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DIGITAL CITIZENSHIP IN THE 21ST CENTURY: STRENGTHENING DIGITAL ETHICS

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ABSTRACT

The concept of digital citizenship in the 21st century, defined as the use of knowledge and skills to behave ethically and responsibly in digital environments. With the rapid development of technology, digital literacy and ethics have become key elements in adapting to the digital world, especially in education, governance, and social participation. This paper also highlights challenges such as the digital divide, authoritarian populism and hate speech, and the need for digital literacy as a solution to mitigate their negative impacts. The purpose of this article is to map previous articles or research on digital citizenship in the 21st century related to the application of digital ethics with data visualization. Using a qualitative approach, this research analyzed 377 articles obtained from Scopus and visualized with the VOSviewer application. The research found that digital citizenship is growing rapidly, but still faces challenges such as the digital divide, cyberbullying, and lack of digital literacy. In addition, the close link between digital citizenship and digital ethics, particularly in education and social participation, is highlighted. With the integration of evolving technologies, this article emphasizes the importance of strengthening digital ethics and literacy to create an inclusive, safe, and sustainable digital environment, especially amidst the surge in the use of digital platforms.

Keywords: Digital Citizenship; Digital Ethics; Digital Literacy.

INTRODUCTION

Digital citizenship is defined as the use of knowledge and skills to demonstrate appropriate behavior online using digital technologies (Martin et al., 2020) . With the rapid spread of technology, individuals have become part of the digital world and face the accompanying need to develop digital citizenship skills (Ozer & Ozer, 2020) . Understanding the misuse of digital technology and its adverse effects is a fundamental issue in psychosocial adjustment among adolescents today.

Over the past two decades, the internet has emerged as an indispensable platform for political expression, community building, and social activism, witnessing a tremendous surge in its significance. During that time, conventional approaches to civic engagement have experienced declining levels of participation (Furlong & Cartmel, 2012; Phelps, 2012; Xenos et al., 2014) . Citizenship, a concept with deep historical roots dating back to Plato and Aristotle, has generally been understood as a set of shared expectations about how members of a society engage in the political sphere (Dalton, 2008) .

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The concept of digital citizenship can be defined as the process of assisting individuals in developing the skills and knowledge necessary to navigate the digital landscape in a responsible and constructive manner, so as to avoid potential challenges and problems that may arise from the use of digital technologies. This is an important consideration in the context of contemporary society and education (Peart et al., 2020)

(Canada, Chile, Spain, United Kingdom, and United States) The recent rise of authoritarian populism, fueled by the spread of digital hate speech and the dominance of emotions in the political arena, has not attracted much interest from educational researchers. In response to this gap in the literature, the authors of this article aim to provide an overview of the educational implications of the recent wave of authoritarian populism by interviewing a group of democratic citizenship education experts from different countries and backgrounds. The dialogue generated from their responses helps advance the educational debate on how schools can address the emotions and hate speech that motivate support for authoritarian populism (Estellés & Castellví, 2020)

The integration of digital technologies has facilitated the enhancement of learning and teaching processes on physical university campuses, both in formally scheduled learning and teaching events and in less formal spaces where higher education experiences are conducted (Blaj-Ward & Winter, 2019) . In terms of per capita usage, Indonesia is one of the countries with the largest social media users in the world. However, in terms of online participation, Indonesian women still lag behind men. Indonesian women's digital engagement and active participation in digital media production allows them to creatively express and champion gender ideals, as well as mobilize activism around political and social issues. A gender perspective on the emerging concept of digital citizenship, highlights women's engagement, activism, autonomy and creative expression (Winarnita et al., 2022) .

E-Government brings administration closer to citizens and entrepreneurs, speeding up, facilitating and increasing the transparency of administrative actions, thus saving time and money and improving efficiency. Exploration of the relationship between *eGovernment*, digital citizenship and the digital divide in Norway and Slovakia. Beneficiaries of eGovernment services are aligned with sociodemographic variables to a lesser extent in Norway than in Slovakia. Norway shows a successful model for digital inclusion through strategies based on digital literacy and universal access. Whereas Slovakia faces challenges in increasing eGovernment adoption due to social and digital divides (Tokovska et al., 2023) . This research focuses on the social gap that occurs in adapting to the development of digitalization in government, namely *egovernment*, which makes it necessary to focus on good literacy in digital citizenship.

The Digital Citizenship Scale (original and revised forms) has been one of the most widely used instruments to measure and evaluate these changes, but to date, no studies have investigated how digital citizenship behaviors relate to exogenous variables. The presence of personality characteristics influences individual behavior in the digital world, including aspects such as digital ethics, responsibility, and participation in digital environments (Roberts et al., 2023) . The research was conducted in universities in Canada, Slovenia and

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Australia. The review on digital citizenship is only seen from the perspective of students and as a proof of the relationship between personality and citizenship which has not fully described the citizenship of the 21st century.

