross-curricular issue and a separate school subject (MoE, 2018). Accordingly, CED fosters principles and social norms that enable people to coexist peacefully in this diverse society and persistently strive toward the realization of the common good. In addition, it seeks to foster attitudes and knowledge that uphold essential values such as equality, fairness, respect, unity, liberty, and freedom (MoE, 2020). With these intentions, competency-based CED in middle-level and secondary schools has been given due eminence in the country (MoE, 2018, 2020).

However, the subject has not been implemented in schools as effectively as it was expected to be (Abebe, 2010; MoE, 2007). Furthermore, research by Tekalign et al. (2017) acknowledged that CED has not yet produced the expected outcomes and attributed the issue in part to teachers' incapacity. The observed outcomes stemmed from either the subject’s failure to effectively instigate the desired changes in student behavior or the CED teachers' lack of instructional competence in their classrooms (Bayeh, 2016; Tafese, 2018) as cited in Habte et al. (2021).

In view of the evidence summarized in the previous literatures, to ensure that the learning process is conducted as efficiently as possible, CED requires teachers to have both subject matter and pedagogical

knowledge competence. However, the practical knowledge and pedagogies used by CED teachers are often overlooked (Jennings, 2003). This claim was further supported by Nogueira and Moreira (2012), who noted that there is a general lack of empirical research on teachers' knowledge regarding CED and that more thorough studies in this area are required. Some previous studies have focused on either CED teachers' personality competencies (Latifah, 2021), pedagogy (Evans, 2004), pedagogical beliefs and classroom practices (Habte et al., 2021), or technology based PCK (Dahnial et al., 2023) separately. This pointed out a noticeable gap in comprehensive research on teachers' PKC, including CK, PdK, and PCK in the context of CED. Furthermore, while several studies have explored different aspects of teachers' knowledge, none has specifically analyzed the PKC of CED teachers in relation to their demographic characteristics.

Therefore, we assumed that factors such as gender (male/female), educational qualifications (graduate degree/diploma), workplace (urban/rural), and years of teaching experience could influence the PKC of government middle-level school CED teachers. As a result, the purpose of this study was to investigate the PKC (CK, PdK, and PCK) of teachers who are responsible for teaching CED in the government middle-level schools (grades 7 and 8) within the West Gojjam administrative zone of Ethiopia vis-à-vis selected demographic variables. In light of this, this study sought to answer two basic questions.

I. To what extent are CED teachers competent in their professional knowledge in terms of their Content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK)?
II. Do citizenship education teachers have statistically significant differences in professional knowledge competence (PKC) with respect to gender, educational qualifications, workplace, and teaching experience?

2. Methodology of the Study

The main purpose of this study was to assess the extent to which government middle-level school CED teachers were competent in professional knowledge (PK). To this end, a quantitative research approach with a descriptive survey design was employed, as a survey design provides a quantitative description of trends, attitudes, and opinions of a population or tests for associations among variables (Creswell & Creswell, 2017).

2.1.Population and Sampling Procedures

A multistage sampling method was employed to select participant CED teachers from the administrative zone. This method involves selecting smaller group samples at each stage from a large population and geographically dispersed groups (Sedgwick, 2015). Initially, six of the West Gojjam administrative zone's sixteen woredas/districts were chosen via a simple random sampling technique. Of the 282 government middle-level schools that were found in the randomly selected sample woredas, 183 were selected through proportional and stratified random sampling techniques by dividing schools into urban and rural locations. The selected schools covered 65 % of the total because a larger sample size would improve

population representation or reduce sampling error (Dattalo, 2008). In the end, a total of 271 CED teachers were embraced from sample schools via the comprehensive sampling technique, as there were few CED teachers in each selected government middle-level school. Although a questionnaire was distributed to 271 sample CED teachers, eight questionnaires were not returned, and three more were abandoned because they were fragmentary. Hence, the results of the data analysis and its subsequent discussion were presented based on properly filled and returned 260 copies with a 95.9% return rate.

