Review Article GU J Sci, Part B, 10(4): 399-413 (2022)

Gazi University

Journal of Science

PART B: ART, HUMANITIES, DESIGN AND PLANNING

http://dergipark.gov.tr/gujsb

A Study on Understanding the Influence of Different Design Approaches to Design Democratization

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Article Info

Received: 16/11/2022
Accepted: 21/12/2022

Keywords

Design Democratization, Design Approaches, Social Inclusion, Diversity in Design, Empowerment in Design

Abstract

Since their emergence, design disciplines have been working to offer better living conditions to the masses. Their contexts, processes, and outcomes are shaped according to the social, economic, and political movements and issues. This situation has paved the way for the inclusion of various user groups in the design process. Mainly, enabling open-source environments and developing technology have strengthened the involvement of diverse user groups in the design and have provided continuous development in design democratization. The paper aims to understand how researchers discuss the concept of democratization within a design context. In order to do this, the paper first explores the meaning and origin of design democratization. Then it examines the related approaches that have emerged over the years in different geographies. As a conclusion of these explorations, the paper emphasizes the importance of social inclusion, diversity, and empowerment in design democratization.

1. INTRODUCTION

Since their foundations, all design practices have been working towards providing better living conditions by focusing on humans and human needs. From the past to the present, their definitions, focus, processes, and outcomes have constantly changed according to social movements [33]. Today, more and more designers choose to work on the social innovation branch of the profession that enables them to apply their creativity to an impact on society's social, economic, or environmental issues [59, 39]. With the help of emerging technologies and innovations, design disciplines (e.g., industrial design, interior design, graphic design, communication and design, and architecture) develop design projects, and creates and enhances design outputs, processes, services, and systems in an open-source environment. The ability to open-access information enables people to raise their voices and participate and contribute to society with personal ideas and experiences [39]. Reflection of this contribution on the design practice leads to finding creative and inclusive solutions to design projects where users become designers; thus, design becomes more democratized [61]. In a democratized design setting, stakeholders with diverse backgrounds come together and collaboratively present solutions to their everyday life problems. In this collaborative design process, diverse user groups come together and contribute with their knowledge, expertise, and experiences, democratically shaping their everyday lives and futures. Because of the importance of diversity and social inclusion in design, all members of society should be considered stakeholders [70]. Since design is different for everyone, “design is too important to be left to designers alone” (p.13) [32].

In the traditional design practice, users have limited or no contribution to the design process, which causes the resulting design to lack perspective, inclusion, empowerment, and value. This situation challenges democratization by revealing a lost space between design theory and practice [92]. In some cases, users with special needs may not access or use properly the designed products, systems, or services. Therefore, by considering social, economic, and environmental issues and movements of the different countries over the years, users have been included in the design process. Different countries

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have developed several design approaches by considering their social issues. The following section covers these approaches within the context of the democratization of design.

2. METHOD

A systematic qualitative review was chosen as the method of this paper. After identifying the research question of how researchers discuss the concept of democratization within the design context, a literature review was conducted to gather information on the meaning and origin of design democratization. This preliminary literature review pointed out the related design approaches that have driven force into a more democratized path in design. To select relevant research studies and reviews, multiple research databases (e.g., Art Index Retrospective, Cambridge Journals Online, Education Index Retrospective, IEEE Xplore, JSTOR, Oxford University Press, ProQuest Dissertations & Theses, ProQuest Ebook Central Open Access Collection, SAGE Premium Journals, Science Direct, Scopus, Springer, Taylor & Francis, Web of Science (WOS), and Wiley Online Library) were searched with keywords such as; social design, democracy, inclusion, minorities, marginalized communities, and Eurocentric design. According to this literature review, the most commonly referred design approaches within design democratization are; universal design, inclusive design, design for all, participatory design, co-design, social design, design for social innovation, and pluriversal design chronologically. After setting the order of the approaches, full-text reviews of selected studies were conducted, the most highlighted features of these approaches were stated, and the paper's conclusion was formed.

