Internet and democracy: Is the Internet an important predictor for physical education teacher candidates’ attitudes towards democracy?

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Abstract: Today, in the digital age, the Internet usage is common among university students. The Internet is also an important platform for actively participating in democracy. This study explores physical education (PE) candidate teachers’ attitudes toward the Internet and democracy. It also explores whether the Internet is an important predictor for democracy. In adopting the survey design, a total of 455 PE teacher candidates participated in the study. The study used the “Attitude Scale towards Internet Use” and the “Attitude Scale of Democracy” as data collection tools. The data were analyzed using descriptive statistics, correlation (Pearson) techniques, and multiple regressions analyses. It was found that PE teacher candidates have positive attitudes towards the Internet and democracy. There was a significant positive correlation (p < .05) found between the Internet and democracy. The study also found that the Internet is an important predictor of negative views of democracy.

Subjects: Information & Communication Technology (ICT); Physical Education; Education - Social Sciences

Keywords: attitudes; e-democracy; information and communication technology; physical education teacher candidates; regression

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PUBLIC INTEREST STATEMENT
Gaining the democratic culture and democratic values school are the most important place, and teachers are the most important mentor. In schools, physical education (PE) lessons total growth and development of all students. Democratic development is a part of the total development. Participate to democracy and to be an active participant of democracy PE teacher can have an important role. To be an active participant in the democratic process the Internet is an important tool. If PE candidate teacher has positive attitude towards the Internet, it is believed participation to the democracy increases. Increases in Internet serve a reflect function and execution of democracy. In this study, it was investigated that the Internet is an important predictor for attitudes towards democracy.
1. Introduction

The methods of communication used in society today have become increasingly dynamic in nature. The advent of the computer and indeed the application of Information and Communications Technology (ICT) in human relations have changed the face of social interaction. This forward progression has also emphasized the need to be up-to-speed with this trend (Eyo, 2016). The majority of teachers say that they make regular use of ICT in their teaching and an increasing number of countries include ICT in the curriculums of initial teacher training programmes. Inclusion of ICT tools within the educational process is particularly effective in increasing efficiency and productivity as well as in diversifying the professional activities of teachers. Examples of such tools are lessons preparation and authoring tools, test service systems, student tracking tools, portfolio systems and complete educational packages/learning management systems (e.g. Blackboard©, WebCT©). The Internet has been regarded as one of the most influential and transformative technologies for teaching and learning among all ICT tools (Gonen, Sharon, & Lev-Ari, 2016; Lee & Tsai, 2010; Leu, O’Byrne, Zawilinski, McVerry, & Everett-Cocopardo, 2009). Internet has the capacity to improve interactive communication processes among people, institutions and organizations at different levels. It can also help in the collection of information about social, economic and political issues (Aguilera, 2015; Öktem, Demirhan, & Demirhan, 2014).

Over the past decade, many studies have been conducted to investigate students’ attitudes towards the Internet (Chou, Chou, & Chen, 2016; Kabadayı, 2012; Peng, Tsai, & Wu, 2006; Rial, Gómez, Varela, & Braña, 2014). These studies, in general, revealed that students have favourable attitudes concerning the Internet (Abedalaziz, Jamaluddin, & Chin, 2013; Tekerek & Ercan, 2012).

In their studies, Eroğlu, Ünlü, Eroğlu, and Yılmaz (2011) stated that physical education teachers and physical education teacher candidates were efficient in their usage of the Internet. Another study indicated that prospective physical education (PE) teachers have high computer self-efficacy (Ünlü & Sue, 2014). In the PE field, educational applications related to the computer and the Internet have become more widespread allowing teachers to present visual aids more easily and hold more interactive classes (Okazaki et al., 2014; Papastergiou, 2010; Zach & Lissitsa, 2016). Previous studies also specified that a great majority of students use the Internet on a daily basis (Bozoglan, Demirer, & Sahin, 2013; Shek & Yu, 2012), and use the Internet for social networking (Çam & Isbulan, 2012), educational and recreational purposes (Chou et al., 2016).

Widespread use of the Internet has come about not only in the field of education (Abedalaziz et al., 2013; Chiu, Liang, & Tsai, 2016), but also in many other contexts (Akhter, 2015; Chang, Tsai, & Chiu, 2015; Truzoli, Osborne, Romano, & Reed, 2016).

