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#### Author Contribution Statement

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Conceptualization, literature review, methodology, data analysis

#### Abstract

The research utilized the descriptive survey model, a quantitative research method, with a study group consisting of 172 social studies teacher candidates (131 females, 41 males). As data collection tools in the study, the Cyberculture Adoption/Development Level Scale developed by Koçak (2019) and the global citizenship scale (Global Citizenship Scale – GCS) developed by Morais and Ogden in 2010 were used. The Turkish adaptation, validity, and reliability study of the global citizenship scale was conducted by Tutkun (2019). In addition, a personal information form prepared by the researcher was used. The data analysis involved the use of the Independent Samples t-test, to determine the relationship between participants' scores on the cyber culture adoption level scale and the global citizenship level scale concerning the gender variable. For situations where differentiation was observed based on class, social media usage purpose and internet usage frequency, the One-Way ANOVA was employed for unrelated Samples. The findings of the research indicate that there is no statistically significant difference in the levels of cyberculture adoption and global citizenship among teacher candidates concerning gender and class variables. When examining the variable of social media usage purpose, a statistically significant difference is observed in the global citizenship levels of teacher candidates. In contrast, no statistically significant difference is found in the levels of cyberculture adoption. Regarding the daily internet usage duration variable, no impact is observed on the global citizenship levels of teacher candidates. In contrast, a statistically significant difference is found in the levels of cyberculture adoption.

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**Research Article****A Study on the Levels of Adoption of Cyberculture and Global Citizenship among Social Studies Teacher Candidates \***Şükran GEÇGEL<sup>1</sup> **Abstract**

The research utilized the descriptive survey model, a quantitative research method, with a study group consisting of 172 social studies teacher candidates (131 females, 41 males). As data collection tools in the study, the Cyberculture Adoption/Development Level Scale developed by Koçak (2019) and the global citizenship scale (Global Citizenship Scale –GCS) developed by Morais and Ogden in 2010 were used. The Turkish adaptation, validity, and reliability study of the global citizenship scale was conducted by Tutkun (2019). In addition, a personal information form prepared by the researcher was used. The data analysis involved the use of the Independent Samples t-test, to determine the relationship between participants' scores on the cyber culture adoption level scale and the global citizenship level scale concerning the gender variable. For situations where differentiation was observed based on class, social media usage purpose and internet usage frequency, the One-Way ANOVA was employed for unrelated Samples. The findings of the research indicate that there is no statistically significant difference in the levels of cyberculture adoption and global citizenship among teacher candidates concerning gender and class variables. When examining the variable of social media usage purpose, a statistically significant difference is observed in the global citizenship levels of teacher candidates. In contrast, no statistically significant difference is found in the levels of cyberculture adoption. Regarding the daily internet usage duration variable, no impact is observed on the global citizenship levels of teacher candidates. In contrast, a statistically significant difference is found in the levels of cyberculture adoption.

**Keywords:** Social studies, teacher candidates, cyber, global**1. INTRODUCTION**

The rapid spread of digital technologies changes individuals' lifestyles, ways of doing business, communication tools and social life experiences and in this process of change, a technology-based life becomes inevitable for individuals. In particular, the use of other digital technologies such as computers, internet and smart devices affects individuals' values, behaviors and beliefs. Also, it creates a new culture with its own ethical rules in the virtual world. This culture, which is referred to as cyberculture, also appears in the literature as cyberspace, digital culture or internet culture (Benedikt, 1991; Çetin & Uslu, 2022; Gündüzalp, 2021; Mackinnon, 1997). The foundations of cyberculture as a concept and research field were developed at the Massachusetts Institute of Technology in the 1960s (Schmidt, 2020).

William Gibson (1984), who popularized the concept of cyberculture as cyberspace, describes the area where people interact through the internet and digital technologies as cyberspace in his novel *Neuromancer* (Bell, 2007). The concept of cyberspace covers most technologies such as fiber optics, mobile connections, the internet and artificial intelligence. Developing cyberspatial technologies does more than transfer people's interactions electronically. It also changes their interests, symbols and community characters (Eid, 2008).

