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What it means to be a citizen in the internet age: Development of a reliable and valid digital citizenship scale

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ABSTRACT

This study puts forward a comprehensive digital citizenship scale based on carefully calibrated, overarching, inclusive components of digital citizenship that can be used to measure abilities, perceptions, and levels of participation of young adults in Internet based community. The Digital Citizenship Scale (DCS) had a 26-item five-factor model that was extracted using an Exploratory Factor Analysis (EFA), and then cross-validated through a Confirmatory Factor Analysis (CFA). The DCS had respectable good reliability and construct validity, supported by a concept analysis of digital citizenship, the expert panel review, EFA, and CFA. In addition, the DCS was shown to have a convergent relationship with Internet self-efficacy and a divergent relationship with Internet anxiety. As a theoretically rigorous and well developed digital citizenship scale, this study will help understand individuals' perceptions of their abilities and trajectories as active and/or critical members of online communities as part of their everyday lives on local, national, and global levels.

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1. Introduction

One of the Web's most lasting and consequential effects may be the impact it is having on civic engagement (Banaji & Buckingham, 2013; Kahn & Kellner, 2004; Smith, 2013), especially among those who use it most as a tool to reach out into the world in qualitatively new ways. Abilities to extend out into continuously expanding networks of information, to link together with new groups, to engage in online (and offline) civic activities that were once beyond the scope of everyday life demands the exploration of new possibilities for understandings and shared definitions of citizenship. Even relatively casual Internet users are often capable balancing the demands and expectations of the place based contexts with their activities using Internet based technologies to log into ideas beyond traditional boundaries. Users must navigate the natural tensions between their physically bounded spaces along with the open environs of continuously expanding cyberspace as they evolve together in dialectical relationship. These new capabilities have led some to suggest the burgeoning information age is

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introducing a new type of citizen with different perspectives and distributed responsibilities (Hermes, 2006). Perspectives that are less tied to the demands and restrictions of specific place – a citizen that is perhaps more globally aware, more critical, more willing to challenge the immediate – heralding the rise of the digital citizen (Bennett, Wells, & Rank, 2009; Coleman, 2006; Hermes, 2006).

One of the early difficulties in exploring the phenomenon of digital citizenship is being able to capture let alone measure it in a meaningful way. For example, not only in how it changes the relationships individuals have with dominant social structures/networks, but the ways in which restrictions and limitations to digital tools might impact roles and abilities of citizens in the 21st century. Further, psychological variables such as Internet self-efficacy and Internet anxiety have been acknowledged as important traits for both acquiring new understandings and developing new knowledge through Internet use (De Marco, Robles, & Antino, 2014; Livingstone & Helsper, 2009). However, little emphasis has been directed toward research exploring how individuals' sense of digital citizenship and their Internet self-efficacy/anxiety are interrelated. It may be obvious that people who are very confident with searching for information online and evaluating digital resources are more likely to participate in online activities. Advanced citizenship can be highly dependent on agency where the individual needs to reach and be part of a community.

In order to understand the role of individuals in civic life in the shadow of the Web, it is imperative to gain a firmer understanding of what it means: activities it engenders, the ways it changes the perceptions of public issues, the skills that help it to flourish? To help address these questions, in this paper we attempt to develop a valid and reliable digital citizenship scale; self-report digital citizenship scale, an instrument that offers respondents a way to tell their own story about how they understand their civic life on and by the Web in a highly structured context.

2. Digital citizenship: a unique and important concept

2.1. Three theoretical foundations

There have been previous attempts at developing a digital citizenship scale (Isman & Canan Gungoren, 2014; Jones & Mitchell, 2015), but they tend to focus on culturally determined behaviors moved online (e.g. showing respect for respondents, developing sharing skills through participation) with limited psychological and sociological theoretical underpinnings. The Digital Citizenship Scale (DCS) presented in this paper attempts to develop a tool that can offer a more complex, transactive portrait of the individual as they live online (Glassman & Kang, 2016) based in emerging psychological and sociological theories of Internet behavior. In development of the DCS for this study we relied on three general theoretical frameworks along with a concept analysis (described below) to help guide development of scale items that might be responsive to the new civic ecologies created by the Internet. The first theoretical framework is not directly related to the Internet but has important implications for understanding human-Internet transactions: Feenberg (1991) critical approach to technology and the idea that individuals control the behavioral trajectories offered by new technologies. The second, Castells (1996) ideas of a networked society arguing that powerful hubs can manipulate and control spaces of place through the Web's continuous flows of information – foregrounding the notion that digital citizenship is as much a responsibility as it is a possibility. Castell's ideas were used in developing items for power relationships between offline and online venues. The third framework is a still developing Open Source approach to educative processes (Glassman & Kang, 2016), impacting the entire scale, in particular issues of user agency.

2.1.1. Feenberg and a critical approach to technology

Feenberg (1991) suggests that the influence of technologies has two perspectives: an autonomous perspective where technology more or less takes on a life of its own, helping to define and in some circumstances actually drive human activity; and a human controlled perspective, where technologies are neutral and it is decisions about how to use them that eventually defines technology's character in everyday life. This decision-making recognizes technology as an augmentation for extending capabilities, but it can also take users on darker trajectories, including the desire for control. Any good or damage technology should not be blamed on the technology itself, but on the individuals using them; or more likely the culture/society that sets the context for individual choices.

We view the Internet as a paradox unique among tools. The Internet can be used to manipulate societies towards more hegemonic systems of governance, or it can be a tool that leads these same societies towards more participatory expression and critique of traditional institutions. Social trajectories are basically up for grabs in a small way every time users decide to log on; based on whether and how they use the Web as an augmentation of civic engagement.

2.1.2. Castells and civic citizenship in the space of flows

The second theoretical construct that informed the development of the scale is Manuel Castell's ideas of an increasingly networked society (1996). Castells suggests that the Internet creates new contexts and processes for the flows of information to individual users. Spaces of place control information through embedded structures and institutions, often deeply indebted to the social and cultural histories of contiguous social/physical environments. It is difficult to change sources of information in spaces of place. Bounded information can serve as a force for stability among those who live in those places: creating a means for shared, sustainable identity. Those who control information in spaces of place are also often stakeholders in the social networks that help define individual and group activities.

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