XAMK BEYOND 2021

Sustainable Development and Social Responsibility

Marja-Liisa Neuvonen-Rauhala & Cai Weaver (eds.)

XAMK

South-Eastern Finland
University of Applied Sciences

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1 INTRODUCTION

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New Openings into Sustainable Development and Socially Responsible Research

The theme of Xamk Beyond 2021 is sustainable development and social responsibility. Xamk has joined the United Nation´s programme for Sustainable Development Goals (SDGs). The goals set the 2030 agenda and defines global sustainable development priorities, while seeking to mobilize global efforts around 17 core goals, which contain individual targets and aspirations. (United Nations, 2015).

The SDGs call for urgent worldwide action among governments, business, and civil society to end poverty and create a life of dignity and opportunity for all, within the boundaries of the planet. Covering a wide and relevant spectrum of sustainable development topics – such as poverty, health, education, climate change and environmental degradation – the SDGs can help to connect education and business strategies with global priorities. (SDG Compass, 2021.)

To meet these goals, it is our responsibility at Xamk to share our expertise developed in our research, development, and innovation projects, to support and challenge industry and businesses, and higher education institutions, municipalities, staff, and students, to build a more sustainable future together. (Arene, 2020.) While this often occurs naturally in many of our RDI projects, in teaching, and in our collaboration with the world of business, we need to take care to foster the development of our expertise and knowledge-exchange in dialogue with the boarder international scientific community. To that end, we tasked our authors to address the sustainable development goals within their own research and projects.

We sought to find out how:

How can those goals be achieved? How do you adapt them in your work, project, etc.? What are the results and what kind of impacts do they have? How can you measure them? What is your contribution in developing sustainable activities of higher education for a better future locally or globally?

We asked these questions in our in our open Call for Papers to potential writers of Xamk Beyond. The theme proved its actuality when we received many relevant article ideas and manuscripts, from many different fields of activities and that consider sustainability or social responsibility in some way. It was interesting to see how the authors either directly tackle these issues in their work or reflect upon their applied research in a new way.

Addressing these questions is key to starting to meet our commitments to the Sustainable Development Goals. Specifically, our measures taken to produce necessary information to support and increase the impact of our RDI activities at the local, regional, national, and international level, and actively and comprehensively highlighting the results of our activities and good practices for the benefit of society, especially by promoting societal discussion and the transparency of information (Arene 2020.).

Social Responsibility

The articles included in the 2021 issue of Xamk Beyond deal either with aspects of social responsibility or sustainable development, or elements of both. Indeed, the boundaries were not always clear between these two themes. Some innovative and thought-provoking openings into the literature and topics of sustainable development have been made in this issue. For example, the authors cover impacts on education, well-being, or preserving social media content for future generations and research. Since the Covid-19 pandemic, there need has arisen for the development of new socially sustainable and responsible community practices and accessible information. In a (post)-pandemic world, social responsibility has taken on a new meaning and requires adaptation and adjustment.

As a theme of this issue of Xamk Beyond, social responsibility covers the descriptions and analyses of research, development, and innovation (RDI) projects that impact many fields of social and working life. Many of the articles written on the theme of social responsibility can be seen as indicators of steps taken to a pave the way to a better and more sustainable way of life that are framed and inspired by the spirit of SDGs.

In their article, Sirkka Komulainen, Tiina Ikkonen, Tanja Mäkelä, Laura Lehtinen and Angelika Polak discuss how art-based activities are adapted in three projects, with the goal being to find better ways of supporting the empowerment and work situation of young people. The results are promising among their target groups. Although the Covid-19 pandemic caused problems with arranging the projects´ activities, however this also reinforced the necessity of live meetings in project work like this one which support emotional, personal, and professional development. Transferring activities online is not always an adequate substitute for real world person-to-person contact, even when the digital replacements are well organised and implemented.

In her article, Sari Tuuva-Hongisto discusses how it is possible to build inclusion and support integration processes using art and cultural methods, with the aim of combating the feelings of youth exclusion among immigrants. Tuuva-Hongisto researched social inclusion as a multidimensional and multi-layered activity, which is often highlighted by the role of social engagement in fostering feelings of belonging and personal growth, especially when connected to migrant education. Her findings emphasise the benefits of building spaces for trust and belonging to strengthen participation in the project activities.

Continuing the theme of social responsibility, Marita Mattila and Sari Tuuva-Hongisto write about fire souls, those individuals that are essential in many open and voluntary organisations. Their voluntary work and individual passion support the development of their local community as agents of social change. Mattila and Tuuva-Hongisto investigate these fire souls, and find out more about who they are and what is the power in their activities? As one might expect, they conclude that fire souls are even more important actors during a pandemic and are often at the heart of local issues of social responsibility issues.

Mikhail Nemilentsev and Ekaterina Prozorova discussed of elements of sustainable learning in their cross-border RDI project and share their experiences from their projects. They argue that social media and related digital tools play a substantial role when tackling the difficulties of distance and restricted movement in cross-border learning. The authors' outlook is positive and future-oriented to the possibilities discussed in the article. Their experiences of cross-border learning and project work is directly transferable to creating sustainable education practices that can support distance and digital education.

Hannele Saunders, Sari Laanterä and Kirsi Moisanen examined what are socially responsible and sustainable development core competencies that need to be included into the curricula of social and health care professionals. They conducted a comprehensive eDelphi survey and outlined the general core competences that are needed for the future social and health care workers. Their work is crucial to the success of professionals in the field, but it also has

strong ramifications for higher education institutes who should implement multi-professional continuing education courses to ensure that social and health care workers have their future skills and competences needs met.

Sustainable Development

Although the division of social responsibility and sustainable development are not always strict or clear, as the concepts often blur together or overlap, it is possible to make a distinction between the mental and physical adaptation of the concepts. Social responsibility refers more to human and social issues, whereas sustainable development refers to more to visible operations and concrete actions.

The theme of sustainable development in the Xamk Beyond concentrates primarily on the circular economy and on new openings of the adaptations of sustainable development in practice and provides a little insight with the help of social responsibility, too.

In their article, Melina Maunula and Kirsi Tallinen discuss the circular economy and how it is adapted in the Kymenlaakso region. They contextualize the local circular economy environment and the unique possibilities it offers for growth and transformation in the region. Particularly noteworthy in their findings is the emphasis placed on the need for strong collaboration between education, enterprise, and RDI projects and the crucial role this plays in the success of the development of the circular economy in the region. Their findings open avenues for future research and might be particularly of interest for other regions internationally.

The same theme is also dealt with in the article of Esa Kohvakka and Matti Koivisto, but in the Etelä-Savo region. They argue that reusing construction materials in Finland would be worthwhile of more research, experiments, and business openings by referring to Danish case studies. Using experiments and pilot projects in Mikkeli, they focus on developing industry practices to reuse bricks and wood, which would help to support Finland's transition to a circular economy. They highlight that this might in the future also reduce building supply costs when engineers and architects must pay closer attention to the material used in construction to ensure climate goals are met and carbon neutrality targets.

Interestingly Anssi Jääskeläinen in his article and Tuomo Räisänen with Miia Kosonen in their article open the topics of social responsibility and sustainable development for virtual museums and preserving social media activities for future generations. ICT and game engines are developed so rapidly and widely that it is possible to adapt them in building new services that attract wider audiences and preserve something we now view as passing or

temporary phenomena. Jääskeläinen offers the results of his development work of a virtual museum for those cultural institutions who wish to make their exhibitions more accessible to people and support the openness of their activities when movement or access to cultural artefacts is restricted. These timely interventions highlight that we need to be open-minded when we think about social responsibility or sustainable development issues.

In our conclusion, we reflect upon the role of Xamk as a university of applied science and its role in socially responsible, scientific publishing. As a higher education institution, we want to support the development of our own staff to write scientific publications in English, to communicate the locally and regionally developed knowledge and project results to the wider international scientific community. We think further about our role as an educational institution about how we can promote high quality scientific international publications, and what training and editorial practices we can offer to support this goal in Xamk Beyond. Finally, we tease the theme of Xamk Beyond 2022 for our readers. While it remains to be seen what other new openings of social responsibility and sustainable development includes and will be discussed during the next few years. It is obvious that UN Agenda 2030 is so ambitious and wide that we only at the beginning, and much more need to be researched, discussed and adapted in the years to come.

This issue of Xamk Beyond would not be possible without the hard work of the editors, Publication and Production Services, and our authors. We would like to thank our writers for the hard work they have put into researching and reporting their work, and for making this issue of Xamk Beyond full of interesting and timely interventions into their respective fields.

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2 ARTS-BASED METHODS IN PREVENTIVE SOCIAL WORK PROJECTS – UNDERSTANDING IMPACT AND EFFECTS

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ABSTRACT

Arts-based methods are popular and exciting ways of working together to promote inclusion and participation in the community. They have been widely used in various contexts with different target groups. This paper focuses on preventive social work projects asking as to how arts-based methods may be useful on the individual and societal levels. The discussion investigates hoped-for effects and the impact of such

methods, where the wellbeing improvements may not be immediately seen or easily measured. As a case study, practical examples from South-Eastern Finland University of Applied Sciences research and development projects using arts-based methods show what is involved in order to understand the various effects and impacts. The effects may immediately concern the target groups locally but also in the long term – way beyond.

Keywords: Arts-based methods, impacts, effects, Social Work

1. Introduction

Arts-based methods have long been applied in the health and social care fields to improve individual wellbeing. Arts-based methods may include visual arts, dance, music, social circus, drama, and so on. They may be used with different groups of people and are often used in projects with vulnerable populations.

This paper investigates the hoped-for effects, and the evaluation of effects of such projects, where the objective usually is about increasing citizen participation into society. The projects have been used for a wide range of purposes, such as learning, self-expression, coping with mental or other health issues, empowerment of low-income families, increasing the youth employability, and so on. There is a strong body of international policy and research knowledge that explores the benefits of arts-based methods, alongside the wider interests in arts and cultural projects' impact on sustainable wellbeing (e.g., THL, 2021a; WHO, 2019; Wheatley & Bickerton, 2017).

As a vast number of preventive community projects are carried out in Finland and elsewhere, it is indeed good to think about their joint impact. The arts have been used in social work practice with individuals and communities since the beginning of the profession. However, international research calls for further rationale for their use (Huss & Sela-Amit, 2018), because it may not suffice if it were simply stated that all projects inevitably create good impact. The analysis here combines both grassroot and wider concerns on longer-term impacts, including the UN Agenda 2030 Goals regarding wellbeing. The UN Goals considered relevant to the discussion in our analysis are 3: Good health and wellbeing; 10: Reduced inequalities; and 11: Sustainable cities and communities. (UN, 2021).

The objective of this paper is to approach the impacts and use-value debate analytically. When talking about impacts, usually a distinction is made between objective and subjective measures of well-being. A distinction is drawn between effects and impacts. In light of the discussion, this paper draws evaluative arguments regarding social responsibility.

What is meant by impact?

Social impact is about how much and how sustainably an activity improves society. Impacts may be observed at individual, community, societal or eventually at global levels in the course of time. The key questions involve the following: What change do we want regarding a specific societal problem? What do we want to achieve in the long term? Will the change be nationwide or local? What is the scale of the change in euros or numbers? In what kind of timescale will the change take place? What is the 'good' we are striving towards? (see www.hyvanmitta.fi)

There may be process, performance, and impact indicators. Process metrics are often the ones that receive the most attention. The indicators often describe the number of activities and participants, the resources used, and so on. Performance indicators measure the direction and size of change. Change indicators are always proportional to the targets and can be set over different time periods. These two types of indicators might be the most relevant regarding individual small-scale implementation projects.

Impact indicators, however, indicate a change in societal need and vision direction. Impact indicators focus on quality rather than quantity. It is very demanding to demonstrate effectiveness, so it is better to apply one or two measures instead of several unsuitable ones. A constellation of several small projects may perhaps be assessed instead of a single project (ibid).

The impact-debate is closely related to that of evidence-based practices, for instance, in the health field. There is a growing need within social work overall to show that the services they provide are effective and lead to improved outcomes. Here 'impact' may refer to the 'influence' or 'difference' brought about by the interventions social work professionals have identified as appropriate. As impact is achieved through interventions, they also need to be clarified. In preventive projects interventions may be considered as actions that are defined in detail, can be reliably measured (at least in part), and can be linked to specific identified outcomes (Proctor 2017).

2. Arts-based methods and cultural wellbeing

Cultural wellbeing is a goal of the current Finnish government. It is being advanced by Finnish universities and cultural institutions through research, policy, and practice. For example, a large-scale project ArtsEqual research initiative, coordinated by the University of the Arts Helsinki, examined the arts as public service, with equality as the starting point,

and explored how the arts can meet the social challenges of the 2020s. Publications generated from these projects have addressed the impact and positive effects of art and culture.

A literature review for the ArtsEqual project indicated that although effects (as different from impacts) have been studied through follow-up studies, surveys, and clinical medicine, verifying and measuring the effects or results of art is often a challenge. Indicators suitable for qualitative assessment are missing or they are scarce. It is challenging to distinguish between the effects of external factors or how to consider long-term effects. Some of the effects may not be measurable to begin with. (Lehikoinen & Vanhanen, 2017.)

In terms of impact, the ArtsEqual project addressed participation and equality, stating that well-being impacts are not only important for humanity but that they also have economic significance. It is possible to calculate cost savings in health care and social services and the productivity of the national economy. The accessibility of arts thus requires social responsibility from service providers and the artists (ibid).

Typically, the impact of art and culture have been examined for example, from the income perspectives of the economy and society. The positive effects of art may also be analyzed on a micro-level phenomenologically. The focus of the research is on people's own subjective assessment and experience in communities. It is acknowledged that experience is always real to the person having it. Art can have various positive effects, such as ethical, moral, educating, therapeutic, health-strengthening, and solutions-seeking tasks in society (ibid). Art may challenge prevailing values, norms, morality, action, stereotypes, and the exercise of power. In social thought, the arts have been understood as forms of social and cultural capital (Bourdieu, 1985) or as mediums for empowerment of those oppressed (e.g., Freire, 1970). The Arts may reach target groups such as those who are illiterate or have learning difficulties, thus providing for more equal opportunities.

3. Case examples: Xamk art projects

This paper presents three different arts projects where their effects are also discussed by the respective project managers. The projects are Valo (Light), Huuma (Lead: Children and Youth Foundation), and Työnhaun performanssi (Performance on job search – implemented with Kouvola Theatre as a co-partner). The work involved visual arts, dance/movement and drama as methods. The Discussion section will then examine the overall impact of projects in relation to the UN Goals.

3.1 Families art workshops in VALO project

The aim of the VALO project (full title: VALO-SVETLINA, *Strengthening holistic wellbeing for families*) was to strengthen the social inclusion of families with children at risk of vulnerability and exclusion. One of the main objectives was to develop new ways for families with young children to be guided at right time to the services they need. The VALO project included art events and art workshop groups for families with children. The mission was to develop an artistic activity model for child and family services, for example to early childhood education organizations and family centers.

Artistic activities provide a lot of possibilities to think differently about preventive social work and learn new ways to work with families. We discovered that children and parents working together was often a great experience for families and professionals. Participants had many inspiring creative moments, and the groups expanded their understanding of art. The art workshop groups, "Valon talo" (House of Light) and Valon tanssi (Dance of Light) provided calming environments and relaxing moments that allowed parents to escape from their daily worries. The families were happy with the fact that child and family service professionals participated in the art workshops. This provided them with the opportunity to ask questions and talk about the services that are available to them. Some of the families started to meet also outside the group. Parents gained inspiration from hobbies that may interest their children from skilled arts professionals, for example the circus or music.

The key significance/longer-term impact of the project thus are: Art workshop groups and art events could become part of the early-stage support services provided to families with children; Art provides new perspectives and support, for example child-parent interactions and bonding; Cultural wellbeing could be an effective part of other child and family well-being services. As the project involved co-operation with a Bulgarian partner, the results also have international significance.

3.2 Performance on Job Search

The Performance on Job Search -project organized creative methods-based training/coaching to improve participants job searching and work finding abilities. The coaching applied drama methods, embodiment-based methods, and futures guidance[1] to enhance participants' social and interaction skills, self-expression, self-esteem, body awareness, overall wellbeing and to help them orientate towards future and work/study life. The programme of the meetings/

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[1]   see https://tulevaisuusohjaus.fi/english/

workshop were versatile. Some external services were incorporated into the activities, such as a visit to museum, concert, and personal training.

The project adopted a holistic perspective of humanity. The human being interacts with the self, others and the environment, on mental and physical levels in specific situations, as well as holds past experiences, memories, etc. In performing job search, one needs more than literary or technical skills – for example, interviews are intricate communication and evaluation situations where information is exchanged verbally and non-verbally. During the coaching, the group created a play-a performance-with the drama teacher, which was performed twice on stage at Kouvola theatre.

The number of participants in the performance was low, only 4–5 people. The coaching was disrupted by the pandemic and hence remained inconsistent. The feedback including interviews and questionnaires gave an idea of effects. The answers varied and the situation affected people in different ways. In the least, the activities helped the participants to reflect upon their situation, clarify their dreams and goals, and give them some trust in the idea that change is possible.

The project overall was positive, even though not necessarily huge improvements or life changing experiences happened, but it was a solid start. The openness and engagement of the participants was a positive surprise. The participants did not know one another beforehand, and they did not have prior experience of applied drama methods.

In general, the participants felt the programme was meaningful and useful, especially the relaxation exercises and improvisation, sports, movement-based pair exercises (giving impulses to move/dance by touching arms, legs, head). It was clear the joint activity was meaningful to the participants involved. They had an activity to go to, something to participate in. Creative coaching improved participants' self-confidence, helping them think differently about themselves and see their situation from novel perspectives, and their body-awareness improved.

The project showed that live meetings were meaningful, and online sessions are not ideal in a project like this. Empowering photography-workshops were interesting for the participants and much enjoyed. It was especially meaningful for one participant's self-image after a long period of illness.

The participants regarded the joint making of the performance positive. Certain and clearly known goal motivated them and made the coaching meaningful. They felt that they had been seen and heard during the project. One participant became more self-accepting and

saw himself more positively. One appeared to gain more courage in speaking in front of others in the group. Another said that their activity level and time taken for sports in daily life increased. One participant was inspired to start again a creative hobby. At the end of the project, all the participants showed interest to continue this kind of group activity or a drama group. They were also actively trying to find work.

3.3 Huuma – Future Skills for Young People through Dance – project

The goal of the Huuma Future Skills for Young People through Dance project (ESF 2019–2022) is to strengthen the mental, physical, and social abilities of NEET youth (aged 16–29, not in Education, Employment or Training) through dance and other forms of creative activity and movement. The project is managed by The Children and Youth Foundation, Finland. The activities are performed in three Finnish cities by teaching artists. Xamk's role in the project is to evaluate the effects

Regular physical activity, good nutrition, and sleep bring people many benefits, affect the work of the brain as well as keep the body in good shape. Dance movement theory related research shows that dance is an embodied activity and, when applied therapeutically, can have several specific and unspecific health benefits. Dance is much more than a form of physical activity, as it connects art, sense of rhythm and space, working together, and so on. Various studies have shown that one hour of dancing a week has a positive effect on a both the physical and mental abilities of a person (see e.g., Koch et al, 2019).

