

Differences in the implementation of physical education (pe) planning containing 21st-century skills based on period of work and gender

Diferencias en la implementación de la planificación de la educación física (EF) que contiene habilidades del siglo XXI según el período de trabajo y el género

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Resumen. Esta investigación tiene como objetivo determinar la implementación de la planificación de educación física que incorpora habilidades del siglo XXI en función de la duración del servicio y el género de los profesores de secundaria en Yogyakarta. Esta investigación se realizó utilizando un diseño factorial 2 x 2 con la duración del servicio y el género como variables factoriales, mientras que la implementación de la planificación de PE contiene habilidades del siglo XXI como variable dependiente. La muestra de este estudio fue de 68 profesores de educación física de secundaria con un período laboral de 1 a 17 años y de 18 a 32 años con género masculino y femenino. La técnica de muestreo utiliza la técnica de muestreo probabilístico. Los datos se recogieron a través de cuestionarios distribuidos a profesores de educación física. Los datos fueron analizados mediante estadística descriptiva y inferencial. Esta investigación concluye que la primera hipótesis no muestra diferencias en la implementación de la planificación de la EF que contiene habilidades del siglo XXI cuando se mira desde el período laboral. La diferencia media en el desempeño de la planificación de la educación física con habilidades del siglo XXI en función de los años de servicio es mínima, y se puede decir que la implementación de la planificación de la educación física con habilidades del siglo XXI entre los docentes entre los períodos de trabajo 1-17 y 18-32 tiende a ser lo mismo. La segunda hipótesis no muestra diferencias en la implementación de la planificación de EF que contenga habilidades del siglo XXI con respecto al género. La diferencia media en el desempeño de la planificación de la educación física con habilidades del siglo XXI según el género es mínima. Se puede decir que la implementación de una planificación de educación física que incluya habilidades del siglo XXI para docentes tiende a ser la misma. La tercera hipótesis muestra una interacción entre la duración del servicios y el género en la determinación de la implementación de una planificación de educación física que contenga habilidades del siglo XXI. Esto significa que la duración del servicio y el género juntos influyen en el logro de implementar la planificación de la educación física y tener habilidades del siglo XXI entre los docentes de secundaria. Esta investigación recomienda que el equipo de formulación de la planificación de la educación física de cada escuela esté integrado por docentes competentes y con suficiente experiencia docente y tenga en cuenta el género en determinadas condiciones y situaciones de cada escuela.

Palabras clave: Planificación, Educación Física, Habilidades del Siglo XXI, Periodo de Trabajo, Género

Abstract. This research aims to determine the implementation of PE planning incorporating 21st-century skills based on the length of service and gender of junior high school teachers in Yogyakarta. This research was conducted using a 2 x 2 factorial design with length of service and gender as factor variables, while the implementation of PE planning contains 21st-century skills as the dependent variable. The sample in this study was 68 junior high school PE teachers with a working period of 1 - 17 years and 18 - 32 years with male and female gender. The sampling technique uses probability sampling technique. Data were collected through questionnaires distributed to PE teachers. Data were analyzed using descriptive statistics and inferential. This research concludes that the first hypothesis shows no difference in the implementation of PE planning containing 21st-century skills when viewed from the work period. The mean difference in the performance of PE planning having 21st-century skills based on years of service is minimal, and it can be said that the implementation of PE planning containing 21st-century skills among teachers between working periods 1-17 and 18-32 tends to be the same. The second hypothesis shows no difference in the implementation of PE planning containing 21st-century skills regarding gender. The mean difference in the performance of PE planning having 21st-century skills based on gender is minimal. It can be said that the implementation of PE planning containing 21st-century skills for male and female teachers tends to be the same. The third hypothesis shows an interaction between length of service and gender in determining the implementation of PE planning containing 21st-century skills. This means that length of service and gender together influence the achievement of implementing PE planning and having 21st-century skills among junior high school teachers. This research recommends that each school's PE planning formulation team be assigned to competent teachers with sufficient teaching experience and consider gender in certain conditions and situations in each school.

