

Technology and Communication in the Irish Culture

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The European Conference on Arts & Humanities 2019
Official Conference Proceedings

Abstract

This paper discusses early findings from my ongoing research looking at people's engagement with communication technologies. The study observes a constructivist grounded theory approach, and was designed in such a way that would allow for capturing of Irish people's behaviour and attitude towards Information Communication Technologies (ICTs). Partial data gathered following in-depth semi-structured interviews with 12 participants suggests that innovations not always improve people's social inclusion, as sometimes the communication skills and social interaction gaps are further enlarged due to unforeseen consequences. Furthermore, innovations are being perceived as destroying communities and act towards creating a dysfunctional society. Initial findings are based on data analysis of interviews conducted prior to participants' interaction with custom built automated enclosures, by means of using mobile phone devices. Additional information about this ongoing project can be found at <http://eyeduinoproject.online/>

Keywords: ICT; technology; community; communication skills

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Introduction

This paper relies on both qualitative and quantitative data gathered for the purpose of describing aspects related to Irish population's view on using information communication technologies (ICTs). Partial data was gathered between February – June 2019, representing part of my current research study looking at the engagement of Irish population with technologies aimed at remotely controlling sustainable automated enclosures. A number of six enclosures (greenhouses) were built at different locations across Dublin, Republic of Ireland, serving as a method of accessing qualitative data acquired by way of focus group discussions, in-depth, semi-structured interviews, and observations. A total of 18 participants were recruited to interact with the enclosures, each for a continuous period of three months. Smart mobile devices, along with a custom built phone app, allow users to control built-in features such as irrigation valves, ventilation fans, and windows. The aim is to ensuring optimal climate conditions for vegetables to grow inside the enclosures.

The theoretical underpinnings for constructing and interpreting the generated data of this study consist of specific literature around ICTs, technologies' impact on society and the undesired effects they bring along; innovations' acceptance, diffusion and the changes they bring to people's lifestyle; and reasons for acceptance or refusal to interacting with specific technologies. Data collection by means of in-depth, semi-structured interviews, as well as observations ensures that the researcher will not become a simple passive spectator, and will better be able to relate to the interviewee and data (Birks & Mills, 2011). The purpose of the first set (out of two) of interviews with the participants is to establish the initial attitude and stance towards technology of the participants, prior to starting their three months engagement with technology consisting of an automated enclosure.

Theoretical concepts

From an utopian point of view, technologies aim at improving peoples' lives, and increase their standard of living. Therefore new and emerging technologies need to be created by keeping in mind the fact that they would eventually have to be acquired and embedded in peoples' social lives (Silverstone, 2005). On the other hand, the dystopian stance is that *'technologies pose a threat to quality of life, human values, freedom and even earthly survival, by causing stress, enhancing inequality and only serving hyper-capitalism and alienation'* (ibid:93).

Orlikowski (1992) argues that *'technology is created and changed by human action, yet it is also used to accomplish social action'* (Orlikowski 1992:405), implying that technologies present both a duality and a flexibility aspect by 'allowing' users to interpret and reformulate its original meaning based on each person's needs. At the same time, while interacting with innovations, people's behaviour will adjust in new

and innovative ways. One can think of the home computer being used for education, entertainment, or business.

While technological innovations are generally meant to improve peoples' lives conditions, sometimes it is not such a case, with occasions when the effects proved to be devastating to people and the environment. 'Unintended consequences' or 'accidents' are built into every technology, no matter how perfect or ideal those technologies might be (Murphie & Potts, 2003). Bijker & Law (1992) agree with this statement by concluding that '*the idea of a 'pure' technology is nonsense. Technologies always embody compromise*' (Bijker & Law, 1992:3). As '*almost no innovation comes with no strings attached*' (Rogers 1995:387), it is impossible in effect to only deliver the desired effects, while avoiding the unwanted ones.

When referring to innovations related to Information and Communication Technologies (ICTs) many think only of computers and internet. Activities such as using a mobile phone, listening to music on a portable device, or getting driving direction using a GPS device should be included amongst ICTs (Selwyn & Facer, 2007). It is therefore the combination of both the technology (hardware), and the knowledge and skills (software) that constitute ICTs.