3. DIFFERENT APPROACHES TO DESIGN DEMOCRATIZATION

While keeping its human-centered nature as a core, the design discipline has developed and continues to develop many different approaches due to the different social movements that have come over the years [70, 33]. Although their related outputs and researches have been produced, especially after both World War I (WWI) and World War II (WWII) and in the following decades, the concepts of democratization of design and social design have gained significant momentum, especially in the last decade with the help of globalization and high technological developments [64, 20]. In the last two decades, several books [40, 64, 36], and the output of design consultancies such as Design Council, IDEO (açılım), Participle, and Think Public have all presented essential information regarding the social change and democratization of design.

The survey paper explores the different approaches within the context of design democratization by correlating with each other as much as possible, starting from the post-WWII period to the present day. The effects of important social events on different countries are specialized by suggesting similarities and differences in the emerging approaches. In that context, the research introduces Universal Design, Inclusive Design, Design for All, Participatory Design, Co-Design, Social Design, Design for Social Innovation, and Pluriversal Design.

3.1. Universal Design

At the beginning of the 20th century, people with disabilities were considered as the true minorities (p.15), and most people with chronic conditions were living in nursing institutions [91]. Additionally, after WWI and WWII, with the return of injured soldiers, and in the 1950s, with the emergence of civil and equal rights movements, universal design was introduced as a strategy that aimed to present solutions to the heterogeneous needs of humans in modern post-war society [102]. Because of the devastating impacts of the wars, the strategy mainly focused on equality, empowerment, and, most importantly, physical accessibility. Driven by the idea of fulfilling equality rights, ideas, and designs, especially physical accessibility, have been developed under the strategy of universal design [89, 91]. Since everyday life objects and spaces were not perfectly suitable for all, universal design aimed to suit a broad range of users with various handicaps, diseases, or sizes [19].

In order to successfully apply universal design in the design practice by enabling the connection between theory and practice, there are seven principles which are (1) equitable use, (2) flexibility in use, (3) simple

and intuitive use, (4) perceptible information, (5) tolerance for error, (6) low physical effort, and (7) size and space for approach and use [5]. These seven principles contain 30 guidelines that present detailed information and design directives. According to National Disability Authority (NDA), fields such as Human Factors, Ergonomics, Disability-Specific Design, and other functional design approaches were introduced within universal design [72].

Universal design was one of the first attempts to democratize design practice in general, with an emphasis on physical disability, as well as age factors. In addition to the elderly population in different Western societies, the increase in physical disabilities, especially in the post-war period, caused universal design to be established primarily in the areas of architecture [91] and product design [67]. Besides introducing technical standards to the designs, the perception of product-user interaction emerged [58]. In the context of product-user interaction, space and product designs moved on from the motivation of "one design for all different users" (p.56) [102], to a more progressive path. While universal design has a political background, thus a strong connection with social issues, it is also a result of specific economic thoughts [102]. In a post-war society where the economy was trying to be sustained, customized designs were deemed expensive. Therefore, the concept of one design for all users became a market strategy [91].

Because of the novelty of the universal design approach and its social, political, inclusive, and early-democratized aspects, it was considered innovative for its time. However, the progressive path that universal design started to present also had challenges. Presenting standardized solutions for human-centered designs created obstacles for designers [102]. While the target audience of the designs became diverse with special needs, the subjectivity and emotional support needs of the designs increased [81]. Since emotions, experiences, and values are highly personal, they require a particular type of perception and ability to understand. While the concepts such as usability and ergonomics could be objectified, designers need to include user perspectives to understand and adapt more personal concepts such as emotions, feelings, and values into designs. In that sense, studies emphasize the importance of empathizing and contributing to the user's happiness and subjective well-being in the design process. Because of these contributions, the universal design approach was considered a pioneer in addressing the need for equality, transparency, subjectivity, and inclusivity in the design practice [28].