Young people from three Finnish cities – Vantaa, Mikkeli, and Kuopio have had an opportunity to participate in the Huuma art-based activities starting from 2019 until the end of 2021. The goal of the dance workshops has been to strengthen vulnerable youth Future skills though the utilization of art-based techniques, creative movement, and joint activities.

Depending on the group, the participants have different needs. Some young people are more interested in mindfulness and relaxation exercises, others wish to include photography or filming into their workshops, while some prefer to share music and dance from their own cultures. In the context of Huuma's activities, dance cannot be understood in a classical way, but more as a creative movement. In other words, artist-instructors do not teach the actual steps of any certain dance or dance style during the workshops, but they use various art-based methods to work with youth-groups.

The significance of the workshops becomes apparent from the feedback gathered in various ways from young people. It shows that Huuma workshops works well for the majority of participants, which includes both native Finns and those with immigrant backgrounds. Akin to a butterfly effect, small acts may have far-reaching consequences.

4. Discussion

The UN Agenda 2030 Goals considered relevant to the discussion i are 3: Good health and wellbeing; 10: Reduced inequalities; and 11: Sustainable cities and communities. In terms of the project objectives, the case examples are clearly aligned with the UN Goals. They all aim at improved wellbeing, reduction of inequalities and the development of healthier communities through empowerment of individuals. Routine project work also involves evaluation of effects, if not impacts.

Indeed, currently in Finland and in other counties, organisations, projects and teams experience increasing pressure from funders to evidence the impact of their work, who in turn need to demonstrate the effective use of resources. There are good reasons for such debates however, there are also critiques of economics-led impact-debates, which may not apply to social work context in obvious ways.

A difference may be drawn between social work as a whole and that of preventive social work. As the arts are primarily a communicative medium, they can enhance communication between social workers and clients. Huss and Sela-Amit (2018) suggest that social work practice needs to shift to a social–anthropological and phenomenological perspective, rather than a diagnostic-, projective-, or product-oriented understanding of using the arts. They argue that the evidence in social work is based on art therapy focusing on the subjective and decontextualized self. These paradigms are in theoretical opposition to conceptions of problems as emerging from context, rather than from the clients. However, it may be argued that in preventive social work the contexts are indeed taken into account where people are approached in their communities. There may not be worker-client relationships. The value in activities lies in citizen participation (THL, 2021b).

From a critical perspective, Webb (2001) argues that the idea that a formal rationality of practice based on scientific methods can produce a more effective and economically accountable means of social service is in part based on a misconception. Especially in preventive social work, the objective nature of evidence-based practice may not be a realistic approach to take. The requirements of evaluative effectiveness may undermine tacit knowledge and

skills in arts-based preventive work and further legitimate a harsher managerialist ethos (see e.g., Webb 2001).

Within these critiques, it is argued that cultural value is distinct from economic value. Cultural value is generated through 'cultural characteristics' derived from an activity, such as aesthetic, authentic (referring to originality of value), historical, spiritual, social (connecting to others) and symbolic (Wheatley & Bickerton, 2017). The subjective measures of well-being may capture the experiences of the generators and/or end users of cultural products.

However, the point of measuring effects/impacts is to make the measured items observable not only to the measurers but also to the service users and/or project participants. This may be done also on societal levels (Kivipelto et al, 2013). Useful participant feedback may be routinely collected throughout the project about the grassroot level successes.

Within RD we may evaluate the used methods in terms of hoped-for research outcomes. To reiterate, Huss and Sela-Amit (2018) suggest that social work needs to create research that focuses on the person-in-context paradigm used in its interventions. In this way, the arts become a method for coproducing knowledge with service users and art becomes a form of participatory intervention.

Firstly, the arts can enable an understanding of service users' social contexts. Secondly, arts enable the creation of a more embodied knowledge and of voiced emotions. Finally, arts create embodied, emotionally driven, and reflective experiences, which can broaden the scope for better understanding research participants' experiences. It may be argued that these hoped-for outcomes already very much manifest themselves in the arts projects carried out by Xamk.

It is suggested here (by Komulainen) that arts project reports could also be more honest and open about both their successes and shortcomings, as something new may be learned from the latter. Not all the targets stated in the beginning of the project become realized during the project, often due to intervening and unanticipated factors. The primary aim is to generate good for the participants and the project methods are merely means to an end. Projects are not meant to solve the world's large-scale problems, but they may bring a lot of good to those microcosmoses where they operate. It is their joint effects that eventually comprise the impact.

5. Conclusion

The case examples show that: 1) arts projects contribute directly to individuals' and communities' sustainable wellbeing; 2) Some of the impacts can be measured and evaluated immediately, others take more time and insight and may not be immediately foreseen; 3) There is already sufficient international research evidence base justifying the value of arts-based projects; 4) There is an on-going need for implementation of arts-based projects; 5) the evaluations of the impacts require both structured as well as qualitative, creative measures as well as connections to other RD communities.

As acknowledged within the Huuma-project, the well-being of one individual is important for the development of the society. It affects not only one person, but the entire social network of the young people, which in turn influences the well-being of the whole society. Art-based methods bring new value, especially for the most vulnerable young people, and, ultimately, it is meaningful for society.

There is however, certainly a need for future research on the effects and impacts of arts on wellbeing, participation, and so on. At a project level, future directions, especially regarding preventive social work, could include developing mind maps and pathways, for instance, toward self-actualization through arts. The Performance of job search-project showed how a drama method enables participants to come out of their shell and enjoy arts together with others. The Valo-project provided an opportunity for families to participate in an encouraging, safe place and take some of the methods home. It would great if it were possible to conduct follow-up research in ethical ways on how the participants carry on after the projects have finished. When such evaluations were drawn together and a larger picture revealed, there would also be more evidence on the impacts at the societal level.

Acknowledgements

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3 BUILDING INCLUSION AND BELONGING WITH ART AND CULTURAL METHODS

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ABSTRACT

This article reflects on building belonging through cultural and artistic activities. The TELL-project is used as an example of building inclusion and a person's capabilities of contributing to society. The TELL me about it – stories building belonging and democratic integration- project aimed to enhance social participation of young people (aged 16-29) in the Baltic Sea region. The project's goal was to build inclusion, which in a broad understanding of the definitions of social inclusion, includes participation, access to opportunities, building capability, and increasing wellbeing. Social inclusion is multidimensional and multi-layered, and often highlighted with the role of social engagement in fostering feelings of belonging and personal growth, especially when connected to migrant education.

Keywords: belonging, integration, young migrants, art and cultural methods

1. Introduction

The early stages of immigrant residence in the receiving country are of particular importance for successful integration and positive wellbeing. This is the reason why some governments have launched special introduction programmes for the early phase of an immigrant's arrival. These introduction programmes generally consist of three main components: language training, civic orientation, and professional labour market training. Introduction programmes can be seen as an investment in the future, one willingly made by both the immigrant and the receiving society. Such programmes give immigrants a start, enabling them to acquire the vital skills to become self-sufficient and, therefore, such programmes

are worth the effort. For social responsibility of society, the return on the investment is that immigrants will become better-equipped citizens, capable of contributing to society. (Cappo & Verity 2014.)

These integration programmes give good start in language and labour market training, but many times often done in a conventional manner. Due to the importance of the early phase, there is a clear need to develop methods and projects that support the integration process. This article reflects a project that utilizes cultural and artistic methods in building belonging; the project was integrated in an early phase introduction programme in Finland and Sweden.

In this article, the TELL-project is used as an example of building inclusion and capabilities for contributing to society. The 'TELL me about it – stories building belonging and democratic integration' project aims to enhance social participation of young people (aged 16-29) in the Baltic Sea region. The project's goal was to prevent exclusion and help immigrant integration focusing on young people. The project organized workshops using cultural and artistic story-making processes as well as the 'Human rights and democracy' game in Finland and in Sweden. It was expected, that as a result the participating young people will gain greater feelings of belonging and cross-cultural understanding. It was hoped that they would learn self-expression skills, which in turn will help in participating in society, education and working life in the future.

The project organized workshops utilizing cultural and artistic methods based on activity, participation, dialog, and interaction. Breaking the normal and everyday routines in a safe environment offers spaces for support and trust which can help to approaching new ideas and learning (Känkänen 2013, 83; Fraser 2018.) Art and culture-based work is characterized by sociality and a certain kind of fun and freedom. (Heikkinen 2002, 125–126.) In-between spaces of opportunity are free from power and promote creativity, where new meanings and learning can take place. This article reflects upon the workshops, the methods and the outcomes, and addresses the question: how can art and cultural based methods increase participation and build belonging?

2. Methods and research material

The research material consists of the interviews and the reflections of the TELL-workshops, notes from the process and meetings. In the interviews, we reflected on the art and cultural based methods that we utilized in the project. Both workshop organizers were interviewed twice during the year 2020.

The methodology of the research process followed the idea of participatory action research. Action research is a method used for improving practice. It involves action, evaluation, and critical reflection and changes in practice are then implemented. This refers to investigations of strategies that can explain or improve a situation. It is linked with evaluation research in its aim to uncover problems or strengths that can be used to better develop the project process with reflection. (Danley & Ellison 1999.)

In the project, we developed the work throughout the process. We had discussions and reflections of the methods with the supervisors of the groups, which were interviewed twice. The article follows the process and reflects on the culture and art based methods used in the project (see Tuuva-Hongisto 2021.) The following sections reflects what were the possibilities of these methods to increase participation and belonging in the workshops.

3. Results

Stories of Participation: how methods increase participation?

In art-based work, one's own activity, inclusion and dialogical interaction are at the heart of the activity. It is a kind of "breaking down everyday life" where the principles of safe guidance, the joy of new learning, and deviations from the daily routine create a sense of support and confidence that can lead to new things and experiences. (Känkänen 2013, 83.) Within the methods, the workshops' instructors emphasized sharing and reciprocity and doing together. Additionally, the dynamics of the group and being part of community was important in enhancing participation. Seen as central to the process, were reinforcing the participation as part of inclusion of society, and the potential to see future possibilities.

> *"They definitely enjoyed the conversations and interactions with each others and discussions of these topics because they wouldn't have discussed them other wise, some of them like human right parts especially, so that's why it broadened their understanding of each other, so definitely it deepens their personal relations." (F2_2020)*

> *"Sharing your knowledge in a language that everyone knows well enough in that group is just as awesome as it can be, and it can be a really empowering experience, I know I can share this knowledge with others, and everyone benefits from this (E2_2020)*

Sharing and reciprocity were the central themes in interpreting the participation in the interviews with the workshop organizers. The supervisors of the workshops emphasized the cooperation, doing-together, the discussions and the joint work. That is not necessarily the case in normal classes at integration and language training, but in these arts and cultural based workshops it was important.

> *"You can't make yourself a king, but the people around you, the community and group make you a part of the group, or excludes you, it is a question of solidarity and common process how to integrate an individual into a community, how to have access in a group." (E2_2020)*

> *When we don't have clear targets in our class and we are aiming at something experimental, like in this case, so it supports the ability to learn when you can challenge the ideas of this world and it gives new kind of reflections your own being, and that can also support to understand your own environment and community. (E2_2020)*

To become a part of a community is a joint and common process, as the community and group must be open and allow access. An important theme of participation in the workshops was the feeling of the group, including the group dynamics and building the community:

> *"One factor in experiencing integration, is that you see a goal on the horizon, it can be your own business in future, you can see that your children go to school, you are visioning spending time with grandchildren and things like that." (E2_2020)*

In the interviews, the supervisors of the groups saw that the potential future horizon is an important part of integration. It is important to have hope and foresight that your family can take root in the place and country. For the supervisors, a clear sign of integration was when the participants had a feeling of home and having a place where their heart is involved, as one respondent put it:

> *"Integration is so complex to define, quite often especially in public debate integration is determined by attachment to working life. (...) so on the other hand we have many people who are unemployed but have a lot of cooperation networks who volunteer or actively do something. And being a participant in those networks (...) or you can place yourself as a participant in Finnish society and find those attachment points." (E2_2020)*

"Life is so big for them, there is a moment they move, the moment they come from Syria, they have another imagination how is going to Europe and how is going to school and how fast I am going to be millionaire." (F2_2020)

The interviews emphasized that when we are thinking about integration, employment is not the only factor. It is possible to integrate and have good social networks to be part of society through other attachment points. How is the future horizon in employment and labour market? How is employment the target of participation and integration? At least, it is a target of almost all these kinds of projects that aim to prevent marginalization and exclusion. Additionally, for many of the younger immigrants, work and employment was their target, and it often was the reason for their migration. In other words, to find a job, was their main wish and at the core of their idea of participation and integration.

Stories of Belonging: how the methods increased belonging?

The cultural and artistic methods increased the participants feeling of belonging. The feeling of belonging increased especially through the drama-based practices, which involved playfulness and inspiration. Playfulness and inspiration are important factors in building participants own activity and dialogical interaction. Being able to throw oneself to playful activities and crossing the barrier through everyday routines in a safe environment requires self-confidence. To be able to be seen and heard and having the ability of self-expression were emphasized as key to the process. Additionally emphasised was needing a certain level of trust and group dynamics for many participants to be able to have the courage to take part in the playful activities. The art-based activities seemed to increase trust, self-confidence, and trust in others specially and society more broadly.

"I think we could see from some of the participants that they felt more inspired because when you learn something new, then you feel like a step closer of the success of your life, so I think we saw this kind of sparkle in their eyes of some of these participants." (F2_2020)

"Learning does not necessarily have to be extremely serious, it can also be light and playful and it still can give new insights." (E2_2020)

"In Sweden they get some paper, they read these rules, about this area, but then we play together, it is so much fun, when they do something in practice." (F1_2020)

As an exception from normal classroom work, the workshops required playfulness and creativity. The playfulness gave new insights and provided new possibilities for learning, and it also increased the participants self-confidence. Playful learning required the participants to throw themselves into activities and as such it produced different information and learning outcomes than just reading words from a book. Additionally, experiencing these activities and playful learning together built trust in the group and fostered the development of a positive group dynamic. For some participants, the practice-based learning was successful, their self-expression skills improved, and it raised their own self-awareness of different kinds of learning identities and improved their self-reflection skills. In the workshops, learning was experienced as fun and easy:

> *"Crossing the threshold was important and it was also visible in these functional and practice based tasks, the positive and inspiring atmosphere catches the group. And in the end, it may be so that a person who has been really repulsed by those exercises, turns his mind around and notices that he learned a lot of things today. Which is a really great experience for the instructors as well, although we were just playing, we learned at the same time. And overcoming the fear of losing face. So it is an important and opening experience, it opens your mind to learning and receiving and sharing." (E2_2020)*

> *"And the importance of telling the video about yourself, it is kind of emphasized in the current times, if you think that nowadays job interviews can be video interviews, you get experience of recording yourself to video, you dare to talk and dare to listen to what you yourself sound like on tape, it is also one important civic skill nowadays". (E2_2020)*

To be able to express yourself and have one's own voice–as well as the means to talk about yourself–are all important civic skills. The drama-based workshops encouraged participants to talk about themselves and tell their own stories and introductions. They also practiced making the presentations using videos, especially during the lockdowns caused by the Covid-19 pandemic.

> *"Many students' self-confidence grew a lot, and their learner's identities shaped towards more positive direction. They felt they were free to make mistakes and got support, a good spirit was prevailing." (E2_2020)*

> *"I feel when we had the topic about the rape, våltagen, woman right to say yes or no about her body. There were three guys, they found it very*

difficult to talk, they were jumpy about these issues, and we don't speak about that. I think they was little ashamed, they don't want, we had a mixed group, they had very difficult to take real discussion with girls, they don't want, they don't want to talk about these issue, it was like, like taboo, maybe (...) I choose these topics, because I know very well, that these topics are very different, very difficult to talk, but we have this problem." (F2_2020)

Building trust was one of the main aims of the project: negotiations of trust between the project and the participants and building trust in society and the environment. Building trust was manifold, painful, and difficult. It was clear from the beginning, that the participants had very thin trust in the authorities, and it was difficult to build the trust between the project and the participants (see also Miller 2004; Tuuva-Hongisto 2021). One of the first steps was to fade the idea of institutional trust. Building trust started from self-confidence, building trust in one's "self" before it becomes possible to build trust in others. There were also breakthroughs, situations when the participants felt they belonged and when they started to trust in their environment and the people around them.

4. Discussion

"It is important in that process to have the experience of success and the experience of ability that yes I can do this." (E2_2020)

Art and culture based methods refer to various empowering art methods, community art, functional methods and the applied use of art. Often, these methods have their roots in community art as well as sociocultural inspiration, which emphasizes informality, experientialism, and dialogue in individual development and social interaction. (Känkänen 2013, 90; see also Freire 2005.) Art-based methods are intended to influence or bring changes in participants' thinking and actions.

The TELL project aimed to build social inclusion, which in broad understanding of the term includes participation, access to opportunities, building capability, and increasing wellbeing. Social inclusion is multidimensional and multilayered, and often highlighted by the role of social engagement in fostering feelings of belonging and personal growth, especially when connected to migrant education. (Kirpitchenko & Mansouri 2014.) In the project, participation was understood as something that was missing and something that was connected to exclusion that is necessary to prevent, in other words the project "tackles the challenges related to participation in and access to the labour market and the challenges

related to minorities and immigrants. The project promotes young immigrants' integration and aims at preventing youth exclusion." With the art and cultural based methods, the project managed to strengthen participation and opened up spaces for trust and belonging.

Richard Sennett (2004) talks about a respectful encounter when he considers the implementation of dialogue in different areas of society. The TELL project is implemented using culture and art based methods for similar reasons, because artistic self-expression can open up a state of respectful encounters that balances knowledge to strengthen self-esteem and produce new meanings. With the help of art, one can get behind thoughts and words, into a space where one can produce something that is valued on its own merit (Känkänen 2013, 69; Sennett 2004; Fangen 2010)

The result of TELL project was strengthening participation and belonging. However, meaningful participation is dependent on people being willing and able to participate and express their own voices. Creative methods seemed to give young immigrants very clear and concrete ways to develop their self-expression and skills. These are critical skills needed for positive integration into society as well as the potential accumulation of employment skills. Possessing language skills, and knowing your own environment, and finding and strengthening expression together are an important part of feeling heard and seen and having our own voice. The project and the utilized methods succeeded in establishing a safe space that enabled the feelings of belonging and participation to grow and develop.

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4 "UNSELFISH WORK AND ENERGY" - FIRE SOULS OF SPORT PROMOTING SOCIAL RESPONSIBILITY

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ABSTRACT

Fire souls are passionate people whose voluntary work supports the actions of small sports clubs. In this article, we concentrate on the social resilience of small sports clubs. We examine the tools and methods that the fire souls have for promoting the socially sustainable development in their communities. From the fire souls' experiences and stories, we are able to find relevant tools and methods for strengthening the social sustainability of the local sports clubs and forming resilient communities. The experiences of fire souls help us to understand the challenges and risks facing small sport clubs trying to find new enthusiasts and being socially sustainability.

