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중등 음악 교사의 국악 지식 형성배경과 교수내용지식(PCK) 간의 관계

The Relationship Between Backgrounds in Gugak Knowledge Formation and Pedagogical Content Knowledge among Secondary Music Teachers

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Abstract This study investigates the impact of secondary school music teachers' backgrounds in gugak (Korean traditional music) knowledge formation on Pedagogical Content Knowledge (PCK). Backgrounds in gugak knowledge formation were treated as independent variables, PCK as the dependent variable, and demographic factors as control variables. A total of 138 in-service secondary music teachers in Korea completed the survey. Data were analyzed using descriptive statistics, correlation analysis, and multiple regression. The findings revealed significant differences in PCK levels based on the number of gugak courses completed and the inclusion of gugak in daily-life classes. Overall, backgrounds in gugak knowledge formation positively influenced teachers' PCK. Specifically, experiential background significantly affected all PCK subdomains, while interpersonal background influenced pedagogical and curriculum knowledge.

Key words: gugak knowledge formation background, pedagogical content knowledge, PCK, secondary school music teacher, music teacher education

초록 본 연구는 중등 음악 교사의 국악 지식 형성 배경이 교수내용지식(PCK)에 미치는 영향을 분석하였다. 이를 위해 국악 지식 형성 배경을 독립변수로, PCK를 종속변수로 설정하고, 성별, 학력, 연수 경험 등의 인구통계학적 변인을 통제변수로 설정하였다. 전국의 중등 음악 교사 138명을 대상으로 설문조사를 실시하였으며, 기술통계, 상관분석, 다중회귀분석을 통해 자료를 분석하였다. 분석 결과, 국악 과목 이수 수와 생활화 수업 여부에 따라 PCK 수준에서 유의미한 차이가 나타났으며, 국악 지식 형성 배경은 전체 PCK에 긍정적인 영향을 미쳤다. 특히 국악 지식 형성 배경의 하위 요인 중 경험적 배경은 모든 하위 요소에, 개인 내적 배경은 교수지식과 교육과정지식에 유의한 영향을 미친 것으로 나타났다.

주제어: 국악 지식 형성배경, 교수내용지식, PCK, 중등 음악교사, 음악교사 교육

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Ⅰ. Introduction

Teachers play a central role in translating the national curriculum into classroom instruction. They design and implement lessons based on their educational philosophy and professional expertise, thereby realizing the aims of the curriculum. In Korea, the national curriculum is flexibly applied at the school level, taking into account teachers' knowledge and instructional contexts (Han et al., 2022). In music education, the curriculum emphasizes students' holistic development and appreciation of musical values, highlighting the importance and nec essity of music learning (Ministry of Education, 2015). Within this context, music teachers' professional competence in deciding what and how to teach plays a critical role.

Among various content areas, gugak (Korean traditional music) has gained increasing emphasis in recent curriculum reforms, accompanied by growing demand for its instruction in schools. Although Korea transitioned into a multicultural society in the 2000s (Kang, 2006), global interest in Korean culture, including Hallyu and K-pop, has continued to grow, further amplifying attention to traditional Korean cultural elements (Yang, 2011). In line with this trend, the national music curriculum has expanded its coverage of gugak (Ministry of Education, 2015, 2022), including specific instructional methods utilizing unique notations such as jeongganbo and gueumbo.

Despite this emphasis, many music teachers continue to perceive gugak as one of the most difficult areas to teach. This challenge stems from multiple factors, including the limited availability of gugak education programs at the university level (Byun, 2014), the cognitive gap between Western musical schemas—formed through formal training—and the sonic characteristics of gugak, and ongoing uncertainty about what and how to teach (Shim & Lee, 2024). Since most secondary music teachers majored in Western music, their pre-service training often provides only limited exposure to gugak. Even when gugak-related coursework is offered, its scope and depth are often insufficient, resulting in psychological burden and practical difficulties for in-service teachers (H. R. Kim, 2015; Lee, 2016).

Given these challenges, it becomes essential to explore the kinds of professional knowledge that teachers draw upon when delivering gugak content. A key concept in this context is pedagogical content knowledge (PCK), which has received increasing attention in music education research. While existing studies often examine general teacher characteristics – such as gender, age, or academic background – these approaches provide limited insight into the deeper causes of teachers' instructional difficulties. Recent discussions emphasize the importance of exploring how teachers' knowledge is formed over time and through lived experience.