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The concept of cyberculture, which expresses the relationship of individuals with all technological tools they interact with, covers the whole of beliefs, values, behavior, attitudes and cultural formations established in social networks, computer networks or online communication areas (Akdemir & Tuncer, 2021). New media, in other words, the internet-based form of communication, which has gained importance after the 2000s, has created a network society that includes cyberculture, thus the relationship between the individual and society has become digital (Aydemir, 2020). Relationships within cyberculture include an abstract structure that transcends time, based on virtual spaces. In addition, in interactions that take place in virtual environments, individuals have social experiences regardless of factors such as age, gender and race (Bostancı-Ege, 2012). In their cultural development model, Vygotsky and Luria (1994) state that cyberculture is an important factor in the cultural development of people who communicate in digital environments, both in communicative and behavioral dimensions, regardless of human-human interaction (Macfadyen, 2006). According to the view expressed by Gunkel (1998), cyberspace opens the doors of a freer global society, without individuals being exposed to phenomena such as prejudice, exclusion and inequality arising from sociocultural limitations. From another perspective, cyberspace makes the concepts of reality and identity more flexible, allowing people to have new experiences in the virtual world (Güzel, 2016).

Cyberculture introduces a new culture that offers individuals the opportunity to express themselves through digital platforms such as digital communication technologies and the internet. This situation adds more value to social life and also leads to the opening of new areas of innovation.

Many factors such as the increase in economic, social, cultural and political interactions around the world, the decrease in borders between countries and the rapid spread of information technologies increase the importance of globalization. In the new world order that has emerged with globalization, the dimensions of citizenship are also changing. In the literature, global citizenship is defined as a universal personality that takes responsibility not only for his/her country but also for the world in which he/she lives and leaves a sustainable world to future generations (Kan, 2009). The roots of the idea of global citizenship, in other words, universal citizenship, are based on Stoic philosophy and the Enlightenment period in modern times (Zolo, 2007). It can be said that Stoic philosophy reveals a universal understanding of world citizenship and that global citizenship reflects the universal and cosmopolitan perspective on the citizenship of Ancient Greek and Roman cultures centered on Western Civilization (Çolak et al., 2019). At this point today, global citizenship is seen as the basis of the era of human rights and responsibility (McIntyre-Mills, 2000).

Oxfam (2006), states that global citizenship is a process that allows the development of the knowledge, skills and values necessary for a sustainable world. In addition, being a global citizen is also important in terms of equality, social justice, empathy, valuing differences, responsibility, sustainable development, respect, concern for the environment, identity, self-esteem and beliefs, values and attitudes that people can make differences (Aktaş & Ayaydın, 2023).

Global citizenship, which emerged as a world citizenship under the influence of globalization is evaluated from different perspectives. While at the first stage, it is perceived as a threat from world governments from a nationalist perspective, according to a different view, it refers to citizens who are aware of global issues and have respect for different cultures (Kaya & Kaya, 2012). There are different definitions of both the concept of global citizenship and global citizenship education. It is also stated that there are common points in many of these definitions (Uslu & Çetin, 2022). When the common point of the definitions found in the literature is summarized, individuals who expand their personality/self-definitions beyond geographical boundaries and are aware of the impact of events occurring anywhere in the world are defined as global citizens (Kavuşan, 2023).

Morais and Ogden (2011) developed a global citizenship model consisting of three dimensions: social responsibility, global competence and global civic participation. The social responsibility dimension includes social commitment to society and the environment. In the global competence

dimension, cultural values are activated and include skills such as interacting with the environment, communicating and being open-minded. In the civil participation dimension, there are sub-dimensions of awareness of local and global problems, activism and social participation. Global citizenship enables students to gain knowledge, skills and responsibilities at a global level in a broad perspective. It is aimed to examine the cyberculture adoption levels and global citizenship levels of social studies teacher candidates. In this regard, answers to the following questions were sought.

1. Do social studies teacher candidates' cyberculture adoption levels and global citizenship levels differ according to gender?
2. Do social studies teacher candidates' cyberculture adoption levels and global citizenship levels differ depending on the class variable?
3. Do social studies teacher candidates' cyberculture adoption levels and global citizenship levels differ according to the purpose of social media use variable?
4. Do social studies teacher candidates' cyberculture adoption levels and global citizenship levels differ according to the internet usage frequency variable?

