FACILITATING DELIBERATION AND DECISION-MAKING ONLINE? A PILOT-STUDY OF NABÚ

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'Two people with different ideas put their energy together to build something in common. From that moment, it is not my idea or yours anymore. The two ideas will together give birth to something else, something that neither you nor I knew.'
(Estalella & Corsín , 2015: 149)

1. Introduction

How groups deliberate and decide upon a task and how collective intelligence can be channelled efficiently has been a prevalent issue within societal organization theory, psychology, social choice theory and democratic theory. The proliferation of digital technologies, especially the Internet, in recent years has brought a transformation in the ways how humans interact, communicate and accomplish tasks together. The "communication revolution" (Mansell, 2002) and the logic of "mass-self communication" (Castells, 2009) have had a considerable impact on organization and deliberative theory: It has been argued that transferring deliberative decision-making online could solve challenges such as the problem of synchronous deliberation, group-internal power dynamics and scalability (Kavanaugh et al., 2005; Price et al., 2002). New mainstream discourse in academia embraces the discussion about the success of online deliberation platforms, designed for connecting a multitude of people over a large distance who might contribute asynchronously (Dahlberg, 2001; Wodak & Wright, 2007). Additionally, as scholar argue, not only the external conditions for deliberation might be improved but the quality of deliberation could possibly be increased (Kies, 2010; Borge & Santamarina, 2015).

These prospects gave rise to a plurality of innovations in this field: Online deliberation platforms are booming and are being implemented by different bodies around the globe, from political parties in candidate selection processes and policy design (Borge & Santamarina, 2015)[1] to community engagement projects in urban planning (Forester, 1999; Gordon & Manosevitch, 2010). Empirical research on this issue, however, is still limited and often moves between optimistic or pessimistic accounts on the success of these platforms, lacking a nuanced critical analysis to identifying how far they actually provide opportunities and face problems (Kies, 2010).

In this paper we want to contribute to such a nuanced view on online deliberation and approach the question how "to develop a valid method to evaluate the deliberativeness of online public spaces" (ibid.: 62). We tailor our focus on the specific niche of online tools that are designed to exchange arguments within a cooperative group to arrive to a consensual decision. Therefore, we focus on two components of online deliberation platforms: *collaborative decision-making* through *deliberation*. This excludes basic organizational tools (Wiggio), forums for communication such as social media (Twitter and Facebook), as well as co-writing tools (googledoc and pads).

This paper is organized as follows: Firstly, we briefly embed our investigation into the literature on online deliberation. Secondly, we provide a compilation of analytical dimensions for the

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1   Prominent examples are Liquid Feedback used by the Pirate Party and Democracy OS by Barcelona en Comú.

assessment of the pilot study Nabú. Nabú is a programme for decision-making processes that aims for consensus-based outcomes as the result of a collaborative deliberation process between individuals that share the same objective. To assess Nabú we draw on empirical data collected through qualitative and quantitative methods to evaluate its organizational design and the quality of the deliberation process. After presenting and discussing the findings and the process of data collection, we conclude with general reflections as well as new proposals to improve online deliberation platforms.

We argue that further research should address the intertwinement of these three aspects to provide a more holistic perspective on online deliberation and decision-making.

2. Deliberation and Collaborative Decision-Making Online: Theoretical Framework

In line with other authors (Price et al., 2002) we argue that it is the facilitated process of exchanging arguments, not barely passive retrieving of information, that is the important feature of transferring collaborative decision-making online. This argument can be clarified with the image of the rise of the Web 2.0 and the birth of an individual that not only consumes but simultaneously produces content. Applied on democratic theory this logic leads to the concept of deliberation, the active shaping of content with own contributions within a discursive decision-making process, not arriving at a decision through voting or preference-aggregation.

We want to base our study on two definitions made in this field: *collaborative decision-making* and *deliberation*. Following Seguy et al. (2010), we identify the *collaborative decision-making* as 'the realisation of a set of activities by a group of actors working together and sharing a common objective and resources, an activity leading to a decision' (ibid: 1047). To arrive to a decision, four different related processes can be distinguished: to search for information on the problem to be solved, to design possible solutions, to evaluate different solutions and to choose among them, and to control the implemented decision (Simon, 1960). Since we are interested in the deliberative aspect in arriving to a collaborative decision, our focus lies on the second and third process is of interest to us: the designing of solutions and the evaluation and choice between them. These both aspects are incorporated in the analytical framework (see section 3.)