In particular, Elbaz's (1983) concept of 'orientation,' situated within the broader framework of practical knowledge, highlights how personal and contextual experiences shape instructional knowledge (Choi & Kim, 2017; Lee & Kwon, 2014). She identifies five orientations of practical knowledge – theoretical, situational, personal, social, and experiential – that represent different ways teachers connect knowledge to their teaching practice. These orientations reveal how teachers interpret experience, prioritize values such as interpersonal responsibility, and attend to various contextual factors. Rather than focusing on isolated details, they emphasize patterns in how teachers actively structure and respond to their teaching environments. A more nuanced understanding of teachers' gugak-related PCK therefore requires attention to the individual and contextual factors that shape the formation of their professional knowledge.

Given these concerns, this study aims to analyze the relationship between secondary school music teachers' backgrounds in gugak knowledge formation and their PCK. It seeks to clarify how teachers' experiences and developmental trajectories influence their instructional expertise in gugak, and to provide a theoretical foundation for more effective gugak education in schools.

The research questions are as follows:

1. What is the relationship between general characteristics of secondary school music teachers and PCK?

2. How do backgrounds in gugak knowledge formation influence secondary school music teachers' PCK?

II. Literature Review

1. Gugak education in the national curriculum

The national curriculum in Korea has undergone continuous revisions to reflect the evolving goals of music education. The 2015 Revised Music Curriculum, in particular, emphasizes holistic education and aims to affirm the value and necessity of music through curriculum – based implementation (Ministry of Education, 2015). Within this framework, gugak (Korean traditional music) has gained increased prominence, especially in the domain of 'music in daily life' (saenghwalhwa), one of the three major learning areas alongside expression and appreciation. This domain explicitly addresses the cultural value of gugak and its relevance to everyday life.

For example, the 2015 curriculum presents gugak – specific terms separately from those of

Western music in its table of musical elements and concepts. It also underscores the practical application and internalization of gugak in students' daily experiences as a core goal of the 'music in daily life' domain (Ministry of Education, 2015). This differentiated approach reflects an effort to embed Korean cultural identity into music education and to position gugak as a distinct and essential element of national heritage (Jung, 2018). Despite these curriculum-level emphases, many music teachers continue to experience difficulties in teaching gugak. These challenges are often attributed to insufficient systematic training, a lack of practical teaching materials, and considerable variation in individual experience and confidence (Kim, 2017; Lee, 2016). As a result, a gap remains between the expectations of the national curriculum and the actual professional capacities of music teachers.

This gap underscores the importance of investigating how gugak-related knowledge is formed and how it is transformed into PCK in teaching practice. These curriculum developments offer a foundational context for understanding the demands currently placed on teachers and emphasize the necessity of exploring how gugak-related PCK is cultivated through both formal and informal experiences.

2. Gugak-related pedagogical content knowledge

The professional knowledge required for effective teaching can be conceptualized through pedagogical content knowledge. First introduced by Shulman (1987), PCK refers to the integrated knowledge of subject matter (content knowledge, CK) and the methods for delivering that content (pedagogical knowledge, PK). Since its introduction, PCK has become a central concept in explaining teacher expertise in Korean music education (Cho & Jung, 2016; Choi & Oh, 2022; Choi, 2012; Chung et al., 2023; Kwon & Seok, 2016; Park & Kang, 2013).

While PCK was initially developed in the context of science education (Park & Chen, 2012; Park & Oliver, 2008), it has since been extended to music education, including research on both pre-service and in-service teachers. Within this context, PCK has been studied in relation to various aspects of music teacher professionalism, such as teacher attitudes (Lee, 2016) and teaching efficacy (Lee, 2017). Moreover, studies have expanded to include diverse sub-fields such as piano, gugak, and music technology (Choi & Oh, 2022; Kim, 2018; Lee, 2016).

Many studies on PCK in music education have primarily focused on teachers' perceptions and on the relationships between PCK and general teacher characteristics, such as gender and teaching experience (Chung et al., 2023; Kim, 2017; J. Lee, 2016; Y. Lee, 2017). In

gugak-specific studies, secondary music teachers have often been found to lack adequate PCK – both in terms of what to teach and how to teach it (Kim, 2017; Lee, 2016). Similar findings have emerged from research on early childhood and elementary teachers, indicating a limited understanding of gugak concepts and performance-related anxiety (H. S. Kim, 2010, 2015; Park, 2010; Shin, 2020).

