Roskilde University

Department of People & Technology
Social Entrepreneurship & Management

Disrupting gamification when driving social change with The Academy for Social Innovation

How to harness collective action by applying gameful elements to a social innovation lab?

Master Thesis - Summer 2022

Group Members:
Camille Thibert, 70199
Marius Paleckis, 70029

Supervisor: Kenneth Hansen
Number of characters: 200.027
Date of submission: 29.05.2022

ABSTRACT

In a world constantly searching for innovative approaches to persistent problems, gamification is becoming a utility for fostering various benefits within a growing extent of disciplines and contexts. Social innovation is considered one of them, as there is a growing need to explore novel approaches to addressing societal difficulties. This research paper explores the possibility of applying a gamified framework tailored to a particular social innovation lab with the underlying determination to foster collective intentions and prosociality, thus collective action. To accomplish this, we have conducted a qualitative case study in cooperation with The Academy for Social Innovation by creating a gameful framework customed to one of their social innovation workshops. While we have utilized ethnomethodology and reviewed the existing literature on gamification, collective action, prosociality, and collective intelligence, we aimed to contribute new knowledge to the yet scarcely explored research topic by merging these two constructs. Taking the point of departure from the participants' experiences who were involved in the co-constructed micro-situation, we have investigated and interpreted their perceptions of the new social order, subsequently drawing conclusions related to the research topic. Our findings indicate that our framework contributed to an extent to the emergence of creative collective endeavors while we have witnessed prosocial behavior within the groups we have investigated. The findings of this paper firstly provide insights into the operationalization of the gameful system and its inevitable embeddedness into the larger macro-scale context. This research also found that accounting procedures are critical when aiming to develop and enhance cooperation by using a gameful method. While the motivational affordances offered a conceptual layer to reflect on our empirical constructs, our findings supported evidence that detrimental emotional reactions might jeopardize sustaining prosocial behavior and collective action in the long run.

TABLE OF CONTENTS

1. Introduction

Applications of gamified features in non-game environments have undergone a surge in recent years and are becoming an important topic of interest among researchers within the Human-Computer Interaction field (Riar et al., 2020). It has in numerous cases been documented as a successful deliverer of promising results when utilized for increasing active participation and engagement. Furthermore, it has been observed to assist people in learning, collaboration, and interaction with the environment and its elements. It is no surprise then that given the playful nature of human beings gamifying otherwise mundane or repetitive activities could aid in successfully achieving given objectives and consequently begin spreading across an increasing number of practices and disciplines (Fuchs et al., 2014). Unprecedented challenges of our time and intractable issues have led HCI (Human-Computer-Interaction) scholars to extend the scope of research to empirically test new models accounting for a multiplicity of actors' motivations, expectations, and intentions (Manzini, 2015). Notably, environmental sustainability applications, have been the entry point of gamification studies to wider wicked problems characterized by multifaceted diagnoses and crystalized around motivational and pervasiveness issues (Nicholls et al., 2015).

This project is rooted in the realm of social innovation that can be broadly described as any new approach that seeks to address social needs. Consequently, our approach comprises a social approach both in terms of means and ends while mobilizing beneficiaries alongside the research process (Simon et al., 2014). There are many different examples, methods, and approaches to how governments and organizations create social innovation and produce social value by mobilizing appropriate beneficiaries. It can take the form of changing governmental policies, facilitating participatory workshops, or establishing social enterprises to tackle societal problems. What is common to all of these, however, is the collective spirit encapsulating the concept of 'social'. In that specific matter, Nicholls et. al (2015) argued that social innovation relates closely to the concept of knowledge and resources pooling through cooperation and co-creation notably. In other words, to produce social innovation, a collective approach must be taken into account someway (Manzini, 2015).

While there is already an extensive body of literature accumulated on the topics of gamification and collective action individually, little research, however, is merging both themes, particularly in the context of social innovation. To address this gap, this study will look into the possible implications and outcomes of implementing gamified elements into a social innovation workshop with the underlying objective of fostering collective intentions and prosociality. By taking into account the theoretical suggestions of gamification and collective action, we aim to apply the method of ethnomethodology and understand gamification capabilities in regard to encouraging collective behavior.

The following chapter introduces the context of the problem more thoroughly, providing the description of the case organization, and elaborating on the problem area in which this research paper is embedded. Following that, the methodology of the paper is laid out, providing insights into the applied methods that were used to study and answer the problem formulation. Further on, the chapter on the literature review familiarizes the reader with the concepts of gamification and collective action and provides an overview of the current academic positions regarding these and other relevant concepts used throughout this paper. Lastly, the analysis of the collected data is anticipated, followed by a discussion of the findings, the overall conclusion, and further research suggestions.

1.1 Problem Area

This study focuses on a specific event that takes the form of a social innovation workshop (further referred to as the innovation lab) hosted by a danish non-profit organization and mobilizing participants of different backgrounds and areas of expertise sharing a common underlying objective. The premise of this workshop is to produce constructive solutions regarding youth unemployment, a societal problem currently prevalent in Denmark. The event is organized and facilitated by a Copenhagen-based non-profit organization, The Akademiet for Social Innovation (further referred to as The Academy). Interestingly, the scope of the event is embedded in a broader project carried out by a government agency, The Reform Commission, which was established to improve education conditions and address unemployment issues (Om Kommissionen, n.d.). The Academy and The Reform

Commission established a partnership aimed at pooling resources and experiences offered by The Academy. Thus, the social innovation lab event is meant to catalyze and generate solutions in turn supporting social change in Denmark. By combining knowledge and different perspectives of The Academy's members and involving the direct beneficiaries there is an attempt to create tangible, creative, and sensible solutions which could be presented to The Reform Commission and subsequently implemented in practice.

We deem it important to mention that one of the researchers has carried out a research project with The Academy, paving the way for this project to explore the organization through another lens. By the same token and derivating from an explorative phase, it has been established that The Academy could potentially benefit from an experimental study focused on fostering collective action and prosociality of the participants. As The Academy is relying on its members (elaborated in chapter 1.2.1) for producing the desired results of the workshop, an emphasis is placed on the group work process being straightforward, easily understandable, and engaging. In addition, given that creating social innovation is intertwined with cooperation and collectivity, The Academy expresses a wish to encourage its members in thinking more jointly and collectively, rather than focusing on personal intentions and gains related to the workshop and their member statuses. To assist these requests, a customized gamified framework was constructed and presented to The Academy to be implemented in the innovation lab, carrying with it the underlying objectives of encouraging collective group intentions in the participants throughout the extent of the workshop.

1.2 Presentation of the Case

This subchapter will introduce the reader to the case organization central to this project and the particulars of the social innovation workshop event that is studied as the core micro-level situation. It is meant to clarify the details of the important elements which constitute both macro and micro situations in which this research is embedded.

1.2.1 The Academy and its Members

The Academy For Social Innovation is a non-profit organization based in Copenhagen, Denmark. They describe themselves as a platform for collaboration that is assisting with social innovation (A Bit About Us In English, n.d.). It has been established in 2019 by leaders of 40 different organizations working within various public and private sectors and has grown to accommodate more than double the amount. The leaders are also assuming the role of members of The Academy. The members meet 4 times yearly to participate in innovation labs where solutions to various social problems are being discussed and produced. During these labs, emphasis is put on experimentation with new and different approaches to solving societal issues.

1.2.2 The Innovation Lab

For the most appropriate application of the gamified framework regarding the scope of this research and time constraints, it was agreed with The Academy that it will be implemented at the innovation lab occurring on the 29th of March, 2022. This particular lab is characterized by mobilizing the youth from the Danish society to initiate ideas and solutions regarding the issues of youth unemployment. The event is scheduled for 7 hours from 10 am to 5 pm and is divided into several distinct stages each consisting of different phases such as introduction, group formation, group work, idea presentations, and celebration (Appendix L). For the group work phase, The Academy mobilizes approximately 40 participants, including its members and the youth.

1.2.3 Participants and Group Constellations

On the 29th of March, five groups of 8 people are to be formed and sent to work in separate rooms. The Academy is relying upon three distinct types of participants to work in each group. The members are forming the largest participant segment, and alongside them, the groups are arranged to accommodate one or two youth participants. At the same time, the members are also divided into two separate

participant types consisting of regular members and thought leaders. Each group will contain one or two Academy members who are assigned the roles of thought leaders. There is a total of eight thought leaders participating in the lab. The thought leaders will play a key role both during the event and before it, as they are assigned the leading role for their groups, as well as tasked with designing the outline of a sub-problem for each of the groups preceding the 29th of March (Appendix E, 16:09). This serves as the foundation for the group formation process, where the thought leaders together with the youth will present five sub-problems of the day, and the remaining participants will have to choose their working groups according to the given topics and their presentations.

It is essential to mention that the head of The Academy, Anders Folmer Buhelt participated in one of the groups instead of a thought leader who was not able to attend the event. This was not initially pre-planned and Anders spontaneously assumed this role on the day of the 29th of March. Other Academy employees, Clara Dawe and Sofie Frederikke Lau-Jeppesen were acting as facilitators and hosts during the lab, assisting the groups with necessary materials, food, and any arising questions regarding practical concerns.

1.3 Research Question

Within the scope of this research, we intend to investigate the interplay between two distinct phenomena in the course of the Innovation lab hosted by The Academy. To this end, the research question stems from the previously outlined problem area and is formulated as follows:

How to harness collective action by applying gameful elements to a social innovation lab?

To allow for a more detailed investigation, the research question is supported by two sub-questions:

1) *How to construct a comprehensive gameful framework that is afforded by the actors of the micro-situation?*

2) *How can gameful experiences affect prosocial motivations, collective intentions, and cooperation in the context of the social innovation lab?*

These two subquestions reflect the twofold aspect of this research as we have co-designed the solution with The Academy and retrospectively, as a second step, investigated a set of variables related to the main problem formulation.

1.4 Delimitations

As The Academy offers wide opportunities for investigations, it appears important to delimit the scope of this research. With the abovementioned research question, we investigate if and how gamified elements part of a gameful system can foster collective action. Consequently, this research doesn't cover the structure of The Academy and the influence of the institution on collective action. In other words, we do not look at routines and their effects on institutions, including their impact on The Academy or The Reform Commission. We excluded from this research the historical context of The Academy and how it has operated in the past. Moreover, this is restricted to one innovation out of the four innovation lab The Academy is hosting per year. If this choice has been naturally guided by the time constraint associated with carrying out this project, restricting the project to one Innovation lab offered a suitable timetable to thoroughly co-design, implement and reflect on the gameful framework.

Finally, further research opportunities and broadened analytical, theoretical, and conceptual scopes of research are presented in the Further Research chapter.

2. Methodology

This chapter will introduce the reader to the methodological approaches and methods applied in this research project. It begins with an account of the chosen philosophical lens in which the research is embedded. Subsequently, the overarching theme of microsociology is outlined, followed by a subchapter on the introduction to ethnomethodology and the reasoning for choosing it as the primary method to gather and analyze the empirical data. Next, the research design is laid out, serving as a guide for assisting the reader in understanding the study type, the research approach, and the research process by outlining each step of the creation, revision, and implementation of the gamified framework. Finally, the data collection and the data analysis procedures are described and accounted for, followed by reflections on the paper's transparency, validity, accountability, and ethical implications.

2.1 Philosophy of Science

To give the reader an understanding of the philosophical stance this project is taking, it is necessary to give an account of which philosophy of science is guiding the research. It provides a window into how reality is perceived by the researchers as well as how knowledge creation is approached from a philosophical standpoint. This chapter will introduce the chosen philosophy of science together with its ontology, epistemology, and justification of such choice.

2.1.1 Social Constructivism

The philosophy of science applied in this research paper is social constructivism. It is a theoretical perspective that highlights the significance of context and culture when trying to understand a given social order and implies that knowledge is constructed through human activity and interaction (Kim, 2001). Social constructivism is characterized by its propensity to emancipation and questioning established norms and traditions. It often assumes that a certain phenomenon is unsatisfactory, therefore it needs to either be transformed or removed (Egholm, 2016).

Egholm (2016) talks about 3 different axes of the social constructivist approach that each has a different source of inspiration and varies in the ways it addresses the study of the construction of reality. The 3rd axis deals with the choice of analytical focus and is either focused on the micro-level everyday knowledge or the macro-level analyses of institutions. The micro-level focus is particularly relevant for this paper as it looks at how actors participate in the production of the given social constructions (Egholm, 2016).

2.1.1.1 Ontology

Ontology refers to beliefs about the fundamental nature of reality. Social constructivist understanding of reality assumes that it is not found 'out there' but that it is invented (or constructed) by the interacting members of society. Phenomena are created in their specific contexts and the focus is on phenomena's emergence and impact, not their actual essence (Egholm, 2016). Thus, the social order is created by social actors who engage with it and produce mutual apprehension and consensus. As this project is two-folded with the first aspect lying in the co-construction of a new reality with a set of rules and another dimension focused on understanding how this reality is perceived, we seek to make sense of this particular situation. Furthermore, we seek to understand how participants of The Academy relate to the procedure we have collaboratively designed with Anders and Clara with the temporal, contextual, and spatial variables in mind. The dynamic nature of the procedures we have created throughout this project naturally affects the ontological standpoint of our research. Therefore we place an emphasis on the interpretations of the rationales by both the participants of the lab and The Academy itself which has operationalized the procedures based on its own perceptions.

2.1.1.2 Epistemology

Epistemology explains how knowledge is studied and created. In social constructivism, it is assumed that people create meaning by interacting with each other and their environment (Kim, 2001). Knowledge results from context but at the same time, it is also a means to modify it. The objective is to reveal how members attribute meaning to phenomena and explain the way this process unfolds (Egholm,

2016). In this project, knowledge is studied and created primarily by interviewing a variety of participants and interpreting their meanings of the process of participating in the social innovation workshop in which the gamified framework was applied.

2.1.1.3 Justification for Choosing Social Constructivism

There are multiple reasons for applying social constructivism in this research project. The aim of this project is to understand how the application of gamified elements on a micro-level will impact different actors and their behavior regarding collective action in the context of the social innovation lab. The study is focusing on how the actors of the lab make sense of the situation and at the same time construct meaning and a new social reality by interacting with the framework and each other. The gamification elements are considered disruptors and possibly emancipating factors that supposedly transform the given micro-level social situation. Moreover, as per the unit of analysis, we focus on interpretations of the effects of the gamified artifacts included in a gameful system by studying the accounting procedures of the involved actors.

2.2 Microsociology

Microsociology is a level of analysis in sociology that studies the social world on a micro-scale. It is primarily concerned with looking at people's interactions on a close, face-to-face, local level (Fine, 1991). As explained by Hargadon (2004), fundamentally microsociology studies a social theory of the mind, and it is focused on "how the social manifests itself not in external institutions but in constructing the individualized representations of those exterior institutions and on how those representations shape comprehension and action." (p.5)

Microsociology as a tradition was developed by pragmatists such as George Herbert Mead, Harold Garfinkel, and Erving Goffman, among others. Mead proposed that the self of every individual is dependent on social interaction because the formation of the self is a social process, which through interaction is simultaneously forming the social and is being formed by the social. In other words, consciousness and self-consciousness emerge in social interactions between people exchanging

significant symbols (gestures) that evoke responses, while at the same time revealing widespread social patterns (Stacey, 2006).

An important component of understanding the self from Mead's perspective is the concept of *generalized other*. During many social interactions throughout one's life, an individual learns to assume the attitudes of those he/she interacts with to evoke in others desired responses and reach the required outcomes of the interaction. However, when engaged in a specific complex micro-social act, an individual does not only assume the attitude of the others present in the act. They also bring the attitudes of the context they come from such as the organization, the society, and the culture they belong to or are involved in. These attitudes also constantly evolve together with society (Stacey, 2006). This is a capacity that humans have developed over time that allows them to imagine what others might think of their words and actions and in turn, behave according to established social rules to avoid conflict and allow more predictability and certainty. Mead referred to this part of the Self as 'Me'. At the same time, the Self also consists of the 'I' which in social interactions often responds spontaneously and imaginatively, and the interplay of these two components ('Me' and 'I') produce the basis for how humans participate in interactions from which meaning and societal patterns emerge (Stacey, 2006).

2.3 Ethnomethodology

Ethnomethodology is a distinct theoretical and methodological tradition that studies how people understand their social world by using common sense (Amzat et. al, 2021). It is often considered as being one of the practical methods of microsociology. Empirically applied, ethnomethodology has the potential to foster progress and help comprehend and advance society. According to Harold Garfinkel (1967), the fundamental concern of ethnomethodology is the core subject of sociology and of social order (Amzat et. al, 2021). Garfinkel is considered to be the pioneer of this tradition when in 1954 he investigated the common sense methods applied by members of a jury during their participation in a jury room. An interest in how people assess, understand and explain social order through their points of view as well as a claim that studying everyday activities and interactions reveal how social order is produced are what characterizes the ethnomethodologist approach. Social

order springs from social interaction, and in order to understand social order, the accounts of actors participating in social interactions must be studied (Amzat et. al, 2021).

The best way to approach an ethnomethodological study is through qualitative research. Such an approach allows for deeper insights into meanings that individuals attach to studied events by revealing how the events are interpreted and made sense of (Amzat et. al, 2021). The most common methods are observations, interviews, collection of facts and artifacts, or a combination of these methods (Cohen & Crabtree, 2006).

There are three distinct principal concepts characterizing the methodical aspect of ethnomethodology that assist in reflecting on the process analytically. They are *indexicality*, *reflexivity*, and *accountability* (Pillay, 2019), each elaborated on below:

1) *Indexicality*

Indexicality refers to how one relates their interpretation of an experience to the context. Meaning is derived from action which is embedded in the interactive context. Context reveals the governing factors for social interactions where the participants of the interaction are working towards mutual goals (Amzat et. al, 2021).

2) *Reflexivity*

Reflexivity is based on the notion that action results from a conversational process but this process is not operating on the basis of cause and effect. The existing order established by interacting individuals sets the stage for the context of the conversation and its meanings. The existing social order simultaneously creates and constitutes the context, which means that the process is reflexive (turned back on itself). Amzat et al. (2021) explain it as such: “In this case, the meaning attached to a context is as a result of the context itself, which produces the meanings”.

3) *Accountability*

Accountability in ethnomethodology means that all human action is in itself accountable. People are able to account for their actions and behavior, and it is important to understand how they tie it to the given social reality they find themselves in (Amzat et. al, 2021).

The three methodical aspects of ethnomethodology described above are useful to take into consideration when attempting to understand and describe how social order is constructed through interaction and how the participants of those interactions understand and interpret it.