Keywords: Planning, Physical Education, 21st Century Skills, Work Period, Gender

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Introduction

21st century skills can be developed through learning, including Physical Education (PE) subjects. 21st-century skills are important to master to prepare students to face the challenges of an ever-evolving era (Suryadi, Nasrulloh, et al., 2024). 21st Century Skills urges education to redesign the learning environment (Mäkelä et al., 2014; Yusri, 2020). 21st-century skills in sports learning enhance content through integrating more 21st-century skills for students to

overcome challenges (Alghafary, 2020; Suryadi, Okilanda, et al., 2024). 21st-century learning is designed to equip students with the four skills: critical thinking, communication, collaboration, and creativity. Soft and communication skills are first among all existing soft skills (Patacsil & Tablatin, 2017). Collaboration skills are one of the provisions for dealing with development problems in the era of advanced technology (Rahmawati, 2019). Education system is expected to create students with skills that can think critically and solve problems, be creative and innovative as well as

communication and collaboration skills (Estimurti et al., 2024; Yamin & Syahrir, 2020). Teachers must be ready for learning that aligns with the challenges of the times and the underlying curriculum. Results reveal critical new perspectives on how pre-service teachers view 21st-century skills (Valtonen et al., 2021). Learning reform that shifts from educator-centred learning to student-centred learning is the answer to efforts to develop 21st-century skills in students (Redhana, 2019). The next generation is determined by the role of education, which prepares to facilitate learning and innovation skills, skills in using technology and information media, and working and surviving using skills for life (Mayasari et al., 2016; Papoutsis et al., 2022). PE is part of school subjects that can be used to realize holistic learning educational goals (Montoya Grisales et al., 2023; Yaakop et al., 2023). Through careful planning and understanding of the conceptual framework, physical activity and sports in PE can be a powerful tool for improving a child's overall development, including cognitive, socio-emotional, and biological aspects (Azevedo et al., 2022; Syaokani et al., 2023). From these opinions, it can be concluded that educators need to understand and practice educating in the 21st Century to provide 21st-century skills to students.

Implementing PE learning planning containing 21st century skills is still not optimal even though most sports and health PE teachers have sufficient teaching experience, both male and female teachers. This pedagogical principle can help planning and implementation be better placed and contextualized in the learning context (Backes et al., 2023; Santos et al., 2020). Planning learning tasks is one of the main actions that a teacher must (de Lucca et al., 2022; Feu et al., 2019). The required role of lecturers, teachers or trainers in managing classes includes; planning, organizing, implementing, and evaluating/assessing in the field of educational sports or professional sports (Setyawan, Suyanto, Suharjana, Prasetyo, et al., 2023). The skills that teachers need to master in the 21st Century are mastering technology, good communication, being able to control themselves, thinking critically, mentoring, being creative, and adapting. Through these skills, teachers are expected to be able to develop the potential/interest of students' talents to face an era that continues to develop (Valverde-Esteve, 2020). Several relevant studies examine the implementation of learning containing 21st century skills (Andrian & Rusman, 2019; Haug & Mork, 2021; Meyer & Norman, 2020; Peña-Ayala, 2021; Rahayu et al., 2022; Thamrin et al., 2024; Valtonen et al., 2021). Research related to the influence of implementing classroom management in the field of sports teaching has also been conducted by (Setyawan, Suyanto, Suharjana, Sumaryanto, et al., 2023). From several studies, little research examines the implementation of PE containing 21st-century skills by gender and length of time teaching PE teachers. This research aims to determine the implementation of PE learning planning containing 21st-century skills based on length of service and gender among junior high school sports and health PE teachers in Yogyakarta.

Method

This research is a descriptive quantitative comparison using a factorial design to test the hypothesis of differences in average criteria variables between sample groups formed based on several factors or classifications. The data analysis technique in this research uses two-way Anova (Two-Way Anova) with the help of the SPSS statistical analysis program. Two-Way Anova analysis is a two-way classification analysis based on observing two criteria or factors that cause variation. Data prerequisite tests were carried out using the Kolmogorov-Smirnov normality and homogeneity tests using Levene's Test of homogeneity of variance. This research was conducted on implementing PE containing 21st-century skills based on years of service and the gender of junior high school teachers in Yogyakarta. The population in this study were PE teachers at the junior high school level in Yogyakarta. The sample in this research was taken using a Simple Random Sampling system or simple random sampling technique. Simple Random Sampling is a technique for determining models randomly without paying attention to existing strata, where the criteria for population members are considered homogeneous or relatively homogeneous (Sugiyono, 2019). Every teacher has the same opportunity to be selected as a respondent in this research. The research instrument uses a Likert scale of 4 – 1 (Always – Never). The device was prepared based on theory, adapted to measure each indicator, and consulted with experts. The instrument has been tested for validity (Product Moment Pearson Correlation SPSS) and reliability (Cronbach's Alpha SPSS) before being used in research. The Product Moment Pearson Correlation validity test results for all question items have an r-value greater than the r-table of 0.235 and a sig. (2-tailed) is $0.000 < 0.05$ at the 5% significance level, so all question items are declared valid. The reliability test results on Cronbach's alpha were 0.898 so it was concluded that all question items were reported reliable or consistent. The data collection technique for this research was taken by distributing questionnaires to PE teachers in Yogyakarta and getting responses from 144 teachers. The sample data is then classified or broken down into four cells: teachers with a working period of 1 - 17 years with male gender totalling 17 people (A1B1), teachers with an operational period of 18 - 32 years with male gender counting 17 people (A2B1), teachers with a working period of 1 - 17 years with gender there were 17 women (A1B2), and 17 teachers with an active period of 18 - 32 years with female gender (A2B2). The next step is to interpret the data so that it contains meaning and can answer the problem being studied.