The Internet is seen as a tool to develop and protect democracy in the world. The Internet provides individuals with the ability to communicate and share their opinions directly with others by ignoring socioeconomic, gender, religious, ethnic and national differences. This improves democratic participation and has led to the creation of a digital community (Borge, Sofia Cardenal, & Malpica, 2012). Gainous, Wagner, and Gray (2016) stated that freedom of Internet provides more positive attitudes towards democracy. It can be stated that the Internet will make important contributions to the rebirth of democracy.

On the topic of using the internet for democracy, Rensburg (2012) posits that the internet has significant potential to stimulate democratic culture through public discourse and citizen participation. The effects that digital technologies may have on democracy and freedom can be more far-reaching (Rhue & Sundararajan, 2014).

Schools are the most important places where democratic tenants such as equality, freedom and justice are inculcated in individuals (Li & Kennedy, 2016; Topkaya & Yavuz, 2011). Teachers play a crucial role in the development and promotion of democratic culture among students (Sendağ, 2010; Topkaya & Yavuz, 2011), and teachers can have considerable impact on the quality of
democracy education in schools (Dadvand, 2015; Thornberg & Elvstrand, 2012). Backman (2011) stated that PE courses provide the opportunity to instill democratic values. PE teachers can foster and encourage their students’ democratic behaviour by acting as a role model. Teachers’ attitudes are the first step towards instilling democratic ideals in students. According to Şendağ (2010), the development of democratic culture means that teachers are the mentors of the next generation.

Considering all these aspects, it can be said that the Internet is very important in the context of participation in democratic processes. It is of great importance for democratic participation that PE teacher candidates comfortably express their ideas, thoughts and preferences without feeling pressure and without being anxious about potential criticisms. It is necessary to understand the views of PE teacher candidates concerning the concept of e-democracy, and to what extent they have been participating in e-democracy thus far. This understanding will pave the way for PE teacher education and support that is geared towards the progress of e-democracy. Even though the Internet is an important means by which to participate in democracy, no study has been conducted focusing on PE teacher candidate’s attitudes towards the Internet and democracy. Also it is necessary to understand PE teachers’ attitudes towards the concept of e-democracy, and to what extent they have been participating. This study introduces the Internet, democracy and its major components within the field of PE teacher education.

The purpose of this study is to find out PE teacher candidates’ attitudes towards the Internet and democracy. Specifically, this study seeks to acquire an enhanced understanding of whether the Internet is an important predictor of the attitudes of PE teacher candidates towards democracy.

1.1. Research questions
In order to fulfill the purpose of this study, answers to the following questions are sought:

(1) What are the attitudes of PE teacher candidates towards the Internet?
(2) What are the attitudes of the PE teacher candidates towards democracy?
(3) Is there any correlation between their attitudes towards the Internet and democracy?
(4) Is the Internet an important predictor of their attitudes towards democracy?

2. Method

2.1. Participants
This study employed quantitative survey model that was used to detect PE teacher candidates’ attitudes towards the internet and democracy (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2010). The participants consisted of 455 PE teacher candidates (M<sub>age</sub> = 22.29, SD = 2.238) selected using simple random sampling from each of the four years (1st–4th year) of the undergraduate PE and sports teaching programs of universities. Of the 455 participants who participated in the study and whose answers were evaluated, 159 were female (34.9%) and 296 were male (65.1%). Participants were chosen via purposive sampling. Samples were chosen by considering the study’s main purpose, “enrollment in PE and sports teaching programs”, via the maximum variability method in the types of purposive sampling. This sampling method is reported to give important clues about the universal values (Fraenkel & Wallen, 2006). In purposive sampling, instead of using a formula, the researcher designates a sample size according to his knowledge, previous theoretical knowledge about the universe and the special purpose of the research (Fraenkel & Wallen, 2006).

All participants were informed verbally about the content of the study’s aim and scope after being requested to fill out the questionnaire. The participants took part in the research voluntarily and the questionnaire forms were anonymous.
2.2. Data collection tools
The study employed two assessment scales, the “Attitude Scale towards Internet Use” and the “Attitude Scale of Democracy”.