Keywords: sport, fire souls, story, sport clubs, resilience, social responsibility

1. Introduction

What are fire souls? They are passionate people who want to work to promote sport and activities in their local communities. As one of our fire souls commented: "If you show excitement, you get other people excited. It's like energy." Many grassroot sport clubs are

usually dependent on individual sport activators. Often, these local sport activators are local enthusiastic "fire souls" whose voluntary work supports the club's actions alone. Thus, the fire souls are community citizens who have a burning interest in developing the local community and change. (Robinson & Green 2011.) In this article, we examine the social sustainability of the local sports clubs, and their methods and tools for social resilience.

Understanding and learning from these fire souls and local activators opens the discussion of their role in promoting and supporting the resilience of the sports clubs. Their lived experiences also help to understand the challenges of the small sport clubs and the risks they face in trying to find new enthusiasts and being socially sustainability. Finding these fire souls and exploring their stories will help to support the resilience of the sport clubs by offering peer support and new tools for sustainability through narrative power (Torkki 2014).

The stories of these passionate sport promoters or fire souls have been collected in 'Villages on the Move GO' (VOMGO)-project. The project promotes the resilience and social sustainability of voluntary sport clubs in rural areas. The project operates in seven countries in Europe and has 9 partners. The interviewees were selected from sports clubs, village associations, schools, and sports institutions. The material consists of 42 interviews which were conducted during the year 2020. The interview data was transcribed and translated into English. The category analysis was conducted with the WeftQda-qualitative analysis programme and the results were then analysed.

In this article, we concentrate on the social resilience of small sport clubs and the tools and methods that fire souls have for promoting the socially sustainable development in their communities. As Robinson and Green (1991) stated "community is constituted when residents in a specific geographical place are mobilized to act on locally-oriented collective interest". The communities and the social environment were central in the fire souls' stories, they get support for their work from the community and in turn their own work is supported by their social environment in a reciprocal manner. From the fire souls' experiences and stories, we can find tools and methods for strengthening the social sustainability of the local sports clubs and supporting resilient communities. In the following sections, we will explore the stories of fire souls, how we have collected the stories and how the fire souls promote the development of their communities.

2. Methods

A story is about emotions and meanings; it is not just a report of activity. For finding passionate and narrative power, we used story-telling methods and particularly the structure of heroic story and idea of monomyth. In the plot of a heroic story, the main character turns out to be a person who, in the midst of suffering, holds on to his dream and shows exceptional greatness and high-mindedness. The monomyth-term is used in myth research to refer to tropes that are similar across nations. The term refers to the typical plot structure in the folk tales and tales of different countries, in which the hero of the story sets off on an adventure and returns as a victor but also as a positively transformed person. The plot structure is still consciously used today, especially in film screenwriting. (Campbell 2014.)

The interviews followed the heroic story-structure for capturing passionate and narrative power. The interview questions were structured through the Freytag pyramid: the interviews started with introduction, continued with the greatest moments and difficulties, and then discussed the most important persons and principles in their daily lives and work (Campbell 2014; Freytag 1900). With this structure, we were able to capture the different storylines of fire souls. We discovered how they had started out, what motivates them to continue, what difficulties they had faced in the past, what assistance they have had, who has inspired them, and how they see the work that they do in the community.

The stories of passionate sport promoters, fire souls were collected through in-depth, semi-structured interviews, as part of the Villages on the Move GO (VOMGO) Erasmus+ Project. The interviewees were selected in a targeted sampling manner from sports clubs, rural sports associations, schools, and sports institutions and came from seven different European countries. They were expert individuals representing various sports clubs that organize activities for different age groups, professional athletes, community, and socially vulnerable groups such as immigrants and people with disabilities.

10 interviews were conducted in Finland, 10 in Portugal, 6 in Lithuania, 5 in Cyprus, 5 in Hungary, 4 in Slovenia and 3 in Belgium. The cohort of fire souls comprised of 17 female, 26 male participants. A total of 43 interviews were conducted with the presence of a researcher in each partner country. All the participants consented to the anonymous use of the data for research purposes. The data collected during the interviews were processed using qualitative research analysis, specifically content analysis and WeftQDA for data categorization. We adopted a thematic content analysis approach involving an open coding process followed by the clustering of the emerged codes into broader themes. This article will concentrate on the category of activities beneficial for society (see also Christodoulides et al. 2022; Mattila & Tuuva-Hongisto 2021).

3. Results

Most of the fire souls had started their personal active lifestyles in childhood, often their parents or local communities had encouraged them into sports activities. The strong engagement and also the community support was an important inspiration for many of the fire souls. For example:

> *"I was born with ski equipment on and immediately after learning how to walk I started to ski." (F4_Finland)*

> *"Sports is a getaway, a way of being, knowing other people, coexist, go to different places, meeting new worlds, other realities". (F35_Portugal)*

The fire souls' stories emphasized the promotion of the positive impacts to their communities with sport activities (Wadell, Day & Howells 2020). For society, they bring beneficial forms of physical activity, opportunities for collaboration, social equality, health promotion and economic impact. Fire souls who participated in this research described their activities as focused on meeting the needs of society. The factors for societal benefits identified in this research were 1) the meaningful forms of physical activity, and 2) opportunities to develop social networks (see also Christodoulides et al. 2022.)

> *"We have all different kinds of activities, from those for small kids to those for older people." (FS23_Slovenia)*

> *"All of these activities are normally associated with basketball, based on the development of motor skills of young people." (FS24_Slovenia)*

Fire souls highlighted their role in organizing meaningful forms of physical activity for society. Their input is reflected in various sporting activities for target groups involving players of all ages. However, the contribution of Fire Souls in general is to encourage communities to participate in sports activities and to motivate them to achieve mastery (see also Rowe et al. 2019). Additionally, their role is about growing and strengthening the community by involving families and people of different ages. For example, this can be seen in the following statements:

> *"A club is made up of people; it is the beginning of everything <...> Without people you do nothing. <...> If there are people, we can go discovering and fixing what we lack. People's presence is fundamental." (FS_41)*

"Sport events are very good for making a community. <...> in the vicinity of the capital is an ideal venue for organizing a sport event and by its size it is good for making communities." (FS33_Hungary)

"The children are motivated to come to the training because they have like 25 friends here with whom they can have fun at the training." (FS27_ Hungary).

Our study revealed that different age groups individuals' participation in sports club activities are associated with social interaction. The opportunity to develop social networks and social equality is an important factor when trying to make activities beneficial for society (cf. Wadell et al. 2020). Children, as well as their parents make friends, develop social contacts, and engage in sports activities. Fire souls share their expressions, that sporting events for the community make people friendlier, more active, and interactive, and facilitate closer communication. By participating in club activities, people can meet new people, create new relationships, and develop a social circle of like-minded acquaintances. Our interviewees, sum this up as follows:

"This is a group of parents from our members, who put in a huge effort to organize a dinner feast, a summer bar, looking for sponsors." (FS33_Belgium)

"Very magnificent to have three generation relatives volunteering at the same time." (FS10_ Finland)

"Then we have women 7-8 groups which are for a healthy back, healthy lifestyle, and exercises for the elderly, because we see how many problems people have in a fast-paced lifestyle. With all our activities we want to emphasize the significance of a healthy lifestyle." (FS25_Slovenia)

Involving families, assessing their contribution with organizing events and helping out in the events, and even contributing financially, is a good indicator of how strong the social connection is between the club and the families of children who participate in the club's activities (see also Dyck 2012). Additionally, clubs engage in educational activities aimed not only at promoting physical activity, but also teaching the principles of a healthy lifestyle and promoting a common understanding of health. Also, clubs develop culturally important things that are closely related to socialization, tolerance, and familiarisation with other cultures. The interviewed fire souls often explained about the benefits they provide to this vulnerable social group, and that people with disabilities are equal members of our society and must have equal rights and opportunities to participate in organised activities.

"... shows people that it doesn't just happen to others. It can happen to them too, and then sport is a way to adapt oneself socially, to like oneself as it is, and to show people that if we have the biggest "difficulties" with all these disabilities." (FS36_Portugal)

In our analysis, fire souls paid a lot of attention to the benefits of their activities for the community to contribute to other good health and well-being practices. With their work they enhance the regional and local development with their locally oriented collective interest in sport. (Robinson & Green 2011; Plüschke-Altof & Grootens 2019.) Running rural sport clubs increasingly means engaging in activities that support community development (Rowe, Karg, Sherry 2019; Schulenkorf, Sherry & Rowe, Katie 2016.)

4. Discussion

Fire souls are active social agents and community developers, they find meaning in their work and society by trying to involve the whole community in their activities (see also Rowe, Karg, Sherry 2019). We found out that they bring beneficial forms of physical activity to local communities and provide opportunities for society. Fire souls are committed to creating opportunities for social networking and facilitating the development of new friendships and connections, along with promoting healthy lifestyles and sports activities.

According to our analysis, fire souls have developed their communities using several tools. In promoting the socially sustainable development of their communities, fire souls have succeeded in recruiting volunteers and involving young people, as well as offering sport and activities for people with disabilities special needs. Especially fire souls have been instrumental in building community spirit and fostering cooperation in their communities, in part by organizing events that knit the social environment together.

Fire souls do plenty of unselfish work in their sports clubs and communities, and what is apparent from the interviews is that they really enjoy working together to improve the wellbeing of their communities. They make things happen with their passion, enthusiasm, and energy.

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5 SUSTAINABLE LEARNING IN CROSS-BORDER RDI COOPERATION: EXPERIENCES FROM THREE INTERNATIONAL MULTIDISCIPLINARY RDI PROJECTS

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ABSTRACT

Various aspects of sustainable learning are studied in the article from the perspectives of the three ongoing cross-border RDI projects where authors participate as project managers and/or project experts. Concepts of sustainability in education, learning and multi-disciplinary research, development and innovation work constitute the article's conceptual framework. The multiple case study represents the methodological framework. Semi-structured interviews with the project stakeholders and participant observation are used for collecting primary data, whereas content analysis is used for the systemic processing of the collected data. Versatile project reports and other project-related information are used as the secondary data in the research process. Opportunities of sustainable education in the creative industries, good practices of international training and teaching, curriculum challenges in force majeure situations, intercultural cross-border RDI activities, as well as formation of a new digital education culture form the five main outcomes of the article.

Key words: cross-border cooperation; education; learning; RDI projects; sustainability

1. Introduction

In this article, we investigate aspects of sustainable learning from the perspectives of the three ongoing cross-border RDI projects where we participate as project managers and/or project experts. The concepts of sustainability in education (Salem 2020), learning (Tight 2021), and multi-disciplinary research, development, and innovation (RDI) work (Hero & Lindfors 2019) constitute the conceptual framework.

We consider the general idea of sustainability in education and learning (UNESCO 2021), but the focus is on practical observations of project experts (i.e., project managers and trainers) as well as students participating in the three cross-border projects. Learning in the context of sustainability requires hybridity and synergy between multiple actors in society and the blurring of formal, non-formal and informal education (Wals 2015). Opportunities for this expand with an increased permeability between units, disciplines, generations, cultures, institutions, sectors and so on.

According to Ben-Eliyahu (2021), sustainable learning in education encompasses four aspects. The first aspect is renewing and learning, how easily and promptly curricula get updated. The next aspect is an intermix of self-learning practices and group-oriented (i.e., collective) interventions. The final two aspects focus on learners' engagement (i.e., their active participation) as well as the future-driven transferability of knowledge. On top of that, Hays and Reinders (2020) bring another significant focal area – methods of applied learning and practice-oriented teaching. In other words, purely theoretical material cannot foster elements of sustainability among students and pedagogues.

The goals of sustainable education suppose developing partnerships between schools, universities and other institutions offering education in different regions of the world (UNESCO 2017). Many forms of learning are emerging that all have promise in enabling such collaborations, including inter-disciplinary, transformative, transgressive, anticipatory and social learning. Proposed global indicators intend by 2030 to substantially increase the supply of qualified teachers, including through international cooperation for teacher training (UNESCO 2016).

Education is considered as more than merely knowledge-based – it should maintain the quality of interaction with others and of the environment in which learning takes place as crucial. Change and innovation dimension of sustainability is of great importance. Its objectives are leadership and entrepreneurship, unlocking creativity, utilizing diversity, appreciating complexity, adaptation, resilience, empowerment, and collective change. In other words - it is learning to make change. (Wals 2015)

When it comes to teachers' preparedness for teaching in a sustainable manner, Takayama et al. (2021) highlight that learners' diversity needs and multicultural background often stay unmet in educational curricula. As such, Knight (2015) states that co-operation with not only educational institutions is required for a successful cross-border education project: dialog with cross-border economic and political providers should not be taken for granted. A larger engagement of multiple stakeholders (not limited to a cross-border cooperation) is considered positively in the OECD (2007) document.

This article provides the five-fold outcomes and impact for applied research and education. First, opportunities of sustainable education in the creative industries are discussed. Second, good practices of international training and teaching are analysed. Third, curriculum challenges in force majeure situations are considered. Fourth, intercultural cross-border aspects of pro-active RDI activities are illustrated. Fifth, processes within the digital education and distant learning, and its impacts on the formation of a new digital education culture are handled from the cross-border perspective.

2. Projects

The Content for Cross-cultural Events (C3E) project was designed to strengthen the links of the participating universities with other cultural, art and design organizations, and use their experience to create and strengthen alliances at various levels. The project aims to improve the skills of managing innovative activities, to develop cross-cultural concepts for interdisciplinary activities. The project agenda is designed to stimulate creativity and research skills, the program fosters the development of creative thinking in the field of entrepreneurship and can respond flexibly to complex problems and developing innovative solutions for a changing world.

Race4Scale – Development of automotive and motorsport ecosystems is the 30-month CBC Programme Finnish-Russian cross-border project that studies the advancements in the automotive and motorsport fields from a multidisciplinary perspective – focusing on the areas of education, technology, and business. The project's overall objective is to establish and strengthen the long-term partnerships among businesses, educational institutions and government-based organizations and associations in the Finnish-Russian cross-border automotive and motorsport industry ecosystem. The project also aims at increasing co-operation between Finnish and Russian SMEs and research institutions, boosting skills and lifelong learning – via training future professionals as well as creating new cross-border curricula. (Race4Scale – Development of automotive and motorsport ecosystems 2021.)

European Entrepreneurship Training Community (EETC) is the Erasmus + Strategic Partnership international project carried out by Riga State Technical University, South-Eastern Finland University of Applied Sciences, Rotterdam University of Applied Sciences and Anglia Ruskin University. The overall objective of the project is to expand best practices of transdisciplinary entrepreneurial skill development of students and educators by identifying current demand of emerging skill sets in the European Union labour market. Additionally, the goal is to improve long-term strategic collaboration among project core partners - higher education institutions and their associated partners - business incubators, student and alumni associations, business partners, public institutions, by creating interrelated processes linked to entrepreneurship training to create a responsive Transdisciplinary Entrepreneurship Training Methodology for students of the Consortium. Thus, leading to attraction of private capital for development of start-ups and new business units in the EU market.

3. Research methods

The multiple case study (Štrach & Everett 2008) represents the methodological framework. Semi-structured interviews with the project experts (project managers, project trainers) and students. These interviews are supplemented by the authors' observations. The interviews are audio and video recorded; its content is analysed and presented in the table format. Versatile project reports and other project-related information are used as the secondary data in the research process that comprise the discussion and conclusion. The students were asked five questions representing five interconnected topics, whereas project experts, in addition to the same questions, were also asked additional two-three questions within each topic due to their wider project competencies and tacit knowledge.

The five outcomes of the paper are reflected in the summative interview tables-either through questions given to the students or through more specific topics discussed with the project experts. The results of individual interviews are summarized and combined into four tables. In Tables 1 and 2 (young learners and course participants), the results of interviews with young learners are analysed from the position of positive and negative experience obtained within the project activities. In Tables 3 and 4 (experts & managers), the results of interviews are categorized according to five-fold outcomes, which are listed in the first column of the Table. The second column of the tables 3 and 4 summarizes challenges, while the third solutions or/and opportunities within the CBC programs.

The interviewees project manager Jarmo Kujanpää and project expert Jan Kettula (both XAMK) represent the expert side of Race4Scale CBC project, whereas project manager Madara Mara Irbe (Latvia, Riga Technical University) represents EETC Erasmus project.

Senior Lecturer Harrison Okuogume was interviewed in the role of expert for both mentioned projects. The author Mikhail Nemilentsev is the project manager in EETC and as the project expert in Race4Scale project. In addition, he was responsible for the funded application of Race4Scale as the project management. XAMK business students Reza Mohamadi and Polina Vishnia were interviewed as they took part in both EETC and Race4Scale project events.

The interviewees project experts Alexey Pastukhov and Liudmila Karpova (both SUITD) represent C3E project and have a vast experience in management and concept leadership within SUITD International Department administration. The author Ekaterina Prozorova is the concept manager in C3E, developing strategy and project activities schedules. SUITD fashion design students Kira Orlova, Elena Stasiuk and Alina Bulgakova were interviewed as they participated in C3E Pro Design School international semester and also the Admiralty Needle contestants.

4. Results and discussion

Remote work experience caused by the response to the Covid-19 pandemic can be seen as an important opportunity to learn from this exceptional situation and offer more flexible project implementation options, explore blended or hybrid learning, mix synchronous learning with asynchronous learning, and gain access to lifelong learning opportunities. It is possible that a change in thinking is taking place and this experience has opened a new horizon of opportunities for transformation.

In the next four tables, the results of the semi-structured expert and student interviews are presented. C3E project is presented separately, while EETC and Race4Scale projects' interview results are grouped. It stems from the relative closeness of the latter two projects to the business field within the creative industries, whereas the C3E project represents the cultural and design side of the creative industries.

According to Table 1 and Table 2, interviewed students had certain differences in perceiving sustainability for the world in the economic and design domains. Another uniting factors of students from C3E and Race4Scale & EETC projects was their understanding of digital tools for efficient learning. With the pro-active dialogue of teachers and students coupled with the up-to-date technologies, sustainable learning can be achieved to the utmost. However, the negative results were mainly viewed through the lens of educators' unpreparedness or lack of certain technological or other professional competences to teach sustainably.