The process of designing solutions introduces the *deliberative* aspect. In academic literature there is a vast amount of accounts on deliberation as a normative procedure on how to arrive collaboratively to a legitimate, just and consensual decision (Mansbridge et al, 2012; Dahl, 1989; Habermas, 1989; Cohen, 1996). Deliberation has a long-standing tradition within political theory and science and has for many become the ideal praxis within democratic theory (Benhabib, 1996). The concept of deliberative democracy can be divided in two parts, the deliberation aspect and the democracy aspect. Deliberation implies a rational discourse whilst the democracy part refers to the fact that the ones affected by a decision should have a say. The strongest argument in favour of deliberation is that a decision is not based upon preference aggregation, as in the logics of voting, but on the active shaping of the outcome via rational arguments. This is strongly related to Habermas' (1996) connotation of the *rational* discourse: the deliberative model underscores the importance of the very process through which solutions are designed and evaluated within a group, ideally with rationality, the force of the better argument (Elster, 1998). From an educational perspective, the exchange of arguments with other individuals also can contribute to the process of opinion-forming (Pateman, 1970) and as a consequence to the emergence of a political culture

(Burkhalter et al, 2002).

With the rise of digital technologies, especially the emergence of the Web 2.0, optimists have foreseen new forms of political participation and deliberative processes in democracy (Fishkin, 1991; Barber, 2003; Groshek, 2009; Park, 2013). In line with this optimism, research points towards potentials for online deliberation to for example reduce emotionality when arguing: Stromer-Galley et al. (2015) compared face-to-face discussion with online discussion and came to the conclusion that "online environment initial expressions of disagreement were less frequent, less bold, and were not sustained" (ibid.: 1). Contrasting this positive finding, however, further research suggests to reject the "assumptions that online deliberation is capable of replacing competently facilitated face-to-face public deliberation as an effective means of addressing complex issues" (Hartz-Karp & Sullivan, 2014: 2). These findings show the contested nature of online deliberation as well as the missing coherence in investigation strategies since empirical research on online deliberation is still limited and the "deliberative model (…) is in need of empirical evidence in order to become more credible and applicable" (Kies, 2010: 62).

In the following section we want to contribute to the discussion by combining to distinct research lines within online deliberation. In line with other authors (Scott & Wright, 2007) we want to argue that it depends on the design and the possibility for qualitative deliberation of online deliberation platforms to facilitate discussion and consensus-building. We therefore intertwine two approaches; the question of design and the assessment of quality to provide a more holistic approach towards online decision-making and for evaluating Nabú.

3. Evaluating Online Deliberation: An Integrative Framework

In this section we want to shed light on two basic approaches towards online deliberation. Firstly, the perspective on the organizational design of the platforms compared to the structural dimensions (Borge & Santamarina, 2015) and, secondly, on the process dimension, namely the quality of the deliberation. The distinction into the two dimensions is an attempt to overcome the "blurry line that divides the technical obstacles of online deliberation with organizational and facilitation choices" (Delborne et al, 2011: 369). However, it has to be mentioned that sometimes the features of the design have an impact on the process and influences the quality of deliberation. Insofar, our analytical framework aims for an integrative approach of design and quality of deliberative decision-making.

3.1 Organizational Design of Online Deliberation Forum

It is a commonly accepted belief that the design of the online deliberation platform plays a crucial role within the process of online decision-making since it reflects "the architecture for virtual public discourse, whatever its use or associated social structure" (Jones & Rafaeli, 2000: 218) and since "interaction does not just happen, but must be intentionally designed" (Krejins et al, 2003: 340). Thus, in accordance with Wright and Street (2007) we want to distinguish between three types of architectures of online deliberation platforms as outlined below in Table 1.

Table 1. Design of Online Deliberation Forum (adapted from Wright & Street, 2007).

