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Decolonization of Digital Learning Spaces: It's Not About Knowing More but Knowing Better

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Abstract
Working alongside members of communities who are remote and/or marginalized from the dominant socio-economic powers, the long-term goal of the Decolonisation of Digital Learning Spaces project is to empower communities in choosing, adopting, developing, and/or appropriating culturally appropriate and sustainable digital learning technologies. Before we can co-envision useful options, however, we must first know what questions to ask and how to ask. It is necessary, therefore, to find appropriate, efficient, and innovative approaches to better understand community needs and values. This paper describes the preliminary planning of the research project in creating an international network of community members, activists, and researchers, and in identifying and testing methods for eliciting needs, values, and ways of understanding the world. Selected methods must allow the researchers to step outside their own pre-conceived understandings to avoid dominating or imposing meaning upon the participants' understandings. In this presentation, we describe: a) the goals and concerns that were the impetus for the project, b) the nascent network, c) potential knowledge elicitation methods, and d) the *repeated single-criterion card sort* method as the first method that will be piloted. This deceptively simple method allows research participants to use their own words to express their conceptualizations thereby reducing the influence of the researcher upon participants' mental model and values.

Keywords: decolonization, research methods, card sorts, personal construct theory, digital learning spaces

Introduction

In July 2021, our team began a research project called "decolonization of digital learning spaces." The main question guiding the project is: How can we assist people in building their own culturally relevant and sustainable digital learning spaces? The long-term goal of this project is to help people adopt, develop, and/or appropriate digital learning technologies and choose their own culturally appropriate and sustainable ways of using them. Our interest is to better understand what it means to have a digital learning space for those communities that are excluded from the dominant cultures, institutions, languages, and political activity of their country or region. However, this question cannot be answered without first investigating appropriate, efficient, and innovative approaches that can create better cross-cultural communication. Before we can solicit meaningful answers and opinions, we must know what questions to ask and how to ask them. It is important that the knowledge elicitation methods limit the influence of the researchers' underlying values and goals upon the community participants. Identification of such methods has become a significant goal of the project. Further to the identification of suitable methods to decolonize the design of digital learning spaces, the people themselves must be involved in the decision-making processes. The establishment of a sustainable network of people from marginalized communities—that is, those who have been disenfranchised from the mainstream, wealthy powers—should be the main drivers. For this reason, one of the initial and most important stages of the project was to engage with members of communities, researchers, and activists at the grassroots level. In this paper, we describe: a) the goals and concerns that were the impetus for the project, b) the nascent network, c) the potential knowledge elicitation methods, and d) the repeated single-criterion card sort method as the first method that will be piloted in 2022.

Concerns

According to Traxler (2019), there is an immediate need to problematize not only digital learning, but also the research methods used to analyze accurately and appropriately the needs, wants, and aspirations of communities who are marginalized from the dominant socio-political powers locally, nationally, and globally. He writes that it is imperative that such communities harness "their own collective critical, meta-cognitive and conceptual skills and thus ensure and enhance their future learning and livelihoods" (p. 9). This project has emerged from the growing concerns about:

- the threats and opportunities of global digital technologies for the livelihoods, resources, lifestyles, and knowledges of rural and remote communities around the world;

- the need for learning that exploits these digital technologies yet preserves local cultures, traditions, ways of knowing, languages, and spiritual practices;

- the role and importance of local ways of knowing that spring from within small, marginal, and fragile communities;

- the need for better communication strategies and research techniques, ethics, and governance that enable (outside) digital education and technology experts to understand these communities, their worldviews, and their meaning of 'learning' and ways of sharing wisdom with others to help each community develop its own digital learning spaces; and

- the need for the development of such digital learning spaces to be designed, developed, and maintained by the local communities in culturally, environmentally, and economically sustainable and appropriate ways.

The Network

At the time of writing, the decolonization of digital learning spaces network has grown to involve communities, researchers, and activists from multiple locations within Australia, Borneo, Canada, Congo Basin, Guatemala, Kenya, Indonesia, Lapland/Finland, Namibia, New Zealand, Mexico, Palestine, and South Africa. The project is not solely focused upon Indigenous communities; the project also includes one Deaf and Hard of Hearing community and a community in Palestine. What the communities in this network share is that they have little in common with the dominant socio-economic powers in their nations.