Of the three articles, (Estellés & Castellví, 2020; Roberts et al., 2023; Tokovska et al., 2023) has clear differences. These differences are described in the following table:

Table 1. Comparison of research on digital citizenship

Aspects	E-Government-The Inclusive Way for the Future of Digital Citizenship (Tokovska et al., 2023)	The Educational Implications of Populism, Emotions and Digital Hate Speech: A Dialogue with Scholars from Canada, Chile, Spain, the UK, and the US (Estellés & Castellví, 2020)	Digital Citizenship and the Big Five Personality Traits (Roberts et al., 2023)
Main Focus	Examining the digital divide and eGovernment inclusiveness in Norway and Slovakia.	The impact of populism, emotion and digital hate speech on democratic education.	The relationship between Big Five personality and digital citizenship behavior.
Approach	Quantitative: Logistic regression analysis based on Eurostat survey data.	Qualitative: Interviews with education experts from different countries.	Quantitative: Survey using the digital citizenship scale (DCS-R) and the BFI-10.
Key Concepts	1.eGovernment. 2.Digital divide. 3.Public service inclusiveness.	1.Authoritarian populism. 2.Digital hate speech. 3.Democratic education.	1. Big Five Personality (OCEAN). 2.Digital citizenship. 3.Digital activism.
Case Study	Norway and Slovakia are examples of developed and developing countries in Europe.	Canada, Chile, Spain, the UK and the US as global contexts for democratic education.	Canada, Australia and Slovenia as contexts for individual digital engagement.
Key Results	1. Norway is more inclusive and has a smaller digital divide. 2.Slovakia faces challenges in eGovernment access.	1. Populism is influenced by emotions such as fear and hatred. 2.Education can fight populism with digital literacy.	2. Openness and conscientiousness influence digital activities. 1.Personality influences online political behavior.
Ethical Perspective	Emphasize inclusiveness of public services to reduce social inequality.	Emphasize the importance of education to reduce hate speech and political polarization.	Appreciate the diversity of personalities in enhancing positive digital participation.
Contribution	Provide recommendations for an inclusive eGovernment model based on the Norwegian experience.	Provide insights into the integration of democracy education and digital literacy.	Provides empirical evidence on the role of personality in digital citizenship.

Source: created by the author

The novelty that arises from this article compared to previous research or articles is that it focuses on how digital ethics are implemented that harmonize and provide direction in digital use for the community based on the existing article data mapping. In addition, this

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article focuses on the development of digital citizenship in the 21st century by looking at the results of data visualization that has been taken.

The purpose of writing this article is to map previous articles or research on digital citizenship in the 21st century related to the application of digital ethics with visualization data. The development of digital citizenship affects digital citizenship that must be developed with good ethics. The 21st century is a century of rapid digitalization. So this article focuses on mapping from the previous article with visualization data on digital citizenship in the 21st century to the efforts of digitalization ethics that must always be applied and to increase community involvement in participating in good digital use according to digital ethics.

RESEARCH METHOD

This research uses qualitative analysis methodology. Qualitative research methodology is well suited to identifying solutions to research problems, offering results in the form of descriptions and factual data collection. The bibliometric analysis used in this study involved the aggregation of a wide range of articles, journals and other scholarly works deemed appropriate to meet the requirements of the study. A large amount of data was collected from two main sources, namely Scopus and VOSviewer, which formed the basis for a comprehensive research corpus. In this collection of data sources, the terms "Digital citizenship" and "Digital Ethics" were found on numerous occasions. Since Scopus and VOSviewer are databases that have been recognized by academic and non-academic organizations around the world, they were used as the main data sources.

The methodological approach of this study employed bibliometric analysis using the Scopus database, focusing on publications from 2014 to 2024. VOSviewer software was used to facilitate detailed qualitative analysis of the data, allowing the identification of thematic trends and patterns in the data security threat literature. The bibliometric methodology used included citation analysis, which examined the frequency and impact of citations to understand the influence and interconnectivity of key research works. In addition, a keyword trend analysis was conducted to identify the most prominent topics and areas of current interest in the field, allowing a deeper exploration of how research priorities evolve over time. Citation analysis helped highlight influential authors and foundational studies, while keyword trend analysis provided insights into shifts in thematic focus. This dual approach ensures a comprehensive understanding of the data security landscape in the public sector.

Data Analysis

(TITLE-ABS-KEY("Digital") AND TITLE-ABS-KEY("citizenship") OR TITLE-ABS-KEY("digital ethics")) AND PUBYEAR > 2018 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, "SOCI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (EXACTKEYWORD,"Digital Citizenship") OR LIMIT-TO (EXACTKEYWORD, "Digital Ethics") OR LIMIT-TO (EXACTKEYWORD, "Citizenship")) AND (LIMIT-TO (LANGUAGE, "English")).