Type	Description
Policy forums	Input is made directly to the policymaking process. These are typically highly structured and focused, with policy documents available for people to read and then an opportunity to post comments on specific questions.
Have Your Say' sections	discussions are relatively unstructured and generally left open so that users can post about what they want
Mixed models	the websites either have a separate policy forum and 'Have Your Say' area

This basic distinction of organizational design is an important first approximation since it divides commenting or opinion-forming (Pateman, 1970) with the outcome-perspective, the actual development of a decision. This division seems obvious but actually is sometimes under considered. For example, investigating public commenting in e-rulemaking, Farina et al (2012) observed the trend of mass commenting with actually limited impact on actual policy making. In the same manner, Manosevitch (2014) recommends that "research on online deliberation needs to provide an in-depth account of the broad array of design choices currently employed in the realm of online deliberation" (p.2).

3.2 Quality of the Deliberative Process

The answer to the question of 'what makes a good deliberation process' is a recurring issue in deliberative theory (Dahlberg, 2004; Kies, 2010). Accordingly, there is a diverse range of normative accounts made towards the "conditions fostering deliberation (i.e. inclusion, horizontal interaction, transparency) and attitudes characterising a deliberative space (i.e. discourse equality, reflexivity and transformation of preferences, and decisions by consensus)" (Borge & Santamarina, 2015: 5). We do not want to start an in-depth discussion about the complex theoretical discussion on ideal processes for online deliberation. For the purpose of analysing the perception on the quality of deliberation using an online platform, we adopt seven criteria as outlines in Table 2. These seven criteria are widely accepted in academic literature for describing an "ideal" deliberation (Dahlberg, 2007).

Table 2. Dimensions for Quality of Deliberation (adapted from Borge & Santamarina, 2015)

Deliberative Criteria	Meaning
Discourse equality	Participants should have equal opportunity to introduce and question any assertion whatsoever and to express attitudes, desires and needs.
Reciprocity (component of rationality)	Participants should listen and react to the comments formulated by other participants.

Justification (component of rationality)	The opinions and propositions should be accompanied by reasoned, accessible, and moral justifications.
Reflexivity (component of rationality)	Participants should critically examine their values, assumptions, and interests, as well as the larger social context.
Empathy (including civility) (component of rationality)	Participants should be sensitive to other views and opinion, not only of those present during debates.
Sincerity	Participants must take a sincere effort to make known all relevant information and their true intentions, interests, needs, and desires
Plurality	A deliberative context should be a context where a plurality of voices is heard even if these voices are critical with the dominant opinions/ ideologies.

We argue that the combination of both sets of dimensions, tackling firstly, the organizational design and, secondly, the quality of the deliberation will be used to examine Nabú to provide a holistic and integrative evaluation of its features, processes and success.

4. Methodology

We decided to take a two-step approach to evaluate the design of Nabú triangulating qualitative and quantitative data. In line with Delborne et al (2011) the first step consists of the description and contextualization of Nabú under the perspective of its design to identify its specific characteristics. The second step contains the analysis of its success by assessing the perception of participants on design and quality of the online deliberation process via Nabú. The "evaluative-descriptive" approach is perceived to be adequate "to analyze conversation held in a specific online environment, in an attempt to understand the strengths and weaknesses of this discussion" (Neblo, 2007: 528).

4.1 The Case Study: Nabú

Nabú is a large-scale decision tool for cooperative groups with the aim to write consensus documents resulting from the collection of opinions and arguments of the participants (Nabú, 2015). Created as a complementary organization tool for the Cooperativa Integral Catalana (CIC), Nabú is still in a test-phase.
To participate, every individual of a cooperative group is given an account to access Nabú where they can enter and start writing. As shown in Figure 1, the process of writing follows the logic of a tree. The documents are developed in five levels, starting with the objective of the group as the root, followed by different steps of proposal collections that are visualized through branches, and the final consensus document as the outcome. The number of the branches represents the number of different proposals (in Figure 1 only one proposal is being discussed with differing

proposals after every level of concretization).