Research Tools and Methods

While we recognize that there are a wide variety of methods and methodologies already developed for decolonisation research, such methods and methodologies have had little impact on digital learning. Furthermore, remote and marginalized communities have not necessarily had a voice in the development and application of such methods and methodologies. For this reason, our current focus is to work alongside communities to collate, critique, and adapt research tools and techniques from across disparate disciplines as well as to identify non-Western ways of researching that are more appropriate to individual communities and will lower barriers of language, literacy, culture, history, power, and infrastructure.

Our approach is to organize participative workshops within each community in which local researchers or intermediaries invite and host community members who have agreed to participate. As we are not yet at the stage of conceptualizing any digital learning spaces, the initial workshops we are conducting are focused on "the iterative introduction, evaluation, adaptation and validation of conventional and innovative social research tools and methods [as well as] discussion and development of culturally appropriate research ethics protocols, leading to the synthesis of tools, methods, and ethics specific to their community, culture, and concerns" (Traxler, 2019, p. 13–14).

To begin the exploration into better ways of eliciting needs and understanding worldviews, we began by considering research methods that would disentangle our Western European assumptions about what it means to know and understand. Within the social sciences interviews of varying levels of structuredness, focus groups, Delphi techniques, rich pictures, case studies, and techniques associated with ethnographic and narrative studies are common and have all emerged through centuries of Western European thought. These methods are heavily imbued with culturally specific meanings and values which might silence or muffle the voices of and ways of knowing of the communities for whom the project is intended to support. For our project, we needed methods that permit us to sidestep issues of language and semantics which may prevent us from hearing the voices of our non-Western community partners. To accomplish this, we decided to begin with card sorts.

Card sort methods

Card sort methods align well with Kelly's personal construct theory (PCT) (Kelly 1905-1967, 1963; To & Wong, 2020). Kelly (2017) refers to the philosophical underpinnings of PCT as "constructive alternativism" and writes:

> the assumption is that whatever nature may be, or howsoever the quest for truth will turn out in the end, the events we face today are subject to as great a variety of constructions as our wits will enable us to contrive. This is not to say that one construction is as good as any other, nor is it to deny that at some infinite point in time human vision will behold

reality out to the utmost reaches of existence. But it does remind us that all our present perceptions are open to question and reconsideration, and it does broadly suggest that even the most obvious occurrences of everyday life might appear utterly transformed if we were inventive enough to construe them differently. (p. 3)

PCT suggests that people develop personal constructs and theories about how the world works; they create frameworks or mental models for structuring their experiences, however mundane. People use these frameworks to make sense of their observations and experiences (Horley, 2012; Kelly, 2017). These personal constructs have potential commonalities within cultures and potential differences between cultures (Greyling & Waitai, 2016).

There a different kinds of card sort methods including *Q sorts*, *all-in-one sorts*, *hierarchical sorts*, and *repeated single-criterion card sorts* (Rugg & McGeorge, 2005)*.* Although card sort methods have emerged from Western thought, we felt that they offer an opportunity to engage with community participants in a more culturally neutral or culturally sensitive way; at the very least, it provides a starting point.

According to Rugg and McGeorge (2005), during card sorting, participants are presented with a number of objects or cards displaying images or text (Figure 1). Each card or object is marked with an identification number (the number is unrelated to any meaning that might be associated with the card). The participants are asked to sort the cards or objects into groups. The groups (categories) may be pre-determined by the card-sort facilitator or determined by the participant. Each participant may be asked to repeat the process until the number of possible groups is exhausted (for example, when the participant indicates that they cannot think of any other way to sort the cards). After each iteration of sorting, the facilitator jots down card numbers that were placed in each group. Analysis reveals the agreement or disagreement among individuals of a community about the categories and which cards belong. Statistical analysis may be used. Geerard and Dickinson (2005) provide an excellent example of how card sorts were used to garner insights about understanding of women's working wardrobe in the UK.

Figure 1

Sample card with picture and number

Rugg and McGeorge (2005) provide advice on when to use and when not to use card sorts. Card sorts are useful for understanding people's mental models. They are useful for exploratory research. Furthermore, card sorts can be use with both abstract and complex phenomena. Among the limitations, they are primarily limited to "static, flat, explicit knowledge [nor] sequencing procedures . . . tradeoffs . . . hierarchies . . . or much tacit knowledge" (p. 97). Furthermore, Rugg and McGeorge (2005) also suggest that the form of the items being sorted is also important (Table 1).