3.2. Inclusive Design

Apart from universal design, inclusive design which emerged in the mid-1990s, is another design approach that aims for a more democratized design practice by considering a wide range of different user groups and their needs. Instead of a new or specialized area, inclusive design is a design approach that aims to develop products or services for the broadest possible user group, irrespective of age or disability [21, 73, 96]. In inclusive design, the essence comes with adding service design into the equation [47].

Differentiation in the local, social, and cultural aspects among countries leads to different types of manifestation in the approach [21] (see Figure 1). While in the United States (US), this manifestation primarily focused on enhancing disabled individuals' access and use of spaces and designs [21], in Europe, inclusive design added access to the services to its context. Designers started to consider culturally sensitive services and systems with the help of civil and social rights movements. In the United Kingdom (UK), Roger Coleman introduced the inclusive design approach by stating the needs and abilities of individuals that change throughout their lifetimes [47, 73]; thus, processes, products, and services must be arranged continuously. The aging population and social exclusion of the disabled are discussed intensely in this context [22]. While this consideration could enhance the well-being of individuals, it could also be profitable to companies and organizations by providing a more effective business plan.

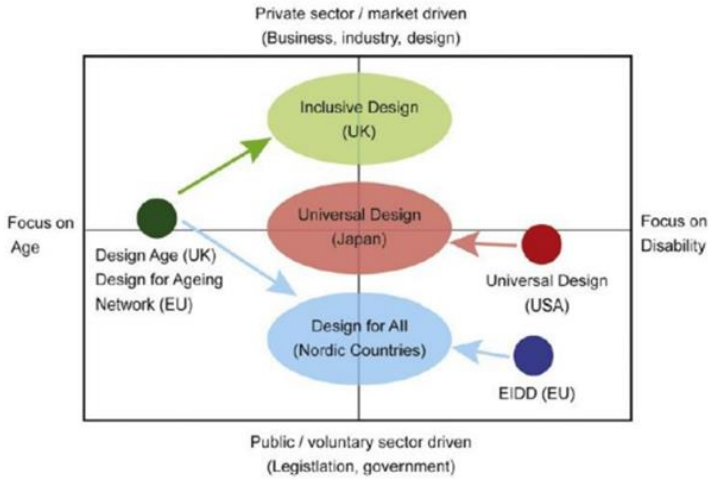

Figure 1. *Influences of Inclusive Design [21]*

Although the definition of inclusive design proposes designs that embrace as many individuals as possible, according to the Inclusive Design Toolkit [96], it aims for appropriate design solutions that include diversity in the population through; (1) providing the best possible coverage in the population, (2) maintaining each product has a clear target group, and (3) to enhance the user experience (UX) and user interface (UI), reducing the excessive need required for products. Consequently, inclusive design addresses diversity and equality and contributes to solving social exclusion through design [21].

3.3. Design for All

Like universal and inclusive design, the design for all approach also tries to maximize user involvement during the design process. It aims to present diverse and democratic solutions to society [10, 47, 79]. While there are several definitions of design for all, the most common one comes from the European Institute for Design and Disability (EIDD; renamed Design for All Europe in 2006) as design for human diversity and social inclusion. It is for business and society, with its three keywords diversity, inclusion, and equality [35]. Different from universal and inclusive design, the origin of the design for all approach lays its roots in the Human-Computer Interaction (HCI) literature at the end of the 1990s, with its three features focused on (1) placing the user at the center of design activity, (2) providing accessible and assistive technologies for the disabled, and (3) using universal design for physical space and artifacts [90]. Additionally, the Scandinavian origin of design for all specialized the approach by changing its direction from focusing on social designs and solutions for the disabled to a design topic focusing on business models, sustainability, innovation, and social responsibility [10].

In 2004, members of the EIDD signed The Stockholm Declaration [34], which explains in detail that the design for all approach aims to enable equal opportunities for all people to participate in society equally. To do so, every designed product, built environment, service, system, and information must be accessible to every person [47]. Hence, the political and philosophical basis of the approach was sustained.