A higher 'social inclusion' rate of people can be achieved by linking social activities with ICT usage. The aim is to avoid of being excluded due to the fact that some 'do not fit' into groups characterised by changing their cultural or social perspectives (Selwyn, 2003; Selwyn & Facer, 2007). While indeed ICTs meant enabling technologies, this in turn created new domain of exclusion, as those technologies were not adapted to peoples' needs (Silverstone, 2003). Technology is not always ubiquitous and not always a 'good' thing for everyone, for they have the potential of changing the social and economic order in the household (Cowan R.S., 1989; Csikszentmihalyi & Rochberg-Halton, 1981; Selwyn, 2003; Silverstone & Hirsch, 1994).

Finally, successful adoption and diffusion of innovations, including that of ICTs, rely on five criteria that need to be fulfilled: relative advantage, compatibility, complexity, trialability, and observability (Gono, Harindranath, & Özcan, 2006; Rogers, 1995). Each of these aspects were considered on this study for the duration of data collection and analysis, by way of semi-structured interviews and observations.

Previous studies

It is claimed that senior citizens are less likely to adopt new technologies (Gilly, Celsi, & Schau, 2012; Gobin, Cadarsaib, Sahib-Kaudeer, & Khan, 2017; Guo, Harvey, & Edwards, 2017), while other authors suggests that women should be more actively targeted, in spite of their apparent marginalisation from technical development (Murtagh, Gatersleben, & Uzzell, 2014).

Taylor & Packham (2016) suggest that in order to achieve long-term, sustainable ICT use, 'barriers of fear, skills, and relevance' need to be addressed by implementation of specific approaches (Taylor & Packham, 2016:9). My study assumes that peoples' fear of technology will hopefully be diminished by the fact that they will be able to grow vegetables in a more sustainable manner. This aspect will be further improved by use

of specific language and methods while they are introduced to newer technologies, as demonstrated by another study looking at the effects of computers on classroom teaching and learning. After all the data was linked, the author was able to discuss the changes that occurred, and suggest changes in terms of teaching methods (Kell, 1990).

By analysing changes in peoples' behaviour following installation of a CCTV system intended to deter burglars from breaking into cars in a car park, researchers discovered some unintended consequences and behaviour change: car owners became more careless and were not locking their cars anymore. Another aspect was the increased traffic in the car park and around, and therefore more social control was needed (Gobo, 2018).

Methodology

My research observes the constructivist grounded theory approach as advanced by Katy Charmaz (Alemu, Stevens, Ross, & Chandler, 2015; Mills, Bonner, & Francis, 2006). The ongoing data collection is based on focus group discussions, in-depth semi-structured interviews, and observations. Current data analysis process is augmented by detailed analytical memos, also to serve as an important pillar during the process of developing the theory towards the end of the study (Charmaz, 2006). Each participant is interviewed twice (before and after their engagement with the automated system).

Grounded theory (GT) research was developed in 1967 by Barney Glaser and Anselm Strauss, and involves reflexive interpretation of qualitative data mainly obtained following interviews, questionnaires, and observations of participants (Birks & Mills, 2011). The emerging theory aims at explaining the phenomenon being studied, through the perspective and interpretation of the researcher (Birks & Mills, 2011; Creswell, 2007; Strauss & Corbin, 1994).

Semi-structured interviews are the accepted norm for conducting qualitative research, and grounded theory in social sciences in particular. 'Funnelling' and 'flip-flopping' techniques were adopted in order to sequentially 'steer' the conversation from loose, general talk to more targeted and detailed questions (Corbin & Strauss, 2008; Creswell, 2014; Maxwell, 1996; Morgan, 1996; Morgan & Hoffman, 2018; Roulston & Choi, 2018). This allowed for themes emerging during focus group discussions to serve as starting points for the following interviews. Referring to semi-structured interviews, Kvale & Brinkmann (2008) acknowledge them as being '*defined as an interview with the purpose of obtaining descriptions of the life world of the interviewee in order to interpret the meaning of the described phenomena*' (Kvale & Brinkmann 2008:3).