Results and discussion

Results

From the 2 x 2 factorial design, there are 4 (four) groups of junior high school sports and health PE teachers in Yog-

yakarta, which will be described separately. For a more detailed description of the results of research data on the implementation of PE learning planning containing 21st-century skills, the description can be seen as follows:

Implementation of PE Learning Planning Containing 21st Century Skills for 1 – 17 Year Work Period Group Overall (A1)

It is known that the Mean value is 31 and the Standard Deviation value is 4 with (N 34). Next, it is categorized using 3 criteria: high, moderate/fair, and low. High criteria; $X < M - 1SD$, moderate/sufficient criteria; $M - 1SD \leq X < M + 1SD$, and low criteria; $M + 1SD \leq X$. Of the 34 teachers, 7 people have implemented PE learning plans containing 21st-century skills in the high classification (20.59%), 24 people have implemented PE learning plans containing 21st-century skills in the moderate/sufficient classification (70.59%), and 3 people had implemented PE learning plans containing 21st-century skills in the low classification (8.82%). For more clarity, the frequency distribution of scores for the implementation of PE learning planning containing 21st-century skills for teachers in the 1 - 17-year work group as a whole can be seen in Figure 1 below:

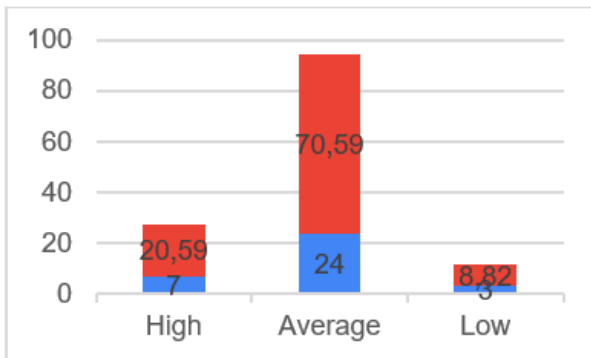


Figure 1. Implementation of PE learning planning containing 21st-century skills for Work Period Group 1 – 17 Years Overall (A1)

Implementation of PE Learning Planning Containing 21st Century Skills Group 18 - 32 Years of Service Overall (A2)

It is known that the Mean value is 32 and the Standard Deviation value is 4 with (N 34). Next, it is categorized using 3 criteria: high, moderate/fair, and low. High criteria; $X < M - 1SD$, moderate/sufficient criteria; $M - 1SD \leq X < M + 1SD$, and low criteria; $M + 1SD \leq X$. Of the 34 teachers, 6 people have implemented PE learning plans containing 21st-century skills in the high classification (17.65%), 24 people have implemented PE learning plans containing 21st-century skills in the moderate/sufficient classification (70.59%), and 4 people had the implementation of PE learning planning containing 21st-century skills in the low classification (11.76%). For more details, the frequency distribution of scores for the implementation of PE learning planning containing 21st-century skills for teachers in the 18 - 32-year work group as a whole can be seen in image 2 below:

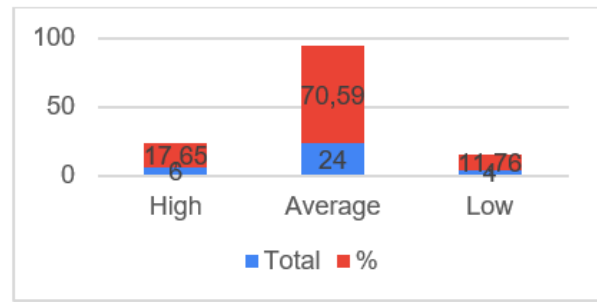


Figure 2. Implementation of PE learning planning containing 21st-century skills for the 18 - 32 Year Work Group Overall (A2)