## 2. METHOD

### 2.1. Model of the Research

In this research, a descriptive survey model, one of the quantitative research methods was used. Descriptive research, one of the most widely used research methods in the field of education, aims to reveal the existing situation along with the current situations, features and conditions (Çoban & Oral, 2020). Although descriptive research aims to reveal a situation clearly, the researcher has no control over the variables and only describes what exists (Büyüköztürk et al., 2019).

### 2.2. Study Group

The study group of research consists of 172 (131 female, 41 male) social studies teacher candidates who continue their education in the Department of Social Studies Education, Turkish and Social Sciences Education Department of Niğde Ömer Halisdemir University Faculty of Education in Turkey. Frequency information for the study group is given in Table 1.

**Table 1. Demographic information about the study group**

Demographic Information		Number (n)	Percent (%)
Gender	Woman	131	76.2
	Male	41	23.8
	<b>Total</b>	<b>172</b>	<b>100</b>
Grade Level	1. Class	26	15.1
	2. Class	44	25.6
	3. Class	43	25.0
	4. Grade	59	34.3
	<b>Total</b>	<b>314</b>	<b>100</b>
Purpose of Social Media Use	Entertainment	70	40.7
	Communication	13	7.6
	Following the Agenda	43	25.0
	Other	46	26.7
<b>Total</b>	<b>172</b>	<b>100</b>	
Internet Usage Frequency	Between 1-5 Hours Daily	87	50.6
	Between 6-11 Hours Daily	68	39.5
	12 Hours and Above	17	9.9
	<b>Total</b>	<b>172</b>	<b>100</b>

When the findings regarding the demographic characteristics of the participants are examined, it is seen that 76.2% of the participants are female and 23.8% are male teacher candidates. It was determined that they mostly use social media for entertainment purposes (40.7%). and half of the participants spend 1-5 hours on the internet per day (50.6%).

### 2.3. Data Collection Tools

As data collection tools in the study, the Cyberculture Adoption/Development Level Scale developed by Koçak (2019) and the global citizenship scale (Global Citizenship Scale-GCS) developed by Morais and Ogden in 2010 were used. The Turkish adaptation, validity and reliability study of the global citizenship scale was conducted by Tutkun (2019). In addition, a personal information form prepared by the researcher was used. The cyberculture adoption/development level scale consists of 22 one-dimensional items and the internal consistency coefficient was calculated as .96. The global citizenship scale consists of 30 items and three sub-dimensions: social responsibility global competence and global civic participation. The internal consistency coefficient of the scale was calculated as .86. The results of the reliability analysis are given in Table 2 below. The personal information form encompasses details through which the researcher arranges information about social studies teacher candidates, including their gender, grade, purpose for using social media and frequency of internet usage.

**Table 2. Reliability analysis results for data collection tools**

Data Collection Tools	Cronbach's Alpha	Number of Items
Global Citizenship Scale	.89	30
Cyber Culture Adoption/Development Level Scale	.91	22

When the findings regarding the reliability analysis of the data collection tools were examined, the Cronbach Alpha value calculated for the global citizenship scale was found to be .89. The Cronbach Alpha value of the global citizenship scale adapted to Turkish by Tutkun (2019) was calculated as .86.

The Cronbach Alpha value calculated for the Cyber Culture Adoption/Development Level Scale was calculated as .91. and the Cronbach Alpha value of the cyberculture adoption/development level scale developed by Koçak (2019) was calculated as .96. The fact that the values of the data collection tools are between 80 and 1.00 shows that the scale has high reliability (Karaca, 2021). In this context, it can be said that the data collection tools have a high level of reliability.

### 2.4. Analysis of Data

The differences in the scores of the participants from the cyberculture adoption level scale and the global citizenship level scale according to the gender variable were calculated with the Independent Samples t-Test. The differences according to grade, social media usage purpose and internet usage frequency were tried to be determined by one-way analysis of variance (One-Way ANOVA) for unrelated samples. Information regarding the normality tests of the variables used in the research is given in Table 3.

