

RESEARCH ARTICLE

The Power of Collaboration: Evaluation of a New and Innovative WeQ Test

El poder de la colaboración: evaluación de una nueva e innovadora prueba WeQ

O poder da colaboraç o: avaliando um novo teste de WeQ inovador

TOBIAS SCHNITZLER* 

*PhD in Economic and Social Sciences. Master in International Development. University of Vienna, Austria. Project Coordinator at World University Service (WUS) Austria. (0000-0003-3335-7180) - ORCID

OPEN ACCESS 

DOI: <http://dx.doi.org/10.18634/sophiaj.17v.2i.1024>

Article information

Received: October 08, 2020
Revised: March 22, 2021
Accepted: April 20, 2021
Published: June 2, 2021

Palabras clave: colaboraci n, aprendizaje colaborativo, prueba WeQ, start-ups.

Keywords: collaboration, collaborative learning, WeQ test, start-ups.

Palavras-chave: colabora o, aprendizagem colaborativa, teste de WeQ, start-ups.

How to cite:

Schntzler, T. (2021) The Power of Collaboration: Evaluation of a New and Innovative WeQ Test *Sophia* 17 (2) e1024

Sophia-Education, volume 17, number 2. July/December 2021. English version.

ABSTRACT

In the last ten years there has been an increase in research on the concept of collaboration. This paper offers outcomes of collaborative learning with mixed methodological approaches and empirical data gained from a WeQ-test, guided-interviews, an online-survey as well as case studies. Hence, this paper contributes with a new, innovative WeQ-test. In more detail, the WeQ-test relates 42 statements, six topics and nine individual factors. The questionnaire asks for the participants' views and how they perceive the views of their team members. The WeQ-test evaluates the quality of a team. Regarding the use of the WeQ-test in start-ups and NGOs an empirical study was designed. With the findings gained from this research, the project more generally attempts to clarify what learning means with reference to organizational development. By doing so, this research project seeks to contribute to a broader scientific discussion in this interdisciplinary field.

Copyright 2021 Universidad La Gran Colombia



Conflict of interest:

The authors declare that they have no conflict of interest.

Author's correspondence:

tobias-schnitzler@gmx.de

RESUMEN

En los últimos diez años ha habido un aumento en las investigaciones sobre el concepto de colaboración. Este artículo ofrece los resultados del aprendizaje colaborativo con enfoques metodológicos mixtos y datos empíricos obtenidos a partir de un WeQ-test, entrevistas guiadas, una encuesta en línea y estudios de casos. Por lo tanto, este documento contribuye con un nuevo e innovador WeQ-test. En concreto, el WeQ-test relaciona 42 declaraciones, seis temas y nueve factores individuales. El cuestionario pide la opinión de los participantes y cómo perciben la opinión de los miembros de su equipo. El WeQ-test evalúa la calidad de un equipo. En cuanto a la utilización del WeQ-test en start-ups y en las ONG, se diseñó un estudio empírico. Con las conclusiones obtenidas de esta investigación, el proyecto intenta, de forma más general, aclarar lo que significa el aprendizaje con referencia al desarrollo organizativo. Con ello, este proyecto de investigación pretende contribuir a un debate científico más amplio en este campo interdisciplinar.

RESUMO

Nos últimos dez anos, houve um aumento nas pesquisas sobre o conceito de colaboração. Este artigo oferece resultados de aprendizagem colaborativa com abordagens metodológicas mistas e dados empíricos obtidos de um teste WeQ, entrevistas guiadas, uma pesquisa online, bem como estudos de caso. Portanto, este artigo contribui com um novo e inovador teste de WeQ. Em mais detalhes, o teste WeQ relaciona 42 afirmações, sixtopics e nove fatores individuais. O questionário pede as opiniões dos participantes e como eles percebem as opiniões dos membros de sua equipe. O teste WeQ avalia a qualidade de uma equipe. Em relação ao uso do teste WeQ em start-ups e ONGs, foi elaborado um estudo empírico. Com os resultados desta pesquisa, o projeto de forma mais geral tenta esclarecer o que significa aprender com referência ao desenvolvimento organizacional. Com isso, este projeto de pesquisa busca contribuir para uma discussão científica mais ampla neste campo interdisciplinar.

Introduction

In the context of multiple crises and changes a number of practices discussed in the context of collaboration and collaborative learning have received considerable attention (Akhilesh, 2017; Hmelo-Silver, 2013; Redlich et al., 2019; Riemer et al., 2019). It is important to focus on relationships and potentials within teams (Levine, 2013; Vidyasagar & Hatti, 2018). To begin with, I want to define a subject and object culture. People invite, encourage and inspire each other in a subject culture. Only if people are on the same level can they develop a stable and viable basis of shared values in the exchange together. Therefore, the extent to which the members of a group are able to interact with each other as self-determined, creative and autonomous subjects is crucial to the quality of the group in question. The author calls this form of interpersonal interaction "subject culture" and contrasts it with its opposite, "object culture". From the opposite point of view, relationships in which people see and treat each other as objects have been formed because they allow educational, work and administrative processes to be more easily controlled (Hüther, 2017). There is a basic rule: as long as the members of a community treat each other as objects, expectations, intentions, transmissions, etc., they can be treated as objects, expectations, intentions, thought transmissions, goals, measures and dispositions, it is not possible to develop the potential created in those members nor in the group in question (Förstl, 2012; Hüther et al., 2018; Levi, 2017). Sooner or later, these historically formed relational patterns, for example, between supervisors and their employees, officers and their soldiers, and between teachers and their students, change on their own, once they become increasingly problematic, insufficient and inadequate in the face of new social developments (Franz et al., 2012). Today, given the increasing complexity and multiple interdependencies and interconnections of the 21st century, innovative breakthroughs are increasingly influenced by the quality of interaction between team members (Levi, 2017; Levine, 2013). The "team IQ" (i.e., WeQ) provides information about the ability and willingness of team members¹ to collaborate and co-create. As such, the new and innovative WeQ method involves a set of statements² that present the collaborative discourse and collaborative learning in question (Hmelo-Silver, 2013; Lewis, 1986).