2.2.1. Attitude scale towards internet use
The scale “Attitude Scale towards Internet Use (ASIU)” was developed by Tavşancıl and Keser (2002). This scale was used in the research to measure teachers’ attitudes concerning internet usage. This scale was developed only to determine the attitudes towards internet use and it revealed validity and reliability findings in some studies related to teacher candidates (Erdogan, 2008; Serin, Saracaloğlu, & Yavuz, 2010; Tekerek & Ercan, 2012; Yapıcı & Akbayın, 2012).

The attitude scale includes 31 items (26 positive and 7 negative), and 6 sub-scales to determine the student teachers’ attitudes towards the internet. The ASIU is a 5-point Likert-type scale. The responses in the Likert-type scale were: completely agree (5), agree (4), undecided (3), disagree (2), completely disagree (1). The negative expressions started with “I totally disagree” and continued with 5, 4, 3, 2 and 1.

The name and the sample of the sub-scales are as follows: use of the internet in education (8 items): “I think that education improves the quality of the Internet,” “It is entertaining to learn on the Internet”. Use of the internet in research (7 items): “The Internet is a super library”, “Researching on the Internet is boring”. Use of the Internet in social interaction (4 items): “I meet new people through the Internet”. “I make new friends from faraway countries on the Internet”. Liking the use of the internet in education (4 items): “I wish all courses were given via the Internet”. Liking the use of the internet in education (4 items): “I wish all courses were given via the Internet”. Liking the use of the Internet in communication (4 items): “I don’t use the Internet for communication”, “I can express myself freely on the Internet”. Use of the internet in information sharing (4 items): “The Internet is the easiest way to share knowledge”, “The Internet is the main source of communication for me”. The internal consistency coefficient (Cronbach’s $\alpha$) was determined as .89. The internal consistency coefficient used as a result of this study was .81.

2.2.2. The attitude scale towards democracy
The scale “Attitude Scale toward Democracy (ASTD),” which was developed by Oral (2008), was used in the research to measure teacher candidates’ attitudes concerning democracy. This scale was developed only to determine the attitudes towards democracy and it revealed validity and reliability findings in some studies related to teacher candidates (Oral, 2008; Özdaş, Ekinci, & Bindak, 2014).

ASTD consists of 27 items (20 of them positive and 7 of them negative) and 4 sub-scales. ASTD is a Likert scale that has five points, and it is graded as follows: I definitely agree (5) to I definitely disagree (1). Reverse grading was applied to negative items. The scale is graded to define high point or average positive attitudes towards democracy.

The names of the sub-scales and their example items are as follows: Inclination to democracy: “I want democratic debate to take place in the media frequently”, and “I would like more focus on democracy in school programs”. Devotion to democracy: “I believe that democracy is a good form of government for contemporary living”, and “I cannot imagine a life where there is no democracy”. Qualities of democracy: “Democracy is a government that embraces everyone”, and “Democracy provides rights, freedom and justice”. Negative view of democracy: “In less developed countries, it is difficult to implement democracy”, and “Democracy is a utopia”. Cronbach $\alpha$ coefficient of internal consistency in the studies of validity and reliability was .90. Reliability and validity studies were carried out again for this study and found to be .87.

2.3. Data analysis
The SSPS 17.0 package programme was used for data analyses. In the first part of the questionnaire, statistical methods such as percentage and frequency were used in the analyses of the data related to personal and professional acts of the teacher candidates. The statistical techniques of “arithmetic
mean” and “standard deviation” were used to ascertain PE teacher candidates’ attitudes towards the internet and democracy. For the statements both on the internet and democracy attitude scales, the degrees of “strongly agree”, “agree”, “neutral”, “disagree”, “strongly disagree” were used. Both scales begin with “strongly agree” (5) for the positive items and “strongly disagree” (1) for the negative items. In order to detect the relationship between internet and democracy, the Pearson correlation coefficient technique was carried out. In addition, a multiple regression analysis was used to predict PE teacher candidates’ attitudes towards democracy. The statistical significance was set to .05 for the statistical analysis.

3. Results
The following section presents findings related to PE teacher candidates’ attitudes towards the Internet use (Table 1) and democracy (Table 2). Also, the findings correlation between attitudes towards the Internet and democracy are presented (Table 3) as well as findings related to whether the Internet is an important predictor of democracy (Table 4).