**Table 3. Normality analysis findings for variables**

Variables	Normality Tests	
Gender	1.239	Skewness .185
	-471	Kurtosis .368
Grade Level	-296	Skewness .185
	-1.224	Kurtosis .368
Purpose of Social Media Use	.393	Skewness .185
	-1.387	Kurtosis .368
Internet Usage Frequency	.681	Skewness .185
	-.592	Kurtosis .368

When Table 3, which includes the normality analysis results for the variables included in the research is examined. it is seen that Skewness values are between -2 and +2 and Kurtosis values are between -7 and +7. In the relevant literature, it has been stated that the Skewness value being in the -2/+2 range and the Kurtosis value being in the -7/+7 range is appropriate in terms of distribution normality (Byrne, 2010). As a result of the normal distribution of the data. it was concluded that parametric tests would be used in the analysis of the variables. In this context, "T-Test for Independent Samples" was used in the analysis of the "Gender" variable and "One-Way Analysis of Variance" was used in the analysis of the "Grade Level", "Purpose of Social Media Use" and "Frequency of Internet Use" variables. In a one-way analysis of variance, Levene's test was used to determine the homogeneity of the groups and it was determined that the groups were homogeneously distributed. Based on the finding that the groups were homogeneously distributed, the Gabriel multiple comparison test was used to reveal the statistical differences between the group averages. Gabriel, a multiple comparison test that is frequently preferred to determine differences between groups in one-way analysis of variance, allows strong results to be used in cases where there are small differences between group sizes (Field, 2012). Although the Gabriel multiple comparison test reveals similar features to the Hochberg GT2 test, it is emphasized that it produces stronger results in cases where there are differences between the numbers of groups (Koca, 2013).

### 3. FINDINGS

In this part of the research, the findings obtained from the answers given by social studies teacher candidates to the cyberculture adoption level scale, global citizenship level scale and personal information form are included.

**Table 4. Independent sample t-test results regarding the differentiation of teacher candidates' global citizenship levels and cyber culture adoption/development levels according to gender variable**

Data Collection Tools	Gender	n	$\bar{x}$	SD	df	t	p
Global Citizenship	Woman	131	2.72	.57	170	.30	.77
	Male	41	2.75	.60			
Cyber Culture Adoption/Development Level Scale	Woman	131	3.38	1.09	170	.50	.49
	Male	41	3.52	1.15			

It was determined that there was no statistically significant difference between the gender status of the teacher candidates and their global citizenship ( $t_{(170)}=.30;p=.77>.05$ ) and cyberculture adoption/development levels ( $t_{(170)}=.50;p=.49>.05$ ). It can be stated that the gender status of teacher candidates does not have any effect on both their global citizenship and their level of adoption of Cyberculture.

**Table 5. One-Way analysis of variance results regarding the differentiation of teacher candidates' global citizenship levels and cyber culture adoption/development levels according to the class level variable**

Data Collection Tools	Grade	n	$\bar{x}$	SD	SV	Ss	df	ms	F	p
Global Citizenship	1	26	2.79	.50	In-Group	1.419	3	.473	1.43	.24
	2	44	2.66	.43	Inter Group	55.480	168	.330		
	3	43	2.62	.65	Total	56.899	171			
	4	59	2.83	.64						
Cyber Culture Adoption/Development Level Scale	1	26	3.43	1.05	In-Group	1.621	3	.540	.44	.72
	2	44	3.29	.85	Inter Group	206.363	168	1.228		
	3	43	3.56	1.21	Total	207.984	171			
	4	59	3.40	1.22						

It was determined that there was no statistically significant difference between the grade levels of the teacher candidates and their global citizenship ( $F_{(3-168)}=1.43;p=.24>0.5$ ) and cyberculture adoption/development levels ( $F_{(3-168)}=.44;p=.72>.05$ ). It can be said that teacher candidates' grade levels do not have an impact on both their global citizenship levels and cyberculture adoption/development levels.