Table 1. Student interviews (C3E project)

Question	Positive results	Negative results
How do you understand the word "sustainability?"	Our attitude towards the world - our activities have a huge impact	Not very well informed about the term, hardly ever heard it connected to education
What associations (thoughts) come to your mind when you or someone talk about sustainability in general?	Associated with fashion, its negative impact on the environment due to excess production, development of recycling technologies, quality items and combination parts, digital clothes instead of enormous amounts of outfits in media content for events and celebrities	no negative associations
If you hear that a person is a good educator (teacher, trainer...) in creative industries (design, culture, technology, innovation, business, and entrepreneurship), how do you imagine such a person?	Always keeps up, has critical thinking capabilities, contemporary and elegant solutions. Capable to create good structure for courses, various forms of delivering learning materials, including digital tools.	Often teachers are not prepared for new digital forms of delivering material and the course then fails
How do you see an effective digital education (some examples, associations, elements)?	Combination of digital and physical parts, time and resource saving digital courses, available educational materials and dialog with teachers on digital platforms High quality and performance of digital tools and teachers skilled in operating such tools Capable hardware and software to provide learning Designing new courses based on rapidly developing software products - Clo3D or similar as an example for fashion. Adopting curriculum tasks in short order with these changes	Lack of emotional communication skills - especially essential for creative professions. Some disciplines need live dialog, learning by doing and immersion into study process – distance learning is not effective in this case
How could you describe a new digital education culture? Does it exist for you?	Becoming more productive, using several digital tools at the same time as listening for general lecture courses and drawing sketches on the tablet New digital culture is in progress - not quite distinguished yet	Some digital environments are not working properly, services are not enough proficient: students are eager to get involved but educational institutions often lag behind

Table 2. Student interviews (EETC & Race4Scale projects)

Question	Positive results	Negative results
How do you understand the word "sustainability?"	knowledge as a cycle – no old and new knowledge; Sustainability comes from a cycle: back and forth, old and new; Sustainable education: student (or team player's) knowledge and competences should be assessed equally (without any discrimination)	no identified negative sides of sustainability
What associations (thoughts) come to your mind when you or someone talk about sustainability in general?	renewable energy; unlimited energy; blockchain; Bitcoin; SDGs; increased life level	No negative associations
If you hear that a person is a good educator (teacher, trainer…) in creative industries (design, culture, technology, innovation, business, and entrepreneurship), how do you imagine such a person?	professional and well-trained, and experienced – for young learners; sincere interest in the way how and what s/he is doing; loyalty, commitment, ability to understand other people, their vision of life, their values and opinions, acceptance of different opinions and life situations, feelings of students; should be an individual approach; willingness to help others (students, people in general)	teachers can lack the "young" and "professional" experience in the modern trends that are ultimate for young students: for instance, blockchain can be taught purely theoretically that does not promote student learning; Teachers are not professionals with certain "new" subjects
How do you see an effective digital education (some examples, associations, elements)?	distant education during Covid19 opened many opportunities; students started living the "distant life"; learning through remote systems – students and people in general can save a lot of time; Use of MIRO in the accelerators; online tools can help in real business events;	meaning of success is erased in the digital (distant) life; level of socialization is not same compared to the real, non-digital life, even for young students; separation of online and offline material; rigid (old-fashioned) forms of course implementations
How could you describe a new digital education culture? Does it exist for you?	future can be seen through the blockchain technology: amount of saved energy, time, capital…	digital culture has more negative meaning; handwritten notes mean more than online digital (tablet, PC) way of life; only digital way of life (on the Internet) should not be the self-goal;

As referred to in Table 3 and Table 4, experts of the C3E project indicated more infrastructural and (software, intra- and inter-university communication channels) socio-cultural factors affecting the sustainable education. Solutions seemed to come mainly, for instance, through the project initiatives (e.g., Mikkeli music festival). In turn, EETC and Race4Scale project experts pointed at the overall lack of teachers' competences in the technological field and related challenges of getting relevant up-to-date material. Another significant observation relates to teacher-student communication and a necessity of critical feedback to challenge the status quo and to boost outside-of-the-box thinking among students.

Table 3. Expert interviews (C3E project)

Sustainable education (SE) elements	Challenges	Solutions * / opportunities ** in CBC projects
General prospects in SE	Well balanced system, safe from destruction from external influences (like, e.g., economical, social or political unexpected developments); Synergetic ideas in creative industries; Wide availability of information within the discipline framework; Scientific approach used by all participants of educational process; Teachers approach to education process when there are no non-creative tasks.	*Synergy in several creative fields: music, ballet dance, visual arts and fashion obtained in C3E Synesthesia project for Mikkeli music festival.
Opportunities in collaborative courses	Universal humanistic principles at the basis of activities developed; Introducing national traditions and mentality; incompatibility of ethical and aesthetic national ideas; significant discrepancies in the levels of professionals; qualification of the participants.	
Curriculum tasks in force majeure	motivating factors of the participants in the events exchanging information, the humanitarian component - live communication between the participants, the cultural aspect - the desire to immerse oneself in an unfamiliar cultural environment	

Sustainable education (SE) elements	Challenges	Solutions * / opportunities ** in CBC projects
Cross-border RDI activities	goal of solving interethnic and cross-border problems; finding innovative solutions in this case are for the benefit of all parties involved; maximum freedom of information and ideas exchange; Failure factors: national security considerations, intellectual property protection, political differences; well-defined system of priorities; understanding of the interests of the parties and the formation of common goals and objectives	Working on global and local strategies needs important principles for implementation: sustainability, equality, environmental friendliness. There must be cooperation between companies and educational institutions, local authorities must be involved in cooperation, new skills and competencies are needed. We try to analyse the future using the virtual environment when teaching and creating new tools.
New digital culture	interactivity of the digital environment in which the educational process is carried out. individual communication between the student and the teacher, strong motivation of the learners balance of elements within educational process the optimal combination of material presentation formats methods of monitoring achievements and skills acquired by the students.	CLO3D software and the possibilities for a sustainable future in fashion design were the focus of the C3E ProDesign course. Models created in CLO3D became effective tool for promoting ideas in the fashion industry. Working with online content sharing collaborative platforms Miro and Google Jamboard, which provided access to course content and group discussions

Table 4. Expert interviews (EETC & Race4Scale projects)

Sustainable education (SE) elements	Challenges	Solutions * / opportunities ** in CBC projects
General prospects in SE	lack of "healthy" criticism (i.e., negative feedback) in general; lack of practical experience; lack of collaboration with the educational institutions; impatience and lack of passion blocks sustainable learning & teaching;	sustainability as a long-term concept far beyond education; sustainable education: balance of theory and practice; sustainability in the creative industries: "art" comes before "knowledge"; not only teaching but showing "good" examples
Opportunities in collaborative courses	too general (one-size-fits-all) assessment; educators are not prepared for the needs of trainees/students	diverse groups and individualized assessment of learning
Curriculum tasks in force majeure	no joint collaborative & cultural principles of work with representatives of one or several countries; ignorance of the participants' practical needs & irrelevant educational content	a joint understanding of collective action & cultural knowledge; counterparts in the international collaboration should be at the same level of intelligence & preparedness
Cross-border RDI activities	"faceless" people in the digital collaboration; only online presence cannot be partners go in two "boats" instead of one; unpractical knowledge – not connected with the industry trends no big cases of commercialization of research	combination of online and f2f partner work optimal combination of "tested" partners in further projects (as certain partners cause extra burden in multiple aspects of project work); high level of individual accountability leads to the increase collective responsibility and collective sustainability; to build collaborations on the industry trends

Sustainable education (SE) elements	Challenges	Solutions * / opportunities ** in CBC projects
New digital culture	lack of technical competences leads to full inefficiency; digital education, although accessible, is not universal, and it should be considered through multiple different perspectives of different generations; lack of student access to the prototyping facilities	welcoming different and distinct cultures & generational changes; accessible study materials in any time – both informal and formal education (e.g., Miro board); new digital tools should enable critical thinking & access to prototyping (i.e., productization & commercialisation of knowledge); technics, materials, and time management – three cornerstones of efficient digital learning

As the EETC Erasmus+ project represents cross-border cooperation for innovation and exchange of good practices, most of the initially planned educational events (i.e., including student-driven Cambridge Venture Camps, Train the Trainers events as well as transborder project meetings were to be organized face-to-face. However, due to the Covid-19 pandemic force majeure and closure of national borders, offline communication became impossible and even impractical. Otherwise, the project's eventual continuation was threatened. Together with Latvian, British, Dutch and Finnish experts, the project learned sustainability via embracing certain elements of the newly established digital culture of learning and digital culture of work.

Together with the participating students, project staff modernized the EETC roadmap and thus enabled the pro-active continuation and on-time completion of the project with all tasks finished. The project goals were attained within the frames of the digital learning culture that provided the added value for project participants (managers, experts, industry members, and students) as well as for other stakeholders. It was reflected in the expert and student interviews.

Race4Scale is an ongoing cross-border cooperation (CBC) project that has already had sustainability goals in the pre-Covid-19 period. By uniting several layers of education and business cooperation in Finland and Russian Federation, the project partners correspond to the higher education level (National Research University LETI, XAMK University of

Applied Sciences), secondary educational level (Vocational Colleges KSAO & Taitaja, secondary education school Kudrovo) as well as industry cluster (Autoprom North-West). Having originally different national educational standards, infrastructure as well as varying expectations of project cooperation, these project partners developed joint sustainable educational events and are currently developing a joint cross-border, inter-level curricula.

Future Profession Workshops in Finland and Russia were organized first to determine existing global and country-specific trends, occupational opportunities for today's students. At the next stage, Finnish and Russian Teacher Weeks were collectively executed for teaching staff and top management of educational organizations. As such, sustainability of future-oriented competences was achieved with the involvement of not only current educators (e.g., teachers, lecturers, professors) but also executives (e.g., vice-rectors, rectors, directors of education). It is not enough to train students or teachers, but to also instil new skills among educational management in the cross-border project setting.

Innovative Camps is the current stage of the project: five multi-day events are to be organized on different topics (e.g., from logistics to future technologies) in the fall 2021 and winter-spring 2022. Due to the closure of the Finnish and Russian national borders in 2020 (the year when the project has started), all events were re-planned for the digital learning environment. The project organizers and participants were forced to acquire new digital competences and to cooperate proactively in a challenging online culture. In result, the project demonstrates a forced example of implementation within the newly reopened digital culture. The results of the interviews support this view.

The C3E project turned out to be very relevant and in demand during the pandemic. There is a lot of positive experience that digitalization has brought to cross-border cooperation activities. The C3E programs have revised the skills and competencies required for young designers, entrepreneurs, and representatives of creative industries. New results of implementation in the field of education and cultural management have appeared: providing *streaming events*, involving international experts and creative youth from Russia and Finland in creative processes *in real time*, developing *digital tools* in design and communication.

Though the success of digital events was largely due to well-prepared offline activities before the pandemic like hackathons for creative industries held in late 2019, both in Finland and Russia.

The "Synesthesia Visualization" project for the Mikkeli Music Festival was launched as a competitive C3E event, which brought together professional artists and students studying game design, audio-visual and graphic design from Russia and Finland. Competitors used

various digital platforms and game engines. Visualization script with mono ballet filming proposed by SUITD team used further processing of the content with Adobe Premier Pro tool. The piece presented by Finnish participants was built on the real-time game engine Unity. The C3E partners and digital experts from OiOi company took the sound signal from orchestra into the Unity-built software to achieved real-time audio-reactive content. The final presentation of Synesthesia project to the experts and general public was released on July 11, 2021 during XXX Mikkeli Music Festival events. The integration of the visual content of Synesthesia into the program of the Admiralty Needle festival revealed various aspects of synergy between performing arts and fashion.

The "Admiralty Needle" Contest - fashion and design festival for creative youth from all over the world has undergone transformations within the framework of the C3E project. In 2019, the International Conference "Industrial Balance in Culture and Design" drew the attention of participants to the concepts of a circular economy and the need for a serious restart of the fashion industry. Waste-free technologies and the transition to sustainable goals in training and production were presented by experts from Finland, Germany, Japan, Italy and Russia. Ethical aspects of production, promotion and consumption have become the driving forces behind educational design strategies. Digital technologies have got the potential to reduce many disruptive and threatening processes in the fashion industry and provide new opportunities for sustainable programs.

The Digital Fashion House became the mission of the XXVI Admiralty Needle Contest and a call to designers to create a progressive fashion reality within the framework of C3E events. "Creators of the Future", "Fashion and Medieval" and "Digital Fashion House Preview" held in November 2020 became events of a mixed format with various digital components. The concepts created with digital 3D tools and animation were integrated into a virtual reality space developed in Unreal Engine tool.

In 2021, the C3E ProDesign School opened an educational international program "Design and Digital Communications". The training was conducted in Russian and English with the involvement of students from Russia, Finland, Germany, France, India. The program proposed 3 study modules: "Cultural events management", "Fashion as Art" and "Fashion as design", each including several disciplines.

The students from the school created digital portfolios based on animated graphics, virtual clothes on digital avatars, got acquainted with the strategy of developing multimedia content. The program also included modules on management in the field of culture and art, technological trends in the textile and event industries. Teaching teams from SUITD and XAMK were involved as lecturers and mentors. Teachers have also become learners in some

of the courses, developing an innovative model of lifelong learning. The significant outcomes of the course were showcased during Admiralty Needle "Gamified World of Design" festival in April 2021. Within the framework of the Contest the C3E design marathon "Vectors of fashion business development after a pandemic" was held at the Boiling Point "PromTechDesign". It considered important changes in the field of culture, education and economics and assessed digital transformation in terms of prospects for research, education, and business. Speakers emphasized the importance of digital transformation in the field of cross-cultural collaboration, interaction between business and education.

5. Conclusion

The knowledge and skills required in working life are changing rapidly. At the intersection of business and education, dynamic projects are created and aim at solving the problems of the future in a changing interdisciplinary environment, in which the circular economy, digitalization, business, future-driven technologies and 3D design play an important role.

Autonomous and blended learning technologies are playing an increasingly important role in education. They raise issues such as the responsibility of learners and their right to determine the direction of their learning, skills that can be learned and applied, and the ability to learn independently and the degree of freedom within institutional education. In hybrid education, online technologies are used not only to complement, but also to transform the learning process.

Successful blended learning occurs when technology and course syllabuses complement each other: material becomes dynamic and allows participants to engage in truly customizable processes. To form such a model, the following parameters are required: understanding of the style and strategy of learning, an active approach to problem solving, willingness to take risks, to pay attention to both form and content, the ability to transform professional terminology into a system of basic concepts and a willingness to revise hypotheses and reject those rules that do not work, have a tolerant and open approach to the goal, and the ability of intuition.

For the successful development of the results obtained, it is necessary to improve the quality of educational spaces, both physical and virtual. For this, it was possible to develop a common virtual space so that all participants could quickly access virtual resources and sites, store their work, and share it in the wider community.

The cross-cultural collaboration programs encourage and inspire learning and teaching to support innovation, employment, and entrepreneurship, which requires developing opportunities for creative interaction, working in partnership with students, and gaining direct experience of doing business. The C3E ProDesign, EETC and Race4Scale projects are becoming the training ground for a breakthrough in digital design and solving the problems of creative industries, helping to make the results of cross-border cooperation more visible and open. The school is making strides in educating new professionals working at the intersection of fashion, business, logistics, technology innovation and digital technology for a more sustainable future.

A re-orientation of higher education towards sustainability requires unconventional ways of looking at management, leadership, knowledge creation, and the interface between science and society.

The research conducted revealed generative practices emerging from student-led transformations in higher education, fruitful dialog between teachers, managers, and learners eager to analyse and improve emerging educational culture. The results obtained offer vast scope of future collaboration possibilities within creative industries and could form new frameworks for appealing content in cross-border cooperation.

The article provides a fresh outlook in the practical, project-driven issues of sustainable learning. In addition to the professional academic views of effective cross-border cooperation, and inter-project comparison of project outcomes, we provided students' opinions in a systemic way. Instead of referring to only the successful moments of the three international projects implemented, we were able to summarize the criticisms of students and project experts. The voices of two generations were able to sound brighter. Students' recommendations affect not only the pedagogical process, but also digital culture, as well as a huge field of professional skills and competencies.

This article brings practical added value in terms of understanding sustainable learning. Our contribution results in a healthy balance of expert and student opinion, in a detailed reflection of the examined five topics within sustainable learning, and the development of the practical significance of the much-needed dialogue between students and teachers across levels of learning and between cultural cross-border contexts.

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6 AN EDELPHI RESEARCH STUDY ON SOCIAL AND HEALTHCARE PROFESSIONALS' FUTURE GENERAL CORE COMPETENCIES

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ABSTRACT

Anticipating social and healthcare professionals' general future core competency needs allow organizations to outline performance expectations and succinctly express the expected competencies for successful performance of jobs in the future. General future core competencies in the social and healthcare field, including the competency on sustainable development, have already been recognized. However, only scarce research evidence exists on social and healthcare experts' views regarding the topic. Social and healthcare professionals' broadening job descriptions require recognition and strengthening of their general core competencies. To fulfil the knowledge gap on social and healthcare experts' views on the general future core competencies in the social and healthcare field, a multi-professional expert panel was conducted.

The aim of this research study was to establish consensus among expert panelists about 15 statements on social and healthcare professionals' general future core competencies. The eDelphi panel was implemented in May 2020 among 13 expert panelists with an

interest in developing general future core competencies. The data were collected using an eDelphi Internet application and the Argument Delphi method.

Of the 15 core competency statements, consensus was established over two rounds on all but one statement concerning explaining about the available social and healthcare services to clients. Outlining the general core competencies for successful performance of social and healthcare jobs in the future through developing a consensus-based, general competency set for all social and healthcare professionals is important, because the general future core competencies are shared among all social and healthcare professionals.

Keywords: social and healthcare professionals; competency; future research; Delphi method

1. Introduction

To attain the societal purpose established for the social and healthcare system requires strong substance competencies specific to various professional fields from the professional groups working in the social and healthcare field. In addition, social and healthcare professionals must possess generic, or general core competencies that are shared by all professional groups. Investigating social and healthcare professionals' general future core competency needs is significant, due to the rapid changes in the professional working environment in the social and healthcare field. The eDelphi expert panel was implemented to investigate the general future core competency needs in the social and healthcare field. This article describes the implementation and results of the eDelphi research study.

2. Background

The eDelphi research study was a part of the national (Sotetie) project focusing on general future core competencies in the social and healthcare field. The main aim of the Sotetie research project was to develop a national roadmap for continued learning for social and healthcare professionals, focusing on their general future core competency needs. The purpose of the Sotetie research project was to deepen and define the more specific contents of the general future core competencies in collaboration with working life (Työ- ja elinkeinoministeriö 2020). This collaboration was based on the results of an electronic survey and a future forum conducted during the Sotetie research project. These results were also utilized in the planning of the eDelphi research study described in this article. In addition,

the results of previous projects describing the general future core competencies in the social and healthcare field were utilized as a basis for defining the general future core competencies in the Sotetie project (Kangasniemi et al. 2018, Leveälahti et al. 2019, Opetushallitus 2019).

The Optimised Education and Competence Reform for Professionals in Health and Social Services (OpiSote) research project (Kangasniemi et al. 2018) included an international review and meta-analysis, empirical data collection among specialists and employees in health and social services, a national survey on learning projects, and an online survey for experts in education. The findings indicated that in addition to the substance competencies specific to various professional fields, social and healthcare professionals' future core learning needs include general, or shared, competencies about working with customers, developing services as well as managing changes related to employment and collaboration. Moreover, general future core competencies are needed on robotization, evaluation of effectiveness, and sustainable growth in the social and healthcare field (Kangasniemi et al. 2018).

The Competent Workforce for the Future (COPE) research project focused on what kind of competencies social and healthcare professionals will need in the future. The research results showed that in the social and healthcare professionals' view, the future learning needs increasing the most are related to electronic social and healthcare services and the integration of services, such as comprehensive mapping of the clients' needs and multi-professional collaboration in the planning, delivery, and evaluation of services. In addition, the importance of customer service was emphasized (Lehtoaro et al. 2019).