Collaboration - The Concept

According to McMillan Dictionary (2019), collaboration is defined as "the process of working with someone to produce something". Salignac et al. (2019) also collect some definitions: An overarching structure that can take multiple forms (Larsen, 2017); a stage in a continuum of interorganizational connections (Hrelja, Pettersson, & Westerdahl, 2016); a cross-sectoral working arrangement (Guarneros-Meza, Downe, & Martin, 2018); and a relational system in which stakeholders pool resources to achieve objectives they cannot accomplish on their own (Stout, Bartels, & Love, 2018). They argue that collaboration today is intrinsic to public or private institutions and that both must make efforts to be flexible in collaborating and measure their "health" to do so efficiently.

For a long time, both academics and non-academics have used collaborative approaches to teach and assess people in different educational settings (Dillenbourg, 1999; Franz et al., 2012; Hmelo-Silver, 2013). In recent years, educators and policy makers, especially in the field of climate change³, have identified the ability to collaborate as an important outcome in its own right rather than merely a means to an end. In particular, the use of a common language is essential to ensure collaboration. For example, collaboration has been helpful in creating a common goal within a group. Roschelle and Teasley give a more specific definition of collaboration by stating that it is a "mutual commitment of participants in a coordinated effort to solve a problem together," (as cited in Dillenbourg et al., 1996, p. 2). Schnitzler (2019) mentions that it is important to build a collaborative atmosphere, which means sufficient time for collaboration, action, reflection, and integration or to conduct an inquiry process driven by the needs, questions, and goals of the learners.

The purposes of this research are: (i) to explore how researchers have defined collaboration; (ii) to learn how educators can foster the development of collaborative skills in their students and employees; and (iii) to review best practices in the assessment of collaborative

1. Team members can be 'all employees' of a startup or an NGO.

2. The term 'affirmation' has a general use in social psychology. It is used to refer to some of the following contexts: the objects of a belief and other "affirmative attitudes" (i.e., what is believed or doubted), as well as the referents of ----- (Lewis, 1986).

3. For example, the United Nations Climate Change Conference COP 25 (December 2 - 13, 2019) was held in Madrid under the Presidency of the Government of Chile and was organized with the logistical support of the Government of Spain.

skills and present the WeQ test and its evaluation. Collaborative learning is defined as "a situation in which two or more people learn or attempt to learn something together" (Dillenbourg, 1999, p. 1) and in detail as joint problem solving (Akhilesh, 2017). Roschelle and Teasley define collaboration more specifically as "the mutual engagement of participants in a coordinated effort to solve a problem together." In addition, Dillenbourg mentions the difficulty of agreeing on a definition of collaborative learning. Ambiguity in the meaning of collaborative learning comes from several sources. First, the scale of interactions can vary from two to thousands of people, with various theoretical tools needed to analyze interactions occurring at different levels. Second, the question of what constitutes learning is a source of uncertainty (Akhilesh, 2017). As Dillenbourg (1999) points out, researchers use the term "learning" to refer to activities, i.e., "learning from collaborative work, which refers to the acquisition of expertise throughout life within a professional community," for example, in NGOs (p. 4).

Therefore, collaborative learning means that students or employees learn together. What happens specifically in this situation-that is, where students or employees learn together collaboratively in small groups-is that they can share knowledge and develop their own skills (Levi, 2017). Additionally, they can question and discuss their knowledge, attitudes, and beliefs, so that learning effects can be maximized (Cörvers et al., 2016; Klarsfeld et al., 2016).

With this stimulus, learning is perceived as a more dynamic and motivating process. Team members "synthesize, communicate, and discuss ideas in ways that enhance conceptual understanding" (Slavich & Zimbardo, 2012, p. 571). Therefore, collaborative learning emphasizes the development of competencies as a social activity. "It involves learning processes in conjunction with participation and empathy as critical factors" (Barth, 2015, p. 93). It is also important to highlight the difference with cooperative learning, since in the latter the learners divide the tasks and work on them separately.

Successful collaboration is based on shared learning objectives and appreciation of different opinions or approaches (Barth, 2015; Hmelo-Silver, 2013; Vidyasagar & Hatti, 2018). The new and innovative WeQ test can be seen as a tool when it comes to the assessment of collaboration skills.

Methodology

The WeQ test design represents a practical nexus of collaboration, collaborative learning and potential development. Regarding the use of the WeQ test, an empirical study was designed involving four NGOs and four *startups* from a variety of collaborative learning environments (i.e., four from the social sector and four from the educational sector).

