

GLOBAL HUMAN RIGHTS DEFENCE

EMPOWERING VOTERS: THE ROLE OF TECHNOLOGY AND DESIGN IN ELECTIONS

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INTRODUCTION

This report aims to explore how technology and graphic/legal design can enhance voter awareness and participation in elections. By examining the integration of these tools into the electoral process, the report seeks to highlight their potential to make voting procedures more understandable and accessible to a diverse electorate. The analysis includes various aspects such as voter registration, identification, voting methods, and the publication of election results, all of which are critical components in ensuring an informed and engaged voting populace.

The use of technology and design in elections is of paramount importance in promoting transparency, accountability, and participation in democratic processes. In an era where misinformation can easily spread and erode public trust, these tools serve as crucial mechanisms to ensure that voters receive accurate and clear information. By simplifying complex legal information through design principles and leveraging digital platforms, these technologies empower voters by providing them with the necessary knowledge to participate effectively in elections.

Transparency in the electoral process is enhanced through real-time updates, live streaming of election proceedings, and accessible platforms for reporting and addressing electoral malpractices. These measures build public trust and ensure that elections are conducted fairly and transparently. Additionally, accountability is strengthened as technology aids in accurate vote counting and secure data management, reducing the potential for fraud and errors.

Participation is another critical aspect addressed by these technologies. Online voter registration systems, electronic voting machines, and mobile voting applications make the voting process more accessible, especially for individuals who face barriers such as geographical distance or physical disabilities. By making the electoral process more inclusive, these tools uphold the democratic principle that every eligible citizen has the right to participate in their government.

Ultimately, the integration of technology and graphic/legal design in elections not only supports the fundamental human rights of information and participation, but also fosters a more transparent, accountable, and inclusive democratic process. This report delves into the current state of these technologies, their benefits, and the challenges they face, ultimately underscoring their transformative potential in empowering voters and strengthening democratic governance.

1. BACKGROUND

1.1. CONTEXTUAL OVERVIEW

The landscape of voter education and the integration of technology and legal design in elections has evolved significantly in recent years. Traditionally, voter education relied heavily on print media, public announcements, and community outreach programmes to inform citizens about their voting rights, registration processes, and election day procedures, however, the advent of digital technology has revolutionised how electoral information is disseminated and consumed.

In today's interconnected world, voter education has expanded beyond traditional methods to include a variety of digital platforms, social media, websites, mobile applications, and other online resources that have become essential tools for educating the electorate. These digital channels offer the advantage of reaching a broader audience more efficiently and cost-effectively. Moreover, they provide interactive and engaging content, such as videos, infographics, and online tutorials, which can make complex electoral information more accessible and easier to understand. The use of technology in voter education also facilitates real-time updates and instant communication. For instance, election authorities can quickly disseminate crucial information about voter registration deadlines, changes in polling locations, and procedures for absentee voting. This immediacy is vital for maintaining an informed electorate and ensuring that voters can participate fully and effectively in the electoral process.

The integration of technology into elections encompasses a wide range of applications, from voter registration and identity verification to vote counting and result publication. Technologies such as electronic voting machines (EVMs), online voter registration systems, and mobile voting applications have been adopted in many countries to enhance the efficiency, transparency, and accessibility of electoral processes.⁵

Legal design refers to the application of design thinking principles to the creation and dissemination of legal information. In the context of voter education, legal design aims to make complex electoral laws and procedures more understandable and engaging for the average voter. This approach involves using plain language, visual aids, and interactive

¹ ACE Project, 'Elections and Technology' (ACE Project, 2024) < https://aceproject.org/ace-en/topics/et/default accessed 31 July 2024 ("ACE 2024").

² Septimius Parvu, 'Technology in Elections – Best Practices in Using Digital Tools and Platforms in the Community of Democracies: Report to the Community of Democracies' Working Group on Democracy and Technology' (Community of Democracies, June 2022) https://community-democracies.org/app/uploads/2022/09/Report-Technology-in-Elections.pdf accessed 31 July 2024 ("Community of Democracies").

³ ACE 2024 (n 1).

⁴ Venice Commission, 'Opinion No. 925/2018 on Digital Technologies and Elections' (Council of Europe, 24 June 2019) https://www.venice.coe.int/webforms/documents/?pdf=CDL-AD(2019)016-e accessed 31 July 2024 ("Venice Commission").