The Future Competencies Anticipation Forum (OEF 2017-2019) of the Finnish National Agency for Education evaluated the future competency requirements needed for jobs in the social and healthcare field. The results showed that the general future core competency needs increasing the most in significance will be related to interpersonal and communication skills, understanding the bigger picture, cultural competency skills, collaboration skills, and ability to endure stress (Kangasniemi et al. 2018; Leveälahti et al. 2019; Opetushallitus 2019). The different industry groups assessed 'knowledge of the principles of sustainable development' to be the most important general future core competency need in 2035, when the most important competency needs for 30 different industries were being evaluated (Opeushallitus 2019). The Rectors' Conference of Finnish Universities of Applied Sciences (Arene) published a Program for Sustainable Development and Social Responsibility (2020). At present, there is no action program for sustainable development in healthcare (Vanninen & Collan 2020), but growing attention is currently being paid to the issue in the social and healthcare field (e.g., Kallio 2020; Kattelus 2020). 'Environmental competency in accordance with sustainable development' is one of the 11 general future core competency areas for social and healthcare professionals developed by Kangasniemi and colleagues (2018). These

11 general future core competency areas were also utilized in the Roadmap for Continued Learning for Social and Healthcare Professionals (Sotetie) research project.

The aims, main purpose, and research question of the eDelphi research study

The main purpose of the eDelphi research study was to describe social and healthcare professionals' general future core competency needs. The research study had 3 aims: 1) to investigate the views of the eDelphi expert panelists regarding social and healthcare professionals' general future core competency needs, 2) to highlight the broad spectrum of the panelists' opinions and opposing views, and 3) to establish consensus on the core contents of the social and healthcare professionals' general future competencies. The research study addressed the following research question: What are the assessments and comments of the multi-professional eDelphi expert panel on how essential are the 15 statements describing social and healthcare professionals' general future core competency needs?

Formulating a comprehensive view by the social and healthcare experts on the general future core competencies in the social and healthcare field is important, because social and healthcare professionals' broadening job descriptions require recognition and strengthening of their general future core competencies. This article describes the eDelphi panel as a research method and discusses the study's data collection and analysis, research results, and significance of the results.

3. Methods

This research study utilized the Argument Delphi method, which focuses on producing relevant, factual arguments (Glasper & Rees 2017) and bringing up for discussion among the panelists a broad range of justified perspectives on the topic of interest. In addition, the Argument Delphi method aims at establishing group consensus, i.e., reaching a unanimous view within a group (James & Warren-Howard 2015). An open source code Internet application (https://www.eDelphi.org) is available for the Argument Delphi method. The virtual panel discussions and commenting on the general core competency statements in this study were anonymously conducted in a closed discussion group using the eDelphi Internet application. In accordance with the size recommendations for Delphi panels in the international literature which call for 8-15 panelists in homogeneous samples (Keeney et al. 2011; Trevelyan & Robinson 2015), the virtual eDelphi panel for this study consisted of 13 multi-professional and multispecialty social and healthcare professionals. The panelists were carefully selected to represent different geographical areas, various professional groups in the social and healthcare

field, and professionals at different levels of practice. The purposive sample included panellists from the public, private, and third sector all around Finland. (Table 1).

Table 1. Selection criteria for the eDelphi expert panelists

	Selection criteria
1	The panelist is interested in the topic of eDelphi expert panel, i.e., the general future core competency needs shared by all social and healthcare professionals
2	The panelists broadly represent different sectors, professional groups, and professional roles in the social and healthcare field, taking into account the sectors, professional groups, and professional roles of those experts who have participated in the previously utilized data collection methods in the research projects
3	The panelist represents particularly those geographical areas of Finland that have not had any participation during the previously utilized data collection methods or those areas that have general future core competency needs that differ from those of most other geographical areas in Finland
4	The panelists represent both Finnish and Swedish-speaking experts
5	The number of participants in the eDelphi expert panel (n=34) is in accordance to the recommendations for Delphi panels published in the international research literature
6	There is a broad representation of participants in the eDelphi expert panel which comes from outside of those organizations which are working life partners in the SOTETIE* research project
7	The viewpoints of the panelists on the topic of the eDelphi expert panel cover a broad spectrum

*SOTETIE research project = Sote-alan ammattilaisen jatkuvan osaamisen tiekartta -hanke

3.1 Data Collection

The data were collected in May 2020. The recommendations in the international literature related to the Delphi method indicate that achieving consensus over two or three rounds is preferred (Hasson et al. 2000). In this research study, two rounds of the virtual eDelphi panel, each lasting for 2 weeks, were conducted anonymously. During the first round of the virtual eDelphi panel, the panelists evaluated and commented anonymously on 15 statements (Table 2) describing social and healthcare professionals' general future core competency needs. The statements were based on the results of previous research projects (Kangasniemi et al. 2018; Laanterä et al. 2020). The panelists were asked to rate each statement describing social and healthcare professionals' general future core competency needs in 2030 as "To

what extent do you believe the above statement is essential as social and healthcare professionals' general future core competency?" on a 5-point Likert-type rating scale (1=not at all essential, 2=somewhat essential, 3=not essential or nonessential, 4=moderately essential, and 5=very essential). In addition, the panelists were asked to provide open-ended written comments on each of the statements to justify their views.

Table 2. The statements describing the general future core competency needs shared by all social and healthcare professionals to be evaluated during the 1st round of the eDelphi expert panel

	Statement
1	The social and healthcare professional strengthens in his/her work the client's and patient's participation with the purpose of advancing a customer-centered approach in the delivery of services
2	The social and healthcare professional supports in his/her work the client's and patient's freedom of choice with the purpose of promoting a customer-centered approach in the delivery of services
3	While guiding clients, the social and healthcare professional recognizes also those clients who have not accessed or utilized social and healthcare services, but who would need them and benefit from them
4	The social and healthcare professional is in his/her work able to take into account those opportunities for services that extend across different social and healthcare sectors and specialties
5	The social and healthcare professional is in his/her work able to prepare for changing and broadening job descriptions
6	The social and healthcare professional bases his/her work on the best available, timely evidence
7	The social and healthcare professional innovates to develop his/her work and social and healthcare services
8	The social and healthcare professional collaborates with technology experts to develop digital services
9	The social and healthcare professional is able to assess the quality of his/her work and the effectiveness of services
10	The social and healthcare professional is in his/her work able to market social and healthcare services and act like an entrepreneur
11	The social and healthcare professional is able to evaluate the interventions for sustainable development implemented by his/her organization, act according to them, and participate in their development
12	The social and healthcare professional recognizes the limits of professional communication and is able to act according to them
13	The social and healthcare professional is in his/her work able to communicate effectively, utilizing different communication methods
14	The social and healthcare professional is able to recognize his/her own work-related competencies and lead him/herself
15	The social and healthcare professional is able to work in the interfaces of different sectors and specialties

After the closing of the first eDelphi panel round, a brief summary of the results was posted by the manager of the panel for the panelists to view at the eDelphi website. The statements on which consensus had not yet been reached among the panelists were revised to reflect the comments and suggestions provided by the eDelphi panelists. The second round of the panel began immediately after the closing of the first round, as prior research findings have shown that taking advantage of the forward momentum was important while the evaluations of the statements were still fresh in the panelists' minds (Linturi et al. 2013; Rubin 2012).

3.2 Ethical considerations

The Sotetie project is a national development project for advancing social and healthcare professionals' general future core competencies. For this reason, applications for research permits were submitted to those social and healthcare organizations which required a research permit prior to commencing data collection.

The electronic invitation letter containing a summary of the ethical considerations of the study were emailed to each potential participant of the eDelphi expert panel. The ethical considerations included the voluntary nature and anonymity of the participation in the panel, as well as the reporting of the study results in such a manner that individual participants or their evaluations and comments could not be recognized. The respondent's evaluation and/or commenting of the statements indicated the respondent's consent to participate in the eDelphi panel.

3.3 Data analysis

The reporting tool at the eDelphi website was used to analyze the panel research data. During data analysis it was investigated whether consensus, i.e., agreement among the Delphi panelists, was established on each of the statements describing social and healthcare professionals' general future core competency needs. Descriptive statistics were computed for the statements and demographic questions. As the median score based on a Likert-type scale is more robust to the effect of outliers than the mean (Hasson et al. 2000, Hsu & Sanford 2007), it was used as the measure of central tendency. In addition, the interquartile range (IQR) was reported as a measure of distribution. These measures were selected because they are commonly recommended measures to determine consensus in Delphi studies (Hsu & Sanford 2007, Trevelyan & Robinson 2015, von der Gracht 2012). Consensus was considered to have been established for statements rated at a group median score of 4-5 among 70 percent of the participants and an IQR of ≤ 1.0. If consensus was not reached

or the statements were considered unclear during the first round of the Delphi panel, the statements were revised to reflect the comments and suggestions of the Delphi panelists.

4. Results

4.1 Participants

A total of 13 multi-professional social and healthcare clinicians, teachers, researchers, managers, and leaders from the public and private sectors around Finland participated in the virtual eDelphi expert panel. The panelists' average age was approximately 54 years, and their average length of work experience in the social and healthcare field was approximately 26 years. Ninety-two (92) percent of the participants in the eDelphi panel were women and 8 percent were men. Two-thirds of the panelists worked in social and healthcare organizations that had over 250 employees, while one-quarter worked in organizations with 50-249 employees. The eDelphi panelists were highly educated, as the majority (58 %) of the panelists had a licentiate or a doctoral degree, and 42 percent of the participants had a Master's degree. One-third (33 %) of the eDelphi panelists were social and healthcare professionals working as clinicians, while one-quarter (25 %) worked as managers and leaders, one-quarter (25 %) were researchers, and one-sixth (17 %) worked as teachers in the social and healthcare field.

4.2 First round of the eDelphi panel

The main aim of the eDelphi expert panel was to establish consensus on all 15 statements under evaluation. According to the Delphi method, subsequent panel rounds are completed until consensus among the panelists will be reached.

Of the 15 statements describing social and healthcare professionals' general future core competency needs, consensus was established on 13 of the statements among the eDelphi panelists during the first round. In other words, consensus was established on all but two statements, when evaluated against the criteria for establishing consensus (i.e., that the statements were rated at a group median score of 4-5 among 70 percent of the participants and an IQR≤1.0).

The panelists' comments on statement number 10 *'The social and healthcare professional is in his/her work able to market social and healthcare services and act like an entrepreneur'*

emphasized that every social and healthcare professional is an advertisement for his/her employer and that everyone has the responsibility with his/her own actions to produce a positive image for his/her organization. Moreover, according to the panelists' comments, entrepreneurial actions were not seen as an integral part of the responsibilities of social and healthcare professionals. Instead, effective guidance for the clients on available social and healthcare services was emphasized in the panelists' comments. In the comments related to statement number 11 *'The social and healthcare professional is able to evaluate the interventions for sustainable development implemented by his/her organization, act according to them, and participate in their development',* the panelists emphasized that it is not necessary for every social and healthcare professional to be able to evaluate the interventions for sustainable development and participate in their development. According to the panelists, it is sufficient that social and healthcare professionals can merely follow the interventions for sustainable development.

Based on the comments and suggestions provided by the eDelphi panelists, statement number 10 *'The social and healthcare professional is in his/her work able to market social and healthcare services and act like an entrepreneur', was reworded to read "The social and healthcare professional is in his/her work able to explain to clients and patients about available social and healthcare services and do his/her part to strengthen the positive image of his/her organization.'* In addition, statement number 11 *'The social and healthcare professional is able to evaluate the interventions for sustainable development implemented by his/her organization, act according to them, and participate in their development'* was reworded to read *'The social and healthcare professional is able to follow the interventions for sustainable development in his/her organization.'* All 15 statements were recirculated in the second round of the eDelphi panel in an effort to avoid potentially introducing bias and the possibility of the reworded statements gaining a greater emphasis or highlighting if listed alone instead of being listed among all the other statements, including those on which consensus had already been achieved. At least 70 percent of the panelists held the view that statements number 1, 6, 9, 12, 14, and 15 should be rated at a group median score of 5, which meant that according to their view these statements were very essential as social and healthcare professionals' general future core competencies.

4.3 Second round of the eDelphi panel

For the reformulated statements number 10 and 11, consensus was established among the eDelphi panelists on statement number 11 only during the second round of the eDelphi panel. As to the reformulated statement number 10, consensus was not achieved during the second round. Although the IQR was <1.0 (i.e., agreement had been achieved among

the panelists), the median score did not reach the threshold value of a group median score of 4–5 among at least 70 percent of the participants outlined in the criteria for establishing consensus. The agreement among the eDelphi panelists on the reformulated statement number 10 concerned strengthening of the positive organizational image, not explaining about the available social and healthcare services to the clients and patients. Most likely, consensus on the statement would have been established during a third round of the eDelphi panel, had the statement been divided into two separate statements.

Conducting a third round of the eDelphi panel was not necessary, because of a total of 15 statements, consensus had been achieved on 14 statements. In addition, as to the reformulated statement number 10, a clear understanding existed on the reasons why the group median score did not reach 4–5 among 70 percent of the participants. Moreover, 6 panelists fewer participated in the second round than had participated during the first round of the eDelphi panel (n=13). For this reason, there was concern about the attrition rate of the participants during a potential third round, especially regarding the ability to calculate descriptive statistics (e.g., IQRs).

5. Discussion

The results of this research study confirm the general future core competency areas previously outlined for social and healthcare professionals (Kangasniemi et al. 2018). Firstly, none of the Delphi panelists articulated the need for additional statements, indicating that a high degree of consensus existed among the Delphi panelists about the comprehensiveness of the statements. Secondly, the statements on which consensus had been established represented all of the general future core competency areas previously outlined for social and healthcare professionals (Kangasniemi et al. 2018). Consensus was not achieved during two rounds of the eDelphi panel on a statement related to explaining available social and healthcare services to clients, because according to the panelists' comments, this task was described as requiring specialized skills or as a task that was not part of the job descriptions of all social and healthcare professionals. To be able to explain about available social and healthcare services to the clients requires timely information about the available services in the local area and on the web provided by the professional's own organization and those of other organizations. It was surprising that social and healthcare professionals' competencies related to sustainable development were regarded as limited by the eDelphi panelists in this study. According to the panelists, it was not necessary for every social and healthcare professional to be able to evaluate the interventions for sustainable development, but perhaps recognizing sustainable development as a phenomenon is somewhat new in the social and healthcare field. Sustainable development and social responsibility are related

as phenomena; for example, social responsibility for the welfare of other people, reduction of social inequalities, or responsible procurement of products support the actualization of sustainable development and social responsibility.

The findings of this research study will be disseminated through national, regional, and local lectures, national and regional conference presentations, and articles published in Finnish and English-language research and professional journals. In addition, the research results will be disseminated via social media channels.

The statements on the social and healthcare professionals' general future core competency needs utilized in this research study were based on the results of previous studies (Kangasniemi et al. 2018), the additions and adjustments made to those results in the Sotetie project, and the results of an electronic survey on social and healthcare professionals' general future core competency needs conducted during the Sotetie project. Although the statements were constructed carefully in multi-professional collaboration among many experts in the Sotetie project, it was neither possible to pretest the statements nor previously publish them. They also have not been utilized in other research or development projects. Moreover, it is possible that the limited size of the eDelphi panel promoted the achievement of a narrow consensus based on relatively conventional ways of thinking. The strengths of the study included using a diverse and multi-professional Delphi panel which was constructed according to carefully planned criteria, including the geographic locations, the specialties, the professional groups, and the professional roles of the panelists in the social and healthcare field.

The limitations of the Argument Delphi method used in this research study relate to the methodological issues regarding the sampling plan, including using a purposive sample of potential panelists invited to participate in the eDelphi panel, which may have caused a selection bias in the study. The strengths of the Argument Delphi method include highlighting divergent views and opposing opinions among the panelists. Moreover, a particular strength of the electronic eDelphi method is that it facilitates participation in a virtual panel anonymously on the web at any time.

Applicability and potential uses of social and healthcare professionals' general core competencies

The social and healthcare professionals' core competencies have multiple potential applications in education and working life that may be utilized by healthcare delivery organizations, educational organizations, and professional organizations. Examples of potential uses of

the core competencies are in outlining performance expectations which are in common for all social and healthcare professionals; in setting performance standards for use in national qualification exams for social and healthcare professionals; in planning education programs for social and healthcare professionals; in performance appraisals of social and healthcare personnel; as well as in clinical ladder promotion programs, professional career development and mentorship programs, and in reward and recognition programs for social and healthcare professionals. In addition, they can be used in guiding interview questions during recruitment of social and healthcare personnel, in orientation sessions for new social and healthcare employees, and in job descriptions outlining the job responsibilities of social and healthcare personnel. They could be used in the development of national practice standards and regulations published and enforced by governmental and professional organizations for social and healthcare professionals. Most importantly, when social and healthcare professionals' core competencies are widely utilized in education and working life, they will ultimately benefit the patients/clients through improvement in clinical outcomes and quality of care.

6. Conclusion

The generic, or general core competencies in the social and healthcare field apply to all the professionals in the field. The contents of the general core competencies which were developed in multiprofessional, national collaboration exemplify the future core competency needs in the social and healthcare field and facilitate the development of employees' competencies in various organizations and professional work environments to meet future competency needs. Moreover, the social and healthcare reform requires comprehensive, interprofessional general core competencies from the social and healthcare professionals. The general core competencies required in the future also place challenges for continuing education in the social and healthcare field, to implement multiprofessional continuing education courses in an anticipatory manner to ensure that future professional competency needs will be met.

The results of this research project on social and healthcare professionals' general core competencies, particularly on how to explain available social and healthcare services to clients, emphasize the need for further research data on general core competencies from social and healthcare professionals. Therefore, we suggest that additional research is conducted on the degree to which social and healthcare professionals' general future core competencies have already been integrated into daily practice. Further research should also be conducted on which of the social and healthcare professionals' general future core competencies require further competency development to integrate the competencies into practice. Finally, this research revealed that there is still a lack of information about the general core competencies

on sustainable development from different social and healthcare working environments to recognize educational needs related to sustainable development and to develop action models. Our findings support the work done in previous research projects in the field of social and healthcare professionals' general core competencies, particularly in the OpiSote research project (Kangasniemi et al. 2018). This was highlighted by the result in this eDelphi research study that consensus was reached among the panelists on all the statements representing the general future core competency areas previously outlined for social and healthcare professionals by Kangasniemi and colleagues (2018).

More research data is needed on general core competency needs collected from social and healthcare professionals. In addition, more research should be conducted on to what degree social and healthcare professionals' general future core competencies have already been integrated into daily practice and which social and healthcare professionals' general future core competencies require further competency development of the personnel to integrate the competencies into practice. Lastly, more information is needed from different working environments in the social and healthcare field about the sustainable development competencies to recognize educational needs and develop action models.

Acknowledgements

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7 CIRCULAR BIOECONOMY RDI AND EDUCATION AS REGIONAL INFLUENCERS

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ABSTRACT

A circular bioeconomy can be seen as one of the main solutions to reduce pressure on natural resources. New technological innovations are needed and solutions to reduce consumption are achieved through a multidisciplinary approach.

Applied research supports the development of commercial circular bioeconomy solutions by providing means for verification of and scaling up technologies and assembling innovation-oriented collaboration. Circular bioeconomy RDI-projects, implemented together with RDI-experts, teachers, and students, create skills, contacts and work for people. High impact in creating circular bioeconomy innovation and business relies on co-operation between different actors, which is not always straightforward because of different needs and motives. However, when those hurdles are overcome, the results can be highly rewarding for all parties involved. A regional circular bioeconomy innovation ecosystem can benefit greatly from multidisciplinary teams and projects of educational and research institutions, as can be seen from the examples presented in this article.