2.2.Methods of Data Collection

As the aim of this study was to investigate the professional knowledge competence (PKC) of CED teachers, the professional competence standard for teachers, developed by the Australian Institute for Teaching and School Leadership (AITSL, 2011) and further adopted by the Ministry of Education (MoE, 2019) was used. Hence, the Ministry of Education (MoE, 2019) served as the source for the closed-ended questionnaire items regarding teachers' PKC, which were then modified. The conceptions about PKC refer to the competence held by CED teachers in terms of CK, PdK, and the blending of these two components, that is, PCK. The PKC had 13 items with three subscales: CK, PdK, and PCK. CK was assessed with five items, PdK with five items, and PCK with three items, all of which were measured using the self-report instrument. All the items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) to indicate respondents' degree of agreement and disagreement regarding CED teachers' PKC, with a specific hub on CK, PdK, and PCK.

2.3.Validity and Reliability of Instruments

2.3.1. Validity

To be aware of whether the data-gathering instruments truly measure the extent to which government middle-level school CED teachers are competent in PK, face and content validity were employed. As a result, one professor and three PhD teachers at Bahir Dar University were asked to check whether the questionnaire items were logical, straightforward/understandable, practical, clear, readable, and uniform in style and format. As Patel and Desai (2020), the validity of the data-gathering instruments is examined prior to the distribution of the final questionnaire to the sample. Thus, instrument validation was done ahead of time. The questionnaire items were adjusted based on the comments received, translated into Amharic by researchers, and then reviewed by two language experts.

2.3.2. Reliability

Once the adjusted questionnaire items were translated into Amhraic and reviewed by experts, a pilot study was conducted with 40 CED teachers from eight-government middle-level schools, who were not part of the sample, to identify incomprehensible items. Participants were provided with a questionnaire to help them comprehend the purpose of the pilot study and indicate areas for improvement and lucidity. Statistical Package for Social Sciences (SPSS) software (version 26) was used to determine the internal consistency of the questionnaire items. The Cronbach's alpha reliability coefficient of the overall PKC items was $\alpha = .865$. Additionally, $\alpha =$

0.826 for CK, α = 0.810 for PdK, and α = 0.745 for PCK were determined for the reliability coefficients, all of which were in the optimal range (0.7–0.8) (Singh, 2007). On the other hand, Hinton et al. (2014) proposed four reliability cut-off points: low reliability (0.50 and below), moderate reliability (0.50– 0.70), high reliability (0.70– 0.90), and excellent reliability (0.90 and above). Additionally, according to Straub et al. (2004), Cronbach's alpha reliability ought to be at least 0.60.

2.4.Data Analysis

The researchers employed both descriptive and inferential statistics. For descriptive statistics, the researcher used means, percentages, and standard deviations. One sample t-test, an independent sample t-test, and a multivariate analysis of variance (MANOVA) were employed for inferential statistics. More specifically, a one-sample t-test was used to determine the extent to which government middle-level school CED teachers were competent in overall PKC. An independent sample t-test was employed to investigate whether government middle-level school CED teachers have significant differences in CK, PdK, PCK, and overall PKC with respect to their gender, educational qualifications, and workplace. Multivariate analysis of variance (MANOVA) with post hoc analysis was used to see whether government middle-level school CED teachers have significant differences in CK, PdK, PCK, and overall PKC based on their years of teaching experience.

3. Results of the Study

3.1. Descriptive Findings on the Demographic Characteristics of the Respondents

The participants of the study consisted of CED teachers (n = 260) who were working at government middle-level schools in the West Gojjam administrative zone, Ethiopia. The data gathered from these participants were analyzed based on their gender, educational qualifications, workplace, and teaching experience. As shown in Table 1, from the total of 260 respondents, 149 (57.3%) respondents were males and 111 (42.7%) were females. This percentage was similar to that of the population of the study, where 58.7% of CED teachers in government middle-level schools were male and 41.3% were female. This pointed out that more male CED teachers are being employed in the government middle-level schools compared to female CED teachers, which in turn indicates that there is gender disparity in the employment of teachers. With respect to the experience of the respondents, the majority (33.5%) of them had between 11 and 15 years of teaching experience at the school level, followed by 29.2% (16–20 years). In terms of educational qualifications, of the total (260) respondents, 63.8% had diplomas, whereas 36.2% had graduate degrees, suggesting that the blueprint intended to guide CED has yet to be implemented Moreover, the majority of government middle school CED teachers (65.8%) were from rural schools, whereas 34.2% were from urban schools.