Implementation of PE Learning Planning Containing 21st Century Skills for the 1 – 17 Year Working Period Group Who Are Male (A1B1)

It is known that the Mean value is 31 and the Standard Deviation value is 4 with (N 17). Next, it is categorized using 3 criteria: high, moderate/fair, and low. High criteria; $X < M - 1SD$, moderate/sufficient criteria; $M - 1SD \leq X < M + 1SD$, and low criteria; $M + 1SD \leq X$. Of the 17 teachers, 7 people have implemented PE learning plans containing 21st-century skills in the high classification (20.59%), 24 people have implemented PE learning plans containing 21st-century skills in the moderate/sufficient classification (70.59%), and 3 people had implemented PE learning plans containing 21st-century skills in the low classification (8.82%). For more clarity, the frequency distribution of scores for the implementation of PE learning planning containing 21st-century skills for teachers in the 1 - 17 year work period group for males as a whole can be seen in Figure 2 below:

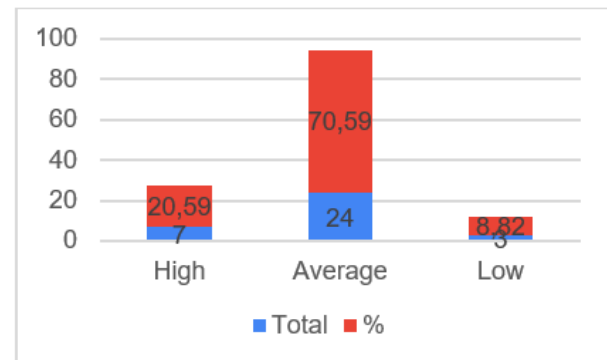


Figure 3. Implementation of PE learning planning containing 21st century skills for the 1 – 17 Year Working Period Group who are Male (A1B1)

Implementation of PE Learning Planning Containing 21st Century Skills for the 18 – 32 Year Working Period Group whose Gender is Male (A2B1)

It is known that the Mean value is 34 and the Standard Deviation value is 2 with (N 17). Next, it is categorized using 3 criteria: high, moderate/fair, and low. High criteria; $X < M - 1SD$, moderate/sufficient criteria; $M - 1SD \leq X < M + 1SD$, and low criteria; $M + 1SD \leq X$. Of the 17 teachers, 5 people have implemented PE learning plans containing 21st-century skills in the high classification (29.41%), 7 people have implemented PE learning plans

containing 21st-century skills in the moderate/sufficient classification (41.18%), and 5 people had implemented PE learning plans containing 21st-century skills in the low classification (29.41%). For more clarity, the distribution of the frequency distribution of scores for the implementation of PE learning planning containing 21st-century skills for teachers in the 18 - 32-year service group for males as a whole can be seen in Figure 4 below:

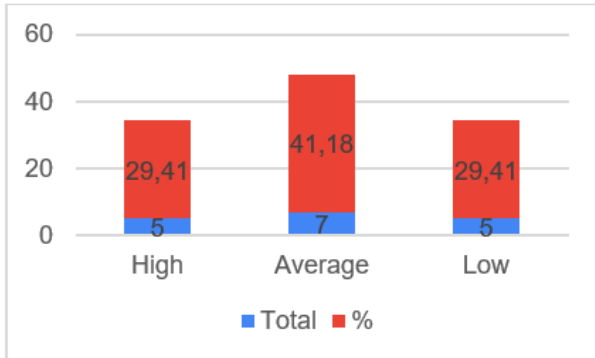


Figure 4. Implementation of PE Learning Planning Containing 21st Century Skills for the 18 – 32 Year Working Period Group Who Are Male (A2B1)

Implementation of PE Learning Planning Containing 21st Century Skills for Working Period Groups 1 - 17 Years Who Are Female (A1B2)