Keywords: sustainability, circular economy, bioeconomy, RDI, ecosystem, education, regional development

1. Introduction

The global economy consumes more natural resources than can be sustainably produced. The need for natural resources is estimated to continue to increase, while the availability of raw materials will decline (European Commission 2020; OECD 2018). Simultaneously severe environmental crises are emerging, among other things such as climate change, decline of biodiversity and soil degradation (Rockström et al. 2009).

A rapid systemic change towards a circular bioeconomy is needed because it has been estimated that half of total greenhouse gas emissions and more than 90% of biodiversity loss and water stress are caused by resource extraction and processing (European commission 2020). The circular bioeconomy supports the use of renewable resources and raw materials in a sustainable manner (Ellen MacArthur 2017; Lieder & Rashid 2016.).

Circular bioeconomy research, development and innovation (RDI) projects benefit the regional economy by developing sustainable solutions for current and foreseeable environmental, social and economic challenges in different industry fields. Lecturers and students who are involved in the implementation of RDI-projects in collaboration with experts develop not only their own skills, but also create environmental benefits and welfare for the entire area.

Bases of circular bioeconomy

In the circular economy, the material loop is closed, this means that once deployed materials are kept in the economic circle by reducing, reusing, refurbishing, repairing, and recycling (Ellen MacArthur 2017). In the bioeconomy, non-renewable materials are substituted with sustainably sourced renewable materials (Hetemäki et al. 2017, 7.).

The improvements achieved with technological innovation are inadequate to the magnitude and growth of consumption. The global human ecosystem has large imbalances in both productivity and welfare (Geissdoerfer et al. 2017.). The circular economy is expected to have net positive benefits in terms of GDP growth and jobs' creation: prior to the Covid-19 pandemic, ambitious circular economy measures were expected to result in an additional 0.5% increase in the EU's GDP by 2030 and approximately 700 000 new jobs (European commission 2020.). To ensure post-pandemic development and the preparedness for new pandemic realities, many governments have recognised the need and opportunity of a sustainable recovery. Recent analyses on circular economy principles within post-Covid recovery plans (e.g., Iordachi et al. 2020; Sarkis et al. 2020), as well as achievable environmental

benefits of such practices (e.g., Su & Urban 2021) are being published and providing much needed research on the circular economy.

Digital solutions and novel business models as well as technological innovation and changes in customer behaviour have an important role in the transition towards circular bioeconomy (Hedberg & Šipka 2020; Lüdeke-Freund et al. 2019.). International environmental commitments and circular economy strategies encourage change on the national and regional level, in which specific features of regional ecosystems can be considered and utilised to promote circular bioeconomy.

That is why it is important to investigate examples of regional circular bioeconomy promotion through RDI and education practises. This article deliberates to what extent regional circular bioeconomy ecosystem can be supported by applied research and education practices?

2. Methods

This paper adopts a qualitative methodological approach by using RDI projects in Kymenlaakso as case studies. Based on the study of ongoing regional circular bioeconomy RDI-projects and education, the article outlines case-examples that relate to the current RDI-ecosystem discussion. As a result, objectives for regional circular bioeconomy ecosystem development are defined.

The article provides timely and valuable case-examples on what extend regional smart specialisation and sustainable development can be supported with applied RDI and education, implemented in collaboration with different stakeholders of the area of Kymenlaakso.

3. Background

In Kymenlaakso, circular bioeconomy is one of the focus areas in regional smart specialisation strategy (RIS3); officially called "Renewable materials and energy" (bio and circular economy priority). Also, the other two RIS3 focus areas in the region, Smart and green logistics and data economy, cyber security and gamification, strengthen and provide vital solutions for the development of regional circular bioeconomy. (KymRIS 2.0 2021). Based on the proximity of one of the world's largest forest industry clusters (Finnish Forest Industries 2021), the influence of the new national promotion strategy for circular economy (YM 2021), and the EU Circular Economy Action Plan (European Commission 2020), the outlook for strengthening the regional circular bioeconomy innovation ecosystem is very encouraging.

The development of circular bioeconomy innovation ecosystem in Kymenlaakso considers regional, national, and international bioeconomy and circular economy strategies, plans and roadmaps. It entails benchmarking and peer-to-peer knowledge exchange as well as ongoing processes for identifying project co-operation opportunities and ideation of topics for circular bioeconomy applied research, following the Carbon Neutral Kymenlaakso 2040 roadmap (Savikko et al. 2020) and Kymenlaakso bioeconomy roadmap (Tallinen & Räty 2019) and taking into consideration the mapping of regional circular bioeconomy drivers (Maunula & Jukka 2021) and knowledge needs (Maunula 2019).

Every region, Kymenlaakso included, needs a development platform and actors that support the development of circular bioeconomy innovation ecosystem by enabling systematic collection and sharing of information to achieve the commonly set goals, such as carbon neutrality. Regional RDI and education provide good premises for this development work.

The South-Eastern Finland University of Applied Sciences (Xamk) has two research units in Kymenlaakso focused on environmental monitoring and sustainable development. First, research centre for bio and circular economy BioSampo, focused on the training and applied research in the fields of energy technology and circular bioeconomy. Secondly, KymiLabs specialises in measurement and testing services for companies in the fields of emission measurement and concrete testing. Both units provide and develop services that support emission reduction and ways to increase carbon sinks by utilising different side streams and reusing biobased waste.

The RDI-development projects are mostly financed by European Regional Development Fund (ERDF) and implemented with other actors (enterprises, research organisations and public sector). The main target of circular bioeconomy RDI is to achieve carbon neutrality as soon as possible and in all industries and sectors of society. Thus, the work includes not only technical development but also community outreach. Dissemination of information about sustainability measures and test results of piloting are as important as technical development. Whereas stakeholder influencing is mostly done through different RDI-projects and education.

Xamk has solid RDI- and circular bioeconomy education facilities and it is developing them strongly to serve the needs of the region. Knowledge and awareness of sustainability and circular bioeconomy are spread through RDI-projects and education. They are also closely related to Xamk's circular bioeconomy research units. At the moment, for example projects such as "KOSKES – Circular economy center of excellence" (KOSKES) and "New openings in the bioeconomy- BUT" (BUT) disseminate the results of circular bioeconomy RDI, as well as getting people involved in matters of sustainable development and social responsibility. The projects have been funded by the Regional Council of Kymenlaakso from ERDF.

In the KOSKES-project, the concept of a circular economy centre of excellence is being outlined in co-operation with research and education organisations, public administration, and industry operators. This is the development of the Hyötyvirta business area, with an emphasis on environmental business, providing excellent location for research, RDI co-operation and circular bioeconomy start-ups. In BUT-project, existing networks are strengthened, and co-operation and know-how brought to the level necessary for development work that has a significant impact on the region and enhances international co-operation. BUT has target to find, create and implement new approaches to improve the potential of the bioeconomy of the Region of Kymenlaakso. (KOSKES 2021; New openings 2021)

Nordregio, a leading Nordic research institute within the broad research fields of regional development, policy, and planning, has published on the state of the Nordic state. This includes an index table describing regional potential which indicates Kymenlaakso has low net migration, employment, educational attainment, and a low R&D investment rate. (2020, 168-169.) Nevertheless, there has a long tradition of the basic principles of the bio and circular economy in Kymenlaakso region because the forest industry has long been a significant player in that field. However, RDI expenditure in the region remains low. There are several other actors in Kymenlaakso whose development work should be made more visible. This visibility could increase interest in relocating to the area, for example as a student, employee, a permanent resident or entrepreneur.

4. Results and impact of RDI-projects

Circular bioeconomy RDI-projects have a strong influence on the Kymenlaakso region by maintaining and enhancing vitality. In many ways, they create skills, contacts, and work for people, as well as environmental benefits and welfare. By including Xamk's students in the implementation of RDI-projects, working as trainees, authors of final thesis or exercise workers, students get work experience and need contacts. At the same time, companies get workers that can help them to develop their businesses to become more sustainable and to be able to call into play new technologies and business models that comply with and benefit from emerging circular bioeconomy practices. Nevertheless, there are often hurdles to overcome in getting the needs of industry, RDI and education to fit as well as making the processes run smoothly, within company innovation process timelines, RDI-project lifetime, and in the rhythm of educational processes. As our case-examples show, when those problems are overcome, the results can be highly rewarding for all parties involved.

As a good example, one project (KYMBIO) implemented by Xamk brought together a waste company and an energy company, whose needs were met through the information gathered

and shared in the project. From the need for the better utilisation of the wood coming to the waste station, and on the other hand, a new, the need for a renewable energy solution for the area to produce district heating. A new wood chip thermal power plant was established by companies (Picture 1). In that case, students also conducted some of the preliminary studies (e.g., indicative profitability calculations and alternative combustion technologies) needed supporting the investments. (Tallinen et al. 2019, 37.).

Picture 1. Wood chip thermal power plant under construction in autumn 2020. (Xamk)

As an RDI-pilot in KOSKES-project, students designed circular economy mascots (Maunula & Haapanen 2021) for EcoUp Ltd, a national enterprise that provides technologies for upcycling construction waste and transforming it into re-usable materials (EcoUp 2021.). Students were given the task to come up with an idea for a treasure hunter mascot that could be used for marketing purposes, digitally, and for example as a toy, which could be produced from a geopolymer. The task was to highlight the potential of the geopolymer material the company developed and to provide an opportunity for the students to use the bioproduct design tools and methods they study.

The students came up with four suggestions, each consisting of a cast or 3D-printed figure (see picture 2) and a 3D-model. EcoUp was very pleased with the mascots, and the Ec-ca-chameleon by Saara Hakamaa was selected for further development. Also, co-operation between EcoUp and Xamk is going to continue in the future.

Picture 2. EcoUp mascot competition entries by Elisa Laitinen and Maisa Mutanen, Benjami Hiljanen, Saara Hakamaa, and Maria Lampinen. (Xamk)

RDI and education collaboration has been utilised in the KOSKES-project to come up with different ideas for possible operations within a regional circular economy centre of expertise, planned in the RDI-project. The ideas that produced by master students from sustainable construction and design programme included different outlooks of circular economy: 3D printing of recycled materials, a recycling service for used office furniture, a co-operation model for textile recycling, collaborative spaces for SMEs, a landscaping innovation workshop, and a packaging center (Maunula et al. 2021.). In any case, these examples are just the tip of the iceberg, showing very useful and effective ways to support circular bioeconomy ecosystem by applied research and education practices, and at the same time, develop expertise and strengthen regional co-operation.

In the transition towards regional circular bioeconomy, knowledge and skills play a vital role. These skills include industry-specific expertise, business and marketing expertise, technological and IT skills, environmental expertise, raw material and circular economy expertise, and general work-life skills (Maunula 2018.). The specific topics of skills needed in an individual organisation, depend on its industry field and product and service range as well as the abilities and duties of the personnel.

As the circular bioeconomy ecosystem overlaps different industrial sectors, learning and innovation is stimulated in collaboration at the interfaces of different knowledge areas (Ghisellini et al. 2016; Hetemäki et al. 2017, 7; Hedberg & Šipka 2020, 20.). Thus, the regional circular bioeconomy innovation ecosystem can benefit greatly from multidisciplinary teams and projects of educational and research institutions.

5. Discussion

A circular bioeconomy reduces pressure on natural resources and is a precondition for achieving the climate-neutrality target by 2050 and halting biodiversity loss (Herold et al. 2019, 35.). Applied research supports the development of commercial circular bioeconomy solutions by providing means for verification of and scaling up technologies and assembling innovation-oriented collaboration. That is important because it gives an early signal to continue or stop proceeding in your development work without remarkable economical (or ecological) losses.

The regional circular bioeconomy ecosystem is supported with RDI activities by finding, creating and implementing new approaches needed to support companies in utilising the business potential of circular bioeconomy (e.g., energy efficiency in the SME sector, blue bioeconomy, biodegradable /plastic-free products, packaging development). Circular bioeconomy RDI provides means for identifying knowledge gaps and development needs in the local circular bioeconomy business ecosystem. It also strengthens existing networks and creates new understanding and skills though knowledge transfer, education, facilitated ideation, testing and piloting.

In Kymenlaakso, different kinds of methods are used and implemented to promote sustainable circular bioeconomy, both in education and in working life. For instance, it is possible to enhance environment friendly production and activities through content of courses in education and practicing, creating practical solutions, and investments. All this can be supported by RDI projects, e.g., piloting new solutions and considering the knowledge and experience gained from.

The role of education and research organisations is vital within regional circular bioeconomy innovation ecosystem (Tallinen et al. 2021.). Nevertheless, the development of the circular bioeconomy ecosystem is dependent on the commercialisation, production and sales of circular bioproducts and services. In other words, it relies on the active role of companies (Lieder & Rashid 2016.). Even though Xamk has strong partnerships with regional businesses and demonstrated successes in developing value for companies and the innovation ecosystem of the region, we realise that relationships within the innovation ecosystem still need to be deepened further. Therefore projects like BUT and KOSKES are very much oriented towards creating networks and developing RDI structures that support circular bioeconomy innovation in the region. This includes collaboration with companies, regional development organisations, universities, vocational collages, public organisations and 3rd sector, not to forget the all-important development of the research centres and RDI facilities as well as education and RDI-collaboration within Xamk.

The strong collaboration between education, enterprises and RDI-projects creates a solid foundation for regional development in Kymenlaakso; one of the important tasks of Xamk. However, it should be recognised that this article is limited to presenting circular bioeconomy RDI and education case-examples in a single higher education institute. Thus, further examples of RDI and education collaboration in applied research should be investigated and analysed in order to identify best practices and to get a more comprehensive view of their significance in promoting circular bioeconomy innovation ecosystem development.

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8 THE REUSE OF BRICKS AND TIMBER: CIRCULAR ECONOMY IN THE DEMOLITION OF BUILDINGS

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ABSTRACT

The United Nations´ program for Sustainable Development Goals encourages us to be more responsible consumers and producers. Sustainable development requires that we urgently reduce our ecological footprint by changing the way we produce and consume goods and resources in all sectors of life. Recycling is a key component of modern waste reduction, and it promotes sustainability by reducing raw material input and redirecting waste output back in the economic system.

This paper investigates challenges and opportunities for the reuse of two popular building materials: bricks and timber. The aim of the study is to find out how to make the recycling of the bricks and timber economically feasible business. The paper discusses the subject based on both international examples and local recycling experiments. The findings of the study suggest that the economies of scale and the creation of added value are the key requirements of the economically feasible recycling of building materials.

Keywords: Timber, Bricks, Circular Economy, Building Demolition

Introduction

Today, the built environment creates one third of the world's greenhouse emissions and every year about 190 million square meters of new apartments are built in Europe alone (Amiri et al. 2020). To reduce the environmental burden of our built environment we must analyze the environmental impacts of the buildings over their entire life cycle. Unfortunately, in Finland the focus has been mainly on the energy efficiency of the buildings, and the development of more environment friendly manufacturing processes and reuse of building materials has received far less attention. This paper focuses on the following two research questions: what are the main factors that prevent the reuse of building materials, and how to make the recycling of the bricks and timber economically feasible business. These questions are of great importance as recycling and waste minimization are essential tools for tackling the climate crisis (Tai-Kuei et al. 2019).

The paper starts with a short review on recent developments in the carbon footprint evaluations, followed by some international examples of recycling two popular building materials: bricks and timber. The empirical part of the study reports the findings of three recycling experiments carried out at demolition sites in Mikkeli, Finland. The research method used in all cases is strategic experimentation (Berg et al. 2014). Finally, the findings of the experiments are discussed, and the requirements of economically feasible building material recycling are identified.

Carbon footprints of the buildings

Finland has set an ambitious aim to be coal neutral by the year 2035 (Government 2019). This transition requires a wide range of changes in production and consumption structures in different sectors of the society. Buildings with a significant carbon footprint and material intensive construction industry play an essential role in this transition.

Traditionally, the attention in the environmental impact assessment of buildings has been on the energy consumption and operational emissions of the buildings. With the tightening climate objectives, people have started to pay more attention to the carbon footprint of the whole lifespan of the building (Amiri et al. 2020). For example, France has already implemented voluntary carbon-related labels and currently implements energy and carbon regulations for new buildings (Häkkinen et al. 2021). In Finland, the government has also started actively to promote the recycling and reuse of building materials. The Finnish Ministry of the Environment is preparing new legislation to promote low carbon building. The life-cycle-based carbon footprint regulations are aimed to be applicable no later than 2025. (Ministry of the Environment 2020.)

The Danish recycling examples of building materials

In many European countries, the reuse of building components has been significant business already for many years. The following examples describe some circular economy business models applied to recycling both timber and bricks. In addition to the financial opportunities, these examples offer important environmental and social benefits. For example, the reuse of the bricks and timber reduces carbon dioxide emission remarkably compared with the manufacturing of new building components, and recycling fulfils customers' demand to increase the practices of sustainable development in construction (Tam et al. 2018).

In Denmark, the building material retailer Stark has started to sell recycled timber. The service which carries the name of GENTRÆ collects timber used in temporary structures such as racks, railings or supporting structures from the building sites. The construction workers of the site place reusable timber in special steel frames and GENTRÆ is then responsible for fetching and sorting the collected material. Reusable timber is labelled with a quality mark and sold to the customers alongside unused material, but at lower price. (Stark s.a.)

Næste Skur is a second Danish company specialising in the reuse of timber. Instead of selling used boards and planks, the company designs and builds different kinds of sheds for a wide range of customers. The sheds can be used for example to store garbage bins or bicycles. (Næste Skur s.a.)

The recycling of bricks has traditionally been based on the reuse of single bricks. Gamle Mursten is a good example of a company operating this way. It collects bricks from the dismantling sites around Denmark and transports them to its office for cleaning and packing. The bricks are first pre-cleaned with dedicated machines and then sorted manually according to color, quality, and other properties. Finally, the sorted bricks are stacked and packed automatically using robots. (Gamle Mursten s.a.)

The transition from lime plaster into higher strength cement mortar has complicated the recycling of the individual bricks because the cleaning of the bricks is far more difficult. However, the Lendager Group has solved the problem with an innovative module structure. Instead of using individual bricks, the old brick wall is sawed with a diamond saw into larger blocks which are then later combined as wall modules using steel frames. These cut out modules are used to create new walls in different kinds of buildings. (Lendager Group s.a.)

Recycling experiments in Mikkeli

In 2020, Kohvakka organized three timber and bricks recycling projects in Mikkeli, Finland. The projects applied the strategic experiment method and focused on learning about the obstacles and possibilities to reuse and recycle building materials. In addition, the experiments fostered the participation of both private citizens and organizations, created public debate on the reuse of building materials, and challenged existing structures in construction industry.

The first experiment was a pilot project called Purkupuu kiertoon (recycling demolition timber) funded by Sitra (Ekengren & Lehtinen 2020). The main objective of the pilot project was to increase the general knowledge about recycling among permanent and summer residents of the area and to find out if there is demand for recycled timber. In the experiment, the project workers removed reusable material from a huge waste timber pile. Potential customers used Facebook to tell their order volumes and they also received information about when they could come to fetch the material. During the experiment, the prepared timber was free of charge for the customers.