Figure 1. How documents are written (Nabú 2015)
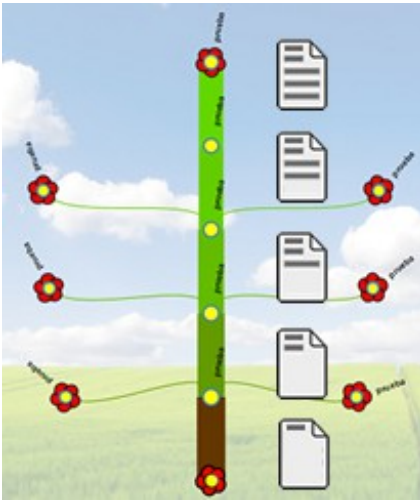
All information gathered by the participants is reflected upon through the visualisation of the tree and the size of branch (the bigger the branch, the more people have voted on it) so the individual knows the tendency of the whole group towards a proposal. The contributions are anonymous for avoiding any internal tensions of the group that could influence the outcome.

4.2 Participants of the study: A housing collective in Madrid

To evaluate Nabú we chose housing collective consisting of six members (aged between 27 and 36) that engages in a variety of political projects. These include the maintenance and organization of a social centre nearby that organizes events related to self-management and DIY practices, such as discussion rounds and film screenings, etc. Some of them affiliated to a feminist collective organized the preparation of demonstrations and gatherings in the house, others were working as musicians, using the community room for concerts and practice. The group was constantly reflecting on their own identity, evaluating the processes and the integrity of the group once a month. Accordingly, they strongly endorsed forms of hierarchical organization, and were strongly affirmative towards the concepts of consensus and collaboration when taking communal decisions. To organize themselves the participants of the collective normally gather together in assemblies to organize their living and projects and discuss and decide upon about issues related to their community. When proposing the Nabú to them, they were curious and willing to implement it, since they were often challenged by the fact that due to time constraints or travel plans not all individuals were always able to participate in the assemblies.

4.3 Research Questions and Hypothesis

In order to provide a description and contextualisation of the specific characteristics of Nabú and to evaluate its implementation in the housing collective, our research was led by the following:

1) How does the organizational design of Nabú perceived by the participants?

2) Which challenges and problems were identified by the participants?
3) Was the quality of the deliberation process improved by using Nabú?

These questions led us to the following hypothesis: Nabú is perceived by the participants to be facilitating the deliberative decision-making process and is preferred to other strategies of decision-making.

4.4 Methods

For answering RQ 1 and 2, we undertook a small qualitative study combining interviews with observations. The data collected for answering RQ 3 derives from a pre-post survey using a rating scale. We used a small-N population for testing Nabú, namely a housing collective consisting of six participants (N=6). Using surveys as data collection method for analysing quality of online deliberation has been promoted by several authors (Borge & Santamarina, 2015; Kies, 2010), however, we have not found any convincing implementations concentrating on the perspective of the participants. In this respect, the operationalization of the dimensions into survey questions can be seen as a contribution in this field.

We wanted to know if the implementation of Nabú facilitated or changed the deliberation quality of the group. The dimensions on quality of deliberation (Table 2) have so far been evaluated by analysing the contributions made in online platforms (Kies, 2010; Borge & Santamarina, 2015). Here we want to propose a differing approach, namely focusing on the perception of the participants. Therefore, surveys were administered prior and after the implementation of Nabú. The implementation of pre-/post-surveys is a common tool when evaluating the perception of an intervention in a population (Guadagnolo et al, 2011).

4.5 Research Phases

The research processes consisted of four phases: In phase 1 Nabú and the data collection process were introduced to the collective with the opportunity to give feedback and clarify open questions. Afterwards, the participants answered the survey according to the dimensions in Table 2 for assessing how they perceived the quality of deliberation in their assemblies. In phase 3 we then asked them use Nabú for organizing an event which had differing initial proposals and observed how they engaged with the platform[2]. In phase 3 we invited them to evaluate the process using the same survey for assessing their perspective on the general deliberation quality of the group but this time tailored to their use of Nabú. Finally, we conducted short follow-up interviews focused on the perceived advantages and disadvantages towards other strategies of deliberative decision-making. Afterwards, we analysed the data by transcribing and coding the interviews in open coding mode for the qualitative part and used paired-sample t-tests for analysing the quantitative data.