However, little research has systematically analyzed the underlying causes of this PCK deficiency. Much of the existing literature emphasizes general demographic factors (e.g., gender, age, academic background), which offer limited depth for educational interpretation. In contrast, research in the social sciences increasingly interprets such differences not merely through biological or demographic lenses, but by considering broader psychological and sociocultural frameworks – such as perceived bias, social pressure, or contextual inequality. These perspectives offer more meaningful insights into educational phenomena.

Accordingly, to better understand the difficulties secondary music teachers face in teaching gugak, it is necessary to go beyond surface-level demographic traits and instead examine more contextual and individualized factors – particularly their backgrounds in gugak knowledge formation.

3. Backgrounds in gugak knowledge formation

The formation of gugak-related knowledge can be theorized through the concept of ‘orientation’, one of the sub-components of practical knowledge proposed by Elbaz (1983). According to Elbaz, practical knowledge consists of three elements: content, orientation, and structure. Of these, orientation refers to the contextual basis upon which teachers’ knowledge is formed and functions as a core element reflecting their individual characteristics. It serves as an internal factor that influences teaching practices and encompasses the personal and situational backgrounds through which teacher knowledge develops. Orientation may also be viewed as a deeper motivational force behind teacher behavior. Furthermore, orientation is understood as a dimension of personal traits shaped by broader general characteristics, such as gender, academic background, and teaching experience (Choi & Kim, 2017; Hong, 2005). It plays an important role in explaining the differences in how teachers acquire and apply practical knowledge.

Building on Elbaz’s framework, Lee and Kwon (2014) conceptualized orientation as the background for the development of practical knowledge and applied it to a study of special education teachers in mathematics. They identified four sub-domains of orientation: personal background, including both internal and external life and learning experiences; experiential

background, such as teaching experiences and classroom practices; contextual background, encompassing school environments and local communities; and reflective background, involving self-reflection and critical thinking about teaching.

This framework assumes that teachers' professional knowledge is not merely transmitted as information but is actively constructed through the dynamic interplay of personal experience, environmental context, and reflective processes. In a related study, Choi and Kim (2017) examined whether differing types of recognition of practical knowledge – implicit and explicit – were associated with backgrounds in knowledge formation, based on general characteristics such as gender, educational background, school type, and teaching experience. However, in the field of music education, research specifically addressing these formative backgrounds remains scarce. In particular, there is a lack of empirical studies analyzing the causal relationship between music teachers' knowledge backgrounds and their PCK in the context of gugak education.

III. Method

This study aims to examine the relationship between secondary school music teachers' backgrounds in gugak knowledge formation and their pedagogical content knowledge (PCK), and to explore its practical implications for gugak education. To this end, a quantitative research design was employed, and data were collected using a self-report questionnaire. The questionnaire measured teachers' levels of PCK and their backgrounds in gugak knowledge formation.

1. The participants and procedure

Since the target population of this study consisted of a specific group of in-service secondary school music teachers, purposive sampling was employed. Participants were recruited through announcements on social networking platforms, such as online communities frequented by music teachers. Those who voluntarily expressed interest were invited to complete a questionnaire, which was administered online via Google Forms. Data collection took place from mid-July to the end of July 2024. A total of 138 teachers completed the survey, and all responses were included in the final analysis.

Among the 138 participants, 124 (89.9%) were female and 14 (10.1%) were male. Regarding academic background, 55 (39.9%) held a bachelor's degree, 82 (59.4%) a master's degree, and

1 (0.7%) a doctoral degree. The majority (92.0%) majored in Western music, while 8.0% majored in gugak. Detailed characteristics are presented in Table 1.

<Table 1> General characteristics of participant (N=138)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	124	89.9
	Male	14	10.1
Final education	Bachelor's degree	55	39.9
	Master's degree	82	59.4
	Doctoral degree	1	0.7
Major	Western music	127	92.0
	Korean traditional music	11	8.0
Teaching experience	Less than 10 years	88	63.8
	10-20 years	39	28.3
	More than 20 years	11	8.0
School type	Public/national	122	88.4
	Private	16	11.6
School level	Middle school	84	60.9
	High school	54	39.1

2. Research instrument

1) General characteristics

The general characteristics of the participants were organized with reference to previous studies on music teaching content knowledge (Choi & Oh, 2022; Kim, 2017; Lee, 2016). The questionnaire included items on gender, age, marital status, location of undergraduate institution, experience with gugak-related coursework and the number of such courses taken, experience with gugak-related training and the number of sessions attended, undergraduate major, completion of teaching practicum, and number of graduate schools attended.