In the project, timber was delivered to more than 100 customers. Altogether more than 3 000 meters of board (mainly 22 mm x 100 mm) and about the same amount plank (50 mm x 100 mm) was delivered to the customers. The customers' feedback was collected using semi-structured interviews and the analysis revealed positive and encouraging findings. The experiment distinctly showed that there is demand for recycled timber in the area. It also indicated that a growing number of citizens want to fight against climate change and make environment friendly choices if they have the opportunity to do so.

The next two experiments concentrated on the reuse of bricks. They were carried out in two separated dismantling locations in Mikkeli (Tuukkala's hospital in November 2020 and Urpola's school in December 2020). In both locations, the required studies of asbestos and other harmful substances were carried out before the experiments started. In Tuukkala, it was noticed that the mortar was not tightly attached to the bricks and therefore the cut-out module technique described earlier could not be used. Instead, the bricks were removed one at a time from the wall. Using this labor-intensive method, a worker was able to remove and clean about 25 usable bricks in an hour. The experiment showed that the manual dismantling of bricks is possible but a slow process. In the second location, a different method was used. The brick walls of the school building were first taken down using the excavator. Then the reusable bricks were collected manually from the yard. The collected bricks were cleaned immediately and stacked to the edge of the site. During the experiment, a worker was able to collect about 120 bricks in an hour.

Discussion

The experiments indicated mixed results. First, the experiments distinctly showed that there is a demand in the Mikkeli region for reusable timber. A growing number of citizens wants to make more environmentally conscious decisions relating to building materials and as such found uses for recycled timber in different ways. Second, the operation models applied in the pilot projects do not support the reuse of the bricks. The applied manual methods are currently too slow and expensive for the price sensitive construction industry.

However, as the Danish examples highlighted the reuse of building materials can be commercially feasible. The key success factors and requirements for a feasible business model seem to be the economies of scale and the creation of added value. Large volumes together with machine based and automated product lines are a prerequisite for recycling used building materials, like bricks and timber. If large volumes cannot be obtained, value creation is another alternative to achieve profitability. In this case, materials are not recycled as such, but they are used to create finished or semi-finished products. Sheds and wall elements are just some examples of the possibilities available.

In Finland, the reuse of bricks and wood is still very much in its infancy. Today, both the construction and demolition processes are still mainly guided by cost efficiency and environmental aspects have only a minor role. However, the low carbon emission targets of Finland promote circular economy and renewed legislation supports all forms of recycling also in construction. This development opens up new business opportunities for the reuse of building components. Therefore, in the near future, architects and engineers will have to pay far more attention to how all the different elements of the buildings can be reused. This responsibility is not only limited to the construction and demolition companies, but also the roles of the clients and owners of the buildings are essential. They must have strict targets and guidelines on how to implement recycling on demolition sites and clear control systems to verify the efficient reuse of building components.

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9 THE DYNAMIC VIRTUAL MUSEUM AND PROMOTING WELLBEING

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ABSTRACT

The availability of new digital innovations have brought many enhancements on how people work, act and experience. During the Covid-19 pandemic, when traveling was restricted, digital cultural experiences became more popular and necessary for the general public. Even before the pandemic, many people were unable to visit museum due to different reasons. It can be seen as social responsibility to bring these experiences within everyone's reach. However, few cultural heritage institutions have the required knowledge or resources to produce decent and accessible digital experiences. Xamk and Digitalia – Research Center on Digital Information Management in an ERDF (European Regional Development Fund) funded DOM (Digital Open Memory) project decided to take responsibility and implement a virtual museum solution, which makes it easy for anyone to create new virtual museums and visit existing ones.

Keywords: wellbeing, unity, virtual museums, social responsibility

1 Introduction

Enhancing well-being is the main goal of the development work behind this paper. This includes, but is not limited to age, physical condition, previous experiences, general health situation, cultural aspects, etc. While some of these aspects can be tackled with design thinking, there are many people with disabilities or those with other impairments need to be considered when designing and implementing a virtual museum experience.

In general, existing museums have several challenges related to modern digital technology, digitalization, and lack of knowledge. This view is supported by Forbes and Fresa (2015)

who state that due to lack of knowledge, funding, awareness, and skills this digital heritage is not yet widely available. Still, the European Parliament resolution (2015) emphasizes that digital cultural heritage is important for preserving our past, but also as a source for education and research opportunities. Good examples do exist, for example my last visit to a museum was in 2019 in the Canary Islands (El Museo Canario) which contains skulls and bones. In addition to a great number of interesting objects, the museum had a scene demonstrating the prehistoric settlement in VR (Virtual Reality) space. Do you remember your last visit to a museum? Can you name any existing virtual museums?

The designed and implemented virtual museum explored in this paper aims to be one size fits all solution that makes the museum accessible for everyone, however the main target would still be those people that are not able to or eager to access traditional museums. The secondary function of this virtual museum might be luring the audience via virtual exhibitions to the physical museum or gallery.

All the above-mentioned aspects were combined into a work package of the DOM project, in which a fully dynamic virtual museum with the Unity game engine was designed and implemented. Through accessing the newly created museum solution enables the promotion of mental well-being and accessibility by allowing anyone anywhere to access virtual museums and even experience those in true VR, if they happen to own suitable devices.

This paper is structured as follows, section 2 describes some existing virtual museum solutions and their problems, section 3 introduces the virtual museum solution by Digitalia, and section 4 concludes with the results and discussions.

2 Existing online museums

Even though modern technology and devices make it easier and simpler to create online museums, the museum field rarely has the required knowledge or funding to start building a new virtual/online exhibition from scratch. In fact, the attitude towards virtual museum has been quite negative until recent years. For example, (Schweibenz 2004) predicted that "The virtual museum is no competitor or danger for the "brick and mortar" museum because of its digital nature". Due to enhanced technological possibilities and true wireless VR experience, this 15-year-old statement has not aged well and museums have started to take their first steps towards this new digital wonderland.

Figure 1. Photogrammetry based solution, https://sketchfab.com/3d-models/hintze-hall-nhm-london-surface-model-b2f3e84112d04bf1844e7ac2c4423566 Vs. a genuine photograph of the same skeleton. Can you spot the differences? https://www.nhm.ac.uk/discover/news/2017/july/museum-unveils-hope-the-blue-whale-skeleton.html

In the DOM project, a fresh, fully dynamic virtual museum was designed and implemented. However, it must be mentioned that many virtual/online museums exist already, so why we did we not utilize one of those? The main reason is that of unavailability. Even though modern technological solutions are implemented, and existing museum artefacts are being digitized, the results might not be publicly available. Even if the artefacts are released for example via Sketchfab service the utilization requires an account and a login. Furthermore, better quality models are generally behind a paywall, thus services offering 3D-models are quite popular among game developers. The objects available free of charge are commonly quite low quality. Finally, according to our studies, existing virtual museums and online exhibitions commonly suffer from some or many problems described below:

- Being photogrammetry based, which leads to a poor detail quality when viewed in close range, as seen in Figure 1,
- Created with panoramic images or cube maps with textures and hotspots which greatly reduce the interaction and update possibilities,
- Bound to Steam, which requires account creation and software installation before the actual museum can be accessed,
- Boring as the artefacts and the experience are always the same due to being a static implementation.

These issues greatly reduce the usability, accessibility and attractivity of the solutions. Digitalia's intention was to build a museum that could enhance mental well-being and reduce social inequality relating to accessibility, rather than cause frustration, anger or boredom. Therefore, a new and fresh solution was needed. In addition to the above-mentioned problems, few very well nicely implemented virtual museum solutions exist. The best available example was cre-

ated by Smithsonian 3D Digitization[2]. At the first glance the solution looks promising and well-made, especially the available x-ray mode, which is particularly impressive. Detailed information about the object is clearly available, but the biggest drawback of this solution are its independent objects. Moving from an object to another takes time and there is not a museum-like, free to explore experience.

Figure 2. The space suit of Neil Armstrong in XRay mode in Voyager application (https://smithsonian.github.io/dpo-voyager/)

3 Digitalia Virtual Museum

The justification for building a new virtual museum instead of utilizing some existing platform is clear. None of the currently existing online museum solutions offer what it takes to achieve the goals of an accessible solution. The virtual museum by Digitalia tackles the identified problems by:

- Generating the museum environment on the fly with basic 3d primitives, textures, and random map generation. This way the quality of the museum itself can be kept at an excellent level,
- Requiring just one zip-file download and extraction. After which it is ready to be used with the included demonstration museums and external objects,
- Being dynamic. Therefore, the museum experience will never be the same. All object and museum structures are randomized,
- Being built with a game engine. Therefore physics, lightning, controls, interactions, etc. and important playability features are automatically being considered,
- Allowing visitors to rotate, zoom and move the objects,
- Furthermore
  - Allowing multiple types of objects (3D-models, images, and videos) with their metadata to be viewed inside the museum,
  - Being very simple to extend with new objects and images with the included instructions and examples,
  - Being linked to Yksa digital archive[3] which can be used as a source for the metadata.

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[2]   https://3d.si.edu/collections
[3]   https://disec.fi/arkistopalvelut/ (In Finnish)

The chosen approach greatly enhances the possibility of providing a great user experience and thus offers an ever-changing, simple to extend, museum experience. During the development process, we kept in mind that example implementing a virtual museum experience for a museum amanuensis and a person with disabilities who has never accessed a real museum are completely different tasks. While an amanuensis might be interested in details and lightning setups to be able to see every single detail of the object, a person with disabilities might just be pleased to see the object, such as a nice vase or a painting, in front of them with some details. Both utilization methods are available in our virtual museum.

From the beginning of the DOM project, the idea was to create a fully dynamic environment which would suit various needs. When everything is designed and implemented to be dynamic, every visit to the museum will be unique. The map, walls, floor, ceiling, materials, lights, and objects are all randomized and can easily be extended by adding more materials to a predefined load path. This game-like immersive experience is enabled by allowing visitors to freely walk around the generated space and interact with the artefacts in a separate artefact view which allows the visitor to rotate, zoom and move the artefacts, as well as to change the general lightning conditions with three different light fixtures. The main exhibition area normalizes the scales of the objects and pictures due to various reasons, such as making it simpler for the visitor to move around.

Figure 3. Screen captures from the Digitalia virtual Museum

3.1 Technology

At first, it should be noted that it would have been far simpler to model a static museum environment with static artefacts such as Clini et al. 2018 described in their research. However, familiarity with the game engines and the strong will to implement something different lead to the fully dynamic approach chosen by this project.

Both major game engines, Unity and Unreal would have been suitable for building this kind of virtual museum, but Unity was chosen due to its native C# support, and in part because it is the most used game engine in the world. Being popular and well-used means that it has a broad base of community support available, which was needed during the implementation of the project.

As mentioned, a virtual museum and online exhibitions can be implemented with a variety of techniques. However, the only truly immersive option is to use a first-person controller in a full 3D environment, and this is the approach used by Digitalia virtual museum. Using a first-person controller also means that the transition to a VR environment is just a matter of replacing the existing controller with a VR controller. Furthermore, the first-person controller happens to be the most commonly used mode in 3D games. Therefore, all modern game engines, including Unity, provide this functionality out of the box and younger people in general are familiar with the controls.

While it will be simple for the users to create new museums and to add new objects and images to the existing museum, the background technology that makes this possible is quite complicated. A basic overview of the workflow, is as follows:

1) The Unity game engine provided functions and C# code creates the basis for the museum.
2) Museum objects are loaded either dynamically from the user configured paths or from a prefab folder when the application is launched. Available museums will appear on the start-up screen. Adding museums is done by editing a simple config.txt file on the main application directory. New objects are added by including objects, images, or videos in a folder structure
3) When a user enters a museum, the background code creates a maze which is used as a blueprint in generating the museum structure. Generated structure will be given a random appearance from the available textures. Rendering and real time lightning calculations are done with Unity URP (Universal Render Pipeline) which produces quite realistic diffractions and shadows. The museum generation on the fly takes approximately one second so there is not a frustrating waiting time.

4) The objects available for the chosen museum are automatically placed into the museum and a spotlight is created for every object with a slightly randomised angle.

5) When the museum is fully generated, the user is placed inside the museum 3D-environment. Moving around the environment and interaction is created with a Unity FPS (First Person Controller), the controls are the same as in any first-person shooter game. Moving around is done with the keyboard arrows or 'wasd' and looking around is controlled with the mouse. A few extra keyboard controls were created for the user, and these are explained in the info screen of the virtual museum application.

An important part is also the object production. Videos, photographs and drawings should not require any premade adjustments, but 3D objects are different. Currently, the virtual museum supports the dynamic loading of .obj files and the related material (.mtl) and texture (.jpg) files. If the object is for example in 3DS Max format, it first needs to be converted into an .obj file before it can be dynamically loaded into the museum. There are many commercial programs that can be used to achieve this conversion, but luckily there is also the open-source application blender[4] which can do the same thing. Additionally, 3D-scanned objects, such as the ones in demo museum should be reduced from their original quality. A 3D-scanned object size can exceed a gigabyte and loading models this large in a game engine is too resource intensive. All objects inside the Demo and Elka-Design prefab museums are reduced in size with Blender decimate geometry function to about 1/25 of their original size to ensure the smoothest possible experience.

4 Results and discussions

To be able to demonstrate the usefulness of this newly created virtual museum a demonstration, which is included in the downloadable package via https://digitalia.xamk.fi, was created with the Design Archives, which operates in conjunction with the Central Archives for Finnish Business Records. Ten objects from the archives were 3D-scanned with a Digitalia-owned Shining Einscan SP scanner and the results were imported into the museum. As stated, scanning produces quite large objects and those need to be reduced before importing. If the object is zoomed too closely, this reduction can be seen as uneven surfaces, minor errors, and so on.

Due to various aspects, such as browser security and graphical quality, a principal decision was made that this virtual museum only operates in a local environment. However, the museum is provided as a downloadable package with the instruction on how to extend

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[4] https://www.blender.org/

the capabilities. At the time of writing, only a Windows application is available but later a runnable file for Linux and MacOS will be available.

Although this virtual museum has not been piloted in a large scale yet, its significance for the museum field is inevitable. With this solution even a simple laptop computer with integrated graphics can be turned into a museum exhibition containing 3D-models, pictures, and videos without any technical know-how. Furthermore, accessing museums will no longer be related to physical on-site access and any museum could easily offer extension content packages to the downloaded museums. Museums that wish to take this virtual possibility into use could easily create their own downloadable package, based on the provided demonstration version, including just their own content.

Even though, this virtual museum is out-of-the-box solution, it is still in a proof-of-concept phase. In future research, it must be considered that utilizing technology will always come with extra limitations. For example, people with sight impairments cannot view regular displays and people with missing or artificial hands cannot use the current controls of the virtual museum. In addition, there are many user experience/playability aspects that could be extended or enhanced, such as adding the possibility to customize the graphics/outlook/ interface. Secondly, the Unity game engine and its capabilities are being developed continuously, so forthcoming features might include something interesting from the museum point of view. Thirdly, it would be possible to implement NPCs (Non-Player Characters) that are also visiting the museums and walk around the space to give it the feel of a real museum, complete with visitors and staff. Also, there is a possibility to download the original 3D-model and print it out in any available 3D-printer, this might be an interesting functionality worth considering in the future. Further, adding additional gameplay elements such as destructive behaviour and some hidden weapons might also be an interesting new viewpoint to consider for the museum field. Finally, an AR (Augmented Reality) enhancement to the virtual museum is being planned as part of a planned forthcoming project.

To conclude, as a result of this work, we hope that visiting a museum would not be more complicated than downloading and extracting a package, launching the application, and then choosing an interesting place to visit from the list of available museums.

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10 OPEN SOURCE TOOLS FOR ARCHIVING SOCIAL MEDIA: A PRACTICAL CASE STUDY OF FINNISH MUNICIPALITIES AND TWITTER

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ABSTRACT

Public organizations increasingly use social media as a communication tool for various purposes, such as informing citizens, networking, or gathering feedback. For researchers, social media provides a valuable source of data on societal phenomena – as primary or complementary datasets. The ubiquitous nature of social media also raises new questions about the long-term preservation and archiving of such fragile data. In this study, we address the question How to make sure that official communication by authorities could be stored for research purposes in the future? As a part of Xamk's social responsibility theme, the Digitalia research center provides open-source tools for low-cost archiving solutions. In this work, we study how to automatically collect and store data from official public accounts using Finnish cities' Twitter accounts as an illustration. Our results demonstrate the importance of preserving born-digital cultural heritage and providing easy-to-use solutions for such purposes.

Keywords: Twitter, Social Media, Archiving, Preserving Data

1 Introduction

Digital information consists of two main types: born-digital information and digital copies of traditional paper documents. The amount of the born-digital types has grown exponentially over recent decades, leaving many archival and library institutions slightly confused as how to handle this information. Not only over the amount of information being produced pose a challenge, but also the required methods, tools, resources, and skills. Currently our life story is more and more in the hands of a few providers of online services and social networks (Pimminger et al., 2015). When properly captured, this digital cultural heritage could be very valuable for society overall, as well as smaller communities, groups, and individual citizens.

Indeed, a good illustration of the above-mentioned challenges is social media, which refers to online platforms that support creating and sharing user-generated content (UGC) and networking with other users (Sloan & Quan-Haase, 2017), such as on platforms like Facebook, Instagram, or Twitter. As Thomson (2016) notes: "Collections of social media data obtained through API-based strategies and adequately preserved by collecting institutions will help ensure the memory of an important cultural moment and help protect equal access to shared digital heritage."

Social media represents a window to our lives in the early 21st century, often giving a more down-to-earth view than official records can provide (Kirmo & Kosonen, 2017). Despite the risks concerning issues such as privacy, "info wars", and addiction, these services are widely accepted and broadly used for communication, networking, and content sharing. This also makes them appealing for research purposes (see Sloan & Quan-Haase, 2017, for a wide set of examples ranging from mapping the spread of influenza to identifying scams or analyzing messages on organizing citizen activity).

Yet the online world is volatile and fragile in terms of data and accessibility. Even the most popular services may suddenly cease to exist, which calls for clear strategies to back-up and collect valuable data. Thomson (2016) explains how research and collecting institutions need to archive social media source data for academic research and preserve it for future access. In terms of public authorities, it is necessary to do this for legal and regulatory purposes.

The most devoted data enthusiasts consider social media to provide unique sources of societal and historical information. However, much less emphasis has been given to how to eventually succeed in archiving data which is "temporarily, spatially, and technologically sensitive" (Papacharissi, 2015). Our paper focuses on Twitter, which in Finland is widely used by larger institutions, politicians, media professionals and researchers. Although ar-

chiving Twitter's content remains an understudied area. Furthermore, Twitter's rules and policies are substantial.

This paper is organized as follows. We start by outlining our problem specification, which are the challenges relating to social media archiving. We then describe the objectives and the selected approach, followed by the overall requirements and our technical solution in the results section. Finally, we discuss the benefits of our approach and some areas for further development.

2 Problem specification

Typically, archivists are interested in preserving data over decades, whereas digital communication services and social media tend to have a rather short life cycle. One example is the Yahoo! Groups case: recently Yahoo! simply notified users that its groups will be deleted in late 2019. As a result, those groups are now permanently gone. Therefore, the main problem with digital spaces is the threat of losing data in the "digital black hole".

Open source and commercial tools for conducting social media archiving exist but are typical limited by a lack of resources. This holds particularly true in cities and smaller municipalities, which have very limited resources for both archiving and identifying new solutions for such purposes.