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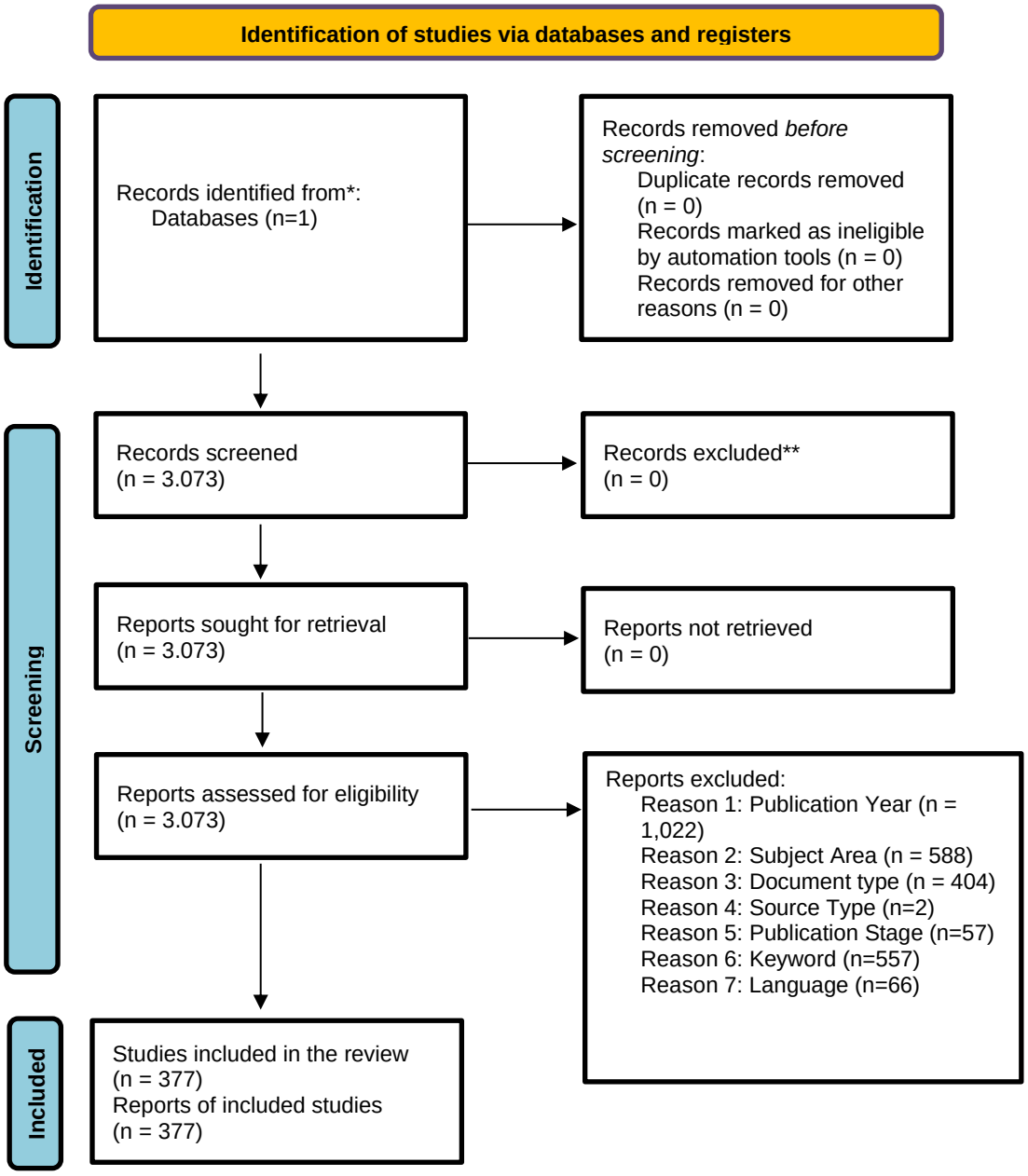
Figure 1. The PRISMA chart



Source: *created by Authors*

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This bibliometric study used the Scopus scientific database to conduct an analysis of publications containing the terms "Digital Citizenship" or "Digital Ethics" in the title, abstract or keywords. This research utilizes the Scopus database, a comprehensive resource with scholarly sources, covering a wide range of fields such as social sciences, engineering, computer science, energy, environmental sciences, and arts and humanities.