3.2.CED Teachers' Professional Knowledge Competence (PKC)

The study aimed to investigate the competence of government middle-level school CED teachers in PK overall, with a specific focus on CK, PdK, and PCK

Table 1. Descriptive Findings on the Demographic Characteristics of the Respondents.

Categories	Groups	Frequency	Percent	Categories	Groups	Frequency	Percent
Gender	Female	111	42.7	**Educational Qualifications**	Diplom	166	63.8
	Male	149	57.3		Degree	94	36.2
	Total	260	100		Total	260	100
Teaching Experience	1-5	18	6.9	**Workplace**	Rural	171	65.8
	6-10	30	11.5		Urban	89	34.2
	11-15	87	33.5		Total	260	100
	16-20	76	29.2				
	21 and	49	18.8				
	Total	260	100				

To achieve this objective, a one-sample t-test was utilized to assess whether the mean for any sub-scale exhibited a statistically significant difference from the expected mean of 3.0. The analysis displayed the observed and predicted mean values of CED teachers to identify significant variations. The presence of significant competence is indicated when the grand mean surpasses the predicted mean, whereas the absence of significant competence is suggested when the grand mean falls below the expected mean. The results of the study were presented, in which the prevailing teachers' competence in PK was based on their highest mean score on the questionnaire.

As can be seen in Table 2, the observed means of each PK subscale competence were calculated to determine whether they significantly different from expected mean of 3.0 at a significant level of ($P < 0.05$). The results indicated that the observed mean scores for middle-level school CED teachers' competence in CK (M = 4.08, STD = 0.61843), PdK (M = 3.9854, STD = .56290), PCK (M = 4.1846, STD = .55432), and overall PKC (M = 4.0833, STD = .45841) were all significantly higher than the expected mean of 3.0 ($p < .001$). Therefore, the one-sample t-test results revealed that CED teachers in government middle-level schools had a high level of PKC. Furthermore, the results of the one-sample t-test revealed a value of t = 106.379 for CK, 114.164 for PdK, 121.726 for PCK, and 143.631 for overall PKC, with 259 degrees of freedom for each with a $P < 0.001$ significant level, indicating that there was no significant difference between the observed mean and expected mean.

Table 2. CED Teachers' Professional Knowledge Competence.

Variables	t	Df	Observed Mean	Mean Difference	Std Deviation	Sig. (2-tailed)
CK	106.379	259	4.0800	4.08000	.61843	.000
PdK	114.164	259	3.9854	3.98538	.56290	.000
PCK	121.726	259	4.1846	4.18462	.55432	.000
PKC	143.631	259	4.0833	4.08333	.45841	.000

Note. CK=content knowledge, PdK= pedagogical knowledge, PCK= pedagogical content knowledge, PKC = overall professional knowledge competence, df = degree of freedom

3.3. Comparing CED Teachers' PKC Based on Their Demographic Variables

An independent-sample t-test was conducted to compare the overall PKC scores of middle-level school CED teachers, with a specific focus on CK, PdK, and PCK scores, in relation to their gender, educational qualifications, and workplace. If the value in the Sig. (2-tailed) column is equal to or less than 0.05, there is a significant difference in the mean scores on the dependent variable for each of the two groups. In contrast, if the value is above 0.05, there is no significant difference between the two groups (Pallant, 2010).

As explained in Table 3, the results of the independent sample t-test revealed that there was a significant difference in the mean scores for males (M = 4.1718, SD = .60494) and females (M = 3.9568, SD = .61756; t = 2.810, df = 258, p < 0.005 sig. (2-tailed) for CK competence. The mean score difference between males and females in terms of CK competence was determined to be .21506, with a very small effect size value (d = 0.18). However, no significant difference was observed in the mean scores for male and female CED teachers (p > .828 sig. (2-tailed) for PdK competence, (p > .734 sig. (2-tailed) for PCK competence, and (p > .231 sig. (2-tailed) for overall PKC. Thus, the independent sample t-test result showed that while male CED teachers at government middle-level schools were found to have better CK competence compared to female teachers, the PdK, PCK, and overall PKC were found to be the same for both genders of CED teachers. Furthermore, the independent sample t-test result revealed no significant difference in the mean scores for graduate degree and diploma CED teachers (p > .549 sig. (2-tailed) for CK; (p > .496 sig. (2-tailed) for PdK; (p > .075 sig. (2-tailed) for PCK; and (p > .206 sig. (2-tailed) for overall PKC. Similarly, no significant difference was observed in the mean scores for urban and rural CED teachers (p > .091 sig. (2-tailed) for CK; (p > .417 sig. (2-tailed) for PdK; (p > .953 sig. (2-tailed) for PCK; and (p > .246, sig. (2-tailed) for overall PKC. Accordingly, the findings showed that the CK, PdK, PCK, and overall PKC of government middle-level school CED teachers were not impacted by differences in educational background and place of employment.