^{).} ⁵ ACE 2024 (n 1).

elements to present information in a clear and accessible manner.⁶ By simplifying legal information and making it more visually appealing, legal design helps to bridge the gap between electoral laws and voter comprehension. For example, visual hierarchies, infographics, and multilingual materials can make it easier for diverse communities to understand their voting rights and the steps they need to take to participate in elections.⁷ This not only enhances voter awareness but also encourages greater participation and engagement in the democratic process.

By leveraging digital tools and innovative design principles, election authorities can create a more informed and engaged electorate, thereby strengthening the foundations of democratic governance.

1.2. HUMAN RIGHTS PERSPECTIVE

From a human rights standpoint, the right to vote is integral to the principles of democracy and civic engagement. The Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR) emphasise that everyone has the right to participate in the government of their country and express their will through genuine periodic elections held by universal and equal suffrage. This mandate is foundational to ensuring that electoral processes are free, fair, and accessible to all eligible voters, which is increasingly being facilitated by technology.

1.2.1. The Right to Information and Participation

Article 19 of the UDHR and Article 19 of the ICCPR highlight the right to freedom of opinion and expression, including the freedom to seek, receive, and impart information. In the context of elections, this right underscores the necessity for voter education and access to information. Voter education, facilitated by legal design principles and technologies, empowers individuals by providing them with the information needed to make informed decisions. This aligns with the European Commission of Democracy Through Law's (Venice Commission) emphasis on the freedom of voters to form an opinion based on accurate information, a fundamental aspect of free suffrage.⁸

Article 21 of the UDHR and Article 25 of the ICCPR reinforce the right to participate in government and elections. These articles mandate that elections should be conducted by universal and equal suffrage, ensuring the free expression of the electorate's will. Technology plays a crucial role in upholding these rights by making electoral processes more transparent,

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⁶ Andrea Miranda Salas and Emma Werowinski, 'Visual and Information Design Research: Designing Impactful and Culturally Responsive Voter Education' (Center for Civic Design, 24 June 2024) https://civicdesign.org/wp-content/uploads/2024/06/OH_Visual-Design-Study_Report_2024_Final.pdf accessed 31 July 2024 ("Civic Design").

⁷ Community of Democracies (n 2).

⁸ Venice Commission (n 4).

accessible, and inclusive, for instance, online voter registration systems, electronic voting machines, and digital platforms for candidate information dissemination ensure broader participation and engagement, reducing barriers such as geographical distance and physical disability.

1.2.2. Non-discrimination and Accessibility

This principle of non-discrimination is central to human rights in elections. Article 5 of the International Convention on the Elimination of All Forms of Racial Discrimination (ICERD) guarantees the right to participate in elections without distinction as to race, colour, or national or ethnic origin. Similarly, Article 29 of the Convention on the Rights of Persons with Disabilities (CRPD) focuses on the inclusion of persons with disabilities in political and public life on an equal basis with others. Accessible election technologies such as screen readers for the visually impaired and mobile voting applications, ensure that all individuals, regardless of their physical or cognitive abilities, can exercise their right to vote.

1.2.3. Data Protection and Privacy

With the increasing use of technology in elections, the protection of personal data and privacy is paramount, Article 17 of the ICCPR protects individuals against arbitrary or unlawful interference with their privacy, family, home, or correspondence. Robust data protection measures are essential to safeguard the integrity of the electoral process and maintain public trust. Ensuring that voter information is securely stored and that online communications are confidential is crucial in preventing misuse of data and preserving the privacy of voters.

1.2.4. Transparency and Legal Frameworks

Transparency in the electoral process is vital for democracy. The Venice Commission emphasises the need for states to honour their duty of impartiality and fairness regarding the use of mass media. Clear and transparent legal frameworks governing voter registration, identification, and the resolution of disputes are necessary to build trust and ensure that elections are conducted fairly. Technology can enhance transparency by providing real-time updates, live streaming of election proceedings, and accessible platforms for reporting and addressing electoral malpractices.9

Ultimately, the integration of technology and design into the electoral process, guided by human rights principles, can significantly enhance voter education, participation, and the overall integrity of elections. By upholding the rights to information, participation, non-discrimination, and privacy, an electoral environment that empowers all voters and strengthens democratic governance is possible.

⁹ ACE 2024 (n 1).