Based on this approach the startups in the social sector were Nano-Join, Mablo, VGV and RAAM. Participating NGOs from the education sector were Wiener Familienbund, Weltumspannend arbeiten, Bank für Gemeinwohl and KTP. Executive directors were contacted and invited with a request to participate in an interview and subsequently in an online survey. A first step was the introductory face-to-face conversation (60 minutes) with the CEO. In a second step, all the employees of the respective company were informed by the CEO about the online WeQ survey and were invited to participate in the study. Participants were assured of anonymity and confidentiality. In a third step, after completion of the WeQ test, all employees were offered a supervisory conversation face-to-face or on Skype (60min).

In this study, the role of the researcher was quite different. The research was considered as a data collection instrument. This means that the WeQ test was introduced and mediated by the researchers. To fulfill this role, study participants need to know about the instrument and the subject fields. The researcher needs to describe the relevant aspects of him/herself, including any biases and assumptions, any expectations and experiences.

The questionnaire as such is a quantitative, standardized, online questionnaire. The WeQ test applies purposive sampling usually including 2 to 11 participants from a group and is developed in 6 thematic domains. These were reflected in a final set of 42 statements. Regarding work times, data were collected from April to November 2018. In detail, eight companies participated in the WeQ survey from April to November 2018. The groups were very heterogeneous in terms of age, seniority in the company, language, professional background or income. It is worth mentioning

that collaboration is influenced by relationships. With 42 statements achieved⁴, the final number of participants was almost 65.62 % response rate.

It has been valuable that all participants were involved from the beginning and contributed a lot of expertise to answer a series of closed questions. ⁵ The closed Likert-type questions focused on the evaluation of the 6 thematic areas, (A) Introduction, (B) Integration process, (C) Dealing with conflict and differences, (D) Potential development and social interaction, (E) Dealing with change and new ideas, and (F) Separation and departure of a member. Finally, upon completion of the IQ test in November 2018, respondents were asked to engage in a reflective conversation via Skype. Specifically, they were asked to reflect on what they had learned from their participation in the IQ test, on the particular ways in which their participation had changed because of this experience, and on what had been new to them.

The objective of the analysis presented in the statistical analysis section is not to discuss each initiative in detail, but rather to detect patterns that may help to understand a global logic, linking collaborative learning in groups and potential development.

Formulate Collaboration and Collaborative Learning with the Use of the WeQ Test.

In this context, a WeQ test was conducted with participants from the collaborative area in Berlin and Vienna.⁵ The following sections introduce a WeQ methodology in more detail, closing with statistical analyses of the nine factors identified.

The WeQ test is a mixed method that enriches the varieties of team interaction analysis. Each member of a group, but also each group as a whole, has a wide range of possibilities for its own development. This potential has been created in members and learning spaces, but has rarely been realized (Hüther, 2017). The quality of a group is determined by the extent to which it succeeds in manifesting the potentials created in its members and in the whole group (Franz et al., 2012; Levine, 2013, Robinson, 2010). In the course of such a process of potential development, it leads to the development of skills and attitudes. The first hidden potentials are transformed into very tangible, visible and effective resources (Hüther, 2017; Schmid, 2014).

The WeQ test was developed to make visible the quality of collaboration of all team members (Hüther, 2017; Levi, 2017). Three pilot groups were organized to test the quality of the research tool in terms of completeness, readability and content balance. It provides information on the degree to which members' individual cognitive, social and emotional competencies are linked (Decety & Ickes, 2009; Förstl, 2012).

Additionally, the operationalization (WeQ) of group dynamics and potentials on a scale of 1 to 6 (where 1 = "The proposal does not apply at all" and 6 = "The proposal fully applies") was developed using the literature related to group dynamics, in particular the insights of Hüther's (2017) insights on co-creativity and community. Teaching and learning, mutual learning, and exchange learning, i.e. between old and young, freelancers and professionals, interdisciplinary experts then becomes a process of co-creativity - a genuinely integrative concept initiated by us. A confluence of all competencies and performances of all those involved in the process was created (Hüther, 2017; Hüther et al., 2018; Lukesch & Petzold, 2011; Schuck-Zöller et al., 2017).

The six domains consider the complex process of group dynamics and how the interrelation of human experiences occurs in a group setting. Forty-two statements were extracted from various measures of group dynamics as presented in several research studies on group dynamics and potential (Akhilesh, 2017; Hüther, 2017; Hüther et al., 2018; Levi, 2017; North & Kumta, 2018; Schmid, 2014). In addition, each statement is linked to a thematic field. For example, statement 3a ("In my team there is a general interest in accepting differences of opinion and seeing them as an opportunity to learn about different perspectives") is linked to the thematic area (B) Integration

4. As for the number of participants within each company's team, the Startups group included Nano-Join, two out of three employees; Mablo, three out of four employees; VGV, eleven out of 15 employees; and RAAM, eight out of eight employees. In comparison, in the NGO group, Wiener Familienbund, four of 15 employees; Weltumspannend arbeiten, four of four employees; Bank für Gemeinwohl, six of ten employees; and KTP, four of five employees responded to the questionnaire.

5. Tobias Schnitzler conducted the interviews in Vienna. Knows the collaborative scene very well. Gerald Hüther and Tobias Schnitzler conducted the interviews in Berlin. Mr. Hüther has extensive experience with companies in Berlin. Tobias Schnitzler is a doctoral candidate and Gerald Hüther is one of his supervisors. Gerald Hüther and Klaus-Dieter Dohne work together at the Academy for Co-Creative Development based in Göttingen. Specifically, the Startups in the social sector were Nano-Join, Mablo, VGV and RAAM. The participating organizations in the educational sector were Wiener Familienbund, Weltumspannend arbeiten, Bank für Gemeinwohl and KTP.

process. In detail, the six thematic domains are exposed with statements in the WeQ test presented below:

Statements in the final WeQ test (some examples)⁶

A. Introduction

1. When a new member joins the team there are several ways to link a new member in different teams. Some teams openly and actively welcome a new member who requires a lot of time and attention. Other teams are less formal and leave the interaction free to the new and existing members. These are two examples of two different ways of welcoming a new member and these can determine the integration of the new member into the team.