Findings concerning standard deviation values and the mean value that PE teacher candidate obtained from the “Attitude Scale towards Internet Use” and in its sub-dimensions is presented in Table 1.

Table 1 shows the average scores of PE teacher candidates towards the internet for each sub scale and whole scale attitudes. The highest score was in the sub scale “Using the Internet in teaching” (M = 3.93) and the lowest score was in the sub scale “Enjoyment of Internet use in teaching” (M = 3.28). Overall, the participants had high average scores in total M = 3.63. With regard to this result, we hypothesize that PE teacher candidates have positive attitudes towards the Internet.

In Table 2 contains the PE teacher candidates’ standard deviation values and the mean values which were obtained from the “The Attitude Scale toward Democracy.”

As seen in Table 2, while respondents had the highest average score (M = 4.18) in the subscale “Devotion to democracy”, the lowest score (M = 3.62) was in the subscale “Negative view of democracy”. In addition, they had an average score of X = 3.80 for the overall scale. According to the average scores, PE teacher candidates show positive attitudes towards democracy.

| Variables                        | N  | M   | SD  |
|----------------------------------|----|-----|-----|
| Using internet in teaching       | 455| 3.93| .725|
| Using internet in research       | 455| 3.71| .536|
| Using internet in social interaction | 455| 3.35| 1.079|
| Liking to use internet in teaching | 455| 3.28| .854|
| Using internet in communication  | 455| 3.38| .763|
| Using internet in sharing information | 455| 3.77| .813|
| Internet total                   | 455| 3.63| .558|

| Variables                        | N  | M   | SD  |
|----------------------------------|----|-----|-----|
| Inclination to democracy         | 454| 3.85| .668|
| Devotion to democracy            | 455| 4.18| .623|
| Qualities of democracy           | 455| 4.12| .696|
| Negative view of democracy       | 455| 3.62| .691|
| Democracy total                  | 454| 3.80| .482|
The Pearson product-moment correlation coefficient technique was used to examine the relationship between the attitudes of PE teacher candidates towards the internet and democracy and the findings are presented in Table 3.

According to Table 3, a positive significant correlation ($p < .01$) was found between all the sub-scales of the “Attitude Scale toward Internet Use” and “The Attitude Scale toward Democracy”. But no significant correlation was found between “Enjoyment of Internet Use in teaching” and “Qualities of democracy”.

The correlation coefficient was found as .438 between the entirety of the attitude scale towards internet use and the entirety of the attitude scale towards democracy. The findings showed that there was a moderate positive relationship among PE teacher candidates between internet usage and attitudes toward democracy ($p < .01$). According to this finding, as usage of the internet increases among PE teacher candidates, their positive attitudes towards democracy also increase.
A multiple regression analysis was carried out to predict the attitudes of PE teacher candidates toward democracy and the results are presented in Table 4.

Table 4 presented the results of multiple regression analysis of predicting PE teacher candidates’ attitudes towards democracy. Significant differences between inclination to democracy, devotion to democracy, qualities of democracy, negative view of democracy and attitudes towards the usage of internet were found ($R = .897$ and $R^2 = .804$). Predictive variables (attitudes towards the usage of the internet) revealed that the variances of the subscale of democracy, respectively inclination to democracy .115%, devotion to democracy .032%, qualities of democracy −.006% and negative view of democracy .880%. Attitudes of internet usage revealed the total variances of attitudes toward democracy at 80%. According to the standardized regression coefficients of attitude toward the use of the internet, the order of importance on the subscale of democracy is as follows: negative view to democracy ($\beta = .867$), inclination to democracy ($\beta = .071$), devotion to democracy ($\beta = .022$) and qualities of democracy ($\beta = −.004$). Regarding to the significance of the regression coefficients according to the t-test results, internet usage attitudes are not to be the significant predictor on the subscale of democracy which is inclination to democracy ($t = 2.443, p > .05$), devotion to democracy ($t = .493, p > .05$) and qualities of democracy ($t = −.119, p > .05$). But the subscale “negative view of democracy ($t = 39.270, p < .05$)” is seen as a significant predictor.

The results of the regression analysis predicting attitudes towards democracy are as follows (following the regression equation model (mathematical model)): Attitudes toward democracy = .797 + .059 inclination to democracy + .019 devotion to democracy + −.003 qualities of democracy + .700 negative view of democracy respectively.