3.4. Multivariate Tests of CED Teachers' PKC Based on Their Years of Teaching Experience

Teachers' working experience (1–5 years, 6–10 years, 11–15 years, 16–20 years, and > 21 years) served as another independent variable. Comparisons were made among government middle-level school CED teachers regarding their overall competence in PK, as well as in CK, PdK, and PCK. A one-way multivariate analysis of variance (MANOVA) with a post hoc test was used for this analysis.

As shown in Table 4, there was a statistically significant difference among government middle-level school CED teachers on PKC with respect to their teaching experience

Table 3. Comparing CED Teachers' PKC Based on Their Demographic Variables

	Sub Scale	Variable	N	Mean	Std. Deviatio	t	Df	Sig. Value	Sig. (2-tailed)	Cohen's d
Gender	CK	Male	149	4.1718	.60494	2.810	258	.532	.005	0.18
		Female	111	3.9568	.61756					
	PdK	Male	149	3.9919	.57181	.217	258	.963	.828	0.01
		Female	111	3.9766	.55317					
	PCK	Male	149	4.1745	.58070	-.340	258	.140	.734	0.02
		Female	111	4.1982	.51909					
	PKC	Male	149	4.1128	.46052	1.2	258	.648	.231	0.075
		Female	111	4.0438	.45464					
Educ. Qualification	CK	Degree	94	4.1106	.64898	.600	258	.590	.549	0.036
		Diploma	166	4.0627	.60176					
	PdK	Degree	94	4.0170	.58118	.681	258	.294	.496	0.04
		Diploma	166	3.9675	.55325					
	PCK	Degree	94	4.2660	.51170	1.788	258	.443	.075	0.11
		Diploma	166	4.1386	.57344					
	PKC	Degree	166	4.1312	.46509	1.269	258	.459	.206	0.08
		Diploma	94	4.0562	.45375					
Workplace	CK	Urban	89	4.1753	.68875	1.700*	152.864	.012	.091	0.105
		Rural	171	4.0304	.57436					
	PdK	Urban	89	4.0247	.53752	.812	258	.452	.417	0.05
		Rural	171	3.9649	.57614					
	PCK	Urban	89	4.1873	.48188	.069*	212.022	.022	.953	0.004
		Rural	171	4.1832	.58985					
	PKC	Urban	171	4.1291	.47579	1.162	258	.214	.246	0.072
		Rural	89	4.0595	.44867					

Note. * $p < 0.05$ level of Levene's test.

F (3, 253) = 1.92, p = .029; Wilks' Lambda = .91; partial eta squared = .029. Furthermore, a one-way between-groups analysis of variance revealed a significant difference among CED teachers in their CK competence, as F (4, 255) = 3.0, p = .019, with a partial eta squared value of .045. However, no statistically significant difference was identified among CED teachers in their PdK, i.e., F (4, 225) = 1.737, p > .42, and PCK, i.e., F (4, 255) = 1.541, p > .191. Once significant differences occurred, post hoc tests were employed to identify significant differences among teaching experience groups (group one: 1–5 years, group two: 6–10 years, group three: 11–15 years, group four: 16–20 years, and group five: above 21 years) in CK, PdK, PCK, and overall PKC.

As the MANOVA post hoc comparison results explained in Table 5, with respect to CK competence, teachers with 1–5 years of teaching experience (M = 3.8111, SD = .56349) were compared with teachers with 6–10 years of teaching experience (M = 4.2133, SD = .62573),and a statistically significant difference was found between them (sig. = .028, i.e., p < 0.05).