**Table 6. One-Way analysis of variance results regarding the differentiation of teacher candidates' global citizenship levels and cyber culture adoption/development levels according to the purpose of social media use variable**

Data Collection Tools	Purpose of Social Media Use	n	$\bar{x}$	SD	SV	Ss	df	ms	F	p
<b>Global Citizenship</b>	Entertainment	70	2.79	.50	In-group	3.671	3	1.224	3.86	<b>.01*</b>
	Communication	13	2.66	.43	Intergroup	53.228	168	.317		
	Following the Agenda	43	2.62	.65	Total	56.899	171			
	Other	46	2.83	.64	<b>The Source of the Difference (Gabriel)</b> Following the Agenda>Entertainment					
<b>Cyber Culture Adoption/Development Level Scale</b>	Entertainment	70	3.43	1.05	In-group	6.716	3	2.239	1.87	.14
	Communication	13	3.29	.85	Intergroup	201.267	168	1.198		
	Following the Agenda	43	3.56	1.21	Total	207.984	171			
	Other	46	3.40	1.22						

\* $p \leq .05$

When Table 6, which contains the statistical analysis regarding the social media usage purpose variable of social studies teacher candidates' global citizenship and cyberculture adoption/development levels, is observed, it is seen that the social studies teacher candidates' global citizenship levels create a statistically significant difference ( $F_{(3-168)}=3.86;p=.01 \leq .05$ ) according to the purpose of social media use. It is seen that there is no statistically significant difference ( $F_{(3-168)}=1.87;p=.14 > .05$ ) in the levels of adoption of cyberculture. It has been determined that the global citizenship levels of teacher candidates who use social media to follow the current agenda are higher than those who use social media for entertainment purposes. In line with the findings, it can be stated that the purposes of teacher candidates' use of social media do not have an impact on their level of adoption of cyberculture.

**Table 7. One-Way analysis of variance results regarding teacher candidates' global citizenship levels and cyber culture adoption/development levels differentiating according to daily average internet usage time variable**

Data Collection Tools	Daily Internet Usage Time	n	$\bar{x}$	SD	SV	Ss	df	ms	F	p
<b>Global Citizenship</b>	1-5 Hours	87	2.72	.56	In-group	.369	2	.184	.55	.58
	6-11 Hours	68	2.70	.57	Intergroup	56.530	169	.334		
	12 hours and more	17	2.86	.71	Total	56.899	171			
<b>Cyber Culture Adoption/Development Level Scale</b>	1-5 Hours	87	3.08	.90	In-group	45.465	2	22.732	23.64	<b>.00*</b>
	6-11 Hours	68	3.49	1.05	Intergroup	162.519	169	.962		
	12 hours and more	17	4.86	1.08	Total	207.984	171			
<b>The Source of the Difference (Gabriel) 6-11 Hours&gt;1-5 Hours 12 hours and more &gt;1-5 Hours; 6-11 Hours</b>										

\* $p \leq .05$

When Table 7, which includes the statistical analysis of the daily internet usage time variable of social studies teacher candidates' global citizenship levels and cyberculture adoption levels is examined, it is seen that the social studies teacher candidates' global citizenship levels do not create a statistically significant difference ( $F_{(2-169)}=.55;p=.58>.05$ ) compared to the average daily internet usage time. It is seen that there is a statistically significant difference ( $F_{(2-169)}=23.64;p=.00\leq.05$ ) in the levels of adoption of cyberculture. It has been determined that teacher candidates who use the internet for an average of 6-11 hours a day have a higher level of adoption of cyberculture compared to teacher candidates who use the internet for 1-5 hours a day. It has been determined that the cyberculture adoption levels of teacher candidates who use the internet for an average of 12 hours or more per day are higher than the teacher candidates who use the internet for an average of 1-5 hours and 6-11 hours per day. In line with this finding, it can be stated that the increase in the average daily time spent on the internet has caused an increase in the level of prospective teachers' adoption of cyberculture. On the other hand, it can be said that the average daily internet usage time does not have an impact on global citizenship levels.

#### 4. DISCUSSION and CONCLUSION

The objective of this study was to assess the levels of cyberculture adoption and global citizenship among social studies teacher candidates, considering variables such as gender, grade, social media usage purpose and daily internet usage time. The findings of the research are presented below.

Upon investigating the cyberculture adoption levels of social studies teacher candidates concerning gender variables, no statistically significant difference was observed. It is conjectured that this lack of distinction may be attributed to the swift proliferation of cyber environments and cyberculture, which manifests diverse effects irrespective of gender. Koçak's (2019) research, however, yielded contrasting results, indicating a noteworthy gender-based difference in the level of cyberculture adoption among university students, favoring male students. Notably, the outcomes of this research diverge from those of other studies.