The selection of Scopus as a reference search source is because Scopus is considered better than Dimensions or Google Scholar because it has a global reputation, rigorous journal selection, and verified data, so it only includes high-quality publications. Scopus provides comprehensive metrics analysis, such as H-Index and Citation Analysis, which support the assessment of scientific impact and researcher productivity, and is widely recognized for formal academic needs such as university rankings and grant applications. Meanwhile, Google Scholar and Dimensions tend to cover a wider range of content, including unaccredited works or "predatory journals," making them less ideal for high-level academic needs, although they are more accessible and often free.

The study examined all types of papers published in the Scopus database between 2014 and 2024 to provide a comprehensive of the world's research output. Scopus is widely regarded as one of the relevant sources of information in the international scientific community, given its status as one of the most important critical data sources.

VOSviewer was used in the data analysis process to view and interpret the research findings obtained from the Scopus database. VOSviewer is a data visualization software that is very useful in qualitative research, especially for network and cluster analysis. VOSviewer allows researchers to visualize relationships between elements in a data set, such as keywords, topics, or authors. It provides an intuitive visual representation of complex data, which facilitates researchers' understanding of the overall data structure. In addition, VOSviewer facilitates collaboration between researchers by allowing them to visually explore and share insights from bibliometric data.

Within Scopus, the data mining process can be divided into eight different steps. In the first step, we classify the searches performed using the keywords "Digital" AND "Citizenship" OR "Digital Ethics". These keywords were determined by analyzing category names, abstracts, or the keywords themselves. The final result was 3,073 papers. In the second step, the authors limited the time period by altering the database search to include a ten-year period, starting in 2014 and ending in 2024. This time period was chosen to get the most recent references on data security. This research has yielded 2051 papers at this point. The author then proceeded to the third step by selecting the Subject Area specifically on Social Science which resulted in 1,463 papers. In the fourth step, the document type selects article only which results in 1,059 documents. The fifth step chooses the source type on the Journal with the result of 1,057. then the sixth step selects the publication stage, namely the Final stage with the result of 1,000. In the seventh step, researchers want to focus more on writing this paper by selecting keywords including [Digital Citizenship]. [Citizenship], and [Digital Ethics] with a result of 443. And finally the author restricts the Language used, namely English with the final result of 337 documents.

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RESULT AND DISCUSSION

Digital Citizenship

The relationship between society and the nation-state has traditionally been conceptualized as citizenship. Citizenship represents a particular way of thinking and looking at social issues and a set of practices that constitute changes in the relationship between citizens and the nation-state. A citizen can also influence the development of the way society is organized (Payne, 2016) . State citizenship and democratic citizenship are not the same and may offer different levels of legal and formal rights. In practical terms, one can only exercise these rights to varying degrees (Sépulchre, 2020) .

One can be a Norwegian citizen of Norway and have all the formal rights that come with Norwegian citizenship but still have difficulty functioning as a full member or citizen of Norway. There are many possible causes for such situations to occur in the process of adapting to a multicultural country, but the most common causes are multicultural, but the most common causes are poverty, serious or chronic illness and disability, and language problems (Mossberger et al., 2007) .

Opportunities to participate in civic, social, and political life have increased with the advent of the Internet. The notion of digital citizenship, for example, brings for example, brings the principles of scale, immediacy, and information control that are all immanent in the notion of big data and which provide a change in understanding (Pangrazio & Sefton-Green, 2021) . Therefore, digital citizenship can be defined as 'the right to participate in society online', thus enhancing the democratic aspects of participation (Shelley et al., 2004) .

Early approaches to digital citizenship were largely concerned with bridging the digital divide where issues of access, inclusion, and communicative rights and freedoms were prioritized (Jørring et al., 2018; Thrane et al., 2005) . The discussion on digital citizenship is described as a contextual approach, which understands digital citizenship as a context-dependent and changing concept. In this approach, digital citizenship 'encompasses very diverse experiences of what it is like to live as a citizen in the digital age' (Jæger, 2021) .
Digital citizenship is not just about state obligations or citizen responsibilities, but also how digital tools and technologies facilitate new forms of participation. Digital platforms now offer more opportunities for informed and engaged citizenship, and citizen participation with significant impact on democratic politics.

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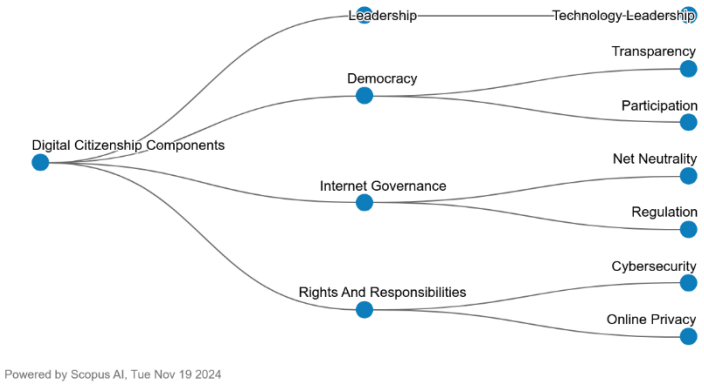
Figure 2. Concept Map of Digital Citizenship