It is known that the Mean value is 31 and the Standard Deviation value is 3 with (N 17). Next, it is categorized using 3 criteria: high, moderate/fair, and low. High criteria; $X < M - 1SD$, moderate/sufficient criteria; $M - 1SD \leq X < M + 1SD$, and low criteria; $M + 1SD \leq X$. Of the 17 teachers, 5 people have implemented PE learning plans containing 21st-century skills in the high classification (29.41%), 10 people have implemented PE learning plans containing 21st-century skills in the moderate/sufficient classification (58.82%), and 2 people had implemented PE learning plans containing 21st-century skills in the low classification (11.76%). For more clarity, the frequency distribution of implementation of PE learning planning containing 21st-century skills for teachers in the 1 - 17 year work period group for women as a whole can be seen in Figure 5 below:

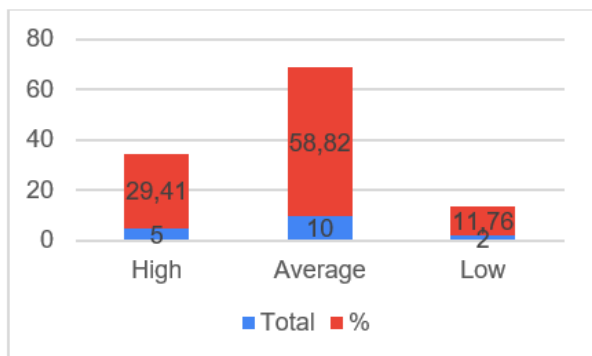


Figure 5. Implementation of PE Learning Planning Containing 21st Century Skills for Working Period Groups 1 - 17 Years Who Are Female (A1B2)

Implementation of PE Learning Planning Containing 21st Century Skills for the 18 - 32 Year Working Period Group with Female Gender (A2B2)

It is known that the Mean value is 30 and the Standard Deviation value is 4 with (N 17). Next, it is categorized using 3 criteria: high, moderate/fair, and low. High criteria; $X < M - 1SD$, moderate/sufficient criteria; $M - 1SD \leq X < M + 1SD$, and low criteria; $M + 1SD \leq X$. Of the 17 teachers, 3 people have implemented PE learning plans containing 21st-century skills in the high classification (17.65%), 12 people have implemented PE learning plans containing 21st-century skills in the moderate/sufficient classification (70.59%), and 2 people had implemented PE learning plans containing 21st-century skills in the low classification (11.76%). For more clarity, the frequency distribution of implementation of PE learning planning containing 21st-century skills for teachers in the 18 - 32 year working group for women as a whole can be seen in Figure 6 below:

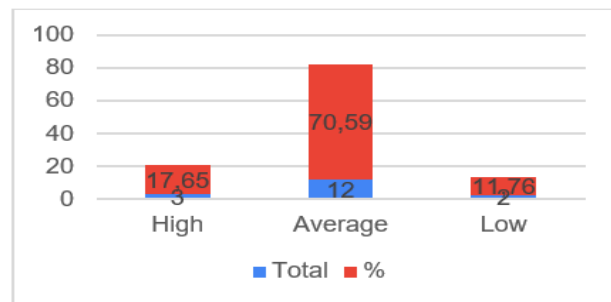


Figure 6. Implementation of PE Learning Planning Containing 21st Century Skills for the 18 - 32 Year Working Age Group Who Are Female (A2B2)

Hypothesis test results

Prerequisite Test

The first prerequisite test used the Kolmogorov-Smirnov normality test with the condition that if $Sig. > 0.05$, then the data is usually distributed conversely if $Sig. < 0.05$, meaning that the data is not distributed normally. Based on calculations, the Sig value is known. $0.051 > 0.05$, so it can be concluded that the data is usually distributed.

Table 1. Tests of Normality

	Tests of Normality					
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Standardized Residual for Results	,084	68	,200*	,965	68	,051

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The second prerequisite test was carried out using Levene's Test of homogeneity of variance homogeneity test with the condition that if the Sig value is > 0.05 , it means that the data variation is homogeneous; conversely, if the Levene Statistics value is < 0.05 , then the data is not homogeneous. Based on calculations, it is known that the Sig value is $0.167 > 0.05$, so the variation in the data obtained is homogeneous.