2) Backgrounds in gugak knowledge formation

To measure secondary music teachers' backgrounds in gugak knowledge formation, a questionnaire was developed based on the 'orientation' sub-component of Elbaz's (1983) model

of practical knowledge. Drawing on prior studies (Choi, 2013; Lee & Kwon, 2014; Shim & Lee, 2024), the original framework was adapted to the gugak context. The instrument consisted of 22 self-report items rated on a five-point Likert scale (1 = not at all, 5 = very much so), covering four sub-components: interpersonal background (5 items), intrapersonal background (4 items), empirical background (6 items), and contextual background (7 items).

After data collection, reliability and principal component analyses (PCA) were conducted. Items with a Measure of Sampling Adequacy (MSA) below .50 were removed, and sub-components with fewer than three valid items were excluded from further analysis. Cronbach's α for the intrapersonal background sub-scale was below .60, indicating low internal consistency. Consequently, only the interpersonal (3 items), empirical (5 items), and contextual (5 items) subscales ($\alpha \geq .60$) were retained for final analysis. The overall reliability of the final instrument was acceptable (Cronbach's $\alpha = .72$).

3) Gugak-related pedagogical content knowledge

To assess gugak-related PCK, this study employed an instrument adapted from Shim and Lee (2024), which applied Shulman's (1987) PCK framework to Korean traditional music instruction. The instrument included 24 items across four sub-components: pedagogical knowledge (7 items), curriculum knowledge (3 items), knowledge of learners (9 items), and content knowledge (5 items), based on prior research on music teacher knowledge and gugak education (Jang, 2011; Lee, 2016; Lee, 2007; Park, 2003).

To provide instructional context, participants were given the sheet music for 'Gangwon-do Arirang', a representative folk song that appears in approximately 50% of secondary music textbooks (Cha, 2019). This repertoire was selected to reflect authentic classroom conditions. 'Gangwon-do Arirang' features an irregular rhythmic structure of (3+2)+(3+2), a form of temporal asymmetry uncommon in Western classical music but characteristic of Korean traditional genres such as pansori and sanjo (Seo, 2022). Participants were asked to respond to PCK items under the assumption that they were teaching this piece, thereby situating their answers in a realistic instructional scenario.

All items were rated on a five-point Likert scale (1 to 5). To enhance content validity, three experienced secondary school music teachers (each with over 10 years of teaching experience) reviewed the items, and their feedback was incorporated into the final version of the instrument.

3. Data analysis

The following statistical methods were used to analyze the data collected in this study. First, frequency analysis was conducted to identify the general characteristics of the participants. Second, descriptive statistics were used to examine gugak knowledge formation background and the levels of PCK among secondary school music teachers. Third, Pearson's correlation analysis was employed to investigate the relationships between teachers' gugak knowledge formation background and their levels of PCK. Fourth, independent sample t-tests and one-way ANOVA were performed to examine differences in PCK according to teachers' general characteristics. For variables showing statistically significant differences, Scheffé's post hoc test was conducted. Fifth, multiple regression analysis was carried out to determine the influence of backgrounds in gugak knowledge formation on teachers' PCK.

All statistical analyses were performed using SPSS Statistics 26, and the significance level was set at .05. These procedures were designed to ensure the validity and reliability of the study, and to provide robust evidence for understanding the relationship between backgroudns in gugak knowledge formation and PCK among secondary music teachers.

IV. Results

1. General characteristics of participants

The descriptive statistics The descriptive statistics of participants' gugak-related experiences are presented in Table 2. A majority of teachers (131, 94.9%) had taken at least one gugak course during their university education, while 7 (5.1%) had not. The average number of gugak-related courses completed was 2.78 (SD = 1.48, n = 131). The number of courses ranged from one to more than five, with responses relatively evenly distributed across categories. Regarding participation in gugak-related teacher training, 67 teachers (48.6%) had attended at least one training session, while 71 (51.4%) had not. Among those with training experience (n = 67), 22 teachers (32.8%) had attended one session, 23 (34.3%) two sessions, 9 (13.4%) three sessions, 4 (6.0%) four sessions, and 9 (13.4%) more than five sessions. The average number of training sessions attended was 1.13 (SD = 1.50).