From the Digitalia participants, The National Library of Finland collects Twitter data for the purposes of preserving national cultural heritage. This takes the form of specific theme collections regarding e.g., politics, topical news, or large events. They are using JSON (JSON homepage, 2021) format. The material is available only in a limited number of reading rooms, and the collected datasets represent a small number of official data. Therefore, we see a need for complementary solutions.

There are over a hundred cities or municipalities in Finland that are already using Twitter regularly to inform inhabitants about important issues in the city or municipality. Each department or actor inside the city or municipality might have their own account, or there could simply be one shared account. Therefore, the solution must be flexible and able to handle tens or even hundreds of accounts per actor. The number of daily tweets per actor might vary greatly, but the worst-case scenario might be a few hundreds of new tweets per day.

3 Objectives and approach

We assume that one service provider can handle our problem. We require that the solution must work on a standard modern PC or laptop. Data collection and storage must happen automatically, since it is unlikely that the account owners will take care to store the data, even though some clear instructions can be given.

To get anything out from Twitter via its API, a standard Twitter development account is needed. When the data is acquired, we will be utilizing other open-source tools like Python libraries (Python software foundation, 2021) and Sqlite (Sqlite, 2021) in the implementation. Due to the Twitter rate limitation policy of a free standard developer account, the full tweet history cannot be reached as the backward limit is 3200 tweets. There is a work around for this, which we will discuss. Our work can be considered as a proof of concept (PoC) rather than a full-scale production ready solution.

There is a variety of choices to work with open source tools. Our current choice is to use Tweepy (Tweepy, 2021) for downloading text, hashtags, etc. But using this tool, we cannot get the media content directly. For this purpose, there are several appropriate choices from the open source community.

In our approach, the full tweet history has to be read once. After that our application is "self-archiving". We do not use Twitter streaming, we simply collect tweets e.g., on a daily basis. In order to build our PoC, we created a csv file, in which each row contains the information of a city accounts i.e., screen names:

> City1, account11,account12,…..
> City2, account21,account22,…..
> .
> .
> .

This data will then be read by our Python solutions and each city will have their own database created, if one does not already exist. The solution is bound to a Linux cronjob and is run e.g., once per day. If there are any changes in the csv file, new accounts will be created, and naturally the existing databases are updated. Possible Twitter media such as images will be downloaded to separate folders named by the city. We rename the media so that the tweet's unique id is appended to the filename. This means that the tweet's associated media can be easily collected for representation.

In principle, the Twitter rate limiting policy gives restrictions to our application, but so far we have not met this limit. Currently, Twitter provides a new version of their API, which allows us to get the whole history for academic purposes, although there are a few requirements (Twitter, 2021).

Despite the rate limiting policy, a rather large pilot study was made. In most cases, this is sufficient to get the whole history. However, in case this is not true, the account owner can download all their tweets. They are in a zip-file in the JSON format, but of course this still requires some effort from the account owner. Our plan is to migrate this data to our database. This requires the development of a user-friendly way to send these files to the administrator, at least in the production level. Once this is done, the data will be stored automatically.

Using this API, we can get the basic information about tweets, but the media content is not included. This means that this content must be downloaded separately. Pictures and videos will take the most resources as it comes to downloading and storing contents. The JSON format includes also addresses to the media content. There are several open source tools for this purpose. In this study, we used download-twitter-resources tool (Download Twitter Resources, 2021).

4 Results and discussion

We have collected over 250 000 tweets from over 150 accounts to the databases. We have no issues concerning software performance. This number of databases can be updated in only a few minutes, but this does depend radically on the amount of media. Media storage takes over 99% of total disk space. It should be noted that Twitter can change the API anytime, so in this event, the modification of our code will be necessary. Yet our work provides a solid starting point to the effort of archiving Twitter content.

We have shown that it is possible to build a system which collects the Twitter content of the Finnish cities, which have very limited resources. This can be done using a single application, which can serve hundreds of accounts and results in low maintenance costs. Naturally, the same approach can be applied to any organization, in case they have the legal grounds for storing and archiving their social-media content (Thomson, 2016, Espley et al., 2014).

It is noteworthy Digitalia does not maintain the actual digital archives, which are the cities' own resources and responsibilities. The objective of our workflow is to demonstrate how the collection of social media data could be done as easily and cost-effectively as possible.

As the described solution is more like a proof-of-concept than a final product, the actual maintenance, its costs and pricing levels remain an issue to be investigated in later projects.

The benefits of our solution are twofold. Firstly, the organizations behind the official accounts would be better able to analyze their own content and influence in terms of their Twitter communication over time. This is enabled by search facilities and simple analysis tools (most popular tweets, word counts, hashtag clouds, etc.) using the data in the collected database. Such tools are of particular interest to communication professionals who would benefit from low-cost systems analyzing organizational social media content. Secondly, the data provides valuable opportunities for academic research in the long term, as it captures timely trends and topics to be analyzed as a whole (see also Sloan & Quan-Haase, 2017). We continue to collaborate with Kuntaliitto (The Association of Finnish Municipalities), universities and archival/library institutions to ensure the desired outcomes.

Social media archiving provides many interesting avenues for further research, ranging from legal perspectives to the actual usage patterns of such datasets. Digitalia continues the work particularly in terms of technical and legal issues. Listening to the needs rising from the ground up, we also aim to broaden our development work into other widely used social media channels.

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11 CONCLUDING REMARKS

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Beyond professional writing

The new volume of Xamk Beyond presents a versatile range of Xamk RDI and education activities. As mentioned in the introduction chapter, the call for papers was open to all writers at Xamk. Therefore, we argue that contributors to this volume have seen the importance of the valorisation of their work results to the wider international scientific and professional community. While currently our scientific writers represent only approximately 10 per cent of our staff in Xamk, we can see that there is far more potentiality both in writers and in the results of activities for scientific publishing.

In this concluding article, we discuss what increasing of scientific writing would mean for staff members of universities of applied science (UAS) specifically and to an UAS in general. We also examine the different possibilities to increase the number of scientific articles and how this might be achieved through staff training, institutional support structures, and professional identity development. Our perspective is a bit historical, futuristic, and primarily based on the process of editing this Xamk Beyond issue and reflections from our professional experience.

Individuals as scientific writers

The first dissertation in Finnish language was published 1858 by doctor Rietrikki Polen. He had a remarkable career in South-East Finland as academic, teacher and journalist. In South-East Finland, the official languages (Swedish and Russian) were not spoken nor understood by the local people. In that respect, Polen and other contemporary academics did important work to give local people access to knowledge and to create better opportunities for all to participate and build a better society. It truly was a local success story in Finland. (Laitinen 1997.)

Now, in the digital era we are facing similar challenges. The problems we face are global and the best solutions need to be disseminated openly and without delay. We need the new information created by scientists, academics, and professionals to learn and apply this knowledge for new products and services. Respectively, we must be able to share our good experiences, interesting problems, successful solutions, and good practices for all. While we do this already to a high standard in Finnish, probably in such a great quantity that would have been unimaginable for Dr Polen some 150 years ago. However, like Dr Polen, we must strive to be more inclusive.

Therefore, in Xamk, we want to enhance good professional and scientific writing to make our problems and our solutions open to a larger public and the broader international community. Pioneers like Dr Polen serve as example of how we as individuals can change habitual ways and established operating patterns. Dr Polen certainly had barriers in his publishing path, when he published in Finnish, but in the contemporary world there are new kinds of barriers to surpass and overcome.

The late emeritus professor Antti Eskola, who was enthusiastic author and researcher both in Finnish and internationally, suggested that every researcher should learn to write and publish step-by-step. He argued that nobody is a high-level scientific writer from the very beginning of their academic career, and often we only see the finished results and admire the finest pieces, and as such we do not see the hard work, failures, and challenges that occurred behind the scenes. Often with all forms of scientific and professional writing, there are frustrations, thought blocks, and conducting similar research several times to reach the desired conclusions. To be candid, as writers, we often produce a sizeable amount of rubbish when we write, but slowly, step-by-step, the individual elements we produce find their places, our thinking becomes more refined, and our argument crystallizes, and only then, is our research ready. We require time to think and process our ideas and research, and in this the support and feedback we get from our colleagues, supervisors, and students, is invaluable.

Adapting Eskola's step-by-step ideas, we could sketch the following competence growth process. First, you can write articles as working papers, perhaps for a conference or as a piece for Xamk Next, a public relations newsletter. The next step could be that you would write a more scientific or professional article with a framework and an empirical section for a joint edited publication (e.g., Xamk series). The last step would be to write about your research into a peer-reviewed, high-level journal or joint publication. This path might help to develop your professional writing skills as well as to consider feedback from professionals in your field.

The need and pressure to conduct research and publish prolifically is becoming of increasing concern to all staff members in higher education institutions, even more so if a career structure demands it. This has been termed "publish or perish" and is a serious issue in modern academia. It presents unique challenges for us to overcome to support healthy, sustainable writing practices among our staff. Such as addressing time allocation issues, as well as overcoming the priority placed on publication quantity over quality and ensuring the relevance of research. In Universities of Applied Science specifically, improving the research and scientific writing competences of staff needs to be supported (Kyvik & Lepori 2010; Weaver, Suojärvi & Laitala 2021.)

As a prescribed solution, Ellen Hazelkorn and Amanda Moynihan (2010) argue that it is vital to embed research activity as a professional norm within the institutional culture. This practice is followed by most UASs, through the development of facilities and incentives to support staff development. They also recognize that there might be conflicting forces with purely teaching-oriented staff, and this dilemma needs to be resolved.

Institutional level of increasing scientific writing

The issue is not only how researchers, RDI specialists or teachers develop their skills, but also how institutions can facilitate and support scientific writing. This issue is even more relevant at the level of UASs, because the publishing of RDI results or teaching based on applied research is increasingly connected to the issue of justifying the purpose of higher education in the future. Complex societies with wicked global problems and together with the need of creating new possibilities require lifelong learning, RDI expertise, and skills to think and disseminate written results for adaptation and development.

According to Hannu Sirén (2021, 61), publishing is essential to strengthen the efficiency of UASs. A credible research unit is primarily known by its publications. That is why Sirén

suggests that UASs develop their publishing activities, especially peer-reviewed publishing, in international and national journals, and by setting quantitative and qualitative publishing objectives. If the objectives are defined and set by the board of operations, this means that the activities will be carried out and resources will be allocated more efficiently than now. RDI activities are financed mostly by ESR or EAKR funds that are seldom permitted for research, and teaching is organized based on courses without further research opportunities available.

By publishing Xamk Beyond, Xamk is partly responding to the above-mentioned challenges by offering the second step in the writer's self-development path. In this issue, we noticed the authors' researching, writing and responding to feedback is often done at the expense of their other duties and they have competing demands on their time and resources. The writers require additional time allocation for writing and more support with their research. While we offer some editorial assistance through giving feedback on drafts, offering sparring sessions to refine their ideas, this is not sufficient in the long run. Therefore, we will discuss and suggest some actions that might address how UASs could achieve the increasing work-load demands. Our suggestions are based on arguments concerning on university staff's views of scientific writing and discuss the challenges in doing that.

Research (including scientific writing) activities of educational staff together with RDI project staff plays a minor role in UASs around Europe (see Kyvik & Lepori 2010). It accounts for approximately of 5-10 percent of staff on average. In this respect, Xamk scientific activities are at a good average level: in 2020 in Xamk there were 60 writers for 86 scientific publications, which is about 7 % of Xamk's staff. However, there are development processes for increasing research activities ongoing because of demands and pressures stipulated by state authorities, supranational organizations (e.g., EU, OECD), societal stakeholders, and academia, not to mention the competition for better status and rankings between UASs and universities.

Developing research activities can also be seen as a response to develop research-based teaching by strengthening the basis of professional practices in occupations taught in UASs, and to take part of regional innovation processes in collaboration with industry and local stakeholders (Kyvik and Lepori 2010). Svein Kyvik and Benedetto Lepori (2010) argue that in UASs around Europe a research drift is taking place that emphasizes publishing at the staff, programme, and institutional level. This follows the increasing demands of a stronger commitment into regional development and the associated joint efforts. Those interests are widely shared and can be combined into aspirations of different purposes of individuals and institutions.

Single steps or actions can be taken however alone they are not efficient enough. Kyvik and Lepori (2010) suggest that UAS could have a research strategy that defines the main

institutional goals to be achieved in research by an institution, as well as the measures needed to reach them. The elements of research strategy contain (a) the research mission and positioning of the institution inside the wider national and international research system and (b) plan for how objectives should be achieved.

It is notable that by research drift Kyvik and Lepori (2010) do not mean that UASs are in an academic drift, which means that UAS would aim to be universities as the concept would indicate. On the contrary, they emphasize that the research drift of UASs is different. Hannu Sirén's investigation opens the discussion on how UASs could proceed in the path of a research-intensive and research-based professional higher education institution.

Socially responsible publishing as the fundamental of education and RDI in the future

Hannu Sirén (2021) argued for more scientific publishing in UASs and this demand is not unreasonable, although it is a complex issue as it also touches on the future model of higher education and the relationship between UASs and universities. It seems that pressure is more to enhance links between both types of higher education institutions rather than transform UASs into Universities. With that said, it can be predicted that the demands and activities will be roughly the same.

The question of research and publishing plays a vital role in this development, as teachers and researchers of universities research, write and teach on this foundation (Ylijoki & Aittola 2005). According to several higher education researchers, even in universities there is lack of time to publish in scientific journals. Keijo Räsänen (2007) describes that during the project development processes there is not time to report or analyze results, and if researcher is moving from one project to another, there is never time for reflections, research or writing. Unfortunately, the lack of time and similar pressures can be seen in UASs, too.

Räsänen (2005) argues that to become a researcher, you must also belong to a local research society, and that you read, write, and discuss and adopt ways of producing and disseminating research results, as well as teaching accordingly. If there is a need to change one habit or aspect of the work, it requires changing the entire network of linked habits. That is why it is important that in UASs we rethink the ways of producing teaching and RDI activities, if we really want to achieve more scientific writing and increase the quality of our publishing.

This year's Xamk Beyond's themes were sustainability and social responsibility. Keeping that in mind, it seems to be clear that we need solutions in publishing that underline the expectations of results together with sustainable and socially responsible actions in UASs' fundamental activities in knowledge and global society.

While international publishing and taking part in international research groups is already a part of Xamk´s RDI activities, this needs to be recognized and actively developed. In other words, we need to further support research activities that aim to enhance international research groups that foster competencies and enrich education and RDI activities. The development of a sustainable research culture is of fundamental importance to UASs in contemporary societies (Kyvik & Lepori 2010). It is also challenging to implement effectively when there is not long research tradition, however, perhaps the lack of an established research history is also an opportunity for the development of healthier, sustainable publishing practices which overturn the publish or perish mentality of many academic institutions.

The role of Xamk Beyond in the process of scientific writing

In this section, we will conclude our experiences of the editorial process, make some self-reflections, and open up further discussions for additional improvements of scientific writing in the context of universities of applied sciences. With these remarks we would also like to challenge writers to offer new articles for the next Xamk Beyond, which will again emphasize the process of scientific writing training along with the renewal of publishing in the higher education context. Evidentially, the scientific publishing tradition in Xamk is young and thus we have the great opportunity to find our own way. While we still need to be faithful to our core objectives and be active in regional and local levels, we also need to share our results with the broader international scientific and professional communities.

We would hope to enable a focus on slow, quality publishing, that gives writers the opportunity to develop their professional skills and produce high quality publications in better ranked journals. We recognize that high quality scientific and professional writing takes time, but we believe that slow writing will not decrease the number of popular scientific or professional publishing. The results and ideas presented in a good scientific or a long professional article can be transformed for many popular texts and facilitate the same vivid discussion. Whereas it is more challenging to transform many general publications into a plausible scientific article.

Xamk Beyond is an enterprise to support the development of a responsible community of professional and scientific writers at Xamk. Xamk Beyond is a learning and teaching platform, and a place for experimentation. It is a combination of traditional academic publishing procedures and a new way to train people to became better professional and scientific writers for international audiences. In fact, this is the traditional way that University of Applied Sciences function: learning by doing.

After two issues of Xamk Beyond we have learnt something, as well.

First, there is great potential in Xamk for publishing in English. To enter a long publication process in a foreign language is a courageous decision. This shows that the writers in Xamk Beyond are not writing only for metrics but also for expressing themselves and to communicate the ideas and issues that matter. This is something to proud of.

Second, we have learnt that slow publishing is sometimes hard to combine with busy everyday life. There is often such a focus on output, which in writing is usually measured by words on the page. This can mean that sometimes the most important parts of writing are not given such a high priority in one's schedules, the activities of reading, listening, thinking, and discussion. To write a high-quality article in a publication like Xamk Beyond is always a group effort. The editors are the first readers of the article, and we really try to understand what the writer wants to communicate. When we do not understand, it is our job to take a proactive approach and ask constructive questions in a positive way to help draw out the core ideas from the writers. After this productive dialogue and couple of rewriting rounds the result is a far higher quality publication in which the core argument and ideas are communicated clearly. This time-consuming dialogue is the heart of ensuring quality and for the editorial team at least, is the most enjoyable part of the process.

Sometimes our lessons are hard learned. In this issue, we brought in additional editorial processes to assist writers with refining their arguments, presenting their research, and producing a scientific article in English. We hoped that these earlier interventions would change the paradigm of editorial work, which is often comes far too late in the writing and publishing process to have any real meaningful impact on the work. However, while the result was positive, as we previously mentioned, there needs to be more time allocated to writing and that the final deadlines should not come during the busy end of year period. While the scientific publishing tradition might be young at Xamk, it also enables us to experiment with the best ways to support writers in the writing process.

However, there must be an element of writer agency in this process. As Weaver, Suojärvi and Laitala (2021) have argued, without a clear dialogue between writers, editors, and reviewers, we will end up replicating the often unhealthy and unsustainable scientific writing processes which plague traditional universities. While we can provide support as editors, and we hope that there will be additional institutional time allocated for writing in the future, writers also need to action and speak up when they require additional support or comments on their manuscript, or when they do not understand the reviewers' comments. Thankfully, through the creation of a positive and supportive atmosphere, we noticed that our writers did feel comfortable to act, ask questions from the editors, sometimes disagree with our comments, and question our feedback. Through this dialogue and the authors hard work, we believe supported the quality raising efforts we aimed at.

The next Xamk Beyond calls for papers opens in January 2022. The theme of the Xamk Beyond is Impacts. With this issue, we are looking for presentations of RDI and education activities that are analysed within the framework of impacts for target groups, society, regions, and so on. We are also interested in articles that measure how impacts are evaluated and how the responsibility and sustainable development objectives of Xamk are achieved in practice.

As a publicly funded higher education instruction, at Xamk we must always ask questions about the results we produce, and what is the impact of our activities and their results. This is a question of quality, and how we manage to act and reform competencies, research, and development in socially responsible and sustainable ways for a better life and improved wellbeing. As well as addressing challenges we are facing globally and locally. For instance, what is the role of entrepreneurship? We look forward to receiving your abstracts.

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1   *Marja-Liisa Neuvonen-Rauhala (ed.).:* XAMK BEYOND 2020. At Your Service – Business Development, Co-operation and Sustainability. 2020.

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