Ethnomethodological research often employs conversation analysis, however, since the 1980s a second approach has emerged, namely the analysis of work processes (Bergmann, 2004). Such studies tend to focus on thoroughly depicting work processes by broadening the scope that moves from studying interactions towards exploring 'the embodied knowledge' emerging from interactions and their outcomes (Bergmann, 2004).

2.3.1 Ethnomethodological Assumptions

Ethnomethodology considers people to be the product as well as the creators of their own social environment. Knowledge is produced by interaction among the members of the society who in turn develop mutual knowledge which produces social order (Amzat et. al, 2021). That order is then studied and attempted to make sense of by developing mutual methods which assist in creating new or supplementing the existing social order, and ethnomethodology's aim is to understand these methods (Amzat et. al, 2021).

It is important to note, however, that according to Hilbert (1990), ethnomethodology is indifferent to both micro and macro-level structure, therefore it cannot be considered exclusively microsociology or macrosociology. Instead, Hilbert claims that ethnomethodology transcends both micro and macro levels as well as the linkage between the two because it studies the methods that produce the structure. Therefore, since ethnomethodologists claim that the structure is generated by macro and micro-level interactions simultaneously (Amzat et. al, 2021) this means that it

has to take into account the microstructure, the macrostructure, and that which connects them, all at the same time (Hilbert, 1990).

2.3.1.1 Justification for Choosing Ethnomethodology

The reasoning for applying ethnomethodology as the primary method of this paper is its possession of many correlations with the social constructivist approach. To better illustrate the similarities between these two schools of thought, a table with their parallels is provided below:

Parallels between Social Constructivism and Ethnomethodology

	Social Constructivism	**Ethnomethodology**
Parallels	1. Social order is invented (or constructed) by the interacting members of society	1. People are the product as well as the creators of their social environment
	2. People create meaning by interacting with each other and their environment	2. Knowledge is produced by interaction among the members of the society who in turn develop mutual knowledge which produces social order
	3. The objective is to reveal how members attribute meaning to phenomena and explain how this process unfolds	3. The aim is to understand the methods which assist in creating new or supplementing the existing social order
	4. SC places an emphasis on context and culture when trying to understand the social order	4. Ethnomethodology (and Mircorosciology) perceive context as the governing factor for social interactions

(Note: Table designed by the researchers)

Given that these intellectual traditions have much in common, it seems sensible to apply them in parallel. Social constructivism, in this case, will serve as a broader theoretical perspective while ethnomethodology will assist as a hands-on method to study and analyze the phenomenon of application of the gamified framework and its effects on participating actors in the context of the social innovation lab with the underlying aim of fostering collective action and prosociality.

2.3.1.2 Phenomenological Implications of Ethnomethodology

Having elaborated on the similarities between social constructivism and ethnomethodology, there is one important philosophical aspect of ethnomethodology that requires further attention. If traced to its roots, ethnomethodology was inspired by Alfred Schutz's ideas on phenomenological sociology which in turn emerged from Husserl's phenomenological psychology (Cohen & Crabtree, 2006). Schutz aimed to describe reality by studying the routines of ordinary people and understanding how they perceive the social world. Essentially, ethnomethodology is an extension of Schutz's phenomenological sociology, as it aims to understand how social facts are constructed and ascribed meaning through the everyday circumstances of social life. Therefore, as we are working ethnomethodologically we have embedded the phenomenological standpoint when forming our interview guides.

2.4 Research Design

The concept of research design serves as an overarching explanation to help the reader understand how the study was planned and executed. It reveals what type of study this project is, as well as the chosen research approach and the step-by-step process of how the research was conducted. It also outlines and explains the selection of the empirical material and the methods to analyze it (Flick, 2018).

2.4.1 Case Study

This research project is considered to be a case study. According to Ragin and Becker (1992), case studies aim to precisely describe or reconstruct

occurrences (Flick, 2018). Yin (1981) has pointed out that the need for a case study arises when “an empirical inquiry must examine a contemporary phenomenon in its real-life context”. In this specific case, we are looking at a contemporary phenomenon in the form of the application of the gamified elements to the context of a social innovation lab, and the study aims to describe and reconstruct the occurrences mostly through the involved actors’ accounts of experienced events.

Although case studies are usually attempted to provide an example that could be applied beyond the concrete case being researched, one of their biggest limitations is precisely the possibility to generalize the findings, since it depends on the context (Flick, 2018). It is possible to avoid this problem by performing multiple case studies. However, due to time constraints, this was not possible to include in the scope of this project.

2.4.2 Research Approach

The research approach applied in this project is regarded as abductive. It is often considered an alternative to induction and deduction, containing elements of both. The inductive approach takes the point of departure in observation of phenomena, which leads to an attempt to derive a plausible theory. Deductive research is characterized by adopting a theory as a starting point and aiming to either confirm or find discrepancies in it. When researching abductively, however, it is common to alternate between verifying assumptions and constructing new hypotheses which allow for greater flexibility and alteration of prematurely held premises that can disintegrate in the light of new findings (Dubois & Gadde, 2002).

However, we have opted for an abductive approach allowing for both inductive and deductive to take place throughout the research to appropriately navigate between the literature and our data. Accordingly, the idea for this research project arose from theoretically supported assumptions that the employment of gamified elements can potentially aid in fostering we-intentions if applied to the social innovation workshop. Simultaneously, although taking into account gamification and collective action theories separately, we strived to contribute new knowledge to the combination of

both topics under one research theme in order to possibly discover new theoretical implications for the scarcely studied subject.

2.4.3 Research Process

To provide better accountability for the ideation, creation, and execution of the gamified solution, it is deemed necessary to clarify the step-by-step process of how the gamified framework and intentions behind its elements unfolded throughout the study. This sub-chapter will outline the conceptualization of the core elements combined with a description of the procedure of creating the solution together with The Academy. It will also provide explanations for each component in the gamified proposal and the reasoning behind their implementation.

We will begin with an account of how the rules of the gamified workshop have been conceptualized from the start. The ideation and creation processes have been a to-and-fro discussion between the researchers and the Academy over a two-month period consisting of multiple online and face-to-face meetings. After presenting The Academy with the idea of implementing gamification elements into one of their social innovation labs, it was agreed that its components must be related to and enhance the objectives that The Academy envisioned for the group work process, namely to assist the participants in producing wild, creative, revolutionary but at the same time tangible and feasible ideas for solutions to the overarching topic of the lab (Appendix G, 16:20). On top of that, The Academy also emphasized the importance of overstepping the participants' self-interest-driven motivations and the wish to enhance the prevalence of the we-intention within the groups (Appendix G, 17:57).

The requirements above have laid the foundation for how to approach the creation of the gamified solution. The final three parameters summarizing the foundation comprised *Feasibility*, *Originality*, and *Empathy*. As initially intended by the researchers, the elements were to stem from the overarching concept of *Creativity* that was first understood as the most important outcome to be reached, however, it was later clarified in the rule sheet created by The Academy that *Empathy* was to be the primary focus of the group work. The second parameter, *Originality*, was likewise adjusted and presented in the lab as *Creativity* on behalf of The Academy. Having

established the parameters, the next step was to intertwine them with gameful elements taking into account the schedule of the workshop. It was agreed that the solution should not envelop the first part of the day, namely the introductory and the group formation phases, but take effect after lunch when the groups first met in the rooms to begin the group work processes (see Appendix L). It was also agreed that The Academy had the freedom to finalize and adjust anything they regarded necessary before the final implementation. It was so agreed in order to avoid possible shortcomings regarding the program as The Academy was much more familiar with minute details of the event which the researchers could have potentially overlooked. Another reason was the fact that the researchers are not native Danish speakers (the language of the lab was Danish) which meant that the process and the rules had to be translated and inevitably adjusted to better fit the scope and context of the day.

After the initial meeting, the first draft of the framework followed, which has been polished over the course of a few more meetings. Finally, the end result containing three distinct gamified phases was handed over to The Academy (see Appendix I). It can be divided into four most distinctive components, namely The Canvas/Rule Sheet, The Self-Assessment, The Collective Scoreboard, and The Reward.

2.4.3.1 The Canvas/Rule Sheet

In the final handoff (Appendix I) the researchers have suggested beginning the group work process by providing the groups with a canvas containing the three parameters (*Feasibility*, *Originality*, and *Empathy*) and assisting questions regarding each. Its intended purpose was to assist in sparking discussions around the three elements that were supposed to permeate the thinking process of the participants and form the basis for the following self-assessment exercise. However, The Academy decided not to include the canvas and instead replaced it with a rule sheet that contained the steps and instructions of the process (see Appendix H & Appendix J).

2.4.3.2 The Self-Assessment

At the end of the group work process it was resolved to encourage the participants in taking part in a collective self-assessment exercise. This was supposed to occur as a collective discussion and allocation of points to each of the three parameters while retrospectively reflecting on how, in the participants' own judgments, the group work process has just unfolded (for a more detailed explanation, see Appendix I, pages 1-2). The intention behind this approach was to steer the participants in thinking collectively and in turn foster a sense of community by having to cooperatively agree on the assessment points. This part of the proposal was the first gamified element applied in the framework which contained a common gamification feature in the form of points.

2.4.3.3 The Collective Scoreboard

Another gamified element was actualized through an aggregated scoreboard that is closely related to the self-assessment exercise described above. A couple of suggestions were made for how The Academy should approach this phase, and it was finally opted for implementing glass jars which were to be filled with colored water that represented the colors of the three parameters (see Appendix I, page 2 and Appendix M, pages 7-8). By visually representing the collective assessments of each group combined together and providing a holistic picture of the whole lab's work process assessment it was aspired to dissolve the boundaries between the groups and encourage the feelings of camaraderie, fellowship, and the overarching we-intention behind being a participant in the lab.

2.4.3.4 The Reward

The final element implemented in the proposal was the third and last gamification feature applied in the workshop, the reward. It was settled upon issuing a small reward at the end of the group work process that was meant to highlight the group's achievements, again relating to the three parameters. While the reward would serve as a motivator for the participants, it is intended to reflect the collective effort showcased in the self-assessment phase. The rule sheet revealed that at the end of group work the participants are to receive a reward but its form was not disclosed. We have suggested a couple of options for how the reward could be

materialized, however, it was The Academy's final decision to decide upon the specific details. Finally, The Academy has opted for a piece of dark chocolate carrying a sticker reflecting a parameter in which the participants assessed themselves highest during the self-assessment exercise (Appendix F, 2:23).

All in all, there were a number of elements in the gamified proposal that The Academy could freely adjust or change, however, it was attempted to ensure that the alterations would not directly interfere with the underlying gamified aspects in order to not affect the research objectives. The altered details were insignificant to the framework and regardless of the choices made by The Academy, the fundamental aspects were implemented as suggested by the researchers, thus securing this project's principal aims.

2.5 Data Collection

The primary data used in this project has been collected in three separate stages, namely the Pre-Lab Stage, Lab Stage, and Post-Lab Stage. They can be distinguished by using the innovation lab as the reference point. Each stage is elaborated on more in-depth in the following sub-chapters.

2.5.1 Pre-Lab Stage

This stage occurred very early in the research process when it was necessary to better formulate the goals and objectives of the research. It served an introductory and exploratory purpose for gathering insights from the two employees of The Academy, the program leader Clara Dawe and the head of The academy Anders Folmer Buhelt. The data was collected in a form of a semi-structured interview and it laid out the context for the upcoming innovation lab. Successively we have formulated the primary objectives and possible pathways points of the to-be-created gameful system. The interview was held online on Google Meet virtual online meeting software. A voice recorder from a mobile phone was used to record the interview and later it was transcribed by using the online tool Otter Voice Meeting Notes. After the interview, the transcription was read through multiple times while listening to the recording to correct spelling and logical inaccuracies caused by the

software. The interview was held in English. These methods were likewise applied to all the other interviews performed for this research.

This interview is considered to be an expert interview as both participants are staff members of the organization which is responsible for organizing and facilitating the event where the gamified framework was applied. As Flick (2018) argues, staff members of an organization who hold specific knowledge or experience are used as a target group for expert interviews. Such interviews serve as the basis for gaining process and context knowledge.

2.5.2 Lab Stage

The second data collection stage, took place on the 29th of March, 2022 during the innovation lab organized by The Academy. One of the authors of this study has participated in the event, observed, and took notes and pictures by witnessing the work process of one of the workshop groups. The observation method is considered to be non-participant, as the observer has observed the process from a distance, instead of actively participating in the group work. The primary objectives here were to gain insights regarding the setting of the event, the dynamics of the group work process, and the participants' reactions, involvement, and interaction with the framework. After the event, an ethnographic interview with the observer was held to document the observations retrospectively. The observational notes (Appendix K), pictures (Appendix M), and the transcribed interview (Appendix A) are all serving as a set of primary data used in this project.

It is crucial to mention that one big limiting factor for the observer was the language barrier. The group work process was held in Danish, and although the observer is able to understand it on a conversational level, he is not a native speaker. Thus, it is difficult to comprehensively assess whether the observed lingual processes were correctly understood, which poses the risk of misinterpreting the collected data. Therefore, in this case, the observational data can only be deemed legitimate if its findings are correlating with other data sources such as the interviews portraying accounts derived from the same group's participants.

2.5.3 Post-lab Stage

The final data collection stage was eventuated shortly after the innovation lab. This stage is considered the most important for answering the research question, as it provided the most in-depth insights into the central study topics of this project. In order to capture participants' experiences from different perspectives, the researchers opted for interviewing three lab participants who each had been assigned a different role. All interviews were semi-structured, with a list of initial questions prepared but not strictly followed in order to allow the emergence of unexpected accounts which were promptly followed up upon. The interview guides were created by considering the phenomenological implications present in ethnomethodological research, which is reflected in the asked questions (see Appendix N).

The first interview was held with Katrine Finke, a leader of an organization called Vidensråd for Forebyggelse (eng. Knowledge Council of Prevention) who was assigned the role of the thought leader in her group. The second interview was conducted with Thomas Braun, a director of the Studenterrådgivning (eng. Student Council) who is also a member of The Academy but has not been assigned the role of a thought leader during the workshop. The last participant interview was held with one of the youth representatives, Lucas Grøndal, who is a member of Mødstrøm. Such selection of participants intended to provide a multiple angle approach to understanding the implications of the gamified framework, at the same time serving the purpose of identifying whether there were major differences in how the gamified solution has been accounted for and understood among participants with different backgrounds, experience levels, and motivations.

Another data set belonging to this stage is the two interviews held with the same interviewees as in the Pre-lab Stage, namely Anders and Clara. This time, however, the interviews were held separately to acquire a more in-depth understanding of how each participant has experienced the studied elements. While they served a vital purpose of gaining a larger overview regarding the implications of the gameful framework, they provided accounts for how the elements were implemented into the event. Clara's and Anders's interviews provided both insights from within and outside the course of the innovation lab.

As established in chapter 1.2.3, the total number of groups formed to work in the lab was five. Katrine and Thomas were working together in one of the groups while Lucas has been a part of another group, which Anders also took part in (this group was the subject of the non-participatory observation, too). This means that the data accounting for the group participants' experiences and the observations are representing the accounts from two groups out of the total five, which limits the ability to provide a complete picture of how the participants have experienced and were affected by the gamified solution. The reasons for not involving other groups' members are limited post-event access to the participants of the lab as well as time constraints.

2.5.4 Other Data Sources

Supplementing the data sources discussed in the previous chapters, this study also relied upon a couple of documents either retrieved from The Academy or created by the researchers. Namely, we have consulted a document in a form of a schedule made for the event of the 29th (Appendix L), as well as the translated and adjusted rule sheet that has been handed out to the participants on the day of the lab, both documents provided by The Academy (Appendix H, Appendix J). In addition, the final proposal of the gamified framework created by the researchers was used when referring to certain elements during the analysis (Appendix I). These documents allowed for better contextualization of the given study elements and provided important insights into the event, the gamified framework, and their execution.

2.6 Data Analysis

This chapter outlines the method used to comprehend, structure, and highlight patterns of the primary data sets collected for this research. The method mostly applies but is not limited to the Post-Lab data collection stage.

2.6.1 Thematic Analysis

The method used to analyze the interviews is considered to be thematic analysis. It is an approach that is useful for the identification, organization, and description of patterns emerging from the data sets that are relevant to the research topic (Flick, 2018). During the process of creating the interview questions, the researchers have relied on the combination of the research topic, the research question, the subquestions, and the suggestions of the ethnomethodological approach to construct a relevant interview guide to be able to invoke the most informative answers from the interviewees. After collecting the data, the interview transcriptions were openly coded to identify the emerging themes while keeping the research topics in mind. The themes that were most prevalent across multiple data sets were subsequently extracted and grouped. Specifically, we have identified seven different emerging themes that were grouped as follows:

1) *Roles* (referring to participants' roles during the lab)
2) *Appropriation of the rules* (of the gamified framework)
3) *Operationalization* (of the gamified framework)
4) *Level of difficulty* (regarding the rules)
5) *Group intentions*
6) *Prosociality*
7) *Distal effect* (on prosociality)

These themes served as the referential foundation for structuring and guiding the analysis chapter which is considered to be the principal section of the paper directly providing the means for answering the research question.

2.7 Quality Assurance

This subchapter will place an emphasis on quality assurance initiatives we have taken to ensure the transparency, validity, and accountability of the study. Although according to Flick (2018), there exist many quality criteria researchers could decide to address, such as reliability, generalizability, objectivity, credibility, and dependability, we deem it relevant to ground the quality of the study by emphasizing the internal and external validity of the research.

First and foremost, internal validity refers to the ability to accurately depict the phenomenon that is being observed (Flick, 2018). To ensure the internal validity of our research we attempted to act as sensitively as possible during all the research phases, from the design and the data collection to the analysis. When we ask ourselves whether we accurately accounted for the members' interpretations of the phenomenon, we rely on the concepts of descriptive, interpretative, and theoretical validity (Jonhson & Christensen, 2019). In that sense, the factual accuracy of the reported data and the observed phenomenon was ensured by taking notes during the lab as well as conducting an ethnographic interview immediately thereafter to minimize data loss. However, since the lab was conducted in Danish, the language barrier and the single investigator present during the lab might have led to an incomplete account of the participants' experiences. Therefore, correlations between these data sets were of crucial importance to verify observational validity, and they have been discovered.

The interpretative analysis focuses on the depth of the meaning-making process and how it is used in the study (Flick, 2014; Jonhson & Christensen, 2019). Therefore, we have been preoccupied with accurately depicting each participant's inner world by creating an individualized interview guide aimed to emphatically account for their own representations, sense-making procedures, and worldviews. Because of a constraining timeline and a large number of participants, we have deliberately decided not to conduct any participant feedback to share our interpretations of participants' interpretations. Consequently, it may have resulted in not identifying inaccuracies and overlooking useful information.