Table 2.
Test of Homogeneity

Levene's Test of Equality of Error Variances, b					
		Levene Statistics	df1	df2	Sig.
Implementation of Learning Planning	Based on Mean	1,742	3	64	,167
	Based on Median	1,712	3	64	,173
	Based on the Median and with adjusted df	1,712	3	47,934	,177
	Based on trimmed mean	1,781	3	64	,160

Tests the null hypothesis that the error variance of the dependent var. is equal across groups.

a. Dependent variable: Implementation of Learning Planning

b. Design: Intercept + Work_Time + Gender + Work_Time * Gender

Two-Way ANOVA Test (Two-Way ANOVA)

The Two-Way Anova test was carried out after meeting the normality and homogeneity test requirements. Meanwhile, if the normality and homogeneity tests are not completed, then the step that can be taken is to use the non-parametric analysis of the Friedman test. Two-way ANOVA analysis is a statistical technique used to see whether there is a difference in averages between two sample groups. This research uses the Two-Way ANOVA test to determine whether there is an interaction between years of service and gender in implementing PE learning planning containing 21st-century skills among junior high school teachers in Yogyakarta. The basis for making decisions in the Two-Way Anova test is: if the Sig value is < 0.05 , then H_0 is rejected, and H_a is accepted, whereas if the Sig value is > 0.05 , then H_0 is accepted and H_a is rejected.

Table 3.
Tests of Between-Subjects Effects

Tests of Between-Subjects Effects					
Dependent Variable: Implementation of Learning Planning					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	141.529a	3	47,176	3,752	,015
Intercept	66343.765	1	66343.765	5276.463	,000
Years of service	11,529	1	11,529	,917	,342
Sex	49,471	1	49,471	3,935	,052
Work_Time * Gender	80,529	1	80,529	6,405	,014
Error	804.706	64	12,574		
Total	67290,000	68			
Corrected Total	946.235	67			

a. R Squared = .150 (Adjusted R Squared = .110)

Based on the results of the first hypothesis test using the Two-Way Anova test, the results obtained a significance of $0.342 > 0.05$, which means there is no difference in the implementation of PE learning planning containing 21st-century skills in terms of the work period of junior high school teachers in Yogyakarta. The following is an Estimated Marginal Error table used to determine how different each variable categorization is.

Table 4.
Period Teacher Work

1. Teacher Working Period					
Dependent Variable: Implementation of Learning Planning					
Teacher Working Period	Mean	Std. Error	95% Confidence Interval		
			Lower Bound	Upper Bound	
Work Period 1-17 Years	30,824	,608	29,609	32,038	
Work Period 18-32 Years	31,647	,608	30,432	32,862	

Based on table above, the mean difference in the implementation of PE learning plans containing 21st-century skills based on years of service is minimal. The mean implementation of PE learning planning containing 21st-century skills for teachers with a working period of 1-17 years is 30,824, while the mean for teachers with an active period of 18-32 is 31,647. Based on these values, it can be said that implementing PE learning planning containing 21st-century skills among junior high school teachers in Yogyakarta between work periods 1-17 and 18-32 tends to be the same. The results of testing the second hypothesis showed no significant differences in the implementation of PE learning planning containing 21st-century skills in terms of gender. This is proven by the results of the second hypothesis test using the Two-Way Anova test which obtained a significance result of $0.052 > 0.05$, meaning that there is no difference in the implementation of PE learning planning containing 21st century skills in terms of gender. Furthermore, to find out the average difference in the performance of PE learning planning incorporating 21st-century skills between male and female subjects, it will be presented in the following table:

Table 5.
Gender

2. Gender				
Dependent Variable: Implementation of Learning Planning				
Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Man	32,088	,608	30,873	33,303
Woman	30,382	,608	29,167	31,597

Based on the table above, It is known that the difference in mean implementation of PE learning planning containing 21st-century skills based on gender is tiny. The mean implementation of PE learning planning containing 21st-century skills for men is 32,088, while the mean for women is 30,382. Based on these values, it can be said that implementing PE learning planning containing 21st-century skills among male and female junior high school teachers in Yogyakarta tends to be the same. Testing the third hypothesis using Two-Way Anova to answer the question of whether there is an interaction between work experience and gender in determining the implementation of PE learning plans containing 21st-century skills obtained a significance value of $0.014 < 0.05$, which means that there is an interaction between work experience and gender in determining implementation. PE learning planning containing 21st-century skills for junior high school teachers in Yogyakarta. The following is an Estimated Marginal Error table used to determine how different each variable categorization is.