Following transcription of audio data, participants' personal details were anonymised during analysis, with initial themes emerging. NVivo software is being used to continually go back and forth between open and focused coding stages, in a process of differentiation, combining and reflection on data (Charmaz, 2006; Miles & Huberman, 1994). For the purpose of writing of this paper, themes related to social inclusion, communication skills, and impact on society of ICT adoption are being discussed.

A number of 47 community gardens in Dublin were initially identified and an email was sent to their administrators, explaining the purpose and inviting them to participate in the study. Seven positive replies were received, and a further four locations were identified by 'word of mouth'. After visiting and analysing various aspects related to each location, six sites were finally chosen to participate in the study. Further discussions by email followed, which resulted in organising of focus groups discussions at five locations. These took place at each particular location during February 2019.

15 participants were recruited following the focus group discussions, with an additional three participants (negative cases) being purposively recruited to serve for validation of theory to emerge towards the end of the study (mid 2020) (Denzin & Strauss, 2003; Flick, 2011; Maxwell, 1996; Pickering, 2008). Based on data gathered following interviewing and observation of 18 participants, this study takes notice of the recommended number of participants in qualitative studies (Birks & Mills, 2011; Brinkmann, 2013; Davies, 2007; Maxwell, 1996; Schreier, 2018).

Ongoing data collection by way of interviews is scheduled to take place between March – November 2019. From late February until early March 2019, in-depth semi-structured interviews were conducted with the first six participants due to start their engagement March 2019. Similarly, the first set of interview questions were discussed with the second batch of the six participants, from late May until early June 2019.

Technical considerations

Although not directly involved in producing the qualitative data discussed in this paper, as mentioned before, the aim of the first set of the interviews, amongst others, is to develop knowledge of participants' current attitude and engagement with various technologies. This is prior to their engagement with the automated greenhouses, powered by renewable energy sources, six of them being purposely built between September 2018 – March 2019 (Figure 1). Automation features were added – irrigation valves, windows, and ventilation fans.



Figure 1 – Enclosure located at one of the research sites. Source: Hamilton V. Niculescu

During initial training, before starting the actual interaction with the enclosure, the participants were introduced to the custom developed mobile phone app (Figure 2) that they will be using to remotely control the automated features, such as:

- open/close the windows;
- start/stop the air circulating fan;
- start/stop the irrigation;

All data following participants' interaction with the system is being recorded on a specific online server, and that quantitative data can be downloaded for further data analysis to be employed for the duration of the study as a whole.

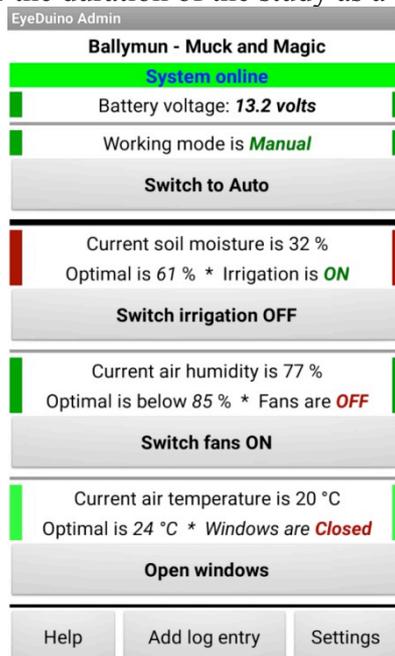


Figure 2 – The main screen of the custom developed mobile phone app. Source: Hamilton V. Niculescu

Findings

Rogers (1995) argue that observability represents an important factor on adoption of innovations. Whether newly adopted technologies are visible to others will influence their adoption rate (Rogers, 1995). Solar panels for instance are much more visible when compared to home computers. With this in mind, some sections of the interviews were focused on the idea of whether people are interested in finding details about technologies that they might notice around them. Initially the participants expressed their intent in approaching other people and discuss about it, however it was noted that somehow fear of offending prevents them from actually engaging in conversation with others.

Furthermore, most people that were interviewed acknowledged the fact that they are not up to date with new technologies, as they prefer to have their old ones repaired, or even to acquire second hand devices when they are beyond repair. Lack of knowledge about new functionalities, and fear of not breaking something act as a barrier towards adopting innovations. Technology is ultimately perceived as having a negative impact on peoples' social lives, by negatively affecting their communication skills.