Within the scope of design for all, recent outputs of the global developments in HCI reveal essential enhancements to its diverse target groups [10]. From a social design perspective, while user-friendly products, services, systems, and interfaces all increase the independence and participation of their diverse target group, from a business perspective, these developments provide value and commercial potential to the market [10].

The impact of the design for all approach in the democratization of design cannot be denied. In addition to providing user-friendly designs, systems, services, and interfaces, design for all expands the accessibility of information, increasing users' participation in design and society. It contributes to the democratization of design [55]. For these reasons, it is recommended that the design for all approach should be included in a designer's professional life as early as possible [74].

3.4. Participatory Design and Co-Design

Heretofore, multiple approaches are analyzed within the scope of design democratization. All these approaches emphasized certain aspects: equality, diversity, empowerment, collaboration, and participation. Today, participatory design and co-design approaches are the most influential and updated research areas dealing with design democratization. Because of their close relationship, shared origins, and similar aspects, participatory design and co-design approaches are explored in the same section.

Participatory Design. Like the design for all approach, participatory design has strong connections with HCI and social movements. It originated from the 1960s Scandinavian Industrial Democracy projects [3] with the ideology of workplace democracy [95]. This ideology was rooted in Scandinavian trade unions' and shop-floor workers' reactions to being neglected from the decision-making process because of the emergence of Information Technologies (IT) systems [43, 44]. This issue led to the Scandinavian Participatory Design (PD) Movement, initially about increasing the users' involvement in the decision-making process [9]. Therefore, participatory design was born as cooperative design [43] and defined as a model in which users and designers are involved in technological development [3]. Then the cooperative design wave spread among Western countries in the 1980s and 1990s as participatory design [9, 46]. The participatory design approach aims to involve all the stakeholders (especially users) in the process as much as possible [18, 46] (see Figure 2). Within this process, another critical area covers the roles of participants and facilitators. While users are active actors in the process by mostly giving inputs, the facilitator holds the real power by acting as a decision-maker [78]. Consequently, participatory design requires a particular collaboration and co-creation of knowledge in practice [44], enabling the democratization of design at a specific capacity.

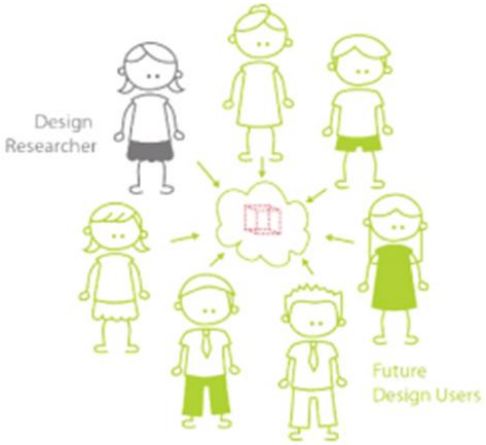

Figure 2. *Design Researcher as Facilitator in Participatory Design [82]*

Because of its enduring political motivation, values of democracy, and empowerment, participatory design is considered a convenient approach for democratizing design [8, 83, 87]. Due to this, there are multiple cases where participatory design was applied to reduce equity gaps, increasing social inclusion, democracy, decolonization, and empowerment in local and marginalized communities [7, 8, 80, 86]. While the previous approaches discuss designs that shaped and optimized for the largest group possible, participatory design led to a community-based tailored and localized design approach for sustainable futures [26, 80].

In the process of design democratization, participatory design has certain advantages [11, 46] and disadvantages [23, 41, 69]. Including end-user in the design process is the most crucial and obvious advantage of participatory design [46]. Therefore, this inclusion adds different perspectives and builds empathy for designers [11]. However, some discussions concern the possible disadvantages of participatory design, such as unexpected shifts in power relations [23] and leadership due to horizontal hierarchy in the process [41].