Source: *Analyze by Scopus AI*

The bibliometric mapping or conceptual framework shows a flowchart depicting the components of Digital Citizenship. This diagram consists of several branches that connect the main components with related sub-components. The following is a description of the figure:

1. Leadership:
    - Technology Leadership:

Refers to the ability of an individual or organization to lead in the effective and ethical use of technology. Technology leaders are responsible for ensuring that technology is used to improve productivity, efficiency, and quality of life, while adhering to ethical principles (Read & Smith, 2023) .

2. Democracy:
    - Transparency:

Transparency in the context of digital democracy refers to the openness of governments and organizations in decision-making processes and information. This includes public access to government data and documents, as well as clarity in procedures and policies (Anthopoulos et al., 2023) .

- Participation:

Digital participation refers to the active involvement of citizens in democratic processes through digital platforms. It includes e-voting, online public consultations, digital petitions, and various other forms of interaction that allow citizens to contribute to political and social decision-making (Pankevych et al., 2021) .

3. Internet Governance:
    - Net Neutrality:

The principle that all data on the internet should be treated equally without discrimination as to source, purpose, or type of content. Network neutrality ensures that internet service providers do not block, slow down, or charge extra for access to certain content (Morley et al., 2020) .

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- Regulation:

Internet regulation involves creating and implementing rules that govern the use of the internet to ensure safety, fairness, and openness. These regulations may include personal data protection, cybercrime prevention, and copyright protection (Kaitatzi-Whitlock, 2020) .

4. Rights and Responsibilities:

- Cybersecurity:

Cybersecurity includes efforts to protect networks, systems, and data from attack, damage, or unauthorized access. It includes technical measures such as encryption, firewalls, and other security practices, as well as user awareness of cyber threats (Elrayah & Jamil, 2023) .

- Online Privacy:

Online privacy refers to the right of individuals to safeguard their personal data from unauthorized access. This includes privacy settings on social media, encryption of communications, and data management by technology companies to ensure that personal information is not misused or sold without authorization (Barassi, 2019) .

It can be interpreted that this diagram reflects various important aspects of digital citizenship, which include leadership in technology, the role of democracy in the digital space, internet governance, and the rights and responsibilities of individuals in maintaining online safety and privacy. Building awareness and a deep understanding of each of these components will help create a healthier, safer and more inclusive digital environment.

Digital Ethics

Digital ethics refers to a set of principles that serve as a guide for the responsible use of technology and data in the digital age (Andreasyan et al., 2024) . These principles encompass moral values and norms relating to various aspects of modern technology. Their main purpose is to ensure that technology is used ethically, both in personal and professional contexts (Lemke et al., 2023) .

In practice, digital ethics covers issues such as data privacy, cybersecurity, transparency and accountability (Gorgoni, 2023) . For example, in terms of data privacy, digital ethics demands that personal data should be kept confidential and not misused. In the context of cybersecurity, digital ethics principles emphasize the importance of protecting information from cyber threats and attacks that could harm individuals or organizations.

In addition, digital ethics also teaches the importance of transparency in the use of technology (Gehring, 2023) . This means that individuals and organizations should be honest and open about how they use technology and data, as well as the impact it may have. Accountability is also an important part of digital ethics, where technology users must take responsibility for their actions and the consequences of using the technology (Tsai, 2021) .

By adhering to the principles of digital ethics, we can ensure that technology is used for the common good and does not cause harm to individuals or society as a whole. This is

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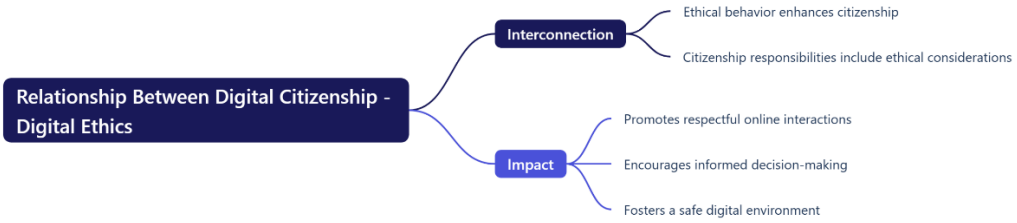
especially important in today's digital age, where technology plays an increasingly large role in our daily lives.

Relation between Digital Citizenship and Digital Ethic

The connection between digital citizenship and digital ethics illustrates how the elements in both concepts complement each other to build healthy digital interactions.