4. Discussion

This study was conducted to find out PE teacher candidates’ attitudes towards the internet and democracy. It was also conducted to determine the correlation between internet and democracy. Another purpose of this study is to acquire an enhanced understanding of whether internet is an important predictor of the democracy attitudes of PE teacher candidates.

It was found that PE teacher candidates have positive attitudes towards the internet. It can be said that PE teacher candidates are eager to use the internet. The studies carried out concerning university students by Peng et al. (2006) found that university students have a positive attitude towards the internet. Another study Eroğlu et al. (2011) stated that PE teacher candidates are highly effective in their use of the internet. In another study, Goktas (2012) found that pre-service PE teachers have positive attitudes towards information and communication technologies and other previous studies (Gibbone, Rukavina, & Silverman, 2010; Perrotta, 2013) also pointed to increased interest of PE teachers in technology. However, Kretschmann (2012, 2015) argued that PE teachers have negative and distrustful attitudes towards integrating technology in PE lessons. According to Hunuk, Ince, and Tannehill (2012), most PE teachers are familiar with technology and using the internet but they do not know how to reach reliable internet sources.

In their study, Devis-Devis, Molina-Alventosa, Peiro-Velert, and Kirk (2011) indicated that internet access provides PE teachers with an overabundance of textbooks in many languages and learning materials to support their school texts with special consideration to the internet and e-learning.

A great majority of teachers know that having access to the internet provides significant contributions to their professional development. Teachers identified the most favorable sides of using the internet as: being aware of the most recent instructional strategies and techniques used effectively in classrooms, having information about different types of questions used as part of measurement and evaluation in schools, and being a part of professional teacher groups created on social media (Bellibas & Gumus, 2016). According to the results of these studies, the internet is an important tool for education purposes.
Another result obtained from the study is that PE teacher candidates have positive attitudes toward democracy. Many studies have examined the perceptions and beliefs of teachers, both pre-service and in-service, as they relate to civics, citizenship and democracy (Osler, 2011; Topkaya & Yavuz, 2011; Zhang, 2010). These studies insisted that democratic education is a significant indicator of how they understand the concept and how they approach it in their daily practices (Dadvand, 2015). Previous studies also indicated that teacher candidates have positive attitudes towards democracy and have strongly democratic values (Akın & Özdemir, 2009; Genç & Kalafat, 2007). It has been seen that the results which were obtained from this study are parallel to the literature. PE teacher candidates should have democratic values and attitudes as individuals of society. It would be extremely important that having positive and high-level attitudes on democracy of the PE teacher candidates provides exhibiting democratic attitudes during their teaching career in the future.

This study found a positive significant correlation between the attitudes of PE teacher candidates in terms of all sub-scales of the internet attitude scale and almost all the sub-scales of the Attitude toward Democracy scale apart from between “Enjoyment of internet use in teaching” and “Qualities of democracy”. Accordingly, it can be said that as the usage and attitudes of PE teacher candidates towards the internet become more positive, their attitudes towards democracy also become more positive. Mossberger, Tolbert, and McNeal (2007) argued for the widespread beneficial impact of internet usage on democratic citizenship. Espinar-Ruiz and González-Río (2015) highlighted the existence of a statistically significant relationship between a higher frequency of internet use and greater online and offline political involvement. In the study conducted by Oral (2008) to determine the attitudes of teacher candidates towards the internet and democracy, it was mentioned that use of the internet for different purposes is effective in the positive and significant relationships of the sub dimensions of both of the internet and democracy scales shown by the students, and the internet can be used as an efficient tool in democracy education and in the formation of a culture of democracy. In another study, Şendağ (2010) stated that many teachers believe that e-democracy, e-citizenship, e-government, e-politics, social networking, civic engagements and participation are considered major components of e-democracy. Voting, civic group membership, frequency of internet use and internet use skills have a significant impact on pre-service teachers’ perception related to e-democracy. Even though the teacher candidates agree with the notion of e-politics, they seem to participate in e-politics at a minimal level. These results support the finding of this study that there is a positive correlation between the internet and democracy.