Table 4. Multivariate Tests of CED Teachers' PKC Based on Their Years of Teaching Experience.

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.983	4969.009[b]	3.000	253.000	.000	.983
	Wilks' Lambda	.017	4969.009[b]	3.000	253.000	.000	.983
	Hotelling's Trace	58.921	4969.009[b]	3.000	253.000	.000	.983
	Roy's Largest Root	58.921	4969.009[b]	3.000	253.000	.000	.983
Experience	Pillai's Trace	.088	1.920	12.000	765.000	.029	.029
	Wilks' Lambda	.914	1.920	12.000	669.667	.029	.029
	Hotelling's Trace	.091	1.914	12.000	755.000	.030	.030
	Roy's Largest Root	.052	3.291[c]	4.000	255.000	.012	.049

Similarly, teachers with 1–5 years of teaching experience were compared with those with 11–15 years of teaching experience (M = 4.2161, SD = .59394), and a statistically significant difference was found between them (sig = .011, i.e., $p < 0.05$). These findings indicated that teachers with 6–15 years of teaching experience demonstrated stronger CK competence compared to those with 1–5 years of experience. Similarly, with respect to overall PKC, a statistically significant difference was found between teachers with 1–5 years of teaching experience (M = 3.9000, SD = .40118) and teachers with 11–15 years of teaching experience (M = 4.1890, SD = .39980), with sig. = .015, $p < 0.05$.

Table 5. Post Hoc Comparison of CED Teachers' PKC Based on Their Teaching Experience.

DV	I (WE)	(J) WE	MD (I-J)	Mean	Std. Error	Sig.
CK	1-5 mean (3.81)	6-10	-.4022*	4.2133	.18159	.028
		11-15	-.4050*	4.2161	.15771	.011
		16-20	-.1652	3.9763	.15966	.302
		above 21	-.2052	4.0163	.16787	.223
PdK	1-5 Mean (3.8889)	6-10	-.0111	3.9000	.16688	.947
		11-15	-.1824	4.0713	.14493	.209
		16-20	-.1453	4.0342	.14672	.323
		above 21	.0440	3.8449	.15427	.776
PCK	1-5 mean (4.0)	6-10	-.0667	4.0667	.16458	.686
		11-15	-.2797	4.2797	.14294	.051
		16-20	-.1886	4.1886	.14470	.194
		above 21	-.1497	4.1497	.15214	.326
PKC	1-5 (3.9)	6-10	-.1600	4.0600	.13528	.238
		11-15	-.2890*	4.1890	.11749	.015
		16-20	-.1664	4.0664	.11894	.163
		above 21	-.1036	4.0036	.12506	.408

Note. * $p < 0.05$. DV = dependent variable, WE = working experience, MD = mean difference, Std = standard deviation, and sig = significance (p)

4. Discussion

This study attempted to investigate the government middle-level school CED teachers' PKC (CK, PdK, and PCK) in the West Gojjam administrative zone of Ethiopia. The study also sought to determine if the demographic characteristics of CED teachers such as

gender, workplace, educational qualifications, and teaching experience have an impact on their PKC. To this end, two specific research questions were devised: The succeeding section provides discussions of the findings related to these two research questions.

The first question was intended to highlight the extent to which government middle-level school CED teachers are competent in PK and its subscales: CK, PdK, and PCK. It has been believed that PK in its entirety is essential to attaining effective instructional quality, which ultimately leads to student achievement (Diez, 2010). It comprises CK, PdK, and PCK (Shulman, 1987), which all are considered crucial components for an effective teachers' PKC. Consistent with this, the findings of the current study revealed that CED teachers in government middle-level schools have a high level of joint PKC (the weighted sum of CK, PdK, and PCK competence scores). The mean scores for these decisive components of PKC were substantially higher than the predicted mean of 3.00, indicating that CED teachers in government middle-level schools not only understand the content but also know how to deliver it in a way that is engaging, effective, and response to the diverse needs of students. This aspect of their competence is supported by Nogueira and Moreira (2012), who concluded that CED teachers are expected to integrate different knowledge domains into their lessons or activities because teachers need to be knowledgeable about successful teaching in order to be effective.