Finally, theoretical validity refers to the validity of the theoretical explanation developed from the study (Jonhson & Christensen, 2019). To account for how the observed phenomenon operates and why it does so in regards to our theoretical lens, gamification, and collective action, we first provided an extensive literature review to better pave the way for the discussion of our findings where we performed perspectivisation.

The internal validity of research relates to the ability to affirm the existence of a causal relationship between two variables (Jonhson & Christensen, 2019). Although

we were investigating the potential effects of a gameful framework on collective action in the context of a social innovation lab, we carefully argue in favor of a causal relationship in the conclusion of this paper. In that sense, we have used triangulation to ensure the internal validity of the research. Precisely, while we have performed a data triangulation method by mixing our data sources, this research was built up by two different authors with different backgrounds originating in multi-investigator research. However, given a narrow delimited scope, we haven't attempted to rule out rival explanations in the course of this research hence potentially affecting the internal validity of our research.

External validity refers to the generalizability of the findings (Flick, 2018). As outlined in the philosophy of science chapter, social constructivism studies are usually strongly rooted in the specific context enhancing the contingence-dependency of the findings. The transferability of our findings is limited as we acknowledge the prevalence of the context in which we have deployed and tested our framework.
Overall, we argue that this study is transparent regarding the use of theory, data collection methods, and methodological influence on the course of the study. Consequently, we consider this study to match quality assurance criteria, yet also acknowledge potential external validity pitfalls.

2.8 Ethics

The following chapter presents an account of ethical issues associated with this study. In the course of the research process, we have been closely involved in the field this research has been carried out in. Flick (2018) outlined the growing sensitivity for ethical issues when merging the daily practices embedded in the field into the research process. In order to live up to a high degree of autonomy and self-determination for both the participants of the research (especially The Academy) and the researchers, we have thoroughly discussed collaborative practices with The Academy prior to investigating our objects and subjects. Accordingly, we have ensured the independence of each party by coordinating a meeting with The Academy to explicitly discuss the nature of the fieldwork, resources, and types of analysis to guarantee the welfare of all participants involved. Flick (2018) also

stressed the prevalence of non-maleficence practices when conducting research. Considering the broad range of our participants we have adopted measures to avoid harming participants. By weighing the risks against the benefits of carrying out this research in the field of cooperation, collaboration, and collective action we constantly intended to cause no harm. However, we considered it important not to disregard such ethical issues. Consequently, the research design has been articulated around continuously assessing potential adverse effects on participants for carrying out such research.

We acknowledge that the relative proximity between the researchers and the researched may have created a certain asymmetry between the two. However, the distributed research design has ensured participants' rights while allowing us to create novel and mutually beneficial knowledge. Murphy and Dingwall (2001) have highlighted positionalities as potentially generating unethical outcomes. As, to some extent, we have mobilized ethnographic data collection processes we are aware of potential influence mechanisms and power relationships between researchers and participants. The risk of misunderstanding, or misinterpreting a subject's own interpretations could lead to interpretative authority (Murphy and Dingwall, 2001). Therefore, we have methodically monitored, observed, and taken into account participants' body language, signs of fatigue, or emotional reactions when collecting data, in this way intending to reduce potential harm.

3. Literature Review/Theories

The following chapter will place an emphasis on the academic concept of collective action and gamification, and how they have been conceptualized, defined, and studied throughout time. We also aim to highlight the research gap and main findings while ultimately pinpointing gateways for our research.

3.1 The Paradigm of Collective Action

The academic field of collective action is particularly marked by a dichotomy that interestingly opposes two distinctive ways of thought. What has crystallized debates and fierce opposition amongst social scientists is the formulation of a model that would sufficiently encompass individual preferences, external factors, and contextual elements.

Mancur Olson published in 1965 what is considered the empirical foundation of the field of collective action. Prior to Olson, social scientists developed a relatively simple view of collective as a natural tendency for people sharing the same interests to act together (Oliver, 1993). Touted with a debate around rationality, collective good, and coercive institutional action, Olson built a model based on mathematical evidence demonstrating that collective action is a suboptimal equilibrium. As an economist, Olson has embedded his theory of collective action within a competitive market setting, with rational agents and situations represented by mathematical equilibrium and functions. According to Olson (1965, p.2): “rational, self-interested individuals will not act to achieve their common or group interests”. In other words, Olson argued that collective action is a result of irrational behavior. Inspired by the “tragedy of the commons” elaborated by Hardin (1968), Olson hence explained how noncooperation is a rational outcome in relation to managing public goods and common-pool resources. Although controversial and at the crossroad between political sciences, mathematical theories and social dilemmas, Olson’s approach to collective action marks a paradigm shift in the field.

As a result, definitions of the term *collective action* are still impregnated and diffused highlighting the ongoing debates around social orders and implications in modern

societies (Ostrom, 2000). It is interesting to note that Olson's logic of collective action, based upon the principle of free-riding, introduced a view of collective action through the scope of public goods provision. Aligned with a neoclassical approach to the phenomena, Olson offers a rather strict conception of individuals' decisions supplemented by a binary dilemma (to participate or not) disregarding the space in which cooperation occurs "contextual parameters", the nature of engagement interaction between individuals "dynamics parameters" (Flanagin & al., 2006).

Ex-post, scholars, practitioners, and academics have raised voices against Olson and his depreciative view of collective action. For instance, authors have qualified what Olson qualified as a theory of collective action, a theory of inaction. Scholars have demonstrated in turn how the theory of collective action described by Olson is unable to account for a wide range of events embedded in a larger scope than the mere individual preferences. In the mid of the 1970s, counter empirical arguments and evidence stood against what has served as a foundation of numerous common-good management policies across the globe. In the meantime, economic crashes, civil violence, and the rise of social movements have opened new horizons for collective action theory (Useem, 1998). Many social scientists have applied the theory of collective action to other fields such as entrepreneurship political economy (Ostrom, 2000), human-computer interaction (Le Dantec, 2016), philosophy (Tuomela, 1995), and creative work.
The metatheory of collective as we know it today has been formulated by Elinor Ostrom and serves as a foundation for scientific work around the notion of cooperation and human behavior.

Regardless of the field of application, the theory of collective action has been concerned with understanding how individual goals, intentions, and interests overlap and interact to emerge cooperative behavior. Hence, in the early 2000s, new derivatives theories surfaced with more narrow scopes and specific cases.

3.1.1 Toward a Universal Definition of Collective Action

Although the field of collective action is spreading across a wide array of academic disciplines, thus representing a diversity of contemporary phenomena, there is little consensus on a universally exhaustive definition. However, some authors have unambiguously portrayed a minimal definition of collective action as a phenomenon involving more than one person and making claims of agency status (Olzak, 1989). Yet agreed upon by a majority of academics and scholars, this simple characterization fails to account for the complexity and importance of adjacent social structures.

As we have highlighted in the previous section, the paradigm of collective action denotes the existence of shifts, supposedly strict patterns, and simplistic shortcuts (Flanagin & al., 2006). In an attempt to reconcile theoretical predictions and empirical pieces of evidence, authors have reframed collective action by offering a comprehensive and exhaustive definition (Bimber & al, 2005). Notably, Bimber and Flanagin have actively approached the persistent empirical dilemmas of the field by mapping out the underlying assumptions, and their roots, of the classical approach (economic) and the modernist approach (sociological). To that end, Flanagin & al. (2006) argued:

> *We reframe collective as being constituted by a set of communication practices involving the crossing of boundaries from the private to the public realm (Bimber et al., 2005). In other words, collective action is communicative insofar as it entails efforts by people to cross boundaries by expressing or acting on an individual (i.e., private) interest in a way that is observable to others (i.e., public).* (p. 32)

The authors contradict the classical approach of collective as they argue that communication between actors, hence the communicative dynamics (trust, negotiation, motivations, and engagement) is the main manifestation of collective action (Flanagin & et al., 2006). Going beyond, Bimber and his colleagues (2005) reframe collective action within the realm of new technology and particularly the digital media environment. They argue as follows:

> *New faces of collective action entail second-order communality and changed dynamics in control over information, as well as the ability of people to exploit technology for performing basic collective action functions in the absence of traditional organizational and accumulated resources.* (Bimber & al., 2005, p. 377).

Positioning information and surrounding technological supports as key components of collective action institutionalize the field in the new era of Human-Computer Interaction.

Interestingly, in these two contemporary definitions of collective action, the omnipresence of the tandem private-public denotes a central feature of the concept. Finally, integrating contemporary technologies into the fundamental essence of collective action paves the way for theoretical modification of the core definition of the concept. As such, the scope, the space, and the dynamics embedded within the contemporary realm of collective action provide a better understanding of the antecedents, consequences, and likelihood of collective action (Bimber & al., 2005).

3.1.2 The Concept of Prosocial Behavior

We have seen that the literature on collective action is concerned with understanding how individuals might behave collectively in the pursuit of common interests. When unfolding this fundamental question, academic and social scientists have commenced exploring which forces are likely to affect cooperation and joint intentions. Derivating from the field of psychology, theories on prosocial behavior shed light on what antecedents play in role in triggering prosocial actions intended to "benefit one or more people than oneself" (Batson & Powell, 2003 p. 463).

Compiled under the umbrella of behavioral science, the literature on prosocial behavior, although recent, is divided into two approaches (Simpson & Willer, 2015). In various fields, it is taken for granted that the sources of cooperation and prosocial behavior are lying within the individuals and their selves. Instead, a sociological lens on the phenomenon sheds light on external factors to prosocial behavior based upon

socially embedded interpersonal mechanisms of interaction. Batson and Powell (2003) have emphasized how this vast field of research has pointed out norms and roles, notably through reciprocity, self-esteem, and social identity, as a key pillar for prosociality to emerge.

Going beyond, scholars deepened research in this direction to better comprehend how these aforementioned social concepts frame prosociality. Simpson and Willer (2015) suggest three social mechanisms, rules, reputation, and relations as evidence for cooperation and prosocial behavior promotion. The authors demonstrate then that network structures at a group level are a key channel to effectively turn social mechanisms into drivers of cooperation. Drawing on Ostrom (2010) and the importance of the structural variables, the authors posit that distance, density, connectedness, or even reciprocity constitute a set of factors impacting the prosociality of individuals. As The Academy facilitates and harvests group work, network relationships play a key role and may have an indirect effect on collective intention, behavior, and dynamics at a group level. Moreover, scholars have also demonstrated the interdependence between situational elements and individual preferences, hence the need to balance out factors from within the individual with structural elements (Simpson & Willer, 2015).

Although individual in nature, prosocial behavior is nested in a set of interpersonal relations mechanisms alongside contingent contextual factors (Batson & Powel, 2003). Thus the need to pay attention to the potential dependence effect of these interpersonal mechanisms of interaction even though cooperation might increase.

3.1.3 Cooperation and Intentionality Intertwined: We-intentions Theory

Analyzed through the scope of social psychology and the understanding of moral reasoning, the literature on prosocial behavior rather disregards groups' prosociality and collective intentions. To fill this academic gap, practitioners and scholars have investigated prosociality's antecedent at a group level through the lens of the collective intention theory.

In the continuous quest to more profoundly grasp the root of cooperation, authors began to explore how the presence and role of collective intentions within groups could be a stepping stone for cooperation and collective action.

In an attempt to formalize multi-agent cooperative behavior based on collective intentions and actions, some scholars have opted for a conceptual mathematical framework approach (Dunin-keplicz & Verbrugge, 2003; Tuomela, 2006, Tuomela & Miller, 1992). Dunin-keplicz & Verbrugge (2003) give an extensive view of collective intentions and their maintenance in a dynamically changing environment. According to them, self-monitoring and self-assessment from agents in a group become a prerequisite to ensure the group collectively approach failure and new opportunity when adjusting actions to advance towards their own goals. The concept of We-intentions is used interchangeably with the term collective intentions but shares the same conceptual standpoint with the latter as to agents sharing common goals and collective intentions (Tuomela, 2006). Developed in the late 1990s by the Finnish philosopher Tuomela, the *we-intentions* theory by confronting I-intentions with We-intentions to create models and predict scenarios amongst groups of agents and their actions. Accordingly, joint commitment, reciprocity, shared authority, and responsibility are factors underlined by the scholar as playing an effective role in helping a group collectively afford a joint mission.

The We-intention theory also elucidates on collective action via one of its undesirable outcomes, free-ridism and being in reserve bridging the gap between behavioral intentions and collective action, hence placing abilities and opportunities at the core construction of a collective intention (Tuomela & Miller, 1992).

Thus, the literature on collective intentions suggests that intentions, beliefs, and attitudes are predeterminants of collective commitment and action (Dunin-keplicz & Verbrugge, 2003). Despite great efforts to institutionalize collective intentions, the contingency dependence of the construct remains the main barrier to adequately accounting for the dynamic and unpredictability aspect of cooperative situations.

3.1.4 Component Of Collective Action: Collective Intelligence

The Academy is an organization aiming to create a place where a wide variety of leaders from Denmark can share their knowledge, skills, and expertise supporting in turn national policymakers (A Bit About Us In English, n.d.). Thus, unfolding collective intelligence as a theoretical subset of collective action significantly helps us frame our research objectives.

Supported by the theory of prosocial behavior, and the pressing matter of common good management, a branch of the literature on collective action is concerned with building collective capacities, sometimes with political intentions, to address our most contemporary societal issues (social issues, environmental matters, civic headaches, urban planning tasks).

Although the literature can trace the term collective intelligence back to the beginning of the nineteenth century, the rise of new complex responsive systems based on information and communication technology has fundamentally altered the understanding of the phenomenon (Sulis, 1997; Kalinauskas, 2014). To understand the premise of this subfield of research and its implication for cooperation and collective action it is important to contextualize the arousal of this concept. The emergence of Web 2.0 and information technologies has radically changed how individuals interact, collaborate, innovate, and engage in contemporary issues (Salminen, 2012).

Moreover, pressing sustainable issues have strengthened interest in collective intelligence and its applicability to the new mediums of communication and interaction (Malone & Klein, 2007). Particularly, the two scholars are using a scenario-based approach to explain how online digital platforms could support policymakers in the process of taking concrete actions to address current world issues. Malone and Klein (2007) argue that in order to turn the scenarios into a desirable and achievable reality, three types of technology would be required: online argumentation tools, computer simulation, and collective decision-making tools. Although this conceptualized approach goes beyond the “one-to-many” to enable “many-to-many” strategies, a new form of collective intelligence lacks empirical examples (Kalinauskas, 2014).

Sulis (1995) provided a solid definition of collective intelligence as he argued as follows:

> *A collective intelligence consists of a large number of quasi-independent, stochastic agents, interacting locally both among themselves as well as with an active environment, in the absence of hierarchical organization, and yet which is capable of adaptive behavior* (p. 1).

In this comprehensive definition, Sulis (1995) highlights the interaction between the collective and its environment through the adaptive behavioral capability of the community. This view of collective intelligence places contextual effects at the cornerstone of groups' behavior and posits that collective intelligence manifests through cooperative behavioral outcomes as the result of environmental stimuli.

The antecedents of the concept of collective intelligence are widely discussed in academia (Bandiera & al, 2005; Woolley & al, 2015; Malone & al, 2010). Accordingly, academics have shown how group characteristics (size, density, diversity, composition) and fluid compositional features are likely to affect groups' performance when performing a collective task (Bandiera & al., 2005; Woolley & al., 2015). In an attempt to map out what are the conditions for collective intelligence development, authors have investigated more than 100 examples of CI applications to emerge what they called: the genome of Collective Intelligence. By empirically emphasizing which factors play a role in the construction of the concept, the authors have pinpointed four underlying questions: - What is being done? Who is doing it? Why are they doing it and how is it being done? (Malone & al, 2010)

3.1.5 Collective Action and Design

While main contributors of the field have set the frame for deeply characterizing the factors and components of the phenomena, scholars began to explore pathways to implement methods to effectively reach a collective behavioral outcome. Interestingly, a segment of the literature about collective action is, therefore, exploring how current methodologies could be unfolded into entry points for applying collective action principles. Le Dantec (2016) especially approached this challenge through the lens of design and human-computer interaction. He argued

that social design may be a key driver of collective action in the broad field of design. Interestingly, Le Dantec's studies return to philosophical work to argue and describe how social design allows exploring beyond mere production and the Homo economicus behavior. By emphasizing the different spheres of influence and interactive space, Le Dantec (2016) posits that design holds the power to shape those by engaging communities and the public with shared social issues in a continuous brokering process about dependencies, commitments, and shared interests. The idea of commons is a recurring topic within the field of collective action, and the approach to the phenomenon through design is no exception.

Accordingly, collective action theory and prosocial behavior theory are rooted in the same quest to explain, at a group level for the first and individual scale for the latter, how individual intentions and collective commitments frame cooperative behavior. While academia emphasizes both the importance of structural variables and intrinsic preferences, we seek to examine the interplay between game elements and collective action by simultaneously accounting for structural variables and intrinsic preferences. As our study seeks to explore how game elements can help a group collectively afford jointly working on a specific task, we intend to investigate what dynamics outlined by the we-intention theory manifest in the context of the Innovation Labs provided by The Academy.

This literature review has highlighted the rich and abundant descriptions of the social concept we use as the underlying context for this study. Although a diversity of approaches, be it conceptual, theoretical, or experimental has been found for each concept separately, there is a lack of understanding of the interweaving of the two phenomenons. Furthermore, due to the lack of a common framework, it is challenging for researchers to theoretically and practically bridge our two fields of study. The definitions, theoretical gaps, patterns, and main findings revealed in our literature review help to narrow our scope of research to effectively explore two distinct concepts that have been scarcely merged within the literature.

3.2 Gamification and Gameful Design

The following chapter offers a comprehensive picture of gamification state-of-the-art including a thorough account of the definitions coming along the wide field of application in which gamification has been mobilized. Then, follows a more precise description of how scholars, practitioners, and academics have merged the field with psychological concepts in turn paving the way for more gamification applications. Finally, this chapter provides an account of attempts to bridge the gap between gamification and collective action through a set of sub-theories.