2. TECHNOLOGY IN ELECTIONS

2.1. CURRENT TECHNOLOGIES

The use of technology in elections varies widely across different countries, influenced by each nation's unique institutional, historical and legal context, as well as political will and resource availability. Voter acceptance and readiness to embrace new technologies also play a significant role. Some countries have implemented comprehensive, integrated systems for election administration, while others have opted for a more limited range of digital tools at various stages of the electoral process. The technological infrastructure varies, while some countries use software-based applications, others prefer web-based platforms. Additionally, the management, security protocols, and inter-agency cooperation associated with these technologies differ from one country to another.¹⁰

2.1. 1. Electronic Voting Machines

Electronic voting machines (EVMs) are one of the most widely adopted technologies in modern electoral processes. EVMs replace traditional paper ballots with electronic interfaces, allowing voters to cast their votes electronically. These machines can be configured in various ways depending on the specific needs and legal frameworks of a country. For example, some systems use direct recording electronic (DRE) technology, where votes are directly input into electronic memory. Other systems employ optical scanning machines where voters mark paper ballots that are then scanned and tabulated by machines.¹¹

2.1.2. Online Registration Systems

Online voter registration systems provide a convenient and accessible way for citizens to register to vote, update their information, and verify their registration status. These systems are particularly beneficial in expanding access to the electoral process by allowing voters to complete registration from the comfort of their homes. This technology simplifies the registration process and helps maintain up-to-date and accurate voter rolls. ¹² Several countries have implemented web-based platforms for voter registration, ensuring that the process is secure and user-friendly.

2.1.3. Mobile Voting Applications / Internet Voting

Mobile voting applications are an emerging technology designed to enhance voter accessibility and convenience. These apps allow voters to cast their ballots using smartphones or tablets, which is especially beneficial for those who may have difficulty reaching physician

¹⁰ Community of Democracies (n 2), pg 8.

¹¹ACE 2024 (n 1); International Foundation for Electoral Systems, 'Electronic Voting Machine Factsheet' (IFES, 20 November 2014) https://www.ifes.org/sites/default/files/migrate/electronic_voting_machines.pdf accessed 31 July 2024. ¹² Community of Democracies (n 2).

polling stations such as overseas citizens and individuals with disabilities. 13 While this kind of voting offers significant advantages it also presents unique security challenges, Ensuring the integrity and confidentiality of votes cast via mobile devices requires robust encryption and authentication protocols.

2.1.4. Identification Systems

Identification systems are crucial for verifying the identity of voters and ensuring that only eligible individuals participate in the voting process. Traditionally, identity cars are still widely used but many countries are now adopting biometric identification systems to enhance security and prevent fraud.¹⁴ Biometric systems, which may include fingerprint, facial recognition or iris scanning technologies, provide a higher level of assurance that each vote is cast by a legitimate and uniquely identifiable voter.

2.1.5. Internet-Based Training and Education

The Internet also plays a vital role in voter education and training. Online platforms can provide comprehensive training materials for both voters and election observers, ensuring that all participants are well-informed about the electoral process and their rights and responsibilities. These resources can include interactive courses, video tutorials, and downloadable guides, making it easier for individuals to access the information they need.

2.1.6. Publishing Election Results

Publishing election results online is another significant application of technology in elections. Real-time results can be made available through dedicated websites and mobile apps, allowing voters and stakeholders to track the progress of the election as votes are counted. This transparency helps to build public trust in the electoral process and ensures that the final outcomes are disseminated quickly and efficiently.

2.2. ANALYSIS OF THE USE OF TECHNOLOGY IN **ELECTIONS**

The data provided by the International Institute for Democracy and Electoral Assistance (International IDEA) in Table 1 sheds light on how technology is being used in elections across the globe. This analysis focuses on voter registration and identification, electronic voting (e-voting), processing of election results, and online data publication by electoral management bodies. By understanding these aspects, we can see how technology empowers voters and supports their human rights to participate in democratic processes.

¹³ ACE 2024 (n 1).

2.2.1. Voter Registration and Identification

The data shows that many countries are adopting digital technologies to improve voter registration. For example, about 23.63 percent of 182 electoral bodies use offline digital registration kits or computers, while 11.54 percent use online systems connected to a central database. This shift towards digital registration helps make the process more efficient and accessible, allowing more people to register easily and accurately.

Despite these advancements, a large number of countries (68.57 percent of 175) still do not use technology for identifying voters at polling stations, relying on traditional methods instead. However, there is a growing adoption of electronic poll books, with 8.57 percent using online systems and 19.43 percent using offline systems at polling stations. This gradual shift indicates an increasing trust in digital solutions to verify voter identities, which can help reduce fraud and enhance the integrity of elections.