The proportion of gugak instruction in school curricula varied: 24 teachers (17.4%) reported

gugak accounting for less than 10% of their instruction; 31 (22.5%) reported 10–20%; 39 (28.3%) reported 20–30%; 17 (12.3%) reported 30–40%; and 22 (15.9%) reported 40–50%. A small number of teachers reported 50–60% (3, 2.2%), 60–70% (1, 0.7%), and over 70% (1, 0.7%). The types of gugak-related activities conducted in schools (multiple responses allowed) included singing (51.4%), playing instruments (55.1%), music appreciation (53.6%), music in daily life (32.6%), and integrated activities (18.1%).

<Table 2> Teachers' learning and teaching experiences related to gugak (N=138)

Variables	Category	Frequency (n)	Percentage (%)
Experiencetaking gugak courses	Yes	131	94.9
	No	7	51
Number of gugak courses taken (n=131)	1	27	20.6
	2	33	25.2
	3	25	19.1
	4	14	10.7
	More than 5	32	24.4
Gugak training experience	Yes	67	48.6
	No	71	51.5
Number of gugak-related training sessions (n=67)	1	22	32.8
	2	23	34.3
	3	9	13.4
	4	4	6.0
	More than 5	9	13.4
Percentage of gugak classes in schools	Less than 10%	24	17.4
	10-20%	31	22.5
	20-30%	39	28.3
	30-40%	17	12.3
	40-50%	22	15.9
	50-60%	3	2.2
	60-70%	1	0.7
	More than 70%	1	0.7
Activities and contents of gugak classes in schools (Multiple responses)	Singing	71	51.4
	Playing instrument	76	55.1
	Music appreciation	74	53.6
	Music in daily life	45	32.6
	Integration	25	18.1

2. Descriptive statistics and correlation analysis

Descriptive statistics were conducted to examine the levels of gugak knowledge formation backgrounds and PCK among secondary school music teachers. Among the background sub-components, interpersonal background showed the highest mean (M = 3.93), followed by empirical background (M = 3.55) and contextual background (M = 3.83). PCK sub-components also showed generally high mean scores, with content knowledge (M = 3.98) and curriculum knowledge (M = 3.94) ranking highest, followed by pedagogical knowledge (M = 3.58) and knowledge of student understanding (M = 3.31). The total PCK score ranged from 4 to 20, with a mean of 14.82.

All variables met the assumption of normality, based on skewness and kurtosis values, allowing for the use of parametric tests. Pearson's correlation analysis revealed a significant positive correlation between overall backgrounds in gugak knowledge formation and overall PCK ($r = .55$, $p < .001$). Among the sub-components, interpersonal background showed moderate correlations with all aspects of PCK, while empirical and contextual backgrounds were also positively associated with several PCK dimensions. Detailed correlation coefficients are presented in Table 3.

<Table 3> Correlations between backgrounds in gugak knowledge formation and PCK

	1	1.1	1.2	1.3	2	2.1	2.2	2.3	2.4
1. Backgrounds in gugak knowledge formation (sum)	1								
1.1. Inter-personal	.62***	1							
1.2. Empirical	.69***	.16	1						
1.3. Contextual	.70***	.07	.31***	1					
2. PCK (sum)	.55***	.32***	.54***	.28**	1				
2.1. SUK	.36***	.19*	.29***	.25**	.57***	1			
2.2. PK	.43***	.25**	.41***	.22**	.61***	.34***	1		
2.3. CU	.38***	.31***	.35***	.12	.81***	.30***	.31***	1	
2.4. CK	.45***	.20*	.49***	.25**	.85***	.29***	.33***	.60***	1

*p<.05, **p<.01, ***p<.001

Note. SUK= Knowledge of Student Understanding, PK=Pedagogical Knowledge, CU= Curriculum Knowledge, CK=Content Knowledge.

3. Differences in PCK according to general characteristics

To examine differences in PCK among secondary school music teachers based on general characteristics, independent sample t-tests and one-way ANOVA were conducted. For analysis purposes, teachers with a doctoral degree were combined with those holding a master's degree due to the small sample size. Similarly, the frequency of gugak-related training was reclassified as 'three or more times,' and the proportion of gugak instruction was regrouped as '40% or more,' due to limited data in higher categories.