Co-Design. Like participatory design, co-design has emerged with the same ideology from the same geography. These two approaches have constantly been developing by influencing each other over the years [83]. The essence of approach is based on the importance of cooperation and co-creation, just like in the emergence of participatory design. In that sense, Scandinavian trade unions' and shop-floor workers' experiences with the emergence of IT systems enabled collective creativity activities on user participation [13, 44, 83]. It is implied that different geographies and their different social issues impact the approaches [21]. Nigel Cross' research in 1972 laid the foundation of the UK approach by emphasizing the urgent need for a new design approach where the citizen-participation should be included in the decision-making process [24]. In light of the previous research, Forsgren developed the diverse stakeholders' first co-design framework by inviting or participating in decision-making [63]. Since design practice has a precise way of thinking [30] and distinct methods [84], emerging user involvement enables new ways to provide solutions, knowledge, values, and sense-making [31].

More recent studies refer to co-design as a collective and creative activity applied to the design process [16, 21, 83, 101] (see Figure 3). Designers and non-designers act as participants who work together in this collaborative and creative activity. In co-design, all participants in the design process are considered equal and have an equal say in decision-making [78]. Users' ability to design solutions according to their needs and values, and designers' supporting role that guides and empowers users in the design process both emphasize the importance of co-design within the democratization of design [18].

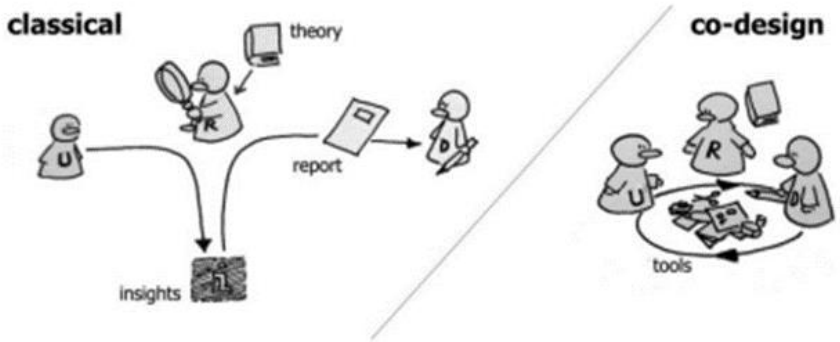

Figure 3. *Traditional Design v. Co-Design [83]*

Today, in the context of design democratization, co-design is widely known and used as a mechanism for collaboration with communities [80, 101]. It broadens the stakeholders' perspectives, reducing equity gaps, increasing empowerment and inclusion, and enabling communities to design their futures. Community involvement challenges traditional design approaches in which designers are considered the sole creator of the project [90]. Community involvement changes the designer's role in the process, adds rituals, practices, and values of the communities into the design equation [27], and enables empowerment, inclusion, and raising the voice of the actual users [12]. Different from traditional design approaches, multiple studies emphasize how co-design contributes to design democratization by presenting horizontal power dynamics among stakeholders [25, 80]. Co-design (1) blurs the lines between stakeholders, (2) empowers communities, and (3) re-centers user needs in their local context [25]. That leads to co-design's increasing importance and place in the global market, where many organizations and companies try to achieve democratization by designing [88].

3.5. Social Design

Over the last ten years, social design gained significant momentum among the approaches in the context of social equity, empowerment, and design democratization [20]. In the broadest context, social design explores social issues and problems and aims to present social solutions for societies' well-being and development [94]. While its recent emergence as a field is triggered because of the 2008 financial crisis' results [56, 66], its roots go back to the works of Victor Papanek, Nigel Whiteley, and Victor Margolin [65, 77, 100]. In that context, Victor Papanek focused on creating a change within the design discipline itself [77]. Design outputs should account for the needs of people. Designers should be morally and socially responsible and take the consequences of their work on society. In that sense, with designers

emerging in social issues and events, social design aims to present design processes and design-related methodologies in solving social issues from a creative and abstract perspective. Vast extent of social design creates close relationships with design thinking, human-centered design, co-design, service design, empathetic design, action research, and design for social innovation [49]. In social design, co-design activities with the public present collective and social outputs rather than traditional commercial products [2].