Additionally, the use of biometric data, such as fingerprint scans and photos, is gaining traction, with 25.40 percent of 185 electoral bodies incorporating these technologies. This move towards biometric identification helps ensure that each voter is properly identified, thereby supporting the right to a secure and transparent voting process.

2.2.2. *E-voting*

E-voting is still a relatively new and debated technology in many parts of the world. According to the data, 73.58 percent of 193 countries do not currently use e-voting. However, 15.03 percent have implemented it in national elections, and 9.33 percent in sub-national elections. This indicates a cautious but growing interest in e-voting as a way to modernise the electoral process.

Different types of technologies are being used for e-voting where it is implemented. Internet voting systems are used by 6.91 percent of 188 countries, while direct recording electronic voting machines are employed by 8.51 percent. These technologies aim to make voting more accessible and efficient, especially for people who may have difficulty reaching polling stations, such as overseas voters or individuals with disabilities.

2.2.3. Processing of Results

The use of electronic systems to process election results is becoming more common, with 63.01 percent of 173 electoral bodies using these systems. This shift helps to ensure faster and more accurate counting of votes, reducing the likelihood of errors and increasing public trust in the election outcomes.

2.2.4. Online Data Publication

Transparency in elections is crucial for maintaining public trust and ensuring informed participation. The data reveals that 80.77 percent of 182 countries publish lists of registered parties and candidates online, and 87.56 percent publish election results online. This high level of online publication supports the transparency and accessibility of electoral information, allowing voters to stay informed and engaged in the democratic process.

However, the use of mobile phones for voter registration or polling station assignments is still relatively low. Only 6.83 percent of 278 countries provide polling station assignments via mobile, and 7.91 percent confirm registrations through mobile phones. In contrast, the use of online interfaces is more widespread, with 25.90 percent assigning polling stations and 30.22 percent confirming registrations online. This indicates a trend towards leveraging online platforms to facilitate voter participation and streamline administrative processes.

All in all, the data highlights a mixed landscape in the adoption of technology for elections. While digital tools for voter registration and identification are increasingly used, many countries still rely on traditional methods, especially for voter identification at polling stations. E-voting is slowly being adopted but remains a topic of debate due to security concerns. The processing of election results and online publication of electoral data shows more consistent use of technology, emphasising the importance of transparency and efficiency in modern elections. By integrating technology into the electoral process, we can enhance voter education, participation, and trust, ultimately empowering voters and supporting their human rights in democratic governance.

The table below provides a detailed breakdown of the specific technologies employed in various aspects of electoral processes across different countries, highlighting the varying levels of adoption and implementation.

Category	Question	Value	Count
Voter registration and identification	1. What type of technology is used by the electoral management body for collecting registration data?	Digital voter registration kits/computers, off-line	43 of 182 (23.63 percent)
		Digital voter registration kits/computers, online connected to a central database	21 of 182 (11.54 percent)
		Scanning technology for processing registration forms Optical Mark	5 of 182 (2.75 percent)

		Recognition or Optical Character Recognition	
	Is technology used for identifying voters at polling stations (electronic poll books)? Is biometric data captured and used	No	120 of 175 (68.57 percent)
		Yes, online/connected to central voter register	15 of 175 (8.57 percent)
		Yes, offline/only access to polling station registration data	34 of 175 (19.43 percent)
		Yes, fingerprint scans	2 of 185 (1.08 percent)
	during registration?	Yes, both fingerprint scans and photos	45 of 185 (24.32 percent)
		Other	9 of 185 (4.86 percent)
	4. How is technology used in relation to paper voter lists?	Technology is used instead of paper voter lists	16 of 175 (9.14 percent)
		Technology is used in addition to paper voter lists	34 of 175 (19.43 percent)
E-voting	1. Is e-voting currently used in any elections with electoral management body participation?	No, e-voting is not used currently	142 of 193 (73.58 percent)
		Yes, in politically-binding national elections (elections for public office or direct democracy initiatives)	29 of 193 (15.03 percent)
		Yes, in other elections with EMB participation (e.g. election of trade union leaders, non-binding referendums)	4 of 193 (2.07 percent)