3.2.1 Defining Gamification

The concept of gamification is intrinsically linked with the development of new communication technologies, the rise of information systems, and the wide diffusion of game consoles (Koivisto & Hamari, 2019). Detering et al. (2011) considered the democratization process of the computer and computer games boom in the early 1980s as the breeding ground for the development and establishment of gamification as both a field of research and a utilitarian tool for the industry. Especially, games and hedonic systems have spread in many aspects of our contemporary lifestyle both for solely supporting and promoting user engagement to harness productivity and efficiency at work (Detering & al., 2011; Koivisto & Hamari, 2019). The research body on gamification largely seeks to pertain to the different aspects, modals, conditions, and premises of gamification that blew up in early 2010. Therefore, definitions of the phenomenon have to spread across many different directions resulting in a broad terminology entailing overlapping concepts. This considerable research body has developed under the scope of the Human-Computer Interaction (HCI). HCI's main academic focus lies within the interaction between people and technology, and this enabled scholars to “investigate the design opportunities that games provided to motivate people in all sorts of interactive technology applications” (Nacke, 2017, p.50). Gamified systems, the use of gamification in an informational system, has been heavily applied by practitioners in the field of marketing (Huotari & Hamari, 2014), education and learning (Majuri & al., 2018), crowdsourcing (Morschheuser et al., 2017), intra-organizational activities (Moccozet & al., 2013), and more recently to the academic field of research on sustainability (Koroleva and Novak, 2020). Until recently, little consensus has been reached on a universal definition of the phenomenon that would encapsulate the richness of the field.

Nonetheless, we can identify recurring patterns and similar elements of inquiry throughout the literature on gamification. Accordingly, studies in the field of gamification are generally touted with an interest in motivations, goals, and behavioral outcomes (Detering, 2012).

Although definitions flourished rapidly within the field, stemming simultaneously from theoretical studies, empirical research, and existing similar concepts, Detering & al (2011) proposed the following definition: "'Gamification' is the use of game design elements in non-game contexts" (p.2). This universal definition enfolds the core principles of gamification while allowing for supplementary interpretation and refinement.

As we have initiated the process of co-designing a gamified solution with The Academy, it is important to clarify the notions gravitating around this phenomenon. The semantic of the word "gamification" suggests that the phenomenon is not entirely new and stems from the field of "funology" (Blythe & al., 2009), the field of gaming (Detering & al., 2011), or even the concept of ludic design (Gaver, 2002). To that end, an increasing body of literature is interested in studying the parallels between playful design, gameful methods, and persuasive games. Consequently, while games have been brought to new contexts, situations, and spaces through the scope of the Homo Ludens, terms coined by the cultural theorist Huizinga in 1938 describe the central function of play in our societies (Huizinga, 2014).

3.2.2 Gamification and Play

In the pursuit of comprehending and interpreting the capacity of a gameful system that intends to foster we-intention to support cognitive play, we need to theoretically distinguish the concepts of play and game. The most prominent contribution to that end is offered by Caillois who semantically distinguished gaming and playing by correspondingly coining *paida* and *ludus* (Caillois, 1961). Highlighting the role of agents, rules, and the modes of interaction in a structured and regulated way, this dichotomy paved the way for a novel design approach to support agents when performing an activity. To that end, Detering & al.. (2011) argue as follows: "While playfulness denotes the experiential and behavioral qualities of playing

(*paida*), gamefulness denotes the qualities of gaming (*ludus)*" (p.03). Further, the authors suggest that gamification analytically coincides with gameful design, although suggesting that while the former is a design strategy, the latter is a design goal. (Detering & al., 2011).

Clarifying which closely related phenomenon gravitate around gamification, Detering and his colleagues (2011) coined as follow:

> *The term "gamification" demarcates a previously but unspecified group of phenomena, namely the complex of gamefulness, gameful interaction, a gameful design which are different from the more established concepts of playfulness, playful interaction, or design for playfulness.* (p.2)

While there is an ongoing debate on the typology, there has been an increasing fringe of the literature focusing on designing gamification.

In an exploration of fun and play through the lens of gamification, Knaving and Bjork (2013) argue in favor of supporting both the activity and play when designing a gamified system. This paper comes along with a list of suggestions that we have attempted to follow when we have designed our gamified system. Among the design suggestion provided by the two authors and with respect to supporting playfulness, they advised as follow:

> *Support affordances for play, like possibilities for playful behavior and exploration, as it can make interacting with the activity more effortless and fun and hopefully allow the user to find and develop intrinsic motivations related to the activity* (Knaving and Bjork,2013, p.03)

In this quest of mapping out which variables and design artifacts scholars and practitioners should have in mind when implementing gamification, Kim (2015) listed crucial features for the effectiveness of such systems. Among others, the author has highlighted clear goals, target groups, user types, culture, gender, age, and content as key components affecting intrinsic and extrinsic agents' motivations when interacting with a gamified system.

Although providing practitioners, designers, and professionals with a solid basis for implementing gamified solutions, some voices resonated against the deterministic and reductionism aspects of such suggestions (Koroleva & Novak, 2017)

3.2.3 Gamification for Behavior Change

Gamification's main goal is to influence users' behaviors, thus the field borrows psychological mechanics to achieve this end (Al Marshedi et al., 2017; Hamari & al., 2014).
To that end, gamification aims to extend the user experience by tapping into engagement methods by producing value for the agents (Hammedi et al., 2019). Scholars argue that motivation is an important factor to consider in gamification and have divided motivation into two broad categories, intrinsic and extrinsic motivations (AlMarshedi, 2017; Nicholson, 2014; Zhang, 2008). While a tremendous amount of papers on gamification have heavily emphasized the importance of fostering intrinsic motivations, little empirical evidence confirms how gamification impacts intrinsic motivations (Dahlstrøm, 2017).

Promising approaches are entrenched in psychology under the scope of motivational affordances coined by Zhang in 2008. Ranging from the need for autonomy, competence, and achievement, to relatedness, affect, and emotion, we will give an account of these principles regarding our gameful framework in the analysis. The operationalized concept of affordance draws on the need-satisfaction theories and, more specifically, Self-Determination Theory (SDT) developed by two psychologists, Ryan & Deci, in the mid-1980s (Ryan & Deci, 2004). Affordance is a commonly used lens to explain the motivational abilities of gamified systems to influence both extrinsic and intrinsic agents' motivations.

Extending on Zhang's work, authors began to outline the interplay between psychological outcomes and behavioral responses by empirically reviewing the mechanics, elements, and patterns embedded within this psychological-behavior loop (Weiser et al., 2015; Koivisto & Hamari, 2019). A great amount of cognitive and behavior models have been applied to enrich the field of gamification, but yet,

subsist a theoretical gap within the growing body of research on the affordance of gamification. Accordingly, authors argue that the environment at hand, situational norms, and the state of the socio-technical system in which the gamified system is embedded have been widely disregarded (Detering, 2014). By the same token, AlMarshedi et al. (2017) explored what might lie beyond intrinsic and extrinsic motivations bringing behavioral change theories back to the forefront of gamification studies. Notably, authors have highlighted how cultural dimensions, entailing a network of norms embedded in a social context, and social influences comprising power dimensions as well as interpersonal interactions, provide one's with intrinsic and extrinsic motivations (AlMarshedi & al., 2017)

The essence of gamification lies around motivational goals, hence it is an inescapable theme in literature. The result of the predominance of motivational affordances paved the way for commercial applications of gamification as a taken-for-granted method driving users' motivation to reach the desired behavior (Detering, 2014). Contrastingly, Detering (2014) suggested as follows: "to abandon a narrow, atomistic, de-contextualized notion of gamification as the implementation of technical elements" (p.323). Although we investigate collective behavior responses to gamification, our research project carries a contextualized panorama in which gamification is deployed.

3.2.4 Gamification and Collective Action

Our project lives at a crossroads between gamification, collective action, and we-intention. Although the previous chapter of the literature elaborates upon these two constructs independently, we deemed it relevant to investigate how they are intertwined. Only recently, have scholars begun to explore the application of game features to contemporary challenges. If collective action entails a wide array of specific phenomena, such as prosocial behavior, collective intelligence, and civic intelligence, isolated empirical studies have flourished in an attempt to describe how gamification might be successful in driving users' behavior in the context of sustainability, collective awareness and social change (Koroleva & Novak, 2020, Galeote & al., 2021). In a comprehensive literature review of existing papers

addressing game-based interventions for climate change engagement, Galeote & al. (2021) argue that gamification features are aimed at increasing achievement, immersion, and social interaction. Furthermore, the authors have published an extensive list of recommendations to better mobilize and comprehend the dynamic between game-based elements and addressing climate change. Notably, they have highlighted the growing need to involve youth and people facing the change as today's issues extend far beyond their futures. However, scholars heavily emphasized the imperativeness for both researchers and practitioners to control design while mitigating potential adverse effects and ethical considerations (Galeote & al., 2021).

Interestingly, we have found only a few published articles addressing collective action, and cooperation through the realm of gamification. Nonetheless, papers tapping into the potential of game mechanics to enhance collaboration, cooperation, and collaborative work have largely been grounded in the topic of Computer-Supported-Collaborative-Work (CSCW) and Computer-Supported Collaborative Learning (CSCL). CSCW is a research field under the umbrella of HCI that is concerned with the usage of digital machines to support the requirements of cooperative work strategy (Schmidt & Bannon, 1992).

To that end, Riar & al. (2020) have tapped into the potential for game features to give rise to altruism and collective action. By empirically testing which game feature had the most effective impact on users' we-intentions and we-goals, the scholars have been able to measure the users' engagement with cooperative game features. While the result of the study indicates that altruism can be a driver for joint intentions, it also supports the perspective that shared goals are invoked by cooperative game features rather than individual ones (Riar & al., 2020). Remarkably, the authors posit that cooperative behavior is an outcome triggered by a group's goals and derives from the value of collectively helping others (ibid). Based on their findings, the authors have listed design implications for practitioners seeking to increase cooperation by gamification. Distinctly, shifting focus from individual-level features to group features, while allowing users to express their goodwill as well as enabling them to: "experience enjoyment for helping or contributing to the welfare of others" (Riar & al., 2020, p.07).

In search of a theoretical ground to offer this new subset of cooperative gamification, Morschheuser et al. (2017) have conceptualized the phenomenon and offered a new framework for gamification features. The authors have found pieces of evidence that gamification features can positively affect cooperative behavior.

As The Academy's main intention with our jointly developed framework is to enhance its members' creativity, it embodies game features for creativity that make it relevant to expand on the academic literature on gamification and creativity. Overall the literature bridging the gap between the two concepts has captured the interest of researchers from the field of collective intelligence (Kalinauskas, 2014), innovation management, and games studies (Agogé & al., 2015). More importantly, Kalinauskas (2014) published a paper trying to shed light on the ability of gamification to foster creativity through collaboration, considering the methodological complexity surrounding the notion of creativity (Boden, 1994). The author came up with the conclusion that gamification can be seen as a creativity facilitator as it provides motivations for cognitive stimuli (Kalinauskas, 2014).

Although the literature on gamification and collective action is scarce, there is a growing interest among academia to apply gamification's principle to collective intelligence, and civic action demonstrates an appetite to creatively harness urgent contemporary threats. This chapter offered a comprehensive overview of gamification both as a theoretical concept and a practical tool to deepen engagement, motivation, or even contribution. Applicative fields are broad, but as the scope of the project revolves around utilizing gamification mechanics for gameful design premises we have demonstrated the field of possibilities for game mechanics within collection action, collective intelligence, and cooperation.

4. Analysis

This chapter will present the reader with the analysis of the gathered empirical data through the methods laid out in the Methodology chapter. It is divided into two main sections (4.1 and 4.2). The first section investigates accounts of how the gamified framework was conceptualized and implemented in the event by consulting the process of how The Academy operationalized the gamified solution. It continues by delving deeper into the different roles of the participants and their implications for the group processes. The first part is concluded with insights into the process of rule appropriation related to the gamified framework.
The second section is concerned with the questions of individual and collective intentions, their interplay emerging throughout the gamified steps, and their influence on prosociality. Furthermore, the prevalent social dynamics and their implications regarding prosocial behavior are investigated. Finally, the collective affordance of the gamified elements is interpreted and presented through the lenses of motivational affordance theory and relying on concepts of autonomy and relatedness.

4.1 Part I - Initiating and Framing the Experience by The Academy: An Enabler of Collective and Creative Rule Accounting Procedures

This subchapter will give an account of how the gamified rules were understood, adopted, and implemented into action by The Academy on the day of the event. To do this, it is looked at how the solution consisting of the gameful elements was comprehended and operationalized by The Academy to fit their organizational goals. The chapter continues with the interpretation of the roles given to the lab participants by The Academy and their implications for group dynamics. Finally, both The Academy's and the lab's participants rule appropriation procedures and their implications are investigated.

4.1.1 Operationalization: Adopting and Implementing the Gameful Framework

In order to understand how The Academy has interpreted and operationalized the proposed gamified solution, we shed light on how the organization embraced, altered, and executed the gameful framework during the lab. While we are zooming

in to each part of our proposal and looking at and interpreting the alterations together with the retained aspects by comparing it with the proposed original framework, we outline how the framework was operationalized during the event. By doing so, we account for The Academy's accounting procedures of the suggested solution while emphasizing the operationality of the gameful framework and the resulting adoption by the participants.

4.1.1.1 Operationalization of the 3 Parameters

The first aspect of the gamified framework was the self-assessment exercise intertwined with the three parameters which were guiding the work process. In order to understand how The Academy operationalized this part of our proposal, it is useful to look at Clara's account on the matter. She provides an explanation of how The Academy approached the implementation of the three parameters (Empathy, Creativity, and Feasibility):

> *[...]we did some different things with the three criteria. We thought a lot about how to make them present in the room, with the participants all through the session. So, we did three things. We did like an instruction for the whole session [...] Because in that we sort of gave them instructions to the whole process, but also why we had the three criteria. Like, what were they supposed to do. And we sort of explained the criteria in regards to the assignment that they had for the day. So empathy, for instance, we said, "Okay, when we set out to do this collaboration with the Reform Commission, we promised ourselves that we wanted to make a point of departure in the experiences and the perspectives from the young people. So that's why we need to focus on empathy."* (Appendix F, 2:23).

In the above passage, Clara accounts for how The Academy has structured the three criteria to fit the purpose of the lab. She justifies, therefore, that each parameter is relevant within the process because it directly correlates with The Reform Commission's vision for the outcome of the lab. The Reform Commission is tied to the operationalization of this aspect since they are responsible for providing

the overarching topic of the lab. Accordingly, the macro context of the problem becomes fully present and visible when articulating the three parameters, as Clara elaborates: [...] *so that's how we sort of explained the criteria. And then I think that's important, an important sort of way to contextualize the game."* (Appendix F, 2:23). Clara reasons that providing the macro context within the given micro situation is an important prerequisite for the operationalization of the phase. Although, while creating the gameful elements, the researchers and The Academy had to inevitably discuss and take into account the overarching macro situation to better understand and account for the context, there was no definite proposal coming from the researchers suggesting including such explanations in the operationalization of the gameful solution. As Clara explains in the latest interview excerpt, by revealing the underlying purpose of the workshop The Academy intended to better assist the participants with the assimilation of the given rules which would imply inseparability of the macro and the micro when attempting to ensure the desired operationalization outcome of the framework elements. This implication, in turn, carries on to the self-assessment exercise as well as other gamified elements, as their foundation is primarily based upon the three parameters.

4.1.1.2 Operationalization of the Collective Reflection of Group Performance: The Collective Scoreboard

Another important aspect of the gamified framework was the collective scoreboard that carried the intention of providing a means for the participants in visualizing their collective assessments and reflecting on the day's work jointly as a community. The Academy decided to implement the solution by utilizing jars with colored water. When asked about the reasoning behind it, Clara explained:

> *And then, we decided to go with the water solution. We had, it was only like, a couple of days before that we decided, and I don't I don't really know why we did it. It just felt like the right thing. Because I think, yeah, I think it was actually also, it was mostly Sophie and I that discussed it. And she was like, uh, Lego bricks, that's just... maybe it's too used, I guess, people use it a lot when they do workshops and stuff and say go build something. And then we yeah, we kind of like the idea, but we were also a bit nervous about how it*

would, how it would feel to do it. But I think it was a nice way of sort of activating them, and also their last sort of thing as a group that they had to go up…" (Appendix F, 2:23).

This passage highlights how The Academy wishes to appear creative and stand out in the eyes of its members and the lab participants by using an alternative method to visualize the collective scoreboard. While this is a reasonable approach considering that creativity was one of the elements required from the participants in the group work, it again seems to point to a curious interplay between the larger macro elements of setting the stage and the micro-environment. The reason for choosing such a method allegedly reflects that The Academy also endorses creative practices itself. Setting a creative environment is then intended to provide a creative space for members to endorse a creative behavior themselves.

4.1.1.3 Operationalization of the Feedback to the Participants: The Reward

The final part of the gamified proposal was issuing participants a small reward that would directly reflect the outcome of their prior collective self-assessment exercise. When asked in the interview, this is how Clara explained the operationalization of this phase:

[...] there were both sorts of practical issues, and more sort of discussions about how we make a reward, that's not ridiculous. Because we can't really give them a big reward. And that would also be weird, but how can we make a small reward that sort of fits? Yeah. And so we ended up with this idea that we, we because they had to… we didn't know what prize they were supposed to get, because they were supposed to reward themselves. So we did this easy way of doing is having the stickers. So we could fast, put them on the chocolate, and then go and hand it out. (Appendix F, 2:23)

The Academy has opted for a simple reward in the form of a piece of dark chocolate with a sticker that represents the parameter on which the groups' have given the highest self-assessment score. In that sense, the operationalization of the reward phase, from a giver's point of view has been approached the way the researchers

suggested. However, this excerpt from Clara highlights that operationalizing the reward phase crystalized discussions around its outcomes of it, especially regarding the ability of the reward to support extrinsic motivations. Concerns regarding implementing the reward phase further highlight the complexity embedded in making the reward personalized and meaningful.

4.1.2 The Participants' Roles and Their Implications for the Group Dynamics

The collaborative nature of the group work initiated by The Academy has been supplemented by a role system intended to structure the work in a more efficient way. To better grasp the premises of modeling roles and the key role of the youth, the following chapter offers an account of the different roles and implications for the social hierarchy, considered a pillar of group cooperation.

4.1.2.1 The Establishment of a Role-System

The rule sheet provided to the participants (Appendix J) reveals that The Academy issued instructions regarding role endorsement. Participants had to choose three partakers responsible for warranting one of the three parameters constituting the foundation of the gameful framework.

> *In the group, choose 3 people who are each responsible for making sure that you remember the criteria in your process. That is, one person is responsible for empathy, one is responsible for creativity and one is responsible for feasibility - and can legitimately ask the question: do we remember creativity/empathy/feasibility?* (Appendix J, page 1).