1a. In my team the welcoming of a new member is actively defined (e.g., with welcoming rituals) and there is a consensus regarding the great amount of attention that this sensitive integration phase requires.

2. The integration of a new member into a team is a sensitive and risky phase for both the existing members and the new member.

Therefore, many teams believe that this adaptation phase is important and need to allow new and previously existing members to openly discuss potential problems and conflicts that may arise during the integration phase.

2a. To avoid potential conflicts and discomfort that may arise during the integration phase, "existing" and "new" members are informed from the beginning about the process and the possible problems and fears that may arise during the adaptation process.

2b. New members receive transparent information about the social rules and roles in my team, in an understanding manner, so that they do not suffer disadvantages.

B. Integration Process

3. Finding goals and a common purpose in a team can be achieved by all members in a democratic and committed way. In such a team, every contribution and opinion is welcome, even if it does not fit with the majority opinion.

3a. In my team there is a general interest in accepting differences of opinion and considering them as an opportunity to learn about different perspectives. [...]

C. Management of conflicts and differences

9. In all social groups and teams, conflicts are part of daily life, and it is important to find effective coping mechanisms. Members need to negotiate with each other and come to an agreement with others of different backgrounds and personalities.

The greater the variety in members' backgrounds, in terms of personality, talents and abilities, the greater the likelihood of conflicts in the team. In heterogeneous teams, team viability and development are important goals and result in a high potential for survival success. These teams recognize, respect, and utilize the differences between individuals. Participants agree that differences in perspectives can increase conflict but should be openly discussed and negotiated.

9a. In my team, it is recognized that open discussions can increase conflict. The focus is on investing the time, energy and resources necessary to find a viable solution and negotiation process.

[...]

⁶ Numbers 1,2,3, etc. give some information about the subject field. Specifically, 1a, 2a, 2b, 3a, etc. are the "statements". Participants could rate the statements on a scale of 1 to 6 (where 1= "This statement does not apply at all" and "6= This statement applies completely").

D. Potential development and social interaction

15. Members are often cautious and provide others with evaluations or feedback on their behavior. They are encouraged to reflect on how their behavior may affect others. Members understand that speculation can lead to misunderstandings and create difficulties in dealing with each other. It is difficult to gain a true understanding of how your own behavior is perceived by others.

For further development of social relationships, it is important to reflect on one's own behavior, how it may be perceived by others and to receive feedback on how to regulate one's behaviors with the help of others.

15a. Members receive timely, direct and open suggestions about their behavior and how they can be perceived by others to improve their social relationship and work well with others.

[...]

E. Managing change and new ideas

23. New ideas often challenge previous patterns of behavior and practices in a team. This requires a high degree of willingness on the part of the members to make adjustments in the team. Since new ideas and visions may challenge previously accepted beliefs, they may be blocked by other members and seen as a threat. This may cause the team to retain old and inappropriate beliefs and strategies for a long time.

23a. Members motivate each other and ask each other to question existing beliefs and ideas [...].

F. Separation and departure of a partner

26. Teams develop different rules for dealing with each other and dealing with "disruptors". The anomalous behavior of the members can be appreciated as an interesting contribution to the development of the team.

However, if a collaborative agreement cannot be reached for an individual case, it is necessary to assume a separation and seek the member's departure. If the separation is not successful, it can create conflicts, difficulties and pejorative evaluations between them resulting in "open wounds". In some teams, many relationships break down because of conflicts and result in a separation of team members.

26a. In my team, the separation and departure of a member is well managed so that it does not "open wounds" and conflicts remain.

26b. Separation from a member of my team starts with conflict, creates embarrassment and ends in the breakdown of the relationship.

[...]

These are some examples of the 42 statements in the WeQ test. As mentioned above, it is important to highlight the relationship between the statements and the evaluations in four dimensions/questions. This interplay between two internal perspectives and two external perspectives is particularly stressful for a human brain⁷ and demands a great deal of mental energy (Fürstl, 2012; Hüther, 2014; Schmid, 2014). That is the core of the WeQ test.

It is also important to mention the concept of the creative brain: "Perhaps the most essential feature of the creative brain is its degree of connectivity, both interhemispheric and intrahemispheric. Connectivity correlates or links the functions of apparently structurally isolated domains in brain modules that serve different functions. Creative cognition is considered to be a self-rewarding process in which divergent thinking would promote connectivity through the development of new synapses. In addition, the phenomenon of synesthesia has often been observed in creative visual artists" (Chakravarty, 2010).

⁷. Clearly, the ability of the human brain to reorganize its neural connectivity throughout life must be considered (Hüther, 2014).

Group members will complete the WeQ test individually and anonymously. In each case, according to the subjective assessment of the present and the desired state of collaboration in the group, there will be a series of questions that will be asked to the test participant to evaluate each statement in the following four dimensions/questions:

1. What is your personal assessment (i.e., your opinion)?
2. How you think other team members would respond to this question. There is no right or wrong answer, but please respond: How do you think others would answer this question (i.e., other people's opinions)?
3. What would you wish for your team (i.e. your personal wish)?
4. What do you think other members of your team would like (i.e. wishes of other members)?