4.6   Presentation and Discussion of Findings

The following sections briefly introduce the findings obtained in the pilot study through qualitative and quantitative data collection. Since we observed a small-N sample, these findings are only indications, and form the basis for further investigation.

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2   The group asked to keep the content of event confidential, therefore we will not provide information about the „objective" oft he group.

4.6.1 Organizational Design of Nabú

Nabú is an interesting case study because it is not a bare discussion platform but has a very distinct architecture and design from traditional online deliberation tools such as Liquid Feedback etc., Democracy OS, Reddit etc. These platforms traditionally employ numbers next to threads to show the popularity of one discussion. Nabú employs these elements within its design but due to its visualisation as a tree, it provides a more immediate overview of the process of the discussion creating "group-consciousness" (Nabú, 2015), a state where the individuals always know the tendency of the whole group.

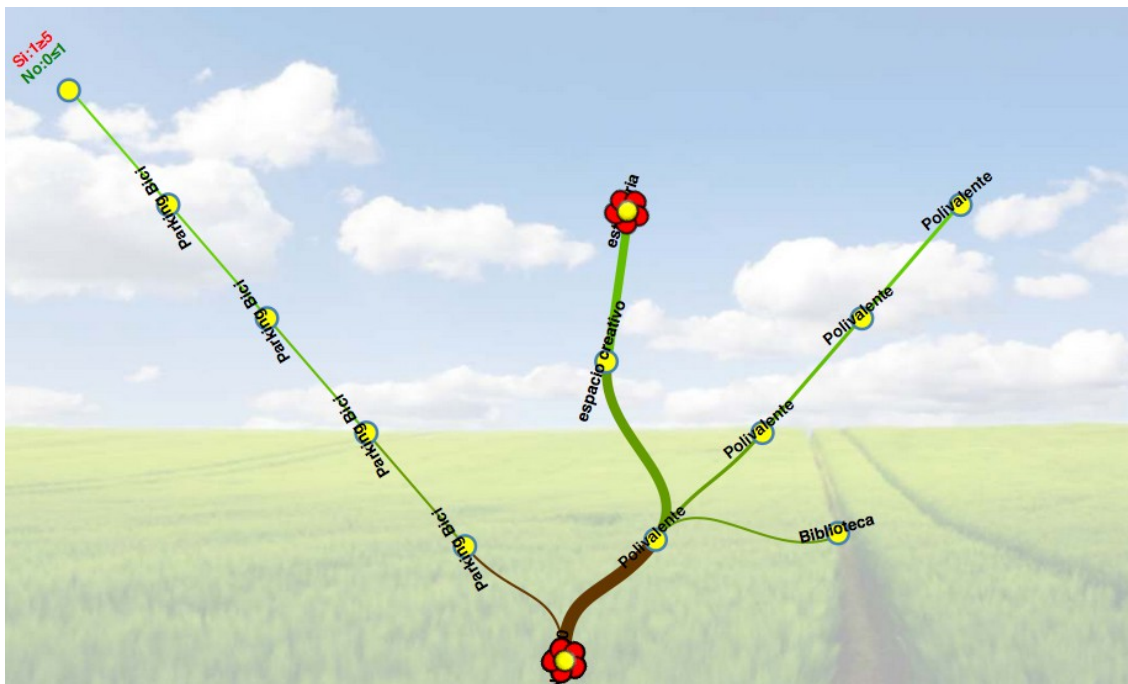*Figure 2: Decision-making process within Nabú by housing collective.*

Figure 2 represents the discussion of the participants visualized in Nabú. We can observe diverse proposals growing from the objective, ending up in a consensus document which was perceived as a success by the group. As the participants confirmed, the feature of the visualization as a tree facilitated the proposal development and voting process:

> *"I really liked the idea with the tree, it gives the whole discussion process the feeling that something grows from the group and compared to the other tools you showed me[3] I can see clearer where we are at, what we are discussing etc."* (ID2)

Nabú ensures the equality of the participants, provided through the same amount of voting opportunities: Every individual has an equal amount of participation and deliberation opportunities (represented through flowers) ensuring the equality of participation. These can be used to either write and modify proposals or vote for an existing one. This feature was perceived as very useful:

> *"Like this, we actually vote on things, in the assemblies we often talk for hours without arriving to*

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3   The participant was given a comparison to DemocracyOS.