This highlights that the group was steered to collectively decide on who will monitor the compliance of this particular rule throughout the process and hold others accountable along the way. As witnessed during the non-participatory observation of one of the group's work processes, it appeared that the participants have seemingly distributed the roles to each other according to the parameter they identified most with. Accordingly, one of the youth representatives undertook the parameter of

empathy, a member of The Academy (who in professional life is a podcaster and journalist) picked the parameter of *creativity*, and the thought leader who was also a more senior member of the group chose *feasibility*. Although operational, such a constellation of role distribution depicts individuals' contributions and endorsement of a specific parameter. Interestingly, the role system establishment can be perceived as a deliberate act on the side of The Academy to indirectly guide particular members to choose the parameters they expected they would be most drawn to. Whether this was a deliberate move or a coincidence, the data for this point is lacking to suggest a clear answer.

Having said that, it seems reasonable to anticipate that the youth would naturally assume the role of empaths as they are considered to be the closest to the problem in question, namely the youth unemployment prevalence in Denmark. They have likely experienced it most recently, firsthand, and could even possibly be considered its victims. Simultaneously, the members who engage in creative professions would naturally gravitate toward creativity. Lastly, the senior members, the 'thought leaders' of the group, who are considered to be experts and the most experienced in such matters would naturally be responsible for ensuring the feasibility and tangibility of the solutions. Against this background, Lucas explained how despite the structured role, members kept an open attitude towards understanding the realm of the problem by listening to the youth (Appendix D, 12'50). In that sense, at least in Lucas's group, the role structure seems to have flattened the hierarchy in turn paving the way for individual rules' accountability and cooperation.

4.1.2.2 The Role of the Youth

One important aspect regarding the role structure was the distinct function of the youth in relation to the context, the gameful framework and the contribution to the group effort. The interview with Anders, the rule sheet of the day, and the observation data all seem to indicate a prevalent central role of the youth during the lab. Considered as having the most comprehensive overview of both the context of the lab as well as the group work process directly, Anders provides insights on the active position of the youth simultaneously enhanced by other members' endeavors and youth's own behavior:

> *So we had these kinds of check-ins with the youth along the way, which, again, was really helpful, and I think also empowered them in a sense. I mean, they were the judges of our ability to actually do something useful.* (Appendix E, 47:49).

Furthermore, the prevalence and importance of the role of the youth are openly stated in the translated rule sheet distributed to the participants at the beginning of the group work process:

> *Empathy:*
> *We have decided that young people's own experiences of what the problem is and their ideas and suggestions for how to solve it will be the basis of our input to the Reform Commission. This does not mean that the young people in your group have all the answers on how to solve the challenges. But it does mean that you are committed to recognizing and accepting their perspectives and working from them.*
> *Be listening, curious, and open-minded.* (Appendix J).

Another passage from the observational data also illustrates and supports the claim for the youth occupying this central role:

> *[...]at least from what it looked like from the side was that the youth were very, in the center of the whole activity [...] But every time somebody would say something, it almost always would bounce back to the youth, and then they would kind of give their opinion about it. And then they would go to another person, they say something, then they bounce back to the youth. So it really felt like the youth was the center of it, you know like they were the sort of the consultants of it.* (Appendix A, 5'11).

Correspondingly, the youth were expected to act as producers of solutions and jointly contribute to the working process on the same level as the other participants. Concurrently, they also had to assume the role of 'judges' by being responsible for assessing the validity of the ideas generated by the rest of the group, especially

related to Empathy. This dual role seems to blur into active participation and the prevalent contribution of the youth to perform the intended gameful tasks. However, it is important to highlight that the creation of a hierarchy within the group may have potentially inhibited group dynamics and how the fostering of collective intentions played out. One instance of perceived difficulties created by the youth role is reflected in the following passage by one Academy member, Thomas:

> *But in this case, they presented the story and they stayed in the room, and to some extent they were, you know, they took upon them all the time to intervene and say "that works for me" or "that doesn't work for me." So the ability to lift the group discussion up over the level of these three individuals was very, very difficult I found.* [...] *So that was another element was very difficult to lift the discussion over these three individuals, and the expertise available in the room with more general and generalizable knowledge, you know, was difficult to bring forward. Okay, so, so that's also why I would say, No, the task was really, really difficult. No matter, you know, that the framing, but with this framing, it didn't make it easier. Even more difficult and I don't think we succeeded […]* (Appendix C, 17:20).

In Thomas's experience, the task of the day to deliver productive solutions to the Reform Commission was hindered by the elevated status of the youth. Not only did the constant presence and the judge role of the youth has affected Thomas's ability to make sufficient use of his and other members' experience and adequately contribute to the task of the day, but it has also likely impaired the group peer relationship which might have negatively affected the fostering of collective mindset and group's sense of cooperation.

4.1.3 The Participants' and The Academy's Appropriation of the Rules

Together with The Academy, the researchers have co-created a micro-situation accompanied by a rule-set, objectives, and a sequence of gameful steps. Describing how the participants assimilated these elements helps us better understand what accounting procedures came into play regarding the assimilation of the gameful elements. Accordingly, this chapter underlines the presentation of rules

as a determinant of the rule structure's accountability, the prevalence of the three parameters, and the completeness of the gameful system as a set of hints for rule appropriation.

4.1.3.1 Presentation of the Rules

The Academy introduced the program of the day to the participants in the morning at the beginning of the workshop by presenting a rundown of the different activities. The first half of the day was dedicated to group formation and consisted of several presentations made by both members of the Academy and external guest speakers (Appendix L). Looking at how the layout of the day has been formulated constitutes a determinant of members' appropriation of the rules. The Academy presented the rules and underlying objectives of the day in a believable fashion to prompt participants to engage with the gameful solution.

While informing participants about a novel way of working by introducing some of the gameful mechanics, Clara described the collaborative frame of the day process as follows:

> *We never said anything about gamification. We never said anything about a game or we said that we installed a bit of competition. That was sort of the way we introduced it. And then we put these three criteria. That was sort of the way we introduced it, that you have to work today, you have to work with these three criteria. And at the end, you have to assess yourself, how well you did in the groups. So there was the instruction that they had sort of in the plenary.* (Appendix F, 14:45)

This excerpt gives details on the narrative of the day and the strategy to provide participants of the lab with clear indications, objectives, and guidance. Without performing a thorough discourse analysis we can argue that The Academy deliberately decided not to extensively elaborate on the underlying gameful mechanics. The inherent arduous essence of The Academy and its premise to support the Reform Commission by providing creative input on societal challenges

constitutes in itself a layer of complexity. Thus, the context in which these rules have been presented and formulated to the members appears as a preliminary factor for accountability through the acceptance of the added layer of complexity with the potential danger to alter participants' perception of the task.
On this specific matter, Lucas expressed that the level of information given at the beginning of the lab during the presentation of the different steps of the day was considerable. He argued as follows:

> *There was so much information we got in the beginning and so many things, so many things we had to remember and think about. And it was nice to have, like a bit of a simpler setup around what to do and how to approach things.* (Appendix D, 16:58)

Enriched explanations and extensive formulation of the rules might drain some participants, especially if they are not familiar with intrinsically complex processes of interaction. In fact, The Academy itself and its representative Clara were well aware of the potential adverse effects of such exhaustive presentations. As such, Clara recognizes:

> *But when we do these processes, we think a lot about how and when you say what, because people can't really listen, or remember that much, actually. So you can't say that much about what's going to happen later, you have to say something, but you can't put too much detail on it, because people don't remember. So they need to know a little bit, and then we get closer to the point in time where it actually has to happen, so you can tell the details* (Appendix F, 14:45).

Thus, presenting the rules to the participants needed to strike a balance between clear, apprehensible, and accountable rules while considering the demanding effort this extra layer of information adds to the already intricate process. To reach an optimal balance in formulating rules and means by which participants should be accountable, The Academy seemed to also rely on the relatively high appropriateness capabilities of its members. According to the Academy, members have a higher propensity for experimental methods since it is a core premise of the

Academy. Consequently, Lucas has expressed his familiarity with similar processes, he coined:

> *[...] we actually used that style of measure, measuring our goals in Mødstrom, when at a general assembly when we should vote on the new main cases or the main campaigns for the coming year [...]* (Appendix D, 22:31)

To support the verbal introduction of the rules The Academy also decided to print a written copy including the rundown of the day as well as indicative time the participants should allocate for each of the seven steps (Appendix H). Moreover, this two-pager rule sheet has been distributed to each group. Interestingly, looking at the content of this rule sheet we can notice an explanatory pattern serving both as a justification of the procedural methods as well as a reinforcement of the rules (Appendix H). Subsequently, this rule sheet is intended to support participants' appropriation of the rules while emphasizing the premises of such processes. This printed material contributes to the overarching objective of the Academy to foster the collective realization of the outcome. It seems that The Academy's strategy was to present a structure that is non-restrictive and non-punitive but yet a creative enabler that helps members accommodate the group's works freely while leaving room for creative thinking to take place.

4.1.3.2 The Prevalence of the Three Parameters

Our gameful solution with points mechanics was aimed at providing the soil for shaping discussions while offering a common evaluative grid in turn allowing the community to stand on a common pedestal. Thus, the three parameters (creativity, feasibility, and empathy) served as a guideline for the gameful solution. Our three interviewees shared how they have worked with the three criteria by explaining how they assimilated the parameters to perform the self-assessment. In order to make the rules approachable and unchallengingly accountable, The Academy opted for a simple rule structure. Consequently, this deliberate choice paved the way for focusing on the most essential part of the rule, namely the three parameters.

Clara presented more thoroughly how the simple rule structure was primarily articulated around the three parameters. In that respect, the rule sheet distributed to the members provides a thorough explanation of each parameter (Appendix J). In sum, The Academy considerably put effort into providing contextual elements while articulating the rules and gameful steps around three overarching proxies aimed at enabling and easing participants' accountability toward the rules. Against this background, we can also observe how the participants accounted for the rule structure, especially through the appropriation of the three criteria. Katrine, an Academy member and a thought leader of one of the groups, described how her group integrated the three parameters as follows:

> *Immediately people were like, accepting it or thinking and embracing it. And it was easy for us to do and it was a good thing that it was something very concrete, like a sign that was visible, something that you could place in front of you. [...] It was like somebody should lead the process, somebody should take care of the time, and then you had to choose three different people that should take care of these empathy, creativity, and feasibility. I think it was a really good help to get started* (Appendix B, 6:00).

The excerpt above details how the clear and central role of the three parameters prompted Katrine's group to assign participants specific roles as explicitly mentioned in the rule sheet. Furthermore, this passage illustrates the guiding role of the three parameters. On a more individual level, Katrine shared that the predominance of the three elements enabled a more personal reflection on her own behavior in regard to utilizing the three parameters. Katrine then argued: *"And then I think it made me think more about being creative and having empathy, and feasibility"* (Appendix B, 6:00).

Similarly, Thomas, another member of The Academy, described how his group responded to the rule structure notably by engaging with the three parameters and operationally applying the rules. Thomas described it as follows:

> *It didn't take us long to recognize that those three aspects, obviously, important aspects of the work we were doing, we distributed the three flags on different team members. And to some degree, they took charge of advocating*

> *for precisely these flags. Maybe it was most needed, and therefore, also, the role taken most carefully was the feasibility flag* (Appendix C, 6:21).

The members connected the three parameters with the subject of the topic they were discussing. The relative connectedness between the three assessment criteria and the matter of the discussion seems to have fostered members' accountability to the rules as they could relate to the essence of the day. The simple structure of the rule and its seamless integration into the agenda of the day made it easy, attainable, and straightforward. In that regard, Katrine argued that the self-assessment rule acted as a stratagem to provide participants with a common ground for their discussion while creating an achievable collective goal. Katrine elaborated as follows:

> *I think it was, it was not, in itself, very important to give it numbers, but that trick or like feature gave us a way of talking about it, that we could maybe not to ourselves if the question was how good were you at this? And how good were you at this? And so is that we had to compare it was actually a good thing, because it, it gave us like a way to talk about it.* (Appendix B, 14:51).

Consequently, coupling a simple rule structure based on three proxies with the content of the discussions seems to have facilitated participants' acceptance and compliance with the rules. Although not primarily intended to be reminders, the three parameters served more purposes than The Academy and the researchers initially conceived (see chapter 4.1.1.1). Notwithstanding, the appropriation of the rule structure by The Academy created the preliminary condition to turn the three parameters into more probable, assimilable, and accountable proxies. Our data indicate that the participants have embraced the three proxies and used them as a common ground for reflection, discussion, and performing the self-assessment (Appendix A, 12:03; Appendix E, 6:07; Appendix K).

4.1.3.3 Completing the Challenge: a Hint to Participants' Accountability for the Rules

The degree of completion of the gameful steps also indicates the degree of commitment of the members while highlighting qualities of assimilation and

accountability. Including three gameful steps (the self-assessment, the collective scoreboard, and the reward-giving phase) all groups have performed the challenges altogether. In other words, the participants willingly, both individually and collectively, ensured that their group would complete each gameful step. Some participants, however, did leave before the concluding step of the collective scoreboard due to work and other matters. Nonetheless, Clara expressed how she was pleasantly surprised by the level of completion as follows:

> *I think my overall impression was from the day that they followed the rules, more than I had expected. And the way, one of the things was that they finished, they did finish something. And they all did the self-assessment thing. And they all presented something at the end. And they all came up and gave themselves points. So they went through the process. And I think that's actually that's not always the case. So I feel that the setup that we made with the small sort of gamification part sort of also captured the process because they had to do something in the end that related to the three criteria. I feel that that sort of also pushed them to finish if that makes sense.* (Appendix F, 17:48).

Not only does this excerpt suggest, in Clara's view, that the participants have accomplished the tasks, but it also denotes that members were mobilizing resources to increase the likelihood to live up to the rules. The realization of the intended steps prompted by a simple rule structure denotes a relatively high appropriation of the latter by the participants to cooperatively accomplish the gameful steps. In that specific matter, the literature on collaborative and collective action suggests that the acceptance of some basic rules is a determinant of collective results (Manzini, 2015; Ostrom, 2000). Thus, the rule structure, because of its simple fashion, has not been negotiated collectively by the members but instead, utilized and interpreted in a singular manner to cooperatively address the content of the discussion while accomplishing the gameful steps. Moreover, while each participant had a unique way of approaching the task, it seems that creatively performing the intended gameful steps, sharing responsibilities, and completing the work were common to all interviewee's efforts.

4.1.3.4 The Viewpoint of The Academy on Participants' Accountability (Isomorphism)

The previous chapter has suggested a relative acceptance of the rules by the participants when affording the rule structure. In that matter, The Academy, through Clara and Anders, correspondingly made sense of the participants' accountability for the rules. Interestingly, Clara shared what were the premises of creating a coherent and affordable rule structure. Accordingly, the rule structure aimed at fostering participants' appropriation and endorsement of the new social situation relied on creating a safe space. Clara reflected as follows:

> *So what types of rules can you set up to make people behave in a way that's good for the conversation, and that makes everyone feel safe, and maybe not always comfortable? Because you're not always supposed to feel comfortable in difficult discussions, but in a way that makes you feel safe and in a place where you can share your thoughts and everything.* (Appendix F, 23:02).

Additionally, Anders also shared his views on the ability of the rule structure to support a safe space by fostering flexibility and allowing participants to freely articulate the discussion while performing the intended gameful tasks (Appendix E, 18:49). Having this in mind, Anders further explained how grounding the rule structure within the core purpose and principles of The Academy seems to have supported participants' accountability. Anders made sense of this continuity between the overall purpose of The Academy and the content of the rule as follows:

> *And I think also the explanation of the empathy that I mean, the value-added that we, you know, the wealth value that we can add, as an academy is basically to take the point of departure in the voices of the young people who have been part of the process. So, I think, the loyalty towards that point of departure, I think, was quite strong. So, that made it natural to stand with empathy as something really important. And I think, then, perhaps as a consequence of that, the other values, you know, kind of integrated into the whole thing, but I think that was the strongest one, so to speak. Of course, also because some of the young people were in the room.* (Appendix E, 8:27).

This excerpt indicates that, according to Anders's opinion, participants endorsed the challenge of the day alongside the set of rules via a high level of commitment and adherence to the simple rule structure. Anders's dual role to frame the rule structure and witnessing participants' accountability assertively provide insights about accounting procedures. Subsequently, Anders argued that although the instructions seemed to have been received rather positively by the participants, they also opened space for the members to know where they were heading while creating a safe space (Anders 18:49). This view matches the previous standpoint of Clara on fostering participants' accountability by materializing the existence of a safe space.

On another note, Anders elaborated on the prevalence of the three parameters in his group. Anders detailed how members of his group accounted for the three parameters as follows:

> *So I think I think the three values were really guiding the work that we did on the initiative for one of the other group members, we made a halfway evaluation of the three values. [...] But I think the three values were clearly present all the time, not only underlying but also explicitly mentioned. [...] The three values in my group at least were taken seriously. And I think just to a large extent, were lived up to. Yeah, we kept each other accountable, I think, on basis of the values*. (Appendix E, 6:07).

Concomitantly, Anders's perception of the three parameters as a common ground for individual and collective accountability is aligned with participants' standpoints on the central function of the three axioms (see chapter 4.1.3.2). Therefore, we notice a relative isomorphism between participants' accountability procedures and The Academy's sense-making of the latter.

While Anders has been actively involved in one group, Clara had a more operational role during the day. Nevertheless, Clara shared her impressions regarding participants' accountability procedures through a more holistic approach by highlighting recipients' discrepancies. Clara explained how the grown-up participants are a different recipient group with other motivations and affordance needs. She argued as follows:

> *[...] that's when grown-up play, that's sort of like, that's a fine balance that you have to strike all the time. I think you should, you have to believe in the rules because otherwise, it's not fun. But you have to do it in a way that's a socially acceptable way for grownups to play. So that's with a bit of a little bit of distance.* (Appendix E, 54:07)

The social acceptability of the created social situation appears, according to Clara, as the main accountability lever for the participants. Despite this, distance also appears, according to Clara's viewpoint, as a prerequisite for acceptance of the rules. Interestingly, the group composition and the overall rule structure should in turn support participants' own free space, motivations, and individual preferences otherwise it might result in an impediment to the appropriation of the rules.