With respect to CK, CED teachers demonstrated their comprehension of the subject matter and other related concepts, including rules and principles as well as social, cultural, and economic contexts. The mean scores for these issue items were higher than the predicted mean (3.00). This outcome is consistent with Mishra and Koehler (2006), who argued that teachers must be aware of the content they are going to teach and how different content areas require different types of knowledge. This also aligns with Bold et al. (2017), who highlighted that teachers must possess CK because it is an essential prerequisite for effective instruction. More specifically, in the context of CED, Nogueira and Moreira (2012) affirmed that knowledge of the subject is a precondition for CED teachers. Teachers need to be informed of the pertinent subject matter covered in CED. Being aware of the CK component in CED is crucial for a successful teaching and learning process. This is also compatible with previous research by Alscher et al. (2022), which emphasized that teachers significantly influence CED teaching by adjusting content to meet students' needs and adapt to the official curriculum.

Concerning the PdK of CED teachers, the analysis revealed CED teachers' commitment to understanding student skills, providing appropriate explanations, selecting appropriate teaching methods, and implementing instruction based on learners' knowledge. The mean scores for these issue items surpassed the hypothesized mean of 3.00, indicating that CED teachers have knowledge about pedagogical expertise. This is in line with the previous study by Adeyemi (2019), which demonstrated that 80% of CED teachers have adequate levels of PdK. CED teachers need to be pedagogically competent to ensure smooth learning and prepare future citizens (Latifah, 2021). Apart from that, knowledge of the

pedagogical approach must be tailored to CED and engage in critical and participatory citizenship activities or projects. This is also supported by researchers and institutions in that teaching and learning about CED must have a strong emphasis on an interactive and participatory approach (Kerr, 1999; MoE, 2020).

As far as PCK was concerned, CED teachers exhibited their understanding of how to present CED lessons in a way that makes them comprehensible to students, addressed students' learning difficulties, and provided examples to enhance their understanding of concepts. The mean scores for these issues were higher than the predicted mean of 3.00, indicating that CED teachers at government middle-level schools are combining CK with PdK in the classroom settings. The findings in the current study thus resound with Shulman (1987), who argued that PCK focuses on the act of teaching, which is transforming knowledge of a specific topic or content and developing the ability to explain it in novel ways, reorganize and divide it, and dress it in exercises, metaphors, examples, and demonstrations so that students can understand it. The findings of the study are also consistent with a previous study by Mufalo (2021), which highlighted that CED teachers should be equipped with PCK because it is a gizmo for effectively teaching the subject and giving students integrated knowledge, skills, values, dispositions, and attitudes.

The second research question seeks to ascertain whether there is a statistically significance difference in PKC (CK, PdK, and PCK) experienced by CED teachers based on their gender, educational qualifications, workplace, and years of teaching experience. In terms of CED teachers' CK domains of PKC based on their gender, male teachers were found to be more competent than female teachers, with a very small effect size (d = 0.18). This aligns with the research by Taiwo and James (2015), which reported that male teachers are better at teaching competence than their female counterparts. The reason for this result might be related to female teachers' burden with housework. Most of the female teachers in Ethiopia do not have a worker to help them at home. In addition to their professional activities at school, they do their housework, such as cleaning, managing the house, preparing food, taking care of the child etc. On the other hand, both male and female government middle-level school CED teachers were found to have the same competence status in the PdK and PCK domains of PKC. This is consistent with Mailizar et al. (2021), who demonstrated that male and female teachers share similar competence of PK and PCK.

With respect to educational qualifications, the current study revealed no significant difference between CED teachers with graduate degrees and those with diplomas of government middle-level schools in CK, PdK, and PCK. Consistent with this finding, Honagudi and Shinde (2019) determined that qualifications do not influence the teaching competence of schoolteachers. Similarly, Kimani et al. (2013) found no evidence that additional qualifications inevitably result in better teaching competencies. By contrast, Dereb et al. (2023) discovered that teachers with degrees have higher CK than those with only a diploma. On the other hand, teachers with diplomas have a higher PK than those with degrees. One possible explanation for the results of Dereb et al.

(2023) is that diploma holders from teacher education colleges might have more PdK than subject-matter expertise, while degree holders from applied universities might not acquire enough PdK.