Communicating with others

When the participants were asked if they would be curious to finding details about new technologies that they might notice around their neighbourhood, the majority expresses their interest, especially when it comes to renewables, with solar panels in particular.

'I would be asking how does it work with the Irish weather, I'd be curious'

Participant 9

Concerns in relation to geolocation and potential lack of solar light have emerged, the participants having doubts about the fact of whether solar panels would represent an adequate technology to provide their current needs for electricity or hot water. They were keen therefore to communicate and finding from other people whether this technology is efficient. However, initiating the conversation was acknowledged by the participants as not being such a straightforward task. A survey conducted in Ireland revealed that approximately 40% of adult population experience different amounts of shyness, to include 'socially withdrawn' or 'socially isolated' (Trinity College Dublin, 2013).

'I wouldn't go and ask them just to talk about that, but if I saw them on the street and we're having a conversation I would ask about it, if it's working, did you see any difference in your bills, how warm is the water, cause we do live in Ireland'

Participant 12

Fear of being too intrusive or being afraid of offending prevented participants in engaging in communicating with others, and admitted that interacting with people they do not know was very difficult. They remember circumstances where participants observed other people acting in an uncivilised manner, yet they refrained from intervening.

'I don't know her well enough that I could approach her and say 'you need to do this'. She is about my age, about 45'

Participant 12

'Some people get annoyed if they feel judged. Who am I to tell that person? We can't be preaching either, I don't want to be that person, I'm actually feeling ashamed to call them. Sometimes I think it affects people, you offend people'

Participant 9

At some stage, while conducting one interview, some person dropped some recyclable plastic tray into the normal waste bin, even though both bins were sitting side by side. The participant got up, went to the non-recyclables bin, picked the plastic tray, and dropped it with the recyclables.

'I do this all the time, and I told them loads of times 'there's the green bin', but some people don't care'

Participant 8

'I talked to young people about recycling, and they looked at me like I was talking non-sense'

Participant 1

This contrasting behaviour may act as a barrier when it comes to approaching some person not already familiar. It was further discovered that most participants, and surprisingly even the younger ones, are longing for the 'old times' and the way society used to function in the past.

'People knew how to make a society, how to live within a society, they shared knowledge about how to fix things'

Participant 4

'Like in 1974 most people would fix a bike, fix a car, a radio, a telly... fix anything really. Now we don't even know how they work. And it's cheaper to buy a new one, everything is disposable. In the old times everything was fixed and repurposed, and people knew how to make a society, how to live within a society, they shared knowledge about how to fix things'

Participant 4

These statements only confirm theory that innovations are not always a good thing, and their unintended consequences might have a much deeper impact on people, both socially and emotionally. Mentioning the automatic dishwasher during the interview, one participant came to realise the multiple negative impacts it meant for their household.

'I told that to my husband 'we used to talk during the washing up, now we dump it in there', and it's not the same [...] the dishwasher it's taking the space of a small bedroom in our house. And it's an extra cost as well, so I need to get rid of it now'

Participant 10

Fear of technology

In direct correlation to above statements, some people expressed their fear in relation to innovations. The fear may be related to lack of knowledge in using or repairing a particular device, lack of their reliability and privacy, or fear that technology might further enlarge the gap in our society in regards to communication skills.

'I don't like to be on my phone all the time, like on social media, I don't see the point of that. It's a waste of energy and time. People can become very addicted to it. I mean, all that communication is just messages'

Participant 10

Complexity, another term advanced by Rogers (1995), refers to the multitude of functions embedded in modern technologies, following a 'catch all' strategy by the manufacturers. These functions however are not always appreciated by their intended audience, acting as a barrier against adoption.

'They rely on too many sensors, too many electronics'

Participant 4

'And if something goes wrong with the computer, and I have to do something outside of my ordinary things to fix it, I'd be really frustrated, I don't want to do it. I'd prefer to have someone else to fix it'

Participant 9

'That scares me, I don't like that your phone is always listening to you... it makes me a bit uncomfortable'

Participant 5

In many instances, mainly senior participants rely on other people or family members to assist them with using certain functions, or doing particular tasks on their communication devices, strengthening theory that senior citizens are less likely to adopt new technologies, which may not necessarily reflect their need or expectations, or by simply being afraid of doing something wrong while using features not known to them.