Coherently with participants' interpretation of the discourse surrounding the nature of the gameful challenge, Clara estimates that participants have accepted the narrative of the day. (Appendix E, 47:50). Thus, the premise of the rule structure was to catalyze group dynamics by establishing a safe space mitigating free-riding, apathetic, and self-centered behaviors while prompting participants to open up and achieve the goal of the day. The gameful tasks have been appropriated by the participants via different accounting procedures facilitated by a simple, straightforward, and appropriable rule structure in turn paving the way for collectively performing the gameful challenge. This common ground has supported participants' commitment, and parameter embodiment, as well as collectivized the process of outcome realization.

4.2 Part II - Intentions, Social Relationships, and Motivational Needs as Factors Impacting Collective Prosociality of Groups

Analyzing what group dynamics occur in the course of the context of the gameful framework allows us to pinpoint how intentions (individual or collective), social relationships, and motivational needs influence behavior aimed at benefiting the group. More importantly, this chapter offers a comprehensive analysis of how the

aforementioned axioms impact collective cooperative behavior and to what extent the gameful framework supported prosocial motives.

4.2.1 Interplay of Collective and Individual Intentions and Their Influence on Prosociality

This research is interested in how the applied gameful framework has impacted collective intentions. The following chapter investigates how the interplay between group-level and individual-level intentions denotes the emergence of altruistic behavior, shapes groups' prosociality, and impacts collective action.

4.2.1.1 We-intentions and Their Influence on Group Prosociality

Although not deliberately communicated to the participants, each gameful step intended to make the group think, work, reflect and act collectively. Stemming from the hypothesis that gameful elements might be suitable to potentially encourage, steer and motivate participants to act prosocially and move away from their individual intentions toward collective targets, our data set encapsulates clues on how we-intentions unfolded in groups.

One such clue is the prevalence of the existence of a "common ground" facilitated by the gameful structure. Anders reflects on the three parameters that guided the process and the impact of the gamified elements: *"And I think the gamification element, and the three clear, so clear values, made it much easier to stand on common ground"*. (Appendix E, 13:48). Given the fact that Anders was a participant in one of the groups, in his understanding, the parameters served as a cornerstone in connecting the participants' common values they were supposed to be striving towards when working with the problem and in turn helping to align the collective purpose of the group. On that matter, Katrine also interpreted the gameful framework as contributing to creating a common soil, while highlighting the choice for recognizable and apprehendable gameful mechanics (Appendix B, 32:25).

Another cue noticeable in the dataset is framed around collectively held goals. Anders provided more detail on how by holding mutual goals, the members of his

group framed a collective response to the gameful task in turn steering toward a hint of prosocial behavior. He argued as follows:

> *And in that sense, you could say that the togetherness was, you know, it was difficult to find. But it was there, because we had a, you know, a shared task and a shared end goal [...] So I think, you know, again, that balance was really helpful for creating a sense of shared responsibility and a sense of a team spirit, if we hadn't had that, that framework to work on, I think, would have been different. Because there were tensions and there was disagreement, and there was, you know, so I think it would have, if we hadn't had that, I think it would have been much more difficult to get to anything productive.* (Appendix E, 34:50).

Despite Anders witnessing tensions between the participants, particularly regarding the age and experience differences which he described as *"a generational tension"* (Appendix E, 34:50), he notices that the commonly held goal has created feelings of camaraderie. Further, Anders explains that shared responsibility and a sense of team spirit which he observed have likely been an outcome of the gameful framework. Another quote from Anders's interview particularly stands out as being a strong indicator of what he perceived to be prosocial behavior tied with collective group intentions during the lab, as follows:

> *And the other one would be the togetherness and the shared ambition and shared objective that we managed to maintain, even, you know, with that divide,[...] I really, really sensed an urge and a commitment and a feeling of responsibility, you know, towards doing something, I mean, really, it's, it's very rare to feel the indignation, you know, when you can actually, I felt the indignation in the room, both in the plenary sessions and in the group work, [...] We need to change as a society and I think it was just fantastic to sense that…* (Appendix E, 42:48).

The underlying collective goal structure arises, according to Anders, from sharing macro-goals and participants presumably feel a responsibility toward higher societal commitments. This shared vision could then be expounded as one of the underlying

preliminary factors contributing to the enhancement of prosocial behavior and fostering collective action and achievement.
Another participant, Lucas, working in the same group that Anders took part in, also had some reflections hinting toward prosociality:

> *It was clear that some of us were more creative and outgoing than others when it came to shooting ideas around and coming up with alternative options and trying to explain our viewpoints in different ways so that other people could better understand them. It's not something that is easy to do. But I think that we were good at helping each other out and trying to, to expand on things in the process*. (Appendix D, 25:42).

Although Lucas noted different manifestations of one's contribution to the group, and difficulties of being able to get across the different viewpoints to each other, participants were successful at helping one another in this endeavor. In regards to prosocial behavior and goal structure, we can interpret altruistic tendencies to share common goals as a sign of prosociality and cooperation.

4.2.1.2 I-intentions and Their Influence on Group Prosociality

The previous chapters have highlighted how the gameful framework strengthens group-level intentions and in turn, positively affects the prosociality of the groups. Nevertheless, investigating person-level intentions offer a contrast with the aforementioned role of the gameful framework in blending oneself with the overall group intentions. Thus the following chapter places an emphasis on the personal motivations for one's prosocial behavior.

Interviewees have shared how contributing to The Academy supports individual intentions and independent goals. Because of the inherent collaborative and connecting nature of the lab, fostered by the gameful system motivating mutual support, participants were encouraged to engage with the underlying collective goal structure. However, Thomas mentioned that participating in the Lab also reflected individual goals articulated around networking. He argued as follows:

> *First of all, I have to say, it was a very valuable day for me. I'm a new member of the Academy. And you know, the networking part that that party is my motivation for being there was a full scale on that* (Appendix C, 16:39).

Resources, expertise, and network offered within the realm of The Academy and the innovation lab constituted motivation for Thomas to benefit from. Embedded social relationships occurring in the course of the gameful framework also take place outside of it. Precisely, the network relationship unfolds during the plenary phases when participants are less actively engaging with the gameful artifacts. To that extent, noticing networking individual intentions make sense considering the existence, properties, and dynamics of the network in which participants realize the gameful set of steps. Accordingly, the tandem benefiting from others while benefiting them reflects a mutual benefit for the individual and the group.

On the other hand, Lucas and Katrine shared more altruistic individual intentions for actively engaging in The Academy and during the lab. Accordingly, Lucas explained that he wanted to individually contribute to a larger cause as he was able to personally relate to the premise of the Academy (Appendix D, 3:28). Similarly, Katrine reflected on how her current role and previous experience could be beneficiary to the community at large. She argued as follows:

> *I was there because I've been working with mental health in children and young people for many years in different jobs. And it's also a part of this job I'm in now because we made two big publications about the research in public... in mental health, sorry, in children and young people. So I thought that I had something to, that I could bring into that problem solving about young people not getting into education and work.* (Appendix B, 1:33).

This passage denotes the altruistic nature of Katrine's behavior of helping others. Regarding the impact of the aforementioned personal-intention structure, Anders provided a clear answer by denying any interference of I-motivations with group prosociality. He explained as follows: *"And as I mentioned before, there was no protecting one's own position, or interests, or I-intentions in any way"* (Appendix E, 45:48). Subsequently, no evidence indicates that participants who have expressed

personal motivations have behaved in a less prosocial fashion or have contributed less to the overall group's effort.

To summarize, the data presented above demonstrates a relatively scarce influence of I-intentions on the We-intentions structure although perceptible and distinguishable. In fact, it does seem to suggest the individual intentions' rootedness in larger collective motivations, as they can be ultimately traced to the participants' underlying prosocial motivations to take part in a social innovation lab. On top of that, the structure of the collective intentions seems to hint at positively affecting groups' prosociality through visible altruistic behavior and collectively held goals. Here, the role of the gameful framework was to serve as a foundation for providing collective tangible structure, goals, and challenges to be performed together in groups.

4.2.2 Distal Effect and its Consequences on Prosociality

In the following section, we move beyond collective and individual intentions, to comprehend which elements embedded in social relationships directly influence prosociality. Our interviewees have particularly expressed the distance (distal effect) between participants and how constituted prevailing conditions had an effect on undermining the group's prosociality. Difficulty to cooperate arose from the group composition. Members of The Academy, participants and The Academy itself altogether shared converging elements regarding the proximal ties as a source of difficulty and tensions. On that matter, Anders stated as follows:

> *[...] And you say it was bold? I don't know, maybe stupid, but I have to say, I was nervous before the 29th. You know, it wouldn't work, would we get anywhere? Would it be too difficult to do? Simply because it is risky business people, you know, in the same room and asking them to do something together when they, you know, with such different profiles.* (Appendix D, 37:37).

This passage highlights the complexity and risk associated with having a diverse group composition. Additionally, Anders expressed that the generational divide was

particularly present and tangible in groups leading to tensions and frictions. He argued as follows:

> *In terms of content, or, you know, I would say a generational divide, surprised me how big it is, and how difficult it is to understand across generations. [...] There was actually, you know, discussions that wouldn't say arguments, but almost about the problem and why young people feel under pressure. It was definitely a generational tension. That was quite clear. And in that sense, you could say that the togetherness was, you know, it was difficult to find*. (Appendix D, 34:50).

The distal effect has been mainly manifested by the generational gap, as each group was composed of youths, more experienced leaders, and regular members of The Academy. By sharing his expectations regarding the dynamics and production of valuable outcomes considering the deliberate choice to form groups with diverse backgrounds, spread knowledge, and wide age range, Anders acknowledges the distal effect as a source of tension and frustration affecting the togetherness of the group. Correspondingly, Clara confirmed Anders' sentiment on the existence of tension and explained she witnessed it from the outside manifestation of the difficulty when members of Anders' group were working in their group (Appendix F, 12:30).
Interestingly, when asking Lucas about the level of difficulty induced by the group composition and the need to perform the collective gameful task, the word "frustration" repeatedly came up. As illustrated in the following passage, Lucas explained:

> *Personally, I found it very frustrating, and really, a bit depressing maybe, to have that obstacle, because when I found out, I really could see that it was, it was a big thing. And it was something that had to be dealt with, on a larger scale, if we would ever get any change in any way.* (Appendix D, 26:43).

According to Lucas, the group heterogeneity constituted a hurdle to reaching a valuable outcome. On top of that, Lucas shared that the content of the discussion outlined a distance between participants and generated an emotional burden taking the form of frustration. Although the inclusive nature of the group composition has

been decided independently of the gameful framework features, the distal effect seems to have complicated the maintenance of a high level of prosociality within the group.

In sum, groups' prosociality seems to be indirectly affected by the distal effect occurring in groups, yet intensified by the common ground supported by the gameful framework, in turn catalyzing difficulties (tensions and frictions). However little evidence suggests that this distal effect contributes to misaligning members' intentions, motivations, and expectations.

4.2.3 Collectively Affording the Gameful Framework

Our study intends to comprehend if and how gameful artifacts can influence collective action processes notably by investigating which accounting procedures unfold when experiencing the satisfaction or dissatisfaction of motivational needs when interacting with the gameful artifacts. Thus, looking at how the participants collectively afforded the gameful artifact in their group through the motivational affordance theory suggested by Zhang (2008) provides a solid understanding of the interplay between collective action and gameful mechanics. The following chapter is thus grounded in, but not restricted to, the motivational affordance theory. It first and foremost offers an interpretation of the phenomenon through the perspectives of our interviewees and then provides a perspectivisation through the theoretical lens of the motivational affordances.

4.2.3.1 Making Achievements Manifest and Tangible

Because of the inherent complexity of the challenge underpinned simultaneously by the content of the discussions and the new social structure initiated by The Academy, including the group composition and a rule structure, the need for achievement and competence was a recurrent theme of our data set. While groups were assigned to a similar set of gameful steps regardless of the group's skills, level of knowledge, or individual motivational needs, they freely and endogenously mobilized creativity to perform the intended challenge. That being

said, participants shared rather different viewpoints on the individual and collective outcomes and achievements of the lab. For instance, Thomas revealed that the level of collective achievement at a group level was relatively low, nearly unfruitful. He explained as follows:

> *[...]It has been a good experience, even though I don't think we accomplished anything, that there's no outcome that stands after the group dissolves. So, the gains are all social within the group*. (Appendix C, 26:48).

According to Thomas, the gameful artifacts have been unsuccessful in providing sufficient feedback on the actual work done in groups. Nevertheless, Thomas also nuanced his sentiment when he explained the collective outcome reached by his group in regard to building social capital. On that note, Thomas detailed the collective achievement as follows:

> *I think I got the experience, and I think that goes for the group members that we took this task very seriously. And we tried to give it our best shot. And, and in that process, we have built confidence, social capital. So we've built social capital, and I think we recognized each other for what we can give to other's tasks, so the social network has been built.* (Appendix C, 22:48).

On the achievement matter, Katrine made sense of her group's achievement through the collective creative contribution to the topic they were discussing. Notably, Katrine detailed her group's ability to describe the problem in a novel and more relatable manner especially due to the presence of youth in the group. She argued as follows:

> *We've found another way, a new way of describing the problem and a solution with some new words that we found in common so it was actually from that perspective, it was pretty good. I think because often you just use the same words and look at the problem with this with the same* (Appendix B, 23:55).

Similar to Katrine, Lucas also expressed that, although a joint goal and effort to progress toward a better understanding of the problem at hand was present, individual disagreements might have hindered the process (Appendix D, 30:29).

According to Lucas, the collective goal attainment generated emotional awareness that can neither be qualified as emotional satisfaction nor dissatisfaction, but yet emphasized a situation where collective cognitive achievement is reached. Interestingly, although Katrine and Thomas worked in the same group, they shared opposite views on their group's achievement thus highlighting the different emotional and behavioral responses to the gameful challenge in regards to its capacity to fulfill participants' achievement needs.

In order to make this collective achievement tangible and the collective creativity mobilized to perform the task of the day, we extrinsically rewarded participants. The intended role of the reward phase was to provide participants with feedback on their creative accomplishments based on their approach to the gameful challenge. Data extracted from Thomas' and Lucas' interviews, however, indicate that the reward has been perceived disparately (Appendix C, 10:28; Appendix D, 20:37). In that sense, we have found very little evidence that the reward-giving phase positively or negatively impacted intrinsic motivation. Instead, it can be argued that the reward has fulfilled its symbolic role to specify the nature of the creative work performed by a group when completing the challenge.

4.2.3.2 Balancing Out Autonomy and the Self With Relatedness

Participants of the lab have deliberately accepted to relinquish part of their individual motivations and welcomed the need to collectively address urgent social matters. Accordingly, our gameful system aimed at balancing out autonomy with relatedness to support participants' needs at a collective level. The Academy intended to create a rule structure supporting participants' autonomy while providing a common framework to support participants' accountability and appropriation of the rules. Thus, this can also be seen as an attempt to create a structure paving the way for participants' affordance of autonomy. Clara expressed the reasoning behind creating such an environment as follows:

> *[...] That was sort of the main reason why we did the thing with the three criteria and stuff to sort of create that space. And at the same time focus on the job that had to be done to come up with the solutions. And I think it's a*

> *very difficult task to create that space. And I think it's.. I think we succeeded in some of the groups and in other groups, it was very difficult.* (Appendix F, 23:02).

Without diminishing participants' own self-determination and avoiding crowding out their self-identities functioning in this particular social context, Clara emphasized the intricate aspect of such a task for The Academy. Implementing a rule structure and a set of gameful steps naturally induces affecting the recipients' social order and the immediate groups' dynamics. Accordingly, Thomas shared his frustration about developing his self-identity among the group he was part of. He argued as follows:

> *And for me, that meant that, you know, as I said, you know, I restrained myself and I was very careful with what I shared. It had to be intelligent, it had to be analytic and you know, in my experience, most good ideas, they develop from somebody who dares to be stupid. And you know, it's just difficult in a group process like that. So that was one, you know, restraint for me personally, but I think also for the group.* (Appendix C, 17:20).

The excerpt above seems to indicate that the gameful challenge may have inhibited Thomas' need for autonomy and representation of his own personality which might, in turn, affect Thomas' sense of self-worth, positive emotional tone, and contributions to his group. If the rule structure, the supporting material printed out by The Academy, and the verbal presentation of the rules can be seen, to some extent, as a way to patronize the members, our data does not seem to particularly relate to such a feeling. In contrast, the participants autonomously and jointly mobilized cognitive capabilities and communicative abilities, in turn paving the way for collective intention to develop, creativity to spark, and optimal functioning to occur. Especially in Anders' group, the relationship between the rule structure and the need for autonomy was the result of a collective process of negotiation, interactions, and discussions stemming from goal-sharing procedures (Appendix E, 10:14). Yet, the absence of enforcement rules within the gameful framework and the nonexistence of sanctions or control exercised by a central authority have enacted groups to endogenously perform the intended gameful framework. This demonstrates that the

gameful framework has likely contributed to supporting participants' autonomy needs.

The inherent interactiveness and collaborativeness facet of the lab forward cooperation at the forefront of the group dynamics. Against this background, participants have been subject to human-to-human interactions which have been particularly intense during group work. The call for empathy and the high degree of collaborative involvement required to perform the gameful challenge can be assessed in terms of relational intensity. Accordingly, Lucas expressed that on top of rules to follow and steps to perform, managing interactions with other group members was difficult, yet rewarding. Lucas argued as follows

> *In a way I would call it more challenging, challenging, but fulfilling. In the way, in a sense that we, we learned something new, and we learned something important in regards to the bigger picture and the bigger issue with the current state of education in Denmark and, and I think that makes it all very worthwhile and really a great thing to experience but I would not call it smooth.* (Appendix D, 24:50).

Similarly, Thomas expressed how, in his group, managing the intensity of the interaction inhibited his group's capacity to lift up the discussion (Appendix C, 17:20). Furthermore, Thomas explained how the intensity of the interaction revealed the participants' statuses thus possibly altering the extent of the social bond (ibid). At glance, the low social tie strength between participants is supported by a diverse group composition with youth, thought leaders, and regular members of the Academy. However, data indicates that members (excluding the youth) formed a homogeneous group in turn reinforcing the social ties. Thomas argued as follows:

> *[...] And that makes you know, that's a community-building element that I think we have, you know, we think we are very different, but actually, we are a very homogeneous group in that respect, so that makes it easy to work together.* (Appendix C, 29:08)

On that matter, Anders shared his understanding of the factors that may influence the intensity of the social ties during the lab as follows:

> *[...] one of the things that we often struggle with within contexts like this, that's the whole premise that the thing, the process is based upon, which is often very, very adult, very academic, you know, all these things, and then you have some people in the room who, who are not trained in that. And, you know, then you kind of lose them or you run that risk, at least of making it basically a false situation.* (Appendix E, 13:48).