Teachers' professional competence was also analysed based on their workplace. Hence, the study showed no significant difference between government middle-level school urban and rural CED teachers in terms of PKC (CK, PdK, and PCK). This might be due to the government educational bureau's fair distribution of teaching and learning materials, supplies, employment and training opportunities for rural and urban schools. Consistent with this finding, Kusin (2022) demonstrated no significant difference between teachers' teaching competence in urban and rural areas. In contrast, it was reported by Dereb et al. (2023) and Mailizar et al. (2021) that teachers working at rural schools have lower competence in PK. Their findings are explained by the polarization of rural schools and their restricted access to programs, services, awards, acknowledgments, and socio-political instability, among other things.

Teachers' competence was also analysed to determine whether there is a statistically significant variation in PK (CK, PdK, and PCK) experienced by CED teachers based on their years of teaching experience. Accordingly, the findings revealed a statistically significant difference in CED teachers' CK and PKC when CK and PKC were treated as dependent variables and years of teaching experience as the independent variable. Specifically, for CK, $F(4, 255) = 3.00$, $p = .019$, and for PKC, $F(3, 253) = 1.92$, $p = .029$. As per post hoc test findings, CED teachers with 6–15 years of teaching experience exhibited greater CK competence compared to those with 1–5 years of teaching experience. Similarly, CED teachers with 11–15 years of teaching experience demonstrated greater overall PKC compared to those with 1–5 years of teaching experience. This result is in line with the studies by Cheng (2017), which demonstrated that teachers with more years of teaching experience are found to be more competent in their CK. Moreover, Podolsky et al. (2019) concluded that experience leads to an increase in teacher competencies. The reason may be due to novice teachers' being new to the school system in general and classroom settings in particular. This finding is consistent with prior studies by O'connor and Fish (1998), which demonstrated that novice teachers' classroom flexibility and variety of functions are less than those of more seasoned teachers.

However, the post hoc analysis found no significant difference among government middle-level school CED teachers in PdK and PCK competence based on their years of teaching experience. This is compatible with previous studies conducted by Alomari (2023), which disclosed no significant difference between teachers with different levels of experience. Studies have yielded contrasting results about how teaching experience affects PdK and PCK domains of PKC. For example, teachers with more teaching experience were found to be competent in their PdK (Jang & Chang, 2016) and PdK and PCK (Cheng, 2017).

5. Conclusions

This study aimed to provide valuable insights into the PKC of CED teachers in the West Gojjam administrative zone,

Ethiopia. The findings present a concerning overview of government middle-level school CED teachers' overall PKC, with specific emphasis on CK, PdK, and PCK. CED teachers demonstrated competence in their joint PK (CK, PdK, and PCK), indicating they understand the content, know how to present it, and can integrate CK with PdK to address students' learning difficulties. More precisely, these results emphasize how crucial it is to understand the complementarities among CED teachers CK, PdK, and PCK in order to deliver high-quality instruction. When comparing CED teachers' CK, PdK, and PCK based on demographic factors, gender was found to influence CK, with female teachers exhibiting lower CK than their male counterparts. Additionally, years of teaching experience impacted both CK and overall PKC, with novice teachers showing lower CK and overall PKC compared to more experienced teachers. These results may be attributed to the additional workload women face at home and the challenges beginning teachers encounter as they adjust to new school environments, classrooms, and students.

6. Recommendations

Based on the findings discussed above, it is undemanding to make a general list of what the concerned bodies ought to accomplish, presuming they are capable and dedicated to doing so. As teachers' PKC symbolizes a prerequisite and prolific domain for mounting the knowledge foundation for teaching, this study therefore suggests that the Ministry of Education, policy makers, academic group leaders, and Educational Bureaus should place special attention on teacher recruitment, preparation, and employment, which will probably be important in generating competent CED teachers who deliver the curriculum successfully. In addition, they should also centred on designing and implementing professional development programmes that are chiefly tailored to address the specific knowledge base of teaching needs of both male and female CED teachers. Furthermore, they should also focus on establishing mentorship and peer co-operation initiatives that pair experienced teachers with those who are less experienced, regardless of gender. Additionally, they should pay attention to encouraging training sessions that promote gender equity in education, emphasizing the importance of diverse perspectives in teaching.

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