The results revealed a statistically significant difference in PCK according to the number of gugak courses taken during teacher training ($F = 2.82$, $p < .05$). Post hoc analysis using Scheffé's test indicated that teachers who had completed four gugak courses demonstrated significantly higher levels of PCK than those who had taken only one. In addition, teachers who included 'music in daily life' activities in their gugak instruction showed significantly higher PCK scores ($t = .35$, $p < .05$) than those who did not. Detailed results are presented in Table 4.

<Table 4> Differences in PCK according to number of gugak courses taken and instructional activities in schools

Variables	Category	Frequency	Mean	SD	t/F	p
Number of gugak courses taken	1	27	13.97	1.63	2.82*	.028 (a<d)
	2	33	14.89	1.87		
	3	25	14.79	1.86		
	4	14	15.52	1.11		
	More than 5	32	15.23	1.59		
Activities and contents of gugak classes in schools	Singing	71	15.09	1.61	1.96	.052
	Playing instrument	76	14.84	1.72	.19	.848
	Music appreciation	74	14.82	1.59	.02	.988
	Music in daily life	45	15.30	1.61	2.35*	.020
	Integration	25	14.67	1.91	-.45	.650

* $p<.05$, ** $p<.01$, *** $p<.001$

4. Effects of backgrounds in gugak knowledge formation on PCK

A multiple regression analysis was conducted to examine the effects of backgrounds in gugak knowledge formation on the PCK of secondary school music teachers. The number of gugak

courses taken and the inclusion of 'music in daily life' instruction – both previously identified as significant variables – were included as control variables to assess the independent effect of backgrounds in gugak knowledge formation.

As shown in Table 5, the regression model was statistically significant ($F = 20.90$, $p < .001$), explaining approximately 32% of the variance in PCK. To assess multicollinearity, tolerance and variance inflation factor (VIF) values were examined. All tolerance values were above .10, and all VIF values were below 10, indicating no issues with multicollinearity. Backgrounds in gugak knowledge formation had a significant positive effect on PCK ($\beta = .52$, $p < .001$), indicating that higher levels of such backgrounds were associated with higher PCK.

<Table 5> Influence of backgrounds in gugak knowledge formation on overall PCK

Dependent variable	Control variables/ Independent variables	*B*	*SE*	β	*t*	*p*	*F*	R^2	*Tolerance*	*VIF*
PCK	(Constant)	8.50	.84				20.90^{***}	.32		
	Number of courses taken	.10	.08	.09	1.19	.237			.917	1.090
	Daily life class activities	.24	.27	.07	.88	.379			.932	1.073
	Gugak knowledge formation background	.58	.08	.52	6.87^{***}	.000			.902	1.109

* $p<.05$, ** $p<.01$, *** $p<.001$

Subsequent regression analyses were conducted to examine the effects of individual sub-components of gugak knowledge formation backgrounds on specific dimensions of PCK. All models were statistically significant, explaining 13% of the variance in knowledge of student understanding, 21% in pedagogical knowledge, 21% in curriculum knowledge, and 27% in content knowledge.

To examine multicollinearity, tolerance and VIF values were assessed. In all models where each sub-component of PCK – knowledge of student understanding, pedagogical knowledge, curriculum knowledge, and content knowledge – was set as the dependent variable, all tolerance values exceeded .10 and all VIF values were below 10, indicating no issues with multicollinearity.

<Table 6> Influence of backgrounds in gugak knowledge formation on sub-components of PCK

Dependent variable	Control variables/ Independent variables	*B*	*SE*	*β*	*t*	*p*	*F*	R^2	*Toler-ance*	*VIF*
Knowledge of student understanding	(Constant)	2.36	.23				4.07**	.13		
	Number of course taken	.00	.02	.01	.09	.927			.877	1.141
	Daily life class activities	.02	.07	.03	.32	.746			.929	1.076
	Interpersonal	.07	.04	.14	1.71	.089			.961	1.041
	Empirical	.12	.05	.21	2.31*	.023			.789	1.267
	Contextual	.08	.04	.17	1.94	.054			.898	1.113
Pedagogical knowledge	(Constant)	2.17	.25				7.17***	.21		
	Number of course taken	-.02	.02	-.07	-.90	.369			.877	1.141
	Daily life class activities	-.01	.08	-.01	-.11	.915			.929	1.076
	Interpersonal	.11	.05	.19	2.42*	.017			.961	1.041
	Empirical	.25	.06	.37	4.25***	.000			.789	1.267
	Contextual	.06	.05	.10	1.26	.209			.898	1.113
Curriculum knowledge	(Constant)	2.03	.37				6.90***	.21		
	Number of course taken	.04	.04	.10	1.21	.228			.877	1.141
	Daily life class activities	.10	.11	.07	.90	.369			.929	1.076
	Interpersonal	.21	.07	.25	3.19**	.002			.961	1.041
	Empirical	.26	.09	.26	3.00**	.003			.789	1.267
	Contextual	.00	.07	.00	.03	.977			.898	1.113
Content knowledge	(Constant)	1.45	.42				9.72***	.27		
	Number of course taken	.02	.04	.05	.60	.553			.877	1.141
	Daily life class activities	.08	.13	.05	.59	.559			.929	1.076
	Interpersonal	.12	.08	.12	1.52	.131			.961	1.041
	Empirical	.48	.10	.41	4.93***	.000			.789	1.267
	Contextual	.10	.08	.10	1.32	.189			.898	1.113