Table 6.
Period Teacher Work & Gender

3. Teacher Work Period * Gender					
Dependent Variable: Implementation of Learning Planning					
Teacher Working Period	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Work Period 1-17 Years	Man	30,588	,860	28,870	32,306
	Woman	31,059	,860	29,341	32,777
Work Period 18-32 Years	Man	33,588	,860	31,870	35,306
	Woman	29,706	,860	27,988	31,424

Based on the table above, it is known that there is an interaction between length of service and gender in determining the implementation of PE learning planning containing 21st-century skills among junior high school teachers in Yogyakarta. The mean for men with a work period of 1-17 is 30,588, while the standard for women with a work period of 1-17 is 31,059. Then, men with the 18-32 years of service category have an average of 33,588, and women with the 18-32 years of service category have a standard of 29,706. This interaction shows that length of service and gender influence the implementation achievements of PE learning planning containing 21st-century skills among junior high school teachers in Yogyakarta.

Discussion

Differences in the Implementation of PE Learning Planning Containing 21st Century Skills in terms of the Working Period of Middle School Teachers

This research obtained significant results regarding the value of teachers' work experience on the implementation of PE learning planning containing 21st-century skills of $0.342 > 0.05$, which means that there is no difference in the performance of PE learning planning incorporating 21st-century skills when viewed from the length of service. This is similar to the research results (Ali et al., 2017), this research was carried out in the Selangor region of Malaysia with a total response of 50 PE teachers. The results of this research show that there is no significant relationship between teaching experience and instructional design among PE teachers. Research results presented in seminars (Syah, 2016) concluded that there was no significant difference between the performance of teachers with 5 to 10 years of experience and teachers with more than 10 years of experience. Similar conclusions in research (Akbar et al., 2021) that there is no significant difference in the teaching performance of Middle School teachers in the South Zone of Central Lombok Regency, Indonesia, during the Covid-19 pandemic between teachers with < 10 years and ≥ 10 years of service. Teachers are always required to develop professionalism regardless of length of service. There is no difference in performance seen in terms of work period due to job demands regulated by the government (Majidah et al., 2019), so the task demands are imposed on teachers without looking at the demographic factors of the teacher's work period.

The research results contradict several existing literature. Different conditions in the 2013 curriculum implementation research in the Sleman Regency area with a sample size of 60 teachers. There are differences in the readiness of social studies teachers at Sleman Regency Middle Schools in implementing social studies learning based on the 2013 curriculum based on teaching experience (Saliman et al., 2016). Learning depends on the length of service, as shown by (Sutrisno et al., 2023) research, which concluded that chemistry teachers with ≥ 10 years of service had better TPACK (Technological Pedagogical Content Knowledge)

competencies compared to teachers with < 10 years of service. "Teaching experience has a positive and significant relationship with teacher professionalism," this is proven to be accurate, even though it is in the low category (Eliyanto & Wibowo, 2013). There are significant differences in teacher performance based on length of service, in the sense that teachers with a more extended service period show better performance than teachers with a shorter service period (Susmiyati & Zurqoni, 2020). Analysis of length of service states that there is a significant influence between size of service and level of competency, so it can be concluded that the higher the length of service, the lower the level of teacher competency (Prasetyo et al., 2020). The teacher's experience will significantly influence their ability to carry out their duties and increase teacher competence (Winarni & Lismadiana, 2020). For teachers who have only a few years of teaching experience or no experience at all, it will be different from teachers who have had many years of teaching experience. So, the more extended and more teaching experience, the better the task will be in guiding students to achieve learning goals, according to the results of their teaching experience.

Similar conclusions in research (Yidana et al., 2022) regarding implementing learning with a multiple intelligence approach. There is a statistically significant difference in applying the physical-kinesthetic intelligence approach between teachers who have been teaching 16-20 years, and those 26 years and over. Teachers who have taught for 21-25 years sometimes apply the physical-kinesthetic intelligence approach compared to those who have taught for 26 years and over who rarely use it. The decline in competence is similar to the research results (Winarni & Lismadiana, 2020); this research illustrates a difference between the results of the physical education teacher competency test and age. There was a significant decrease with increasing age. There are differences in the results of the professional competency test for physical education teachers by age. The highest average score was obtained by the 40-44 year age group, while the lowest average score was accepted by the 55-59 year age group. Meanwhile, the results of the pedagogical competency test for physical education teachers according to age, the lowest score was in the 55-59 year age group and the highest average score was in the 20-24 year age group.

The results of several studies illustrate various influences and differences in conditions based on a teacher's length of service. Several theories explain that the working period impacts teachers' learning process in preparing the media and the learning models and methods used.