As the gameful framework has been plugged into an existing social order with diverse group composition, data indicates that it indeed supported participants' need to relate to others through high relational intensity. However, the need for relatedness taking the form of social ties fluctuates between weak and strong as interaction quality seems to vary greatly from one group to another.

In essence, the gameful framework seems to have supported participants' need for autonomy while creating an intense social bond thus supporting participants' longing for relatedness. However, evidence from our data pinpoints the challenge associated with managing interactions and the risk of generating separated social groups.

5. Discussion

In this paper we have interpreted participants' accounts and reactions to the gameful framework intended to foster collective intentions and, in turn, pave the way for collective action. The following chapter offers a comprehensive discussion of our findings by notably perspectivising the elements analyzed in the previous chapter. Moreover, in this chapter, we also consider the adverse effects of implementing such an attempt to shape social context with a set of rules, social mechanisms, and methods affecting intersubjective relationships.

5.1. Macro and Micro Context Intertwined and its Effects on Prosociality

As explained in Methodology chapter 2.3, this research project was conducted by applying the ethnomethodological approach. A micro-level situation materializing from altered social order circumstances was examined to understand how the involved actors interpreted, made sense of, and contributed to constructing the new social stratum. This was carried out by creating a unique framework consisting of gamified phases and their actualization into the program of the social innovation workshop. Complying with the chosen method and its assumptions, it was deemed necessary to account for the macrostructure encapsulating the studied micro-level situation. Our data indicate that the macrostructure (The Reform Commission and its premises) was intertwined with the microstructure (the workshop on the 29th of March), particularly through the operationalization phase which highlighted the embeddedness of the local structures into a wider realm. While this supports the ethnomethodological assumption of the inseparable nature of micro and macro elements, it underlines the probable necessity to always account for such nature when approaching gamification through the ethnomethodological lens.

In addition, as highlighted by Detering (2014), the context seems to condition the effects of any gameful system. By creating situated local interactions, leading to the emergence of local norms, and patterns of collective behavior, we have emphasized the embeddedness of such elements into the global environment directly influencing the former. Furthermore, in this particular case, the micro-level situation was attempted to be directly influenced by means of highlighting the presence of the macrostructure and its implications to the end objectives of the micro, which in turn

were intended to alter the macrostructure in a constructive and beneficial manner, implying a high degree of reflexivity.

The analysis has also pointed out the simultaneous role of individual factors and structural variables on prosociality, cooperation, and, in turn, collective action. Among the mechanisms internal to the individual, we have demonstrated how preferences, intentions, and choices are emphasized by the gameful elements which act as revealers of such individual proxies. Our analysis emphasized individual mechanisms leading to accountability, acceptance, and affordance occurring first at a personal level and then subsequently affecting the group dynamics, cooperation strength, and interactional ties. While the literature on gamification is touted with an individualistic approach (Detering, 2014; Brynjarsdóttir & al., 2012), our attempt to move away from the pattern-based approach induced both The Academy and us as researchers to navigate between the pervasiveness pitfalls and individualistic traps. Although literature stemming from behavioral economics and psychology (Simpson & Willer, 2015) has highlighted individual tendencies, individual proxies isolated separately are insufficient to explain the emergence of behavior benefiting the group rather than individuals.

In an attempt to provide pathways addressing current theoretical holes in gamification, Detering (2014) suggested moving from patterns to lenses when designing gamification. Our findings are consistent with Detering's main thoughts regarding the integration of the context in which gameful elements are deployed, in turn outlining the designers' (in our case, The Academy and the researchers themselves) role in accounting for the social context and translating it into an affordable experience. Correspondingly, The Academy, as the agent co-designing, validating, and deploying the gameful framework, becomes a singular agent playing a key role in facilitating the emergence of global patterns from local interactions.

As we have designed a gameful framework based upon interaction and reciprocity in turn creating a strong, yet intentional dependency link between groups' members, structural variables embedded in the situation are worth discussing. Especially, in the field of collective action, Ostrom (2000) identified group size, heterogeneity of the participants, repetitions of interactions, links between participants, and freedom to enter or leave as structural variables influencing the likelihood of cooperation and

collective action. The literature on prosocial behavior has mainly identified norms, hierarchies structure, and interpersonal relationships as external forces impacting prosocial behavior (Simpson & Willer, 2015). Regarding these parameters, it is important to note that the design of the gameful framework has not interfered with the formation of the group nor the group composition as these decisions have been taken ex-ante by The Academy. In that sense, the gameful framework has been plugged into the existing structure provided within The Academy then reinforcing the social micro-interactions taking place within each group. While these structural proxies were not in our control, data suggests that some participants have developed creative adaptative behavior to perform the gameful steps given the structural constraints in which they found themselves (especially during the self-assessment phase).

Authors, scholars, and practitioners in the field of collective action and cooperation have adopted different positions to address the question of how micro-interactions are affected by a set of structural proxies. Simpson & Willer (2015) have argued that the two domains (local and structural) interact or cohabit in parallel, while others have turned to theories of complex adaptive systems characterized by self-appropriation, self-organization, and creativity (Salminen, 2012). The capacity to engage in an altered social situation marked by gameful elements and structural proxies denotes what literature has coined as a level of emergence (ibid) or a set of complex responsive processes (Stacey, 2006; Mowles, 2017). Endogenous behavior aimed to help others while performing intended gameful steps can be assimilated as the result of collectively evaluating the situation at hand through the norm and rule structure in place. Extending from these premises, the micro-interactions, the prevalence of a rule structure, and endogenous adaptive behavior executed at a group level paved the way for collective intelligence to emerge. While such processes fall under the scope of collective intelligence, it remains unclear whether these adaptive behaviors have been solely triggered by the gameful framework or constituted by natural responses to a changing environment. However, this attributional ambiguity doesn’t diminish the interaction between local and structural proxies and the prosocial outcome we have observed.

Finally, norms appear as a common characteristic of structural variables of cooperation and collective action (Simpson & Willer, 2015; Ostrom, 2000). Our data

indicate that not only norms have been brought in locally by each participant but they have been manifested structurally too. The nature of the gameful framework enhanced the interdependency of the participants and the interactive experience, thus allowing local norms to form a whole. In this way, commitment, prosocial acts, sharing, and listening can be considered as norms that might have been brought in individually in a different fashion by each participant but seem to have transcended the individual level and opened up opportunities for collective action. Particularly, the self-assessment step has crystallized norms prevailing in the group through the emergence of creative decision-making processes allowing one to share the individual self, identity, values, and ideology. Again, this aspect raises questions about the extent to which the gameful framework has helped form the collective norms. In turn, a question arises whether a gameful framework could be used to harness specific norms in the search for cooperative and prosocial outcomes?

Although consistent with Simpson & Willer (2015), the research has highlighted self-interested intentions, yet they did not translate into impairing or anti-social behavior. Against this background, other gamification features, such as leaderboards or rankings could have taken the form of injunctive norms signaling peers' disapproval of certain behavior, actions, and practices. If our findings indicate that the gameful framework has, to some extent, encouraged prosocial acts, would a different gameful framework relying on more competitive features encourage the emergence of prosocial norms both at the local and structural level?

5.2 The Role of the Youth: Key Driver of Fostering Collective Action?

As established in the analysis, The Academy has opted for a role system that was intended to enhance the effectiveness of the group work process. What particularly stood out as an important emphasis was the protruding significant responsibility that was put on the youth participants' shoulders. Such an approach of separating the youth from other participants implied the creation of a hierarchy that imparted the youth with a higher status in the group by prescription of the idea-judge role consequently empowering them with a decision-making privilege. In turn, the presence of different statuses within groups by some means or other is likely to have affected the group dynamics which would have subsequently influenced the work

process and the objectives of the gamified framework, namely, fosterage of collective intentions and action. In support of these claims, Simpson and Willer (2015) argue that present status hierarchies within groups can indeed potentially help promote we-intention and collective action by motivating the higher-status members to contribute more to the process while at the same time encouraging lower-status members to follow through with their contributions. On the other hand, established status hierarchies in groups might also pose a risk of fostering interpersonal conflict or undermining compliance with the prescribed hierarchical structures which in turn may result in canceling the above-mentioned potential benefits.

Although group heterogeneity helps to clarify the role structure, it also generates a distal effect assuming the form of a generational gap. The identified generational tension resulting from the diverse constellation of the participants also seemingly contributed to the group dynamics and affected the work process. Therefore, it implies that the youth role was either directly responsible for the presence of generational tensions and distal effect or that it further perpetuated their occurrence (as it might have already been present due to the given group constellations). As elaborated in Simpson and Willer (2015) regarding the possible adversarial effects of elevated statuses in groups, namely the potential of undermined compliance to the given hierarchical structure, our data indicate that such outcome has occurred on some level, at least in one of the groups. Therefore, it can be proposed that in the given context, the elevated youth status carried with it intrinsic dangers that might have unfavorably affected the work process which in turn hindered the overall objective of fostering collectivity intended by the gameful solution. The distal effect also poses the question of such one-fit-all gameful affordance. In that sense, offering a more personalized gameful solution accounting for each participant's propensity to play, own motivations and cognitive characteristics could have potentially helped mitigate distal effects.

It is also of crucial importance to mention here, however, that the elevated status and role of the youth were neither directly nor indirectly related to the creation of the gameful elements. It has arisen from The Academy's initiative to involve participants that have personally experienced the problems at hand and this was not something that the researchers could influence in any way. From this perspective, the gameful solution itself was directly affected by the context that it was embedded in and

therefore it cannot be said with full confidence that it has successfully completed or failed its purpose as the variables involved in ensuring its success were out of its scope of influence. Hence, dynamics crystalized around statuses manifest the existence of social mechanisms occurring regardless of the form of the gameful framework, in turn questioning the potential impact of gamified features emphasizing roles and statuses. While we have intended to utilize roles for their functional advantage leaving aside the potential motivational premises of such features, there seems to be a close connection between roles as a functional feature, and statuses as a social proxy. It can only be left for speculation regarding the question of what could potentially change if the given youth status was not present or has been approached differently. Given the nature of the social research, and its low level of replicability, we argue that statuses may not need to be overly emphasized by gamified features as they constitute an element inherent to the social situation. However, our attempt to foster roles with the personalized reward phase could be replicated and provide more insights into the interplay between roles and statuses within gamification in the realm of cooperation (Tunggawan, 2018).

5.3 Maintaining a High Level of Prosociality and Collective Intentions: Replicating, Scaling Out, and Maintaining Relationships

Our findings do also suggest that prosociality can be invoked when participants interact with a gameful framework. Notably, the collective goal structure rendered relatable and affordable by the gameful framework indicates that participants are willingly contributing to the welfare of others. Accordingly, individual goals expressed by the participants do not overshadow the collectively accepted goals of the day nor do they inhibit cooperation. Nevertheless, according to the literature, the diversity of individual motives might influence the overall group's motivations by creating ambiguity around the underlying rationale driving one's prosocial behavior (Simpson & Willer, 2015). Against this background arises the question of maintaining, replicating, and scaling out the beneficial effects of utilizing such a frame. Considering The Academy as an organization providing solutions to "large, urgent, intractable contemporary problems" (Manzini, 2015, p.177), can we imagine scenarios where the gameful framework could be reproduced in other labs

organized by The Academy as well as outside of it? If this research can be seen as a more experimental phase, can we adapt the framework to different circumstances, different group compositions, and different purposes? Although probative, our findings seem heavily contingent on a set of structural variables making it difficult, at first sight, to move beyond the scope of the environment in which the gameful framework has been deployed.

If prosociality was visible during the time the participants experienced the gameful framework, scarce data account for the level of trust and reciprocity. Authors have highlighted how the intensity of the social relations can promote greater trust in others thus facilitating cooperation (Ostrom, 2000; Simpson & Willer, 2015). Accordingly, deploying the gameful framework for a longer period of time, or anchoring some of its features in a timely manner could have extended the interactions, resulting in a more clear manifestation of reciprocity and trust.

The question of temporality and maintenance has been mentioned during the co-design phase where different timely scenarios were suggested to articulate the gamified feature around. The strategy consisted of potentially linking gamification features with future labs to ensure relationship maintenance and connecting different labs in turn creating synergies between subjects and objects. An important question for future work revolves around the maintenance of a high level of prosociality without undermining autonomy and freedom to leave and exit or diminishing collective intentions, or cooperation.

5.4 Driving Collective Action with Gamification: What is the Cost? Potential Emotional Detrimental Effects and Consequences on Prosociality

While we have discussed how gamification can help bridge the gap between the local level of interactions with more global variables, our analysis has highlighted the prevalence of detrimental effects for some participants. In the next chapter, we discuss how these drawbacks might affect prosociality, and cooperation and in turn undermine collective action.

Among the effects of the implementation of the gameful framework during the lab, our data indicate the prevalence of emotional reactions. It is deemed important to further discuss potentially detrimental emotional effects as they do not seem residual nor anecdotal. Participants expressing frustration constitute the main emotional side effect experienced during the lab. While we have demonstrated that frustration simultaneously comes from both the overarching setup of the given micro situation that was not included in the gameful framework, as well as the interpersonal essence of the relationships fostered by the gameful framework, the latter also contributed to making the intractable nature of the problems discussed more tangible, yet a burden. The literature on social innovation and design has outlined the role of implementing discontinuity as a method to tackle intractable social issues (Manzini, 2015). However, based on the findings we interpret this novel gameful environment as an external proxy catalyzing emotional burden.

More precisely, the diverse composition of each group deliberately intended by The Academy reinforced the distal effect we noticed among some groups. While this generated emotional effects resulted from a relatively high emotional commitment, moral obligation, and interest in other members' welfare, it remains unclear which specific gamified mechanic has influenced this process most. Gamified features invoking relating processes, such as the self-assessment step, could play a central role in exacerbating moral obligation and emotional commitment. Coherent with Detering's (2014) view, our gameful framework relies on a set of communicative elements, actions, and environment shaping. Consequently, we have intentionally (or unintentionally) materialized morality by opening and (or) closing doors for "ethical deliberation and decision making" (Detering, 2014, p.320). Our results outline the importance of addressing the emotional burden induced by the implementation of a gameful framework and the potential negative effect on prosociality. Especially, since such effects arose primarily for the youth, it becomes crucial to better comprehend the role interplay of gamified elements and structural burdens on more vulnerable groups.

One question persists regarding these emotional consequences that seem to both take the form of positive feelings (commitment, high self-esteem, achievement) or negative (frustration, low self-esteem): are they directly or indirectly induced by the

gameful framework? The literature on gamification has highlighted how gamified applications can be a source of psychological harm and cognitive distress (Kim & Werbach, 2016; Goethe & Palmquist, 2020). In that sense, the attribution of such cognitive impediment to the implementation of a constraining gameful structure can be seen as a major challenge in utilizing game mechanics when fostering cooperation and collective action.

6. Conclusion

In this paper, we intended to empirically answer the following research question: "*How to harness collective action by applying gameful elements to a social innovation lab?*". We wished to gain an understanding of a possible synergy between two social constructs, namely collective action and gamification, by examining how participants of the social innovation workshop interpreted and accounted for the co-created gameful system. More precisely, we directed this micro-oriented analysis towards The Academy's and the lab participants' sense-making processes by investigating emerging prosocial behaviors, joint intentions, and social mechanisms of interpersonal interactions.

Based on our findings and our approach to co-designing the gameful system with The Academy, we argue that operationalizing a gameful method becomes a twofold process involving the researchers and the research subjects simultaneously framing and experiencing the set of gamified elements. Thus, when framing the gameful system we advocate that concurrently considering local and global structures as the premise of the actors embedded in a larger social realm constitutes a determinant of actors' accountability for the system. In turn, we have demonstrated that The Academy played a central role in operationalizing the gameful system by accounting for the gameful procedures themselves before implementation. Sharing the process of defining the scope of the gameful experiences, intended objectives, and selecting mechanics at play suggests that the exercise of co-designing gamification itself enables participants to account for the rule structure.

Our analysis also highlights that participants' accountability for the gameful structure has been manifested primarily as creative and collective endeavors. Notably, we argue that the three parameters have successfully been appropriated by the participants in different fashions, yet providing a common ground for reflection, discussion, and completing each step of the gameful system. Arguably, the isomorphic pattern between participant sense-making of the rule structure and The Academy's perceptions of members' accountability suggests a coherence between the described phenomenon and the conclusion reached.

Furthermore, we posit that the gameful system relatively supported participants' commonly held goals in turn positively influencing groups' prosociality and helping behavior. While prosociality seems to emerge from a relatively high level of we-intentions, it remains a relatively significant attributional ambiguity in this specific matter. Consequently, the link between the level of cooperation stemming from prosocial group behavior is not strongly established although we can interpret prosocial behavior as the condition for cooperation to emerge. An intriguing question that surfaced from this study is if the already existing shared goal structure was less prevalent, would the gameful elements be able to reinforce and foster conditions for collective intentions and cooperation? In other words, how much of the emerging prosociality and collective actions were directly influenced by the gamified framework, and how much of that was a direct result of the predefined lab objectives paired with both The Academy's and the participants' intrinsic cooperative nature?

All in all, we have demonstrated that some particular elements have crystallized interactive dynamics more vividly than others. In that sense, the grading system has been the heart of our solution while the reward and the collective aggregation phase effects have been peripheral.

Research on gamification has been primarily focused on motivational affordances to explain what needs a gameful system should support (Zhang, 2008). This line of work, yet providing a solid understanding of the underlying purposes of gamified applications, has been confined to individuals rather than groups of individuals. However, our examination of motivational affordance at a group level consolidated the conceptual model and provided evidence for the manifestation of emotional needs and preferences reflecting collective dynamics. Accordingly, the gameful framework has, to a certain degree, supported participants' need for autonomy while creating an intense social bond thus supporting participants' longing for relatedness. However, evidence from our data pinpoints the challenges associated with managing complex social interactions and the possible risks of generating diverse social groups.

Against this background, we argue that the gameful framework can be the source of a cognitive load manifested by emotional responses that may undermine prosocial behavior and the welfare of the group. Interestingly, participants' backgrounds seem

to be determinants of these cognitive loads and gameful features deployed at a group level provide the soil for intensifying such impediments. The role of the rule structure and its appropriation shows the importance of designing gameful artifacts for accountability when targeted at encouraging prosocial acts rather than competition and chase of self-interests. All things considered, some gamified artifacts embedded in our gameful framework have crystalized more vividly the above-mentioned mechanics.