Table 1

Form of items/entities

	Advantages	Disadvantages
Objects	All senses can be engaged; helpful if participant is unfamiliar with the domain.	There may be irrelevant or distracting characteristics; object size and weight may be cumbersome.
Pictures	More practical than objects (portable); can remove irrelevant and distracting features; can test varying characteristics by using slightly different pictures; amenable to computerization.	Reduced sensory features; less information than objects.
Words	Simplest form (just names of objects); no extraneous detail; amenable to computerization.	Participants must understand the words on the cards.

Repeated Single-Criterion Card Sorts

In planning our pilot testing, we chose the repeated single-criterion (RSC) card sorting because it is the most basic and very easy to learn for researchers or intermediaries in the field. The key concepts associated with card sort methods include *construct* (attributes for describing), *criterion* (the attribute that determines membership in a category), *category* (group of like items), *facet* (viewpoint from which classifications are made), and *range of convenience* (the settings in which the construct makes sense) (Rugg & McGeorge, 2005). During an RSC session, the participant "sorts the same entities repeatedly, categorizing in terms of a different single attribute ('criterion') each time" (Rugg & McGeorge, 2005, p. 96). The method is used with one individual participant at a time. The key steps are described in Table 2.

Table 2

RSC card sort procedures (Rugg & McGeorge, 2005)

Procedure	Description
1. Choose entity	Example: *knowledge sharing*: All cards show depictions of people interacting in some way with other people or things in the environment.
2. Prepare the items	The cards should be of similar quality, size, texture, and glossiness. The words or images should be of similar quality so that the participant focuses on the semantic differences that are important to the study. Each card should be numbered.
3. Develop instructions	Use the same instructions for each participant to ensure consistency. Do a practice session or demonstration with a small

set of cards (perhaps of a related concept, but not the same cards as will be used by the participants).

4. Conduct the session	The participants should be encouraged to look through all the cards before sorting for the first time. A large, flat surface is recommended so the participants have sufficient room to create groups. In the case of our preliminary field work, a facilitator may begin by telling participants that they have a collection of cards with pictorial representations of, for example, *knowledge sharing* (teaching, learning, sharing information). Then, the facilitator would ask each participant to sort the cards into groups according to <u>one</u> criterion only. When the participant has finished sorting, the facilitator would ask what the criterion was, jot down the number of groups and the numbers of all the cards that went into each group of cards. It is important to note left-over cards that have not been sorted. The facilitator may check that the participant is satisfied with the sort without commenting on the way the participant categorized the cards. The facilitator would then shuffle the cards and ask the participant to think of another criterion and sort the pile of cards again and again until saturated.
5. Record the session	Sortings may be recorded on paper. Video and audio recordings may help to capture comments. Rugg and McGeorge (2005) recommend jotting down respondent number, date, facet (such as *knowledge sharing*, session codes. And for each sort by individual participants: sort number and criterion, group/category names, the numbers on the cards.
6. Analysis	There are many ways to analyze the data such as number of criteria, type of criteria, commonality (i.e., agreement/disagreement) of sorting criteria across participants, commonality distributions, and excluded or missing criteria or categories. Analysis is amenable to computerization.

Conclusion

At the time of writing, our research group has gained the interest of more than 20 researchers, activists, and community members from around the world. As we move forward, we are interested in welcoming even more participants. At these early stages, we are focusing on the identification and testing of robust, simple, and practical methods for facilitating authentic discussions surrounding learning needs and how they might be manifested digitally. Additional, and no less important, issues we are working on in parallel include decolonization of research ethics (Kruger et al., 2014) and decolonization of research project governance (Binns, 2006; Bozalek, 2011). Through this interdisciplinary and exploratory project, our aim is to establish a process to identify, adapt, and test research tools and techniques from a range of disciplines that have value to social science researchers working amongst and alongside disadvantaged and development communities, including educationalists working in informal digital learning. Repeated single-criterion (RSC) card sorts is just the beginning.

Author's Contributions

J.T. conceived of the project and provided multiple statements and writings that were incorporated into this paper. M.K. wrote various sections and collated the paper. S.F. discussed, shared insights, and helped edit the paper.

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Ethics Statement

This project is just starting the research ethics process. No data has yet been collected.

Conflict of Interest

"The authors do not declare any conflict of interest."

Data Availability Statement

This project is just starting the research ethics process. No data has yet been collected.

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