Access to and use of the internet can contribute to multidimensional forms of participation. This could be through participation in institutionalized politics or in government activities through e-government, e-campaigning and e-democracy (Oyedemi, 2015). Coinciding with this idea are some findings which state that internet users have a greater interest in political issues, greater political knowledge, a higher probability to be involved in politics, and greater participation than average citizens (Bakker & de Vreese, 2011; Bennett & Segerberg, 2011; Chadwick, 2006; Gainous et al., 2016; Gil de Zuniga & Valenzuela, 2011).

However, Ceron and Memoli (2016) stated that usage of the internet has no impact on satisfaction with democracy. In their study, Yiğit and Çolak (2010) observed that teachers do not have adequate information about e-democracy and how to use it. It was found that when technological infrastructure is properly prepared for teacher candidates with regard to e-democracy applications in Turkey, the quality of democracy will increase and bureaucracy will decrease due to the greater speed and efficiency of online services. In addition, it was stressed that a great majority of pre-service teachers are not aware of e-democracy applications in the world and in Turkey.

This study posits that an individual’s attitude towards the internet has significant potential to stimulate democratic culture through public discourse and citizen participation. It can be suggested that as internet usage among PE teacher candidates increases, democratic tendencies will also increase, or, as their positive attitudes towards democracy increase, the use of the internet for various purposes will increase or will be given greater importance. Moreover, it is expected that internet
usage will contribute to the democratization process of PE teacher candidates because they will be able to vote via the internet, make comments in various forums and platforms, and freely express their opinions without feeling pressure. According to the results of this study and literature, it may be concluded that PE teacher candidates’ positive attitudes toward the internet affects their attitudes toward democracy. By using the internet they may attend political debates, take part in the election process and voting. In other words, they are better able to participate in democracy.

This study examined whether the internet attitudes of the PE teacher candidates was an important predictor of their attitudes towards democracy. It was found that the internet was not an important predictor of inclination to democracy, devotion to democracy and qualities of democracy despite the positive relationship between the two variables. But in the subscale of the “negative view of democracy”, it is seen as a significant predictor.

There has been limited discussion about the connection between digital access and democracy (Groshek, 2010; Howard & Hussain, 2011; Schmidt & Cohen, 2010). Faris and Etling (2008) provide an excellent and detailed analysis of the different ways in which digital access might contribute both positively and negatively to democracy.

Campante, Durante, and Sobbrio (2013) determined the negative effects of the internet on democracy. In accordance, some scholars insisted that the internet does not provide political knowledge and awareness (Kaufhold, Valenzuela, & de Zuniga, 2010) and does not affect participation behaviour (Farina, Newhart, & Heidt, 2012; Wagner & Gainous, 2013). In their studies, Richey and Zhu (2015) predicted that the internet has no influence on political interest, efficacy, and knowledge due to problems of motivated selection, crowding out, and information overload. These studies support the results of this paper. However, Stoycheff, Nisbet, and Epstein (2016) stated that the internet has great potential to impact democracy. According to the Ayuda (2011), participation of internet users in public activities increases democracy. Through internet access, people have equal access to information and through this one can increase political knowledge, interest, participation, trust and efficacy (Bakker & de Vreese, 2011; Boulianne, 2009; Breuer & Groshek, 2014; Ceron, 2015). Also Rensburg (2012) emphasized that the internet has significant potential to stimulate democratic culture through public discourse and citizen participation. These studies are not consistent with this study.

PE teacher candidates do not see the internet as a very important device for inclination to democracy, devotion to democracy and qualities of democracy. However, when they try to express their negative views of democracy, they use the internet as an important tool. There are limitations of the study to address that may have affected results. For instance, focusing only on PE teacher candidates rather than actual teachers could have changed the results, targeting universities may have had an impact, the larger male population may be different from females, there may be other variables that affect the relationship between use and democracy such as family upbringing, political views and social interactions.

5. Conclusion
In this study, the attitudes of PE teacher candidates towards democracy and the internet were determined. In addition, the correlation between the internet and democracy was examined and also whether the internet is an important predictor for democracy was determined. It was found that PE teacher candidates had positive attitudes towards the internet and democracy. The correlation between the internet and democracy found a significant positive correlation. The study also found that internet is an important predictor on negative views of democracy.

Future studies can examine how often PE teachers and teacher candidates participate in democratic processes via the internet. In addition, it is recommended that further studies should be conducted regarding how participation in this process can be increased.
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