Since the design discipline is about creating, enhancing, and developing solutions and answers to human problems, their focus is on humans, communities, societies, and even the global masses [98]. However, their contexts are not just social since they contain culture, economy, environment, and politics [45]. That is why social design could not be discussed without exploring global developments in these fields [60]. Since end-users usually do not directly participate in in-person or have a clear voice in the economic or political environment, ethical and emphatic aspects of social design come into the equation. In that sense, designers or design experts commonly work in non-governmental organizations (NGOs), consultancies, institutions, and charities within social design. Some studies have encouraged designers and design experts to work on social inclusion and empowerment of the socio-economically excluded and marginalized perspectives [15]. Since social design is a socially driven, self-aware, and emphatic approach [45], it draws links more from approaches that emphasize social inclusion, interpersonal relations, and collaboration in the context of design democratization.

3.6. Design for Social Innovation

Like participatory design and co-design, social design and design for social innovation have many similarities. However, design for social innovation is more concerned with social change at the systems level [94]. Design for social innovation is an expert design contribution to a co-design process that aims to provide social change (p.63) [64]. In that sense, design for social innovation has a more direct and precise relationship with social issues. It aims to present new social forms and innovations with different economic models. Ezio Manzini stated the importance of economic changes, which should be considered when presenting design solutions [64]. Design for social innovation considers all income-level users and is politically, environmentally, and socially aware. It presents sustainable goods and develops new services, systems, and strategic designs [97]. In these design activities, diverse stakeholders and their involvements are promoted. Designers' and design experts' roles become visible in the design for social innovation approach. In order to develop and enhance sustainable design goals and futures, designers and design experts more actively contribute to the design process. However, all stakeholders could raise their voices. Like in the participatory design approach, in design for social innovation, designers could lead, facilitate, proceed with the process, and shape the relationships among the actors [97]. Active participation is vital in design for social innovation, which indicates that the approach does not involve top-down processes [71]. Additionally, the driving force of reason and participation in the design for social innovation shows the importance of process in the approach as much as the social outputs.

As the design for social innovation is interested in presenting locally initiated and sustained solutions [94], communities contribute to their sustainable futures in its process. These communities approach the problems with their local know-how and creativity and initially develop current products and systems within their contexts [68]. In this local development process, designers could support communities by extending their knowledge and capacity and could act as facilitators [50]. In design democratization, design for social innovation enables local empowerment and social inclusion and presents diversity in the design environment.

3.7. Pluriversal Design

Pluriversal design is the final approach explored in the context of design democratization in the literature review. Since design approaches are shaped by social and cultural issues [21], current social discussions regarding the impact of a single dominant gender [6, 42], race [1, 14, 51, 52], ethnicity [80], and nationality [17] on design practice are studied through various case study examples from all around the world. The modern patriarchal capitalist worldview separated the developed Western or Eurocentric

world from the rest of the world [29]. That is why designers or designs from local or marginalized communities are considered as the other and are excluded and are oppressed from the mainstream design practice [48].

Pluriversal design is an approach that aims to support, emphasize, and provide multiple ways of sustainable world-making, considering and including different gender, race, ethnicity, as well as nationalities [62]. The way of pluriversal design's sustainable world-making comprises social and political issues and environmental issues (climate, biodiversity, and natural resources) [62]. Studies discuss the approach's concerns with the destruction caused by Western civilizations and Western thinking, such as colonialism, globalization, and mass production [37, 57]. Since design practice was rooted as a profession in the Industrial Revolution, modernity and universalism values intersect at the center of the approach [36, 57]. The design needs to include transdisciplinary and transcultural discussions from colonized, indigenous communities, and socio-economically marginalized perspectives to challenge the Westernized way of designing [36].