* $p<.05$, ** $p<.01$, *** $p<.001$

Significant predictors included empirical background, which was positively associated with all four components of PCK: knowledge of student understanding (β = .21, p < .05), pedagogical knowledge (β = .37, p < .001), curriculum knowledge (β = .26, p < .01), and content knowledge (β = .41, p < .001).

In summary, among the sub-components of backgrounds in gugak knowledge formation, interpersonal background contributed significantly to pedagogical and curriculum knowledge, while empirical background showed a consistently positive influence across all dimensions of PCK.

V. Discussion & Conclusion

This study examined the pedagogical content knowledge (PCK) of secondary school music teachers in relation to their backgrounds in gugak knowledge formation. The findings revealed that PCK levels significantly differed depending on general characteristics such as the number of gugak-related courses taken and whether gugak was implemented in 'daily life' instruction. These results suggest that both formal educational experiences and practical instructional contexts contribute meaningfully to teachers' pedagogical expertise in gugak (Kim, 2017; Lee, 2016).

One key conclusion drawn from this study is that the number of gugak-related courses completed during college was significantly associated with higher levels of PCK. Teachers who completed four gugak-related courses demonstrated significantly higher PCK than those who completed only one. This finding aligns with previous research by Lee (2016), which emphasized that the extent of gugak coursework in teacher education programs plays a crucial role in developing instructional competence. Additionally, teachers who included gugak in 'daily life' instruction also showed significantly higher PCK. However, the definition and scope of 'daily life' instruction may vary depending on school context and curriculum interpretation. Thus, this result requires cautious interpretation and calls for more detailed, context-sensitive analysis.

Furthermore, regression analyses confirmed that backgrounds in gugak knowledge formation were significant predictors of PCK, even after controlling for other relevant variables. Teachers with stronger gugak-related backgrounds were found to have higher levels of PCK. Sub-component analyses revealed that empirical background was positively associated with all four components of PCK: knowledge of student understanding, pedagogical knowledge, curriculum knowledge, and content knowledge. Interpersonal background also significantly predicted pedagogical and curriculum knowledge, underscoring the importance of social and

collaborative experiences in shaping teacher expertise. These findings are consistent with Elbaz's (1983) theory of practical knowledge, which highlights the role of orientation – defined as the personal and contextual factors that influence knowledge formation. Similar insights have been found in studies by Lee and Kwon (2014) and Choi and Kim (2017), which emphasize the influence of empirical and relational dimensions on professional knowledge development.

Based on these results, several directions for future research and discussion are proposed. First, variables related to gugak coursework at both undergraduate and graduate levels should be more precisely examined to understand how different academic trajectories shape PCK. Second, the structure and pedagogical strategies of 'daily life' gugak instruction should be investigated through qualitative research to clarify how these activities contribute to teachers' instructional knowledge. Third, further research should explore additional variables – such as instructional beliefs, professional development experiences, and access to curricular resources – that may interact with gugak knowledge formation to influence PCK. Longitudinal or mixed-method approaches may be especially useful in capturing how teachers' gugak-related PCK develops over time.

In conclusion, this study provides empirical evidence that both academic training and experiential factors are significantly associated with the development of pedagogical content knowledge in gugak. These insights suggest that teacher education programs – both pre-service and in-service – should incorporate more robust gugak-related content and support authentic, practice-based learning experiences to enhance the quality of gugak instruction in secondary schools.

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