		Yes, in politically binding sub-national elections (e.g. elections for regional legislature or executive office etc.)	18 of 193 (9.33 percent)
	2. What type(s) of technology is used?	Internet voting systems	13 of 188 (6.91 percent)
		Electronic ballot printers	4 of 188 (2.13 percent)
		Optical Mark Recognition or Optical Character Recognition	6 of 188 (3.19 percent)
		Direct recording electronic voting machines with and without voter-verified paper audit trail	16 of 188 (8.51 percent)
		Other	7 of 188 (3.72 percent)
Processing of results	Are official election results processed by an electronic tabulation system?	Yes	109 of 173 (63.01 percent)
Online data publication by electoral	Does the country provide individual online voter	Yes, assigned polling station using mobile phone	19 of 278 (6.83 percent)
management bodies	registration/polling assignment checks?	Yes, confirmation of registration using mobile phone	22 of 278 (7.91 percent)
		Yes, assigned polling station using online interface	72 of 278 (25.90 percent)
		Yes, confirmation of registration using online interface	84 of 278 (30.22 percent)

2. <u>Does the country</u> publish the lists of	No	31 of 182 (17.03 percent)
parties and/or candidates registered for elections online?	Yes	147 of 182 (80.77 percent)
3. Does the country publish the election	No	22 of 193 (11.40 percent)
(voting) results online?	Yes	169 of 193 (87.56 percent)

Table 1 – On the use of modern information and communication technologies in elections based on International IDEA's "ICT in Elections database" that includes up-to-date findings from numerous countries across the globe. International Institute for Democracy and Electoral Assistance (2024). ICTs in Elections Database. Available at:

https://www.idea.int/data-tools/data/icts-elections-database.

3. DESIGN AND LEGAL LITERACY

Legal design plays a crucial role in creating clear and understandable voter education materials. It involves applying design thinking and user-centred approaches to legal information and processes, with the goal of making them more accessible, usable, and engaging for the intended audience. In the context of voter education, legal design is significant because it helps bridge the gap between complex legal information about voting procedures and the average voter's understanding.

Legal design in voter education materials focuses on translating legal jargon and complicated election laws into plain language that is easily comprehensible to diverse communities. By employing legal design principles, organisations can create materials that not only inform voters accurately about their rights and responsibilities but also empower them to take action and participate in the democratic process.

Key design principles that make voter education information accessible and engaging include:15

• Plain language:

Using clear, concise, and jargon-free text that is easy for voters to understand, regardless of their educational background or civic literacy level.

• Visual hierarchy:

Structuring information with headlines, callouts, and colour to capture and direct voters' attention to the most important details.

• Colour usage:

Employing colour strategically to organise information and make it more visually appealing, while being mindful of cultural associations and potential impacts on different voter groups.

• Imagery:

Incorporating diverse and representative images that resonate with the target audience, being careful to avoid stereotypes or unintentional exclusion.

• Bilingual layouts:

Designing materials that accommodate multiple languages to invite participation from voters with varying levels of language fluency.

• Action-oriented content:

Focusing on providing clear, actionable steps that voters can take, addressing the "why" behind voting to increase engagement.

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¹⁵ Civic Design (n 6).

• Cultural responsiveness:

Tailoring design elements, including colours, images, and language, to reflect the cultural context of the target communities without creating division or feelings of being targeted.

• Digital accessibility:

Considering the varying relationships different voter groups have with digital and online information, ensuring materials are accessible across multiple platforms.

CONCLUSION

The report has highlighted the significant role that technology and graphic/legal design play in enhancing voter awareness and participation in national elections. These tools are instrumental in improving transparency, accountability, and inclusivity within the electoral process, thereby strengthening democratic governance.

The analysis of data from the International IDEA reveals that digital technologies for voter registration and identification, such as online systems and biometric data capture, have made the registration process more efficient and secure. This advancement ensures that more citizens can register to vote accurately, fostering greater voter turnout and trust in the electoral process.

Despite the cautious adoption of e-voting, its potential to make voting more accessible, particularly for remote or disabled voters, is evident. The growing implementation of e-voting systems indicates a positive trend towards modernising the electoral process. Additionally, the use of electronic tabulation systems for counting votes enhances the accuracy and speed of election results, which is crucial for maintaining public trust.

The widespread publication of electoral data online, including candidate lists and election results, promotes transparency and allows voters to stay informed. This easy access to information supports voter education and participation, ensuring a well-informed electorate.

In summary, the integration of technology and graphic/legal design into national elections has a transformative impact on empowering voters. By making complex legal information more accessible and engaging, these tools bridge the gap between electoral laws and voter comprehension. As technology continues to evolve, its integration into the electoral process will further enhance voter education, participation, and trust, ultimately strengthening democratic governance.

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