Upon examining the global citizenship levels of teacher candidates in relation to gender variables, no statistical difference was identified. Consistently, Öksüzoğlu's (2022) research revealed that the global citizenship levels of teacher candidates exhibited no statistical variance based on gender. This finding aligns with the results obtained by Özdemir-Özden and Karadağ (2021), who concluded that there was no significant difference in the global citizenship levels of teacher candidates when analyzed in terms of gender variables. Similarly, Çoban and Karaca (2015) determined that no significant difference existed when evaluating the global citizenship levels of teacher candidates based on gender variables. Additionally, a study by Çakmak et al. (2015) found no statistical difference in the global citizenship levels of teacher candidates with respect to the gender variable. Furthermore, Göl's (2013) research established that there was no statistical difference in the global citizenship attitude levels of social studies teacher candidates when examined in terms of gender variables. However, in Gül's (2020) research, an examination of the global citizenship levels of university students based on the gender variable led to the conclusion that a significant difference existed, favoring female students. Similarly, in Durmuş's (2017) study, an analysis of the global citizenship attitudes of teacher candidates resulted in the determination of a significant difference, favoring female teacher candidates.

Upon scrutinizing the cyberculture adoption levels of social studies teacher candidates with consideration given to the grade level variable, no statistically significant difference was identified. It can be inferred that the grade level factor does not exert a notable impact on the cyberculture adoption levels of teacher candidates. Similarly, an examination of the global citizenship levels of teacher candidates concerning the grade level variable revealed no statistical differences. This aligns with the conclusions drawn by Öksüzoğlu (2022), who determined that the global citizenship levels of teacher



candidates were not a decisive factor when assessed in relation to the grade level variable. Additionally, Koçar's (2022) research indicated that the grade levels of teacher candidates do not exhibit a significant difference in their global citizenship status. Consistent with these findings, Özdemir-Özden and Karadağ (2021) observed that the global citizenship levels of teacher candidates remain consistent regardless of the grade level they are enrolled in, Gül's (2020) research on university students also substantiates this, suggesting that global citizenship levels do not significantly change with variations in grade level. In a related context, Durmuş (2017) found that prospective teachers' global citizenship attitude levels do not exhibit a significant difference at the classroom level. However, there is some divergence in findings, as indicated by the research conducted by Çoban and Karaca (2015) which suggested that prospective teachers' global citizenship attitude levels differ statistically concerning the class variable. Additionally, Göl's (2013) research found no significant difference in the global citizenship attitudes of teacher candidates based on grade levels.

When social studies teacher candidates' cyberculture adoption levels were examined in terms of the social media usage purpose variable, the findings showed that teacher candidates' social media usage status did not affect their cyberculture adoption levels. Entertainment, which is one of the purposes of teacher candidates' use of social media, affects their global citizenship levels. It can be expressed that this situation is due to the fact that social media has a global impact in the world, turning individuals and their citizenship status within society into global citizens as a world citizenship.

When social studies teacher candidates' cyberculture adoption levels were examined in terms of the daily internet usage time variable, the results showed that increasing internet usage time highly affects the cyberculture adoption levels of teacher candidates. This situation can be thought to be due to the fact that cyber environments create a world that directly belongs to internet culture. It was concluded that the daily internet usage time did not affect the global citizenship levels of teacher candidates. Global citizenship encompasses an understanding of citizenship that expresses the responsibility of individuals toward the problems in the world. At this point, although the internet is considered a tool that supports global citizenship duties, it can be stated that the duration of daily internet usage does not affect the global citizenship level of teacher candidates because global citizenship exists independently.

#### *Suggestions*

In order to ensure that teacher candidates and students act consciously and safely on cyberculture issues, it may be recommended to organize training on digital training, data privacy, social media management and ethical behavior in digital environments.

It may be suggested that cyberculture education should be comprehensively addressed in the social studies curriculum and that simulations and interactive games on cyberculture should be developed for students.

It may be recommended that teacher candidates and students be encouraged to participate in social responsibility projects and contribute to social responsibility projects around the world in order to develop global citizenship awareness.

#### *Ethics Committee Decision*

*This research was carried out with the permission of Niğde Ömer HalisDemir University Publication Ethics Board with the decision numbered 165350 dated 01.02.2022.*

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