Figure 3. Relation between Digital citizenship and Digital Ethic



Source: Created by Author

1. Interconnection
   - Ethical behavior enhances citizenship :
     - Ethical behavior in the digital world, such as respecting privacy, avoiding fake news, and fighting hate speech, creates an image of a responsible digital citizen.
     - Example: A person who avoids sharing fake content on social media contributes to a digital society with more integrity..
   - Citizenship responsibilities include ethical considerations :
     - Being a digital citizen is not just about utilizing technology, but also understanding the ethical consequences of their online actions.
     - Example: Reporting content that violates or respects copyright in online information sharing.
2. Impact
   - Promotes respectful online interactions :
     - Digital etiquette teaches the importance of mutual respect when communicating online.
     - Example: Not engaging in cyberbullying or using polite language in online discussions.
   - Encourages informed decision-making :
     - By understanding the principles of digital ethics, digital citizens are encouraged to make wise and informed decisions.
     - Example: Verify facts before sharing news or information on social platforms.
   - Fosters a safe digital environment :
     - Collaboration between digital citizenship and ethics helps create a digital space free from threats, such as online fraud or misuse of personal data.

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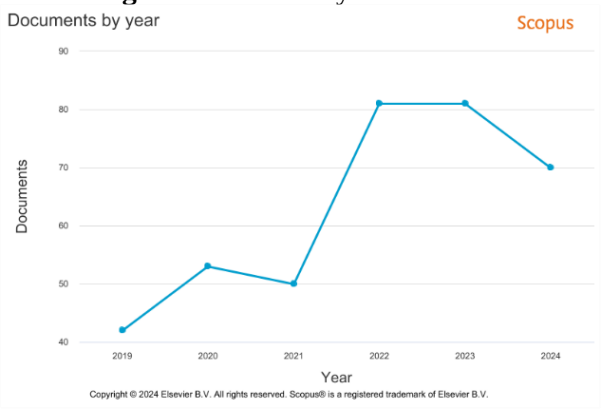
- Example: Using secure passwords and not sharing personal information carelessly.

Trends of Publication

The results of the analysis conducted on Scopus for the keywords used, namely "Digitization" AND "Citizenship" OR "Digitalization Ethics" show that from 2019-2024 there was an uneven increase and decrease. A very sharp increase occurred from 2021-2022. The increase in the number of documents is from 50 documents to 81 documents, which is 31 documents uploaded in 2021. However, from 2023 to 2024 (currently) there was a noticeable decrease of around 11 documents (81-70).

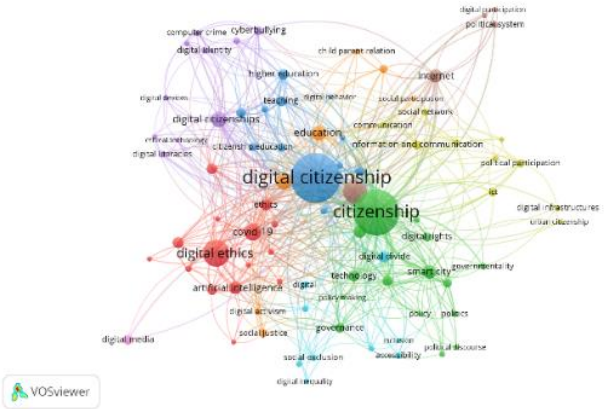
Figure 4. Document by Year



Source: Analyze search research by Scopus

The networked relationship of digtal citizenship to digital ethics in 377 existing scientific articles was processed using VOSviewer software, visualizing related terms. Overall, there were 9 clusters and 84 items. Text items can be defined as research themes related to digital citizenship and digital ethics.

Figure 5. Digital citizenship visualization network



Source: Processed by the author using VOSviewer

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Table 2. Items by Cluster on Digital Citizenship Network visualization - Source: Processed by the author using VOSviewer

Cluster	Items	Color	Percentage
Cluster 1 (15 Items)	artificial intelligence, covid-19, data governance, data privacy, data protection, digital contact tracing, digital ethics, digital platforms, digital surveillance, digital technologies, digital transformation, ethics, pricay, privacy policies, technology policy.	Red	18%
Cluster 2 (15 Items)	citizenship, democracy, digital rights, governance, governance approach, government, governmentality, policy, policy making, political discourse, politics, smart city, technology, technology adoption, urban politics.	Green	18%
Cluster 3 (12 Items)	citizenship education, digital behavior, digital citizenship, digital competence, digital skills, digital society, digitization, e-government, global citizenship, higher education, online learning, teaching.	Blue	14%
Cluster 4 (10 Items)	citizenship participation, communication, digital democracy, digital infrastructure, e-participation, ict, information and communication technology, political participation, social network, urban citizenship.	Gold	12%
Cluster 5 (10 Items)	computer crime, cyber bullying, cyberbullying, digital citizenships, digital devices, digital identity, digital literacies, digital security, ethical technology, political debates.	Purple	12%
Cluster 6 (9 Items)	accessability, digital, digital divide, digital inequality, digitalization, disability, inclusion, social exclusion, social inclusion.	Light Blue	11%
Cluster 7 (7 Items)	child parent relations, digital activism, digital literacy, digital technology, education, social justice, social participation.	Orange	8%
Cluster 8 (5 Items)	digital participation, internet, political relations, political system, social media.	Brown	6%
Cluster 9 (1 Items)	digital media.	Pink	1%