Accordingly, this platform falls under the category of "mixed models" (Wright & Street, 2007) in respect to their organizational design: It provides a space where a clear proposal is written (policy forum) as well as a commentary space ('have your say' sections) where the proposal can be backed up with arguments, doubted or be reflected on.

The commentary space was used extensively, however, some important doubts were raised regarding the utility of the commentary space. A participant criticised that "*the way of just adding comments (...) did not help me understand how to change the proposal*" (ID4). This problem was backed up by the observation that some of the participants talked about the proposal face-to-face and then later inserted the result into Nabú. Referring to existing studies, this finding correlates with the observations made by Hartz-Karp and Sullivan (2014) in the respect that online deliberation is not "capable of replacing competently facilitated face-to-face public deliberation as an effective means of addressing complex issues" (ibid.: 2). In the follow-up interviews this point was made by the participants answering to the question if they would use Nabú in the future. All participants criticized the design of the 'have-your-say' sections and the majority stated that even though deliberation was possible, the direct and immediate possibility to formulate opinions was easier via face-to-face discussion. Here we can observe the entanglement between the design and the quality aspect of deliberation (Delborne et al, 2011). Regarding the dimension 'reciprocity', Nabú was not able to provide a way how the participants could respond to comments in an efficient manner. However, this finding on the other hand does not affirm that "emerging technologies (...) undermine severely the rhythm of democratic discourse" (Wilhelm 2000: 101). As one participant pointed out Nabú could be used in between face-to-face session, where the emotional and more discursive parts of the decision-making process would be exercised and later could be inserted into Nabú.

Furthermore, the group faced different challenges in respect to the usability of Nabú: Presenting and introducing the platform to the whole group was not for everyone sufficient for explaining exactly how it worked. Although we afterwards distributed a tutorial with a detailed description, the participants required a face-to-face introduction by one of the researchers, sitting next to them while they used Nabú. Asking how this could be avoided, one participant suggested to "*insert the explanations on how to use Nabú directly into the page*" (ID1) instead of having separated documents.
Considering that the digital literacy of the participant was quite high, all of them were using the Internet in their day-to-day life, this could pose a problem to more heterogeneous communities with mixed levels of digital literacy. Related to this aspect, some participants felt a first burden when they were confronted with a new technological tool. One of them stated:

"I do not know if I would have started using Nabú if you (one of the researcher*) were not here, I think I would have been too lazy"* (ID5)

In summary, the perception by the participants regarding the organizational design of Nabú (RQ 1) was rather positive. The consensus document that emerged from the process helped to organize the event they were planning and the participants generally enjoyed using the tool after they got used to it. Especially the fact that the tree provided the possibility to know about the general tendencies of all individuals was perceived in a positive way. The participants saw the possibility to

use the platform especially in occasions where not all of them were able to attend in the assemblies. Also, the individuals who formed part of the feminist collective suggested to mention the platform in the next assembly of their group but only for issues that are not emotional but rather organizational.

This leads to the problems and challenges identified by the participants (RQ 2). Firstly, the usability of the platform was perceived as lacking some intuitional elements or a better description implemented in the page. Secondly, the 'have-your-say' sections were perceived as too unstructured. Two suggestions were raised related to this issue, firstly, to improve the sections and secondly, to use Nabú only complementary to the assemblies. Lastly, it was pointed out, that the tool could be used for easier planning tasks but that is was not sufficient for emotional or more complex deliberative issues. To summarize, the 'collaborative decision-making' (Seguy, 2008) aspect of Nabú was perceived as being facilitated, the 'deliberative' aspect was perceived as being hindered.

In order to triangulate these data, we wanted to know if the participants felt a difference regarding if the quality of the deliberation within the group was improved after the use of Nabú. Therefore, the next section presents the results of the quantitative part of the study obtained via a pre-post survey.

4.3.2 Quality of Deliberation of Nabú

To assess the quality of deliberation a paired-samples t-test was conducted for all seven dimensions to compare the quality of deliberation perceived by the participants before and after implementing Nabú.
No statistically significant difference between any of the categories in the previous and subsequent measures to use the platform was found.[4] This means that the results indicate that there was no improvement in any of the seven dimensions in respect to the quality of deliberation. Accordingly, in respect to RQ3 it has to be stated that, in the perception of the participants, the quality of the deliberation was not improved.

