VISUAL VOICE

EXPLORING YOUTHS' VISUAL DESIGN THINKING THROUGH VISUAL LITERACY

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Amna Qureshi

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AMNA QURESHI