The Design Research Society's (DRS) conferences and publications present valuable information and exciting studies concerning the possible adaptation methods of pluriversal design into design research, practice, and education [62]. Western frameworks and conventional design are used to understand the contemporary culture of local or marginalized communities. However, Western paradigms still shape understandings since these approaches do not consist of participation or local perspectives [1]. Decolonization in the design process aims to link power and cultural relations between designers and users [86]. In that way, design practice could include more cultures and perspectives by enabling people to tell their own stories and experience their own cultures [62].

4. CONCLUSION

This paper introduces design democratization and the fundamental approaches from past to present. In light of this information, as a conclusion, the paper emphasizes the common vital features of the approaches regarding participation, inclusion, diversity, and empowerment in design democratization. Today, the concept of design democratization has increasing importance in almost every design discipline in creative industries by influencing designers' roles, the phases of design processes, and the formation of user groups [39]. Especially after WWI and WWII, multiple social and human rights movements have proven that design practice must be developed socially, economically, and environmentally. The urgent need for designers in social and public innovation processes has led to more participatory design conduct involving different user groups with different backgrounds, perspectives, and needs [39]. To benefit from the outcomes of the design process, all members of the different communities should be able to come together and collaboratively contribute to the design process as equal stakeholders [70]. In terms of democratizing design activity, designers should not act on behalf of the community but act and guide them respectfully in the design process [99].

Design provides a common ground where different communities actively share and represent their identities, cultures, and values [53]. However, as multiple sources confirm, dominant Western or Eurocentric design perspectives reduce the empowerment and visibility of users' social and cultural values [4, 17, 75, 76]. In that context, studies show that approaches other than Western or Eurocentric design are considered vernacular [38, 53]. Some tools aim to protect local communities' rights to maintain and control their cultures within the design context [54]. To develop further and successfully adapt the democratization of design, diverse and multicultural training is a possible solution [17]. Another study states that multicultural training presents inclusive, empowering, and diverse emotional outcomes [93]. It also sustains a great sense of belonging and bonding and broadens the horizons of future designers. With modern and socially innovative design approaches, design is more inclusive and socially aware. Today, contemporary design education approaches provide new methods, models, and techniques that shape designers' roles. With the high involvement of users in the design process, traditional design concepts and traditional designers' roles are changing irreversibly [85].

Today, research studies on social inclusion, empowerment, and democratization have gained significant momentum due to recent social issues and movements such as decolonization, the indigenous people movement, Black Lives Matter, or the MeToo movement. These studies consist of policy reports, surveys, or research articles. Multiple disciplines (e.g., sociology, anthropology, business administration, design, and education) explore these topics according to their research concerns and perspectives. While the foundation of these concepts has diverse knowledge, since these topics have close relationships with social issues and movements, the earliest dominant disciplines at the core of these researches consist of social sciences, especially sociology, anthropology, and cultural studies. In time, business administration and education disciplines started to present new perspectives on these research themes. Because design disciplines are relatively new and based on practice rather than research, their contributions to these research areas are much more recent. As all design disciplines provide better life solutions and sustainable futures to all living beings, they have close relationships with social, political, environmental, and economic issues. Therefore, design research's abstract and creative nature contributes to the literature by exploring more personal and experience-based aspects of these research areas.

The paper presents an information source to the social design literature by showing how design approaches within the context of design democratization have emerged and have evolved by influencing each other over the years. While doing so, it also discusses the social aspects and key drivers of the approaches. Since the context of the paper is relatively close to the social sciences literature, a design source will enrich the content. Among many resources from social sciences taken from the literature, this study reviews the concepts of social inclusion, empowerment, and democratization within the design practice. As a result, it is expected that this paper will contribute to the researchers who focus on and analyze studies on social design, democratization, and empowerment within the scope of creative industries (e.g., industrial design, interior design, graphic design, communication and design, and architecture).

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