Source: Created by author

Each cluster has a different color and different scale thickness, which can then illustrate the extent to which the concept or term has been studied in digital citizenship studies. The thicker the scale, the more the term or concept has been the main focus, allowing future researchers to quickly identify related but under-researched themes that could be further explored.

Cluster 1, the terms that appear in this cluster identify that the focus of the research conducted is related to digital ethics networks in the use of digitization in various applications. Relevant articles as references in this research, for example Weiss, Catharine (Weiss, 2020) , explain that with the development of technology today, it is very worrying about one's privacy. AI that continues to be developed must also consider the level of transparency of data. This article describes the development of trade, where technology is used to make it

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easier for consumers to choose the goods they buy. Assessment of the limits of effectiveness between consumers and digital marketers and social media.

Cluster 2, a discussion of citizenship that plays a direct role in governance both democracy and politics. Articles that are relevant to this study are, Greig, et al (Charnock et al., 2021) . This article examines the evolution of the 'Barcelona Model' of urban transformation through the lens of worlding and provincialization of urbanism. New councils are given time to leverage digital platform technologies to enhance participatory democracy, and the agenda is to secure technological sovereignty and digital rights for citizens.

Cluster 3, focuses on digital citizenship itself by discussing more about learning or teaching. Dimitriadi (Dimitriadi, 2019) in his article discusses digital education that is highly connected, teachers at universities are interested in utilizing the opportunities of digital trends in teaching and learning. The informal learning that students have done outside the classroom can be used to support their digital citizenship development through offline community engagement. The use of opportunities as a means to encourage civic practice amongst student communities and the positive impact such synergies can have on all participants.

Cluter 4, in this cluster, is focused on the discussion of information and communication, which in this cluster is also connected to ICT. Articles that can be a reference are, Mahmoud Hawamdeh, et al (Hawamdeh et al., 2022) . The COVID-19 pandemic is increasing the use of distance learning while research has shown that digital knowledge among students in distance learning is still inadequate, while awareness and knowledge of digital citizenship among teachers and students remain the main criteria for improving distance learning that largely depends on information technology. Al-Quds Open University (QOU) in the Palestinian territories and Kyrenia University (KU) in the Turkish Republic of Northern Cyprus in 2020 became research sites for integrating digital citizenship practices such as digital rights, digital security, and digital ethics into the elearning curriculum.

Cluster 5, shows how cyber engagement needs to be considered to maintain data security. The article from Stephanie Fredrick S, et al (Fredrick et al., 2023) describes cyberbullying. Cyberbullying is a significant public health issue that has been associated with negative outcomes. There is a need for training and professional development to support the reduction of cyberbullying cases that occur today.

Cluster 6, focuses on accessability which is also related to disability and social exclusion and inclusion. Filippo Trevisan (Trevisan, 2022) , This article explores inclusivity in the context of digital politics. As online campaigns and digital participation become increasingly important in democratic politics, it is important to better understand the implications of this shift for politically marginalized and vulnerable people. And the focus of this research article is on people with disabilities.

Cluster 7, in this cluster describes the supervision of the use of technology or digitalization on individual development for social behavior every day. Suitable articles for reference Florence Martin, et al (Martin et al., 2021) , in this article examines parents' perceptions of students' digital security in the use of technology, time spent, parents' concerns, and their knowledge of various digital security topics. Parents provide time limits for children

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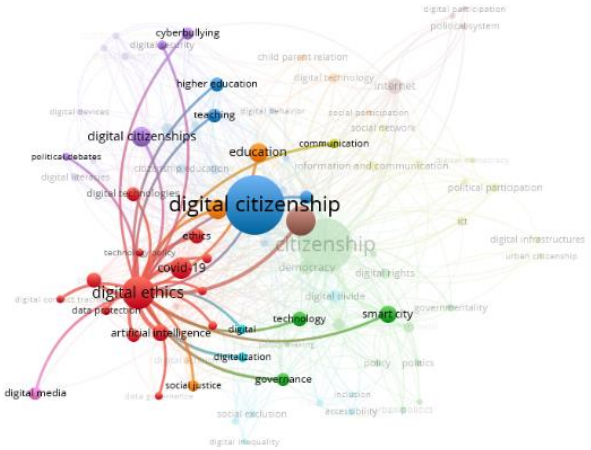
to use technology. Regarding time limits and access restrictions, 40% of parents let their children go online for 1-2 hours a day and 47% of parents set time limits. Parents recommend ensuring age restrictions and identity verification when using various websites and games.