It is important to note that specific problems with the design of the survey and the operationalization of the dimensions were identified. Also, we have found the need to carry out an investigation with a much larger sample that allows us to establish the basic conditions for testing application reliability, validity and further factor analysis.

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4 There was no significant difference regarding *equality* in the scores for pre-Nabú (M=3.00, SD=1.08) and post-Nabú (M=2.75, SD=.72) conditions; t(3)= .397, p=.718).
There was no significant difference regarding *reciprocity* in the scores for pre-Nabú (M=3.70, SD=.76) and post-Nabú (M=3.33, SD=1.13) conditions; t(3)=2.02, p=.135.
There was no significant difference regarding *justification* in the scores for pre-Nabú (M=3.50, SD=1.54) and post-Nabú (M=3.20, SD=.843) conditions; t(3)=.651, p=.562.
There was no significant difference regarding *reflexivity* in the scores for pre-Nabú (M=3.25, SD=.77) and post-Nabú (M=3.20, SD=.31) conditions; t(3)=.147,p=.893.
There was no significant difference regarding *empathy* in the scores for pre-Nabú (M=3.29, SD=1.18) and post-Nabú (M=3.37, SD=.1.46) conditions; t(3)=-.215,p=.844.
There was no significant difference regarding *sincerity* in the scores for pre-Nabú (M=3.41, SD=.73) and post-Nabú (M=3.41, SD=.92) conditions. t(3)=.000 ,p=1.00.
And there was no significant difference regarding plurality in the scores for pre-Nabú (M=3.41, SD=1.54) and post-Nabú (M=3.12, SD=1.82) conditions. t(3)=1.33 ,p=.275.

4.4 Summary

We have to reject the hypothesis that Nabú was perceived by the participants to be facilitating the deliberative decision-making process and is preferred to other strategies of decision-making. The results of the qualitative part showed that there were remaining barriers to substitute face-to-face assemblies and the quantitative analysis showed no improvement of the quality of deliberation. However, the findings of the qualitative part of the study generally suggest a positive encounter with Nabú, and gave a nuanced insight to the problems and difficulties that can be embedded within literature of online deliberation. Hence, the problems of usability, missing proximity and intimacy between the individuals and the lack of possibility for emotional expressions are issues to be further explored.

Furthermore, we have to point to the problems regarding the survey design that made a reliable analysis of the quality of deliberation difficult. However, since this was a pilot study we want to build on in the future, the results of the survey helped us to tailor the questionnaire for improving the analysis. Accordingly, experts were asked to evaluate the survey to enable an implementation at a later point.

Lastly, the results of this study were handed over to the developer of Nabú who will consider the suggestions made for the further development of the platform.

5   Conclusion

In this paper, we argued that the Internet has transformed and altered the way human are interacting and communicating. The academic discourse on online deliberation, however, often takes a rather binary view on the possibilities and problems, ranging from purely cyber-optimistic accounts to pessimistic attitudes. Our findings show that a nuanced view is more helpful to understand how digital technologies can actually change certain aspects of human interactions without praising nor dismissing their overall potentials. We therefore advocate for more specific empirical research, concentrating on the different levels that are embraced by online deliberation. This means asking who is deliberating, why they are deliberating and under which conditions they are deliberating in. Although these issues are being discussed in the general field of deliberative democracy (i.e. Wolkenstein, 2015), theory and empirical research on online deliberation often still lacks an application of these distinctions.

Therefore, we tried to contribute to the discourse by integrating two analytical frameworks and provided a pilot study to approach the online deliberation potential of a promising online deliberation platform, Nabú. And indeed, the findings pointed to interesting aspects of the decision-making process that can be tackled in further research.

Since online deliberation is still a rather new field of study, it is furthermore important to closely observe the development of its implementations throughout all kinds of organizations. The question to which extend online deliberation platforms can foster sovereignty and autonomy in decision-making processes, and more general, autonomous forms of organizing, will certainly shape future discourse about the potentials and pitfalls of digital technologies.

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