Differences in the Implementation of PE Learning Planning Containing 21st Century Skills given the Gender of Middle School Teachers

This research obtained significant results regarding the value of teachers' work experience on the implementation of PE learning planning containing 21st-century skills of $0.052 > 0.05$, which means that there is no difference in

the performance of PE learning planning having 21st-century skills when viewed from gender. Results were similar in the study (Yidana et al., 2022), which shows that the implementation of multiple intelligences in the learning process by teachers does not depend on gender. Other research results show that teacher performance is not influenced by gender (Syah, 2016). The conditions were the same in the 2013 curriculum implementation research in the Sleman Regency area, with a sample size of 60 teachers. The research results show no difference in the readiness of social studies teachers at Sleman Regency Middle Schools in implementing social studies learning based on the 2013 curriculum based on gender (Saliman et al., 2016). In line with the conclusions in the research (Akbar et al., 2021), the teaching performance of junior high school teachers during the COVID-19 pandemic based on gender showed no significant differences. There are no differences in the perceptions of social humanities teachers based on gender regarding several Technological Pedagogical Content Knowledge domains (Hidayati et al., 2019).

A different conclusion regarding gender demographics was shown (Sutrisno et al., 2023) research, which concluded that female teachers had better TPACK (Technological Pedagogical Content Knowledge) competencies than male teachers. Teacher demographics based on gender show a relationship between the implementation of HOTS-based learning with a moderate/fair level of relationship (Maghfiroh & Santi, 2022), and it was concluded that gender significantly influences the performance of HOTS-based education. Differences based on gender demographics are confirmed by field findings (Prihastuty et al., 2020), which show that the professional quality of female Islamic boarding school teachers is higher than the professional quality of male Islamic boarding school teachers. The professional quality of male Islamic boarding school teachers is 3.64%, and the professional quality of female Islamic boarding school teachers is 10.80%.

Several research results provide various influences and differences in conditions based on gender. According to theory, gender is a physical factor influencing a person's readiness. However, the results of this study conclude that there is no difference in the implementation of PE learning planning containing 21st century skills when viewed from gender. This is possible because the teacher's opportunity to gain knowledge of a learning implementation policy having 21st-century skills is the same for men and women.

Differences in the Implementation of PE Learning Planning Containing 21st Century Skills in terms of Years of Service and Gender of Middle School Teachers

This research also examines the interaction between length of service and gender in implementing PE learning planning containing 21st-century skills. The analysis results show a significance value of $0.014 < 0.05$, meaning there are differences in the implementation of PE learning planning containing 21st-century skills regarding length of service and gender. So (Alternative Hypothesis - H_a) in this

study is accepted. Work experience and gender together influence the implementation variable of PE learning planning containing 21st-century skills. The research results were similar (Mariyana, 2016), showing that male teachers who have worked >10 years have a lower level of pedagogical competence than female teachers with the same work experience. Research with similar results when length of service is combined with educational level on teacher performance. Research results (Hasan, 2015) concluded that work experience and teacher education significantly influence teacher performance at SDN Sukabumi 10, Probolinggo City. Years of service and job satisfaction simultaneously influence the organizational commitment of honorary teachers at superior high schools in the city of Palembang (Wahyudin, 2015). There is a jointly significant relationship between work experience, professional attitudes of teachers, work discipline, and teacher performance with a contribution of 63.80% (Sudika et al., 2018). The results of the analysis simultaneously show that length of service and teacher certification can influence teacher work commitment at SMA Negeri 5 Banda Aceh (Lena, 2014).

Conclusion

This research concludes that the first hypothesis shows no difference in implementing PE learning planning containing 21st-century skills when viewed from the work period. The mean difference in the performance of PE learning planning having 21st-century skills based on years of service is tiny, and it can be said that the version of PE learning planning containing 21st-century skills among teachers between working periods 1-17 and 18-32 tends to be the same. The second hypothesis shows no difference in the implementation of PE learning planning containing 21st-century skills regarding gender. The mean difference in the performance of PE learning planning having 21st-century skills based on gender is minimal, and it can be said that the implementation of PE learning planning containing 21st-century skills for male and female teachers tends to be the same. The third hypothesis shows an interaction between length of service and gender in implementing PE learning planning containing 21st-century skills. This means that length of service and gender together influence the achievement of implementing PE learning planning and having 21st-century skills among junior high school teachers in the region. Yogyakarta. This research recommends that each school's PE learning planning formulation team be assigned to competent teachers with sufficient teaching experience and consider gender in certain conditions or situations in each school.

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Conflicts of interest

The authors declare that there are no conflicts of interest

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