Respondents should provide their answers to each of the questions on a scale of 1 to 6 where 1= "This statement does not apply at all" and "6= This statement applies completely".

1= does not apply at all

6= applies fully

	1	2	3	4	5	6
D. 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For example, in statement 1a. "In my team the welcoming of a new member is actively defined (e.g., with welcoming rituals) and there is a consensus regarding the great amount of attention that this sensitive integration phase requires", each participant must answer four questions. Specifically, what is your personal assessment of statement 1a? The result is more meaningful when all members of the group or team have completed the test.

The ability to learn quickly, in a group or an organization, is an important element of development (Akhilesh, 2017). In addition, a cycle of self-reflection could be initiated through one's own perspectives and success strategies that are happening (Vidyasagar & Hatti, 2018). Gradually, experiences and skills are formed to deal with (still) unsolvable problems. The knowledge and skills acquired through the development of this potential are resources available to both the individual concerned and the group (Levi, 2017). However, if this CLS ("collaborative learning space") is not available for development, important potentials are lost.

Additionally, as soon as the members of a group begin to see each other as subjects⁸ to motivate and inspire each other, the manifestation of the hidden potentials in these members and in the group in question is inevitable. When people are on the same level, only then can they develop a viable and stable basis for the exchange of shared values. Therefore, the extent to which the members of a group can confront each other as committed, creative and self-responsible individuals is crucial to the quality of the group in question. The authors call this way of dealing with people "subject culture" in contrast to its opposite, "object culture". The WeQ test was developed to make measurable how strong a group is when it is still in object culture or how far it has managed to develop the subject culture required to manifest the processes of potential (Hüther, 2012, 2017).

Currently, the creative potential that arises when people share their unique experiences, their respective knowledge and their specific skills within a group and unite in a common force, can only be conjectured (Brief, 2008; Hüther, 2017; Klarsfeld et al., 2016; Redlich et al., 2019). Two or more people develop over the long term an internal framework that is very similar in several ways to that of the human brain (Hüther, 2012).

8. The following are the sustainable characteristics of the subject: (1) personal pronouns, (2) self-referential self (3) individual cognitive awareness (4) responsible subject, and (5) dignity (Zima, 2010).

Depending on experiences, the brain and human capacities grow along the developmental spectrum (physical, cognitive, affective) in an interactive way. It is important to mention that what happens in one domain influences what happens in others. Specifically, emotions can trigger or block learning (Darling-Hammond et al., 2019).

In fact, all unconstrained, interconnected, viable groups work in the same way that agile, adaptive brains learn from trial and error, develop highly interconnected structures, gain experience, and constantly adapt an innate organization (Riemer et al., 2019; Schmid, 2014). For human groups, this means that manifesting potentials and evolving depend on collaboration and exchanges with other groups (Levi, 2017). In collaboration with the other, the person can release potentials of which he or she is not aware and which he or she cannot manifest on his or her own. "*The dialogical principle*" by Martin Buber (2009) shows vividly how we are, for example, our unique, irrefutable personality⁹ is first shaped in the dialogue between you and me. His research confirms that creativity is also the result of a process of human collaboration.

In every human group there is something that keeps the members together, like an inner bond. Due to the significant expansion of attitudinal ranges in collaborative education, not only cognitive skills are developed in a significantly superior way, since in a team-based learning environment, the learning experiences and qualities of team members are much better for their own learning curves, as opposed to competitive and unilateral learning. We-qualities such as a sense of responsibility, commitment or cooperative design require a significantly stronger life-practice reference. Experiential and life-related learning strengthens the experience of personal effectiveness, the enthusiasm for lifelong learning, as well as the personal and social usability of everything learned (Hüther, 2012, 2017).

An IQ gives information about individual cognitive abilities. This was developed and disseminated in the 20th century, when economic, social and cultural developments were mainly determined by individual creative and analytical achievements. Today, we face the challenges, complexity and multiple interdependencies of the 21st century. Innovative developments are increasingly determined by the quality of collaboration in groups. The "group intelligence quotient" (WeQ) provides information about a group's ability and willingness to collaborate. The purpose of this test is to help them grow as a team and make the potentials of each member and the group more prosperous and sustainable in the future. (Hüther et al., 2018, p. 239).

The 42 statements are descriptive and are evaluated with a similar scale in four dimensions/questions. Hüther et al. (2018) operationalizes these statements into nine factors and achieves a WeQ score for each factor. Factor (1), Team support, captures how possible it is to integrate a new member into an existing social system without unduly disrupting the order. New members should be accepted in a benevolent and stable manner (Levi, 2017; Taylor 2008; von Weizsäcker & Wijkman, 2018). Factor (2), Social-emotional communication, portrays in detail, whether it is a positive and calm social-emotional evaluation of brain levels or whether communication and coexistence are determined by annoyance, fear and disorientation (Decety & Ickes, 2009; Hüther, 2012; Taylor, 2008). Factor (3), Objective-related communication, describes the extent to which all members receive the relevant information necessary for good participation in the work of the group. Additionally, this factor captures the degree of tolerance given to dissenting beliefs and opinions Hüther et al., 2018, p. 246; Taylor, 2008). In dealing with Factor (4), Diversity, each group has different personalities, competencies, experiences, knowledge, and cultural values of its members (Brief, 2008; Klarsfeld et al., 2016; Sterling, 2011). Factor (5), Participation, provides information on the extent to which individual members of a group feel invited or motivated to express their personal beliefs, opinions, and interests, and to seek agreements and solutions through open and constructive dialogue with other members (Barth, 2015; Missimer & Connell, 2012; Sterling, 2011; Zima, 2010). On the other hand, factor (6), Shared value, makes it possible to estimate how much your group has managed to define a common purpose, as well as a shared goal and a shared vision (Hüther et al., 2018; North & Kumta, 2018). Factor (7), Cooperation, reflects the degree of collaboration of the members in a group. Each group thrives on openness and putting new ideas to the test (Missimer & Connell, 2012; Schapiro, 2009; Schnitzler, 2019).