While in cluster 8, digital participation is one of them with social media in politics. Beatriz Catalina-García, et al (Catalina-García et al., 2019) explains this research which focuses on several aspects that connect the digital life of university students and their civic, political and social engagement, aiming to determine the level of involvement of young people in actions or institutions related to associations through digital networks. The research also tries to determine the relationship between the level of social/political participation of this sector of the population and the interest of its members in the social media profiles of civically engaged subjects or organizations. The result of this research is that intensive use of social networks by young people is not positively associated with greater levels of civic engagement. Finally, it appears that young people prefer to consume content rather than produce it.

Finally, cluster 9 explains about digital media. David McGillivray and James Mahon (McGillivray & Mahon, 2021) in their article explain that it focuses on the use of digital platforms by young people, in the context of 'live' digital media projects. The research draws on Bourdieu's notion of social practice and explores imbalances in young people's ownership of digital capital. For young people emerging from a challenging habitus, support mechanisms are an important element in building a bank of digital capital that can be traded in other areas of their lives. Communities of practice can support those who are not privileged to compete on a more level playing field with their privileged peers by opening up access to educational cultural capital.

Figure 6. Network visualization of digital ethic attachment with digital citizenship



Source: Processed by the author using VOSviewer

From Figure 5, it shows that the writing of this article focuses on the attachment of digital ethics which is in line with the current development of digital citizenship. Ethics are

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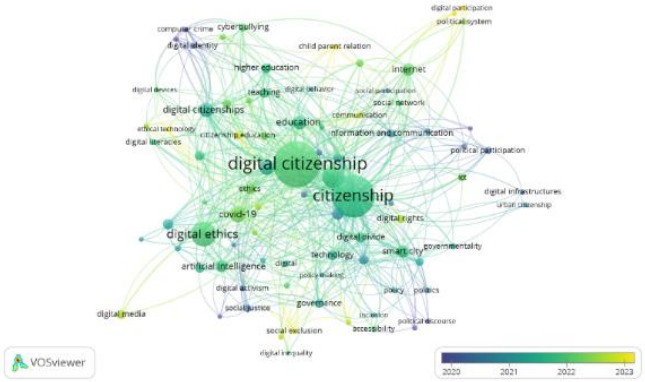
needed for individuals or groups to manage digital use so as not to be attacked by cyberbullying for digital users. In addition, the digital ethics network also binds to education, teaching as a continuation that there needs to be a good understanding for users.

Figure 7. Overlay visualization of digital citizenship between 2019-2024



Source: Processed by the author using VOSviewer

The time span taken in processing the data in this article is between 2019-2024. The author wants to see how the development between digital citizenship and digital ethics is researched and see the time span from the start of the research to the current research. It is clear that digital citizenship and digital ethics have quite bright colors even though digital ethics looks a little darker than digital citizenship. This indicates that digital ethics was first researched by many people considering that digital ethics itself is something that really needs to be considered when digital starts to develop rapidly. Digital citizenship and digital ethics are quite widely researched, this is related to the size of the node which is quite large, which has quite a lot of networks with other nodes

CONCLUSION

Digital citizenship in the 21st century is closely linked to rapid technological development and the social and ethical challenges that come with it. Digital literacy and ethics are key elements in supporting responsible digital citizenship, especially to address challenges such as cyberbullying, digital divide and hate speech. In the 2019-2024 timeframe, research trends in this area show a significant increase, particularly in connecting digital ethics with digital citizenship through various applications such as education, digital democracy, and social inclusiveness. In addition, the emphasis on the role of technology in education, socio-political participation and digital inclusion highlights the need for a strategic approach to creating a safe, just and inclusive digital society for all.

Recommendations for future research could focus on exploring the relationship between digital citizenship and social inclusion, especially in increasing the digital participation of marginalized groups such as women, people with disabilities and remote

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communities. In addition, in-depth studies on the integration of digital ethics in education are needed to instill the value of digital responsibility at different levels of education. Research can also examine the impact of new technologies such as artificial intelligence and social media on users' digital rights, privacy and security, and evaluate existing regulations. Cross-country comparative studies on the successful implementation of e-government policies can identify best practices that can be adopted globally. Finally, longitudinal studies that monitor changes in people's digital behavior over time will provide deep insights into the effectiveness of digital literacy strategies and related policies in the evolving digital age with hyperlinks connecting different material pieces. Utilize terminology with significant significance within science and refrain from employing statistical or methodological technical jargon.

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