'the next step for me is to try start using 'note' on my phone. My wife is going to show me how to do that, cause she's using it'

Participant 3

'We're lucky we have a 23 year old son who is guru of technology so if we have a problem...'

Participant 4

Some participants are happy with using older technologies, with whom they are familiar and got attached to. In these cases, upgrading to newer technologies does not seem to bring any advantages. They are trying to fix older devices, or search for similar second hand models. When eventually the old technology needs to be replaced, the 'forced' updates makes them feel disadvantaged.

'When we moved into the house 14 years ago, we got a washing machine, and two years ago I noticed that the rubber inside was wearing, and I decided to bring it to a repair centre, and they serviced it'

Participant 8

'I'm aware that a lot of products are made with a built in obsolescence'

Participant 4

'My sister was throwing out [the mobile phone] cause the screen was smashed, and it worked perfectly well, and I'll use it until it's broken and then I'll wait and see if someone else is throwing their phone out'

Participant 9

Finally, some participants expressed their concern about the purpose and potentially lack of safety features that are currently built-in with new technologies. However, they expressed their disappointment by stating that they ultimately have no choice, but eventually to introduce new technologies into their households as older ones break down and become unavailable.

'I feel like people are going into the wrong decisions, they are picking the wrong road to go down, where they are not helping the world. They make technology more like entertainment'

Participant 11

'Artificial intelligence destroying the world, like getting into nuclear facilities and let off bombs... I don't know. It's about doing us physical harm'

Participant 7

Discussion

The relatively low amount of official information about renewable energy sources have a direct impact on their adoption by the large population. Potential users have to rely on information sparingly obtained following direct communication with people who already decided to switch to such technologies. Lack of communication skills and shyness act as a deterrent against getting such information from unfamiliar people.

Fear of offending or being intrusive prevent people from engaging in conversation and actions that could lead to changing the behaviour of other people. The participants admitted that they preferred to deal with the situation themselves – as for instance picking the rubbish that others dropped on the street – rather than intervening. Also, the participants noted the lack of interest of other people in recycling, especially in the case of teenagers. Education might prove as being a support in this regard.

While introducing the automated enclosure at a particular location, one person mentioned that preferably there was no technology around the garden, and that all work should be done by hand. When presented with possible advantages, such as monitoring and having control over the climate and vegetables while on holidays for example, that person agreed to participate in the study. At the time of writing of this paper, that participant only recently started their engagement timeframe with the

automated system. It will be interesting to learn about their interaction pattern with the automated enclosure via the mobile phone.

Many participants are aware of the negative impact that ICT bring to the society. While having mixed feelings about innovations, the general sentiment is that technologies not always bring the intended advantages to society, but also sometimes unintended accidents. Being demographically characterised as mainly coming from working class areas, participants in this study proved to have a high awareness of their financial status. Lack of money might be an underlying reason for them lagging behind in regards to adopting of new technologies, and preferring to fix older devices or consider buying second hand technologies.

Conclusions

As it emerged during the interviews, many participants prefer to buy technology in ordinary shops, as opposed to buying online. With Ireland being such a small country, and considering the urban environment where participants involved in the study are living, generally new technologies, and renewable technologies in particular, can not be found in physical shops. Observability (Rogers, 1995) is therefore low, representing a potential main reason for the low adoption rate of technologies (renewable technologies in particular) amongst Irish population.

Shyness and lack of communication skills following the negative impact of introducing ICTs to society further enlarged the gap in terms of social inclusion. Access to technology and usage patterns are confirmed by existing knowledge referring to older adults using technologies (Davies, 2007). Being more aware of systemic changes that innovations brought to society, senior participants revealed that they are missing old fashioned ways of communication and social interaction, blaming technologies for the changes.

Limitations of this research

The inductive methods used for data interpretation, and also by using a small sample of Irish, working class population living in an urban environment, means that this study's findings may not apply for larger populations, and/or under different settings or locations, and/or under the influence of different social, economic, and cultural factors.

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