⁹ The author's approach to personality is strongly related to Buber's interpersonal theory. The purpose is to show that interpersonal relationships are valuable for personality categorization theory.

Additionally, factor (8), Openness to change, also includes the willingness to question old convictions, values and attitudes (Robinson et al., 2005; Szabla et al., 2018). Factor (9), Error culture, clarifies whether errors are truly assumed as a challenge for the group or whether errors occurred are more likely to be attributed to individuals or some members (Hüther, 2017; Richardson & Mishra, 2018, Schnitzler, 2019).

An in-depth analysis of these individual factors provides information on where a group's particular strengths and problems may lie. For example, the WeQ score on factor 4 may be very strong and the WeQ score on factor 8 very weak. In sum, the WeQ score means the average of the evaluation of the 9 factors. The WeQ score represents the type of relationship on a scale from 0 to 100. This way of dealing with each other is defined as a "subject relationship" (defined as 100) and contrasted with its opposite, the "object relationship" (defined as 0) (Hüther, 2017; Hüther et al., 2018; Levi, 2017).

Results

The main element of the test, the so-called WeQ score, is a direct link to potential collaboration within a team, i.e., a high WeQ score indicates high collaboration within the team and is evidence of a subject culture. On the other hand, a low WeQ score indicates low collaboration within the team and suggests an object culture.

Comparing the results, it becomes clear that Mablo has the highest WeQ score of 97, followed by VGV with a WeQ score of 94 and KTP (WeQ score of 86). On the other hand, Weltumspannend arbeiten shows the lowest WeQ score with 46, followed by Bank für Gemeinwohl (WeQ value: 51) and Wiener Familienbund (WeQ value: 50). The factors, therefore, show a range of WeQ scores from 46 to 97. Comparing the two sub-groups, it becomes clear that 58.25 is the average of the WeQ test for non-governmental organizations, compared to an average of 86.5 for start-ups. As a result, collaboration in NGOs is relatively low and collaboration in start-ups is relatively high. This shows a distinction in how team members collaborate with each other and what type of business culture is currently developing (object culture vs. subject culture).

In addition, the internal point of view ("own perspective") of the team members was analyzed. This was defined in the questionnaire with the personal evaluation question ("How much does this apply to your team from your personal point of view?"). The current assessment of the situation ("is") and the desired ("projected") situation are presented in the nine factors. In addition, individual factor considerations show where particular strengths lie and also the best fields of action. The higher a value is, the more a subject culture is experienced for this factor. The factors with the lowest values in the "is" range may be where a change is easiest to implement and would lead to noticeable positive changes more quickly.

Discussion

The challenge for NGOs is the factor (2) called social-emotional communication. Current problems in social-emotional communication become visible (statements 19b and 21a) in NGOs. Issues fraught with social and emotional conflict are difficult to articulate and resolve. In fact, this is a major issue to be addressed by NGOs. In addition, the most salient difference between "is" and "projected" is factor (3), the objective-related communication factor. The best result was achieved in (1) the team support factor. NGO team members perceive themselves well in the process of integrating new members into an existing social system without unduly disrupting the order. The new members were accepted in a benevolent and stable manner. In short, the desire for change, and in all areas, is significantly strong.

The challenge for startups is also the factor (2) called social-emotional communication. Other challenges are factors (9) the error culture factor and factor (8) openness to change. In a direct comparison between startups and NGOs, it is important to note that the scores for all nine factors are significantly higher in startups than in NGOs. From a collaborative point of view, startups behave within a subject culture and collaborate in greater proportion with each other.

In a next step, the external perspective ("the perspective of other members") is analyzed. NGO team members were asked in the questionnaire: "To what degree do other members consider that this statement applies to the team?" and "How much do you think the other members would like this statement to apply to the team?" This was based on how other members tend to rate what is going on in the team. The greater variations in

the results from an individual perspective suggest that each team member attributes to the other a different, perhaps distorted, view of what is happening in the team.

The challenges of NGOs from the perspective of other team members are factor (2) social-emotional communication, factor (6) shared value and factor (3) goal-related communication. It is interesting to note that the results from the perspective of other team members are higher than in one's own perspective. In particular, it is the factor (1), team support that is lower in the perspective of other team members (65.5) than in the own perspective for NGOs (66.75). In terms of the nine factors, the difference between the desired ("projected") and the reality ("is") is significant. In short, the desire for comprehensive change in all areas is particularly strong.

The challenge of startups from the perspective of other team members is also factor (2) Social-emotional communication. Other challenges are factor (5) Participation, and factor (9) Error culture.