In summary, and in relation to our philosophical standpoint, we argue that framing this gameful system highlights the importance to consider concurrently local and global structures as the premise of the actors is embedded in a larger social realm. The role of the rule structure and its appropriation shows the importance of designing gameful artifacts for accountability when gamification is targeted at encouraging prosocial acts rather than competition and chase of self-interests. In essence, we advocate that our framework has created conditions for intentionality, and behavior favoring prosocial acts to occur at a collective level in turn affecting the level of joint benefits and collective action.

Coinciding with the literature on gamification, we advocate for enriched gameful solutions encompassing structural variables and local patterns of interactions. Moving beyond the scope of gamification, more focus should be drawn on concepts adjacent to motivational and pervasive systems. This study points out the critical role of social mechanisms when shifting from individual behavior to collective behavior to foster social innovation processes through collective action.

7. Further Research

With this study, we provided empirical evidence suggesting that a gameful framework can play a central role in highlighting collective intentions and fostering prosocial behavior. While common goal structures have been emphasized and materialized by the implementation of the gameful framework, contextual contingent factors may also be responsible for the effects we have identified. Accordingly, the interplay between situational elements and gamified features may create prerequisite conditions for prosociality, collective intention, and, in turn, collective action to occur. However, the degree of attribution of the highlighted effect to the gameful framework is yet to be precisely assessed as these are elements outside of our scope. This attributional ambiguity could be addressed with future research more thoroughly investigating the relationship between contingent factors and gameful proxies. The embeddedness of our gameful framework suggests that the source of prosociality and collective action also derives from elements already conceived regardless of the structure of the gameful framework. In that sense, we call for more research including situational norms, already existing social mechanisms, and the broader context in which gamification is deployed. While some authors have highlighted the importance of context as a critical factor in gamified systems, we argue that deeper research on the more precise role of contextual factors is needed (Detering, 2014).

If empirical studies bridging the gap between collective action and gamification remain scarce, this study contributes to broadening our understanding of these two concepts that have largely been studied independently. While we have extended our study upon the research conducted by Riar et al (2020) investigating gamification and collective action, we call for broadening research on gamification to the realm of collective intelligence, social movements, civic intelligence, and policymaking. Since collective action is rooted in societal change, highlighting the role of institutions, and the prevalence of the commons, we call for further research on the effect of gamification on such proxies (Ostrom, 2000). Our study has highlighted some dynamics taking place within The Academy which is an institution, therefore, better apprehending its role through the lens of collective action would help the field better account for various dynamics derived from the concept. It would result in a more

accurate conceptual understanding of why and how the prevalent collective action dilemma can be solved. While we have accounted for The Academy's interpretation of the co-created situation, looking more deeply at the role of The Academy as an institution exercising power in turn conditioning cooperation, collective creativity, and collective action would provide relevant insights regarding conceptual issues occurring in the field of collective action.

Although we have initially dissected collective action through the lens of collective intelligence and we-intentions, these two concepts served as the underlying theoretical frame. Therefore further research could emphasize more exhaustively the interplay between the gameful elements and the level of emergence and maintenance of collective intelligence within the working groups.

Finally, the analysis has highlighted potential adverse effects on participants derived from the gameful framework, we call for more research investigating detrimental effects embedded in gamification. It is of high importance to clarify how a gameful system can be harmful, and to what extent distress implied by such a system can be attributed to it. While this study has been carried out with an ethnomethodological approach, placing participants' sense-making at the core of the study, we argue in favor of investigating the pervasiveness of the gameful system more thoroughly and its impact on perceived roles and contributions. Subsequently, further research could expand on the possible mechanism of alteration induced by gamification in the context of social and sustainable change (Brynjarsdóttir et al., 2012). Addressing potential harms, considered as blindspots of gameful systems aimed at enhancing collective action, would strengthen the HCI field by broadening the understanding of the uniqueness and changing circumstances regarding persuasion.

8. Bibliography

Agogué, M., Levillain, K., & Hooge, S. (2015). Gamification of Creativity: Exploring the Usefulness of Serious Games for Ideation. *Creativity and Innovation Management*, *24*(3), 415–429. https://doi.org/10.1111/caim.12138

A bit about us in English. (n.d.). Medlemsuniverset. Retrieved March 12, 2022, from https://www.akademietforsocialinnovation.dk/a-bit-about-us-in-english

AlMarshedi, A., Wanick, V., Wills, G. B., & Ranchhod, A. (2016). Gamification and Behaviour. *Progress in IS*, 19–29. https://doi.org/10.1007/978-3-319-45557-0_2

Amzat, J., Kolo, V., & Bello, B. (2021). Beyond a Theoretical Rhetoric: The Theory and Practice of Ethnomethodology. *ResearchGate*, 211–227.

Ayob N., Teasdale S., Fagan K. (2016). How Social Innovation 'Came to Be': Tracing the Evolution of a Contested Concept. *Cambridge University Press,* 635-653.

Bachurewicz, Gracjan. (2019). Towards a General Theory of Uncertainty: Theory of Collective Inaction. https://doi.org/10.13140/RG.2.2.22409.90721

Bandiera, O., Barankay, I., & Rasul, I. (2005). Cooperation in collective action*. *The Economics of Transition*, *13*(3), 473–498. https://doi.org/10.1111/j.1468-0351.2005.00228.x

Batson, C. D., & Powell, A. A. (2003). Altruism and Prosocial Behavior. *Handbook of Psychology*. https://doi.org/10.1002/0471264385.wei0519

Bergmann, J. R. (2004) Ethnomethodology. In Flick, U., Kardoff, E.v , Steinke, I., (2004). *A companion to qualitative research* (pp. 72-80)

Bimber, B., Flanagin, A. J., & Stohl, C. (2005). Reconceptualizing Collective Action in the Contemporary Media Environment. *Communication Theory*, *15*(4), 365–388. https://doi.org/10.1111/j.1468-2885.2005.tb00340.x

Bingemann, A. (2020). *Gamification for social innovation: How playful features can scale impact*. N3XTCODER. https://n3xtcoder.org/blog/2020-01-20_n3xtcoder-meetup-gamification-for-social-innovation-how-playful-features-can-scale-impact

Blythe, M. A., Overbeeke, K., Monk, A. F., & Wright, P. C. (2009). *Funology*. Springer Publishing.

Boden Margaret, A. (1994) Dimensions of creativity. The MIT press. Cambridge, Massachusetts.

Brynjarsdottir, H., Håkansson, M., Pierce, J., Baumer, E., DiSalvo, C., & Sengers, P. (2012). Sustainably unpersuaded. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. https://doi.org/10.1145/2207676.2208539

Cohen D., Crabtree B. (2006) Qualitative Research Guidelines Project. http://www.qualres.org/HomePhen-3590.html

Dahlstrøm, C. (2017). Impacts of gamification on intrinsic motivation.

Detering, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness. *Proceedings of the 15th International Academic MindTrek Conference on Envisioning Future Media Environments - MindTrek '11*. https://doi.org/10.1145/2181037.2181040

Detering, S (2014). Eudaimonic design, or: Six invitations to rethink Gamification. In Fuchs, M., Schrape, N., Ruffino, P., & Fizek, S. (2014). *Rethinking Gamification*. Van Haren Publishing. https://www.researchgate.net/publication/263918136_Eudaimonic_Design_or_Six_Invitations_to_Rethink_Gamification

Dubois, A., & Gadde, L. E. (2002). Systematic combining: an abductive approach to case research. *Journal of Business Research*, *55*(7), 553–560. https://doi.org/10.1016/s0148-2963(00)00195-8

Dunin-keplicz, B. & Verbrugge, R. (2003). Collective Intentions. Fundamenta Informaticae. 51. https://www.researchgate.net/publication/2566298_Collective_Intentions

Egholm, L. (2016). Philosophy of Science: Perspectives on Organisations and Society.

Eisenberger, R., & Rhoades, L. (2001). Incremental effects of reward on creativity. *Journal of Personality and Social Psychology*, *81*(4), 728–741. https://doi.org/10.1037/0022-3514.81.4.728

Fine, G. A. (1991). On the Macrofoundations of Microsociology: Constraint and the Exterior Reality of Structure. *The Sociological Quarterly*, *32*(2), 161–177. https://doi.org/10.1111/j.1533-8525.1991.tb00351.x

Flanagin, A. J., Stohl, C., & Bimber, B. (2006). Modeling the Structure of Collective Action This material is based upon work supported by the National Science Foundation under Grant No. 0352517. The authors are equal contributors to this article. *Communication Monographs*, *73*(1), 29–54. https://doi.org/10.1080/03637750600557099

Flick, U. (2018). An Introduction to Qualitative Research (Sixth ed.). SAGE Publications Ltd.

Fuchs, M., Fizek, S., & Ruffino, P. (2014). Predigital Precursors of Gamification. In *Rethinking Gamification* (p. 99-118). Meson Press.

Fernández Galeote, D., Rajanen, M., Rajanen, D., Legaki, N. Z., Langley, D. J., & Hamari, J. (2021). Gamification for climate change engagement: review of corpus and future agenda. *Environmental Research Letters*, *16*(6), 063004. https://doi.org/10.1088/1748-9326/abec05

Garfinkel, H. (1967). *Studies in Ethnomethodology*. Prentice Hall.

Gaver, W.W. (2002). Designing for homo ludens.

Goethe, O., & Palmquist, A. (2020). Broader Understanding of Gamification by Addressing Ethics and Diversity. *HCI International 2020 – Late Breaking Papers: Cognition, Learning, and Games*, 688–699. https://doi.org/10.1007/978-3-030-60128-7_50

Hardin, G. (1968). The Tragedy of the Commons. *Science*, *162*(3859), 1243–1248. http://www.jstor.org/stable/1724745

Hargadon, A. B. (2004). Bridging old worlds and building new ones: Towards a microsociology of creativity. *Graduate School of Management University of California*.

Hilbert, R. A. (1990). Ethnomethodology and the Micro-Macro Order. *American Sociological Review Vol. 55, No. 6.* 793-808.

Huizinga, J. (2014). *Homo Ludens: A Study of the Play-Element in Culture*. Martino Fine Books.

Huotari, K., & Hamari, J. (2016). A definition for gamification: anchoring gamification in the service marketing literature. *Electronic Markets*, *27*(1), 21–31. https://doi.org/10.1007/s12525-015-0212-z

Johnson, R. B., & Christensen, L. B. (2019). *Educational Research: Quantitative, Qualitative, and Mixed Approaches* (7th ed.). SAGE Publications, Inc.

Kalinauskas, M. (2014). Gamification in Fostering Creativity. *Social Technologies*, *4*(1), 62–75. https://doi.org/10.13165/st-14-4-1-05

Kim, B. (2001). Social Constructivism. In M. Orey (Ed.), Emerging perspectives on learning, teaching, and technology. Retrieved, from http://projects.coe.uga.edu/epltt/

Kim, B (2015). Understanding Gamification. *Library Technology Reports*, 29-35.

Kim, T. W., & Werbach, K. (2016). More than just a game: ethical issues in gamification. *Ethics and Information Technology*, *18*(2), 157–173. https://doi.org/10.1007/s10676-016-9401-5

Koivisto, J., & Hamari, J. (2019). The rise of motivational information systems: A review of gamification research. *International Journal of Information Management*, *45*, 191–210. https://doi.org/10.1016/j.ijinfomgt.2018.10.013

Koroleva, K., & Novak, J. (2020). How to Engage with Sustainability Issues We Rarely Experience? A Gamification Model for Collective Awareness Platforms in Water-Related Sustainability. *Sustainability*, *12*(2), 712. https://doi.org/10.3390/su12020712

Le Dantec, C. A. (2016). Design through collective action / collective action through design. *Interactions*, *24*(1), 24–30. https://doi.org/10.1145/3018005

Majuri, J., Koivisto, J., & Hamari, J. (2018). Gamification of education and learning: A review of empirical literature. *GamiFIN*.

Malone, T. W., & Klein, M. (2007). Harnessing Collective Intelligence to Address Global Climate Change. *Innovations: Technology, Governance, Globalization*, *2*(3), 15–26.

https://doi.org/10.1162/itgg.2007.2.3.15

Malone, T. W., Laubacher, R., & Dellarocas, C. (2010). The collective intelligence genome. *IEEE Engineering Management Review*, *38*(3), 38–52. https://doi.org/10.1109/emr.2010.5559142

Manzini, E. (2015). *Design, When Everybody Designs: An Introduction to Design for Social Innovation*. MIT Press.

Moccozet, L., Tardy, C., Opprecht, W., & Leonard, M. (2013). Gamification-based assessment of group work. *2013 International Conference on Interactive Collaborative Learning (ICL)*. https://doi.org/10.1109/icl.2013.6644565

Mowles, C. (2017). Ralph Stacey: Taking Experience Seriously. *The Palgrave Handbook of Organizational Change Thinkers*, 1237–1255. https://doi.org/10.1007/978-3-319-52878-6_93

Morschheuser, B., Hamari, J., Koivisto, J., & Maedche, A. (2017). Gamified crowdsourcing: Conceptualization, literature review, and future agenda. *International Journal of Human-Computer Studies*, *106*, 26–43. https://doi.org/10.1016/j.ijhcs.2017.04.005

Murphy, E., & Dingwall, R. (2001). The Ethics of Ethnography. *Handbook of Ethnography*, 339–351. https://doi.org/10.4135/9781848608337.n23

Nacke, L. E. (2017). Games user research and gamification in human-computer interaction. *XRDS: Crossroads, The ACM Magazine for Students*, *24*(1), 48–51. https://doi.org/10.1145/3123748

Nicholls, A., Simon, J., & Gabriel, M. (2015). Introduction: Dimensions of Social Innovation. *New Frontiers in Social Innovation Research*, 1–26. https://doi.org/10.1057/9781137506801_1

Nicholson, S. (2014). A RECIPE for Meaningful Gamification. *Gamification in Education and Business*, 1–20. https://doi.org/10.1007/978-3-319-10208-5_1

Oliver, P. E. (1993). Formal Models of Collective Action. *Annual Review of Sociology*, *19*(1), 271–300. https://doi.org/10.1146/annurev.so.19.080193.001415

Olson, M. 1965. The Logic of Collective Action: Public Goods and the Theory of Groups. Cambridge, MA: Harvard University Press.

Olzak, S. (1989). Analysis of Events in the Study of Collective Action. *Annual Review of Sociology*, *15*(1), 119–141. https://doi.org/10.1146/annurev.so.15.080189.001003

Om Kommissionen. N.d. Reform Kommissionen. Retrieved March 14, 2022. https://reformkommissionen.dk/om-kommissionen/

Ostrom, E. (2000). Crowding out Citizenship. *Scandinavian Political Studies*, *23*(1), 3–16. https://doi.org/10.1111/1467-9477.00028

Ostrom, E. (2010). Analyzing collective action. *Agricultural Economics*, *41*, 155–166. https://doi.org/10.1111/j.1574-0862.2010.00497.x

Pillay, R. (2019). Ethnomethodology. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 269-284).

Ragin, C., & Becker, H. (1992). What is a case? Exploring the foundations of social inquiry. Cambridge: Cambridge University Press.

Rehm, S., Foth, M., & Mitchell, P. (2017). DoGood: examining gamification, civic engagement, and collective intelligence. *AI & SOCIETY*, *33*(1), 27–37. https://doi.org/10.1007/s00146-017-0711-x

Riar, M., Morschheuser, B., Hamari, J., & Zarnekow, R. (2020). How Game Features Give Rise to Altruism and Collective Action? Implications for Cultivating Cooperation by Gamification. *Proceedings of the Annual Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2020.086

Salminen, J. (2012). Collective intelligence in humans: A literature review. https://doi.org/10.48550/arXiv.1204.3401

Schmidt, K., & Bannon, L. (1992). Taking CSCW seriously. *Computer Supported Cooperative Work (CSCW)*, *1*(1–2), 7–40. https://doi.org/10.1007/bf00752449

Simon J., Millard J., Lauritzen J., Carpenter G., Schimpf G., Leszek P. (2014) 'Doing Social Innovation: A Guide for Practitioners. A deliverable of the project: *"The theoretical, empirical and policy foundations for building social innovation in Europe"* (TEPSIE), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research

Simpson, B., & Willer, R. (2015). Beyond Altruism: Sociological Foundations of Cooperation and Prosocial Behavior. *Annual Review of Sociology*, *41*(1), 43–63. https://doi.org/10.1146/annurev-soc-073014-112242

Stacey, R. (2005). Complex responsive processes as a theory of organizational improvisation - Organizations understood as complex responsive processes. In Shaw, P. (2000). *Experiencing Spontaneity, Risk & Improvisation in Organizational Life*. Routledge.

Sulis, W. (1997). Fundamental Concepts of Collective Intelligence. *Nonlinear Dynamics, Psychology, and Life Sciences*, *1*(1), 35–53. https://doi.org/10.1023/a:1022371810032

Tunggawan, E. (2018). Gamification: Classification of the Users Based on Player Types and Motivations. *Journal of Applied Information, Communication, and Technology*, *5*(2), 91–96. https://doi.org/10.33555/ejaict.v5i2.48

Tuomela, R. (2006). Joint Intention, We-Mode, and I-Mode. *Midwest Studies in Philosophy*, *30*(1), 35–58. https://doi.org/10.1111/j.1475-4975.2006.00127.x

Tuomela, R., & Miller, K. (1992). We-intentions, free-riding, and being in reserve. *Erkenntnis*, *36*(1), 25–52. https://doi.org/10.1007/bf00401963

Trading Economics. (2021). *Denmark Youth Unemployment Rate - January 2022 Data - 1983–2021 Historical*. Retrieved February 27, 2022, from https://tradingeconomics.com/denmark/youth-unemployment-rate

Useem, B. (1998). Breakdown Theories of Collective Action. *Annual Review of Sociology*, *24*(1), 215–238. https://doi.org/10.1146/annurev.soc.24.1.215

Weiser, P., Bucher, D., Cellina, F., & de Luca, V. (2015). A Taxonomy of Motivational Affordances for Meaningful Gamified and Persuasive Technologies. *Advances in Computer Science Research*. https://doi.org/10.2991/ict4s-env-15.2015.31

Woolley, A. W., Aggarwal, I., & Malone, T. W. (2015). Collective Intelligence and Group Performance. *Current Directions in Psychological Science*, *24*(6), 420–424. https://doi.org/10.1177/0963721415599543

Yin, R. K. (1981). The Case Study as a Serious Research Strategy. Knowledge, 3(1), 97–114. https://doi.org/10.1177/107554708100300106

Zhang, P. (2008). Motivational affordances: Reasons for ICT design and use. *Communications of the ACM*, *51*(11), 145–147. https://doi.org/10.1145/1400214.1400244