It is interesting to compare the results of four NGOs and four startups. The shift between one's own perspective and the perspective of other team members was evident. Again, comparing startups and NGOs from an external perspective, it is important to note that the scores for all nine factors are significantly higher in startups than in NGOs. From a collaborative point of view, startups behave within a subject culture and collaborate in greater proportion with each other. In short, one's own perspective differs from that of other team members: it is significantly lower. Second, the current assessment of the situation ("is") and the desired ("projected") are close among startups and differ among NGOs. That means that startups have a smaller difference between the current and desired situation in all nine factors.

Conclusions

The findings of this research will contribute to the benefit of the groups considering their own perspective and the perspective of other members. Ultimately, collaborative learning and the assessment of a WeQ test support a shift from "learning how to understand" to "learning how to act and transform." The new and innovative framework of this WeQ test is the change in how we think and act, also, how we approach the individual as a subject, transforming society towards greater collaboration and collaborative learning as well as uncovering hidden potentials. In the study, collaboration and collaborative learning have fertile research soil.

Three important findings can be highlighted from this evaluation of the WeQ test: (1) Startups behave more collaboratively than NGOs and thus manifest potential processes; (2) team members in NGOs and startups evaluate more highly from an external perspective ("other members' perspective") than from an internal point of view ("own perspective"); and (3) the main challenge of all participants is social-emotional communication. This means, in detail, that either — results in the — positive calming — of the social-emotional evaluation of the brain levels, or whether it is annoyance, discomfort, fear and disorientation that determine coexistence and communication.

With the WeQ study in mind, this paper offers an exploratory view for the conceptualization of collaboration practiced in startups, NGOs and their immediate environments. The purpose of the analysis presented in the discussion section is to detect patterns that may help to understand a general logic, connected collaborative learning in groups with potential development. Instead, it aims to offer a new and innovative tool to manifest potentials in teams.

Finally, in terms of lessons learned and recommendations for future research, we need to assume greater sensitivity to context, as well as exploratory techniques for what is perceived as co-creativity. In the context of multiple crises and changes, a deeper concept of co-creativity could receive considerable attention. It is valuable and advisable to focus on the relationships and potentials within the teams. Therefore, co-creativity could play a key role in the future.

References

- Akhilesh, K. B. (2017). *Co-Creation and Learning: Concepts and Cases*. New Delhi: Springer India.
- Barth, M. (2015). *Implementing sustainability in higher education: learning in an age of transformation*. London, UK: Routledge.
- Brief, A. P. (2008). *Diversity at work*. Cambridge, UK: Cambridge University Press.
- Buber, M. (2009). *Das Dialogische Prinzip*. Gütersloh: Gütersloher Verlagshaus.
- Chakravarty, A. (2010). The creative brain - revisiting concepts, *Med. Hypotheses*, 3, 606-12.
- Cörvers R., Wiek, A., de Kraker, J., Lang, D. J. & Martens, P. (2016). Problem-Based and Project-Based Learning for Sustainable Development. In H. Heinrichs, P. Martens, G. Michelsen & A. Wiek (Eds.), *Sustainability Science* (pp. 349-358). Dordrecht: Springer.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B. & Osher, D. (2019). Implications for educational practice of the science of learning and development, *Applied Developmental Science*, 1, 1-44. <https://doi.org/10.1080/10888691.2018.1537791>
- Decety, J. & Ickes, W. (2009). *Social neuroscience. The social neuroscience of empathy*. Cambridge, MA: The MIT Press.
- Dillenbourg, P., Baker, M., Blaye, A., & O'Malley, C. (1996). The evolution of research on collaborative learning. In E. Spada & P. Reiman (Eds.), *Learning in humans and machine: Towards an interdisciplinary learning science* (pp. 189-211). Oxford, UK: Elsevier.
- Dillenbourg, P. (1999). What do you mean by collaborative learning? In P. Dillenbourg (Ed.), *Collaborative-learning: Cognitive and computational approaches* (pp. 1-19). Oxford, UK: Elsevier.
- Förstl, H. (2012). *Theory of Mind*. Berlin: Springer.
- Franz, H.-W., Hochgerner, J. & Howaldt, J. (2012). *Challenge Social Innovation: Potentials for Business, Social Entrepreneurship, Welfare and Civil Society*. Berlin: Springer.
- Guarneros-Meza, V., Downe, J., & Martin, S. (2018). Defining, achieving, and evaluating collaborative outcomes: A theory of change approach, *Public Management Review*, 20(10), 1562–1580. <https://doi.org/10.1080/14719037.2017.1383782>
- Hmelo-Silver, C. E. (2013). *The international handbook of collaborative learning*. New York, NY: Routledge.
- Hrelja, R., Pettersson, F., & Westerdahl, S. (2016). The Qualities Needed for a Successful Collaboration: A Contribution to the Conceptual Understanding of Collaboration for Efficient Public Transport, *Sustainability*, 8(6), 542. <https://doi.org/10.3390/su8060542>
- Hüther, G. (2012). Biologie der Angst, Wie aus Stress Gefühle werden. Göttingen: Vandenhoeck & Ruprecht.
- Hüther, G. (2014). Lifelong plasticity of the human brain and its implications for the Prevention and Treatment of Mental Disorders, *Internationale Zeitschrift für Psychotherapie*, 2-3, 206-263, 108-125.
- Hüther, G. (2017). *Co-creativity and community*. Göttingen: Vandenhoeck & Ruprecht.
- Hüther, G., Müller, S. O. & Bauer, N. (2018). *Wie Träume wahr werden*. München: Goldmann.
- Klarsfeld, A., Ny, E. S., Booyens, L. A. E., Christiansen, L. C., Kuvaas, B. (2016). *Research handbook of international and comparative perspectives on diversity management*. Cheltenham, UK: Edward Elgar Publishing.
- Larsen, P. W. (2017). Delineating partnerships from other forms of collaboration in regional development planning, *International Planning Studies*, 22(3), 242–255. <https://doi.org/10.1080/13563475.2016.1253459>
- Levi, D. (2017). *Group dynamics for teams*. Washington D.C. SAGE.
- Levine, J. M. (2013). *Group processes*. New York, NY: Psychology Press.
- Lewis, David K. (1986). *On the Plurality of Worlds*. Oxford, UK: Blackwell.
- Lukesch, B. & Petzold, H. G. (2011). Lernen und Lehren in der Supervision – ein komplexes, kokreatives Geschehen, https://www.fpi-publikation.de/downloads/?doc=supervision_lukesch-petzold-lernen_in_der_supervision-supervision-05-2011.pdf
- McMillan (2019). *McMillan dictionary*. London, UK: Springer Nature Limited.
- Missimer, M. & Connell, T. (2012). Pedagogical approaches and design aspects to enable leadership for sustainable development. *Sustainability*, 5(3), 172-181. doi: 10.1089/sus.2012.9961
- North, K. & Kumta, G. (2018). *Knowledge Management: Value Creation Through Organizational Learning*. Cham: Springer International Publishing.
- Redlich, T., Moritz, M. & Wulfsberg, J. P. (2019). *Co-Creation: Reshaping Business and Society in the Era of Bottom-up Economics*. Cham: Springer International Publishing.

- Richardson, C. & Mishra, P. (2018). Learning environments that support student creativity: Developing the SCALE. *Thinking Skills and Creativity*, 27, 45-54. doi: 10.1016/j.tsc.2017.11.004
- Riemer, K., Schellhammer, S. & Meinert, M. (2019). *Collaboration in the Digital Age: How Technology Enables Individuals, Teams and Businesses*. Cham: Springer International Publishing.
- Robinson, C. F., Doberneck, D. M., Kenney, P., Fear, F. & Sterner, G. (2005). *Through the looking glass: Our transformative experiences in wonderland*. New York, NY: Columbia University.
- Robinson, K. (2010). *In meinem Element. Wie wir von erfolgreichen Menschen lernen können, unser Potenzial zu entdecken*. München: Arkana.
- Salignac, F., Marjolin, A., Noone, J., & Carey, G. (2019). Measuring dynamic collaborations: Collaborative health assessment tool, *Australian Journal of Public Administration*, 78(2), 227-249. <https://doi.org/10.1111/1467-8500.12386>
- SCHAPIRO, S. (2009). CREATING SPACE FOR TRANSFORMATIVE LEARNING. IN B. FISCHER, K. D. GELLER & S. SCHAPIRO (EDS.), *INNOVATIONS IN TRANSFORMATIVE LEARNING* (PP.23-38). NEW YORK, NY: PETHER LANG.
- Schmid, B. (2014). *Systemische Organisationsentwicklung*. Stuttgart: Schäffer-Poeschel Verlag.
- Schnitzler, T. (2019). The Bridge Between Education for Sustainable Development and Transformative Learning: Towards New Collaborative Learning Spaces, *Journal of Education for Sustainable Development*, 1-12. <https://doi.org/10.1177/0973408219873827>
- Schuck-Zöller, S., Cortekar, J., & Jacob, D. (2017). Evaluating co-creation of knowledge: from quality criteria and indicators to methods, *Advances in Sciences and Research*, 14, 305–312. <https://doi.org/10.5194/asr-14-305-2017>
- Slavich, G. M., & Zimbardo, P. G. (2012). Transformational Teaching: Theoretical Underpinnings, Basic Principles, and Core Methods. *Educational Psychology Review*, 24(4), 569-608. Oj: 10.1007/s10648-012-9199-6
- Sterling, S. (2011). Transformative learning and sustainability: sketching the conceptual ground. *Learning and higher education*, 5, 17-33.
- Stout, M., Bartels, K. P. R., & Love, J. M. (2018). Clarifying Collaborative Dynamics in Governance Networks. In M. Stout (Ed.), *Critical Perspectives on International Public Sector Management* (pp. 91–115). <https://doi.org/10.1108/S2045-794420180000006005>
- Szabla, D. B., Pasmore, W. A., Barnes, M. A. & Gipson, A. N. (2018). *The Palgrave handbook of organizational change thinkers*. Cham: Palgrave Macmillan.
- Taylor, E W 2008, 'Transformative Learning Theory', *New directions for adult and continuing education*, no. 119, pp. 5-15. doi: 10.1002/ace.301
- Vidyasagar, S. & Hatti, P. (2018). *Leadership and Role Modelling: Understanding Workplace Dynamics*. Cham: Springer International Publishing.
- Zima, P. V. (2010). *Theorie des Subjekts. Subjektivität und Identität zwischen Moderne und Postmoderne*. Tübingen und Basel: Francke.
- von Weizsäcker, E.-U. & Wijkman, A. (2018). *Come On! Capitalism, short-termism, population and the destruction of the planet*. New York, NY: Springer.

NOTE: All direct quotes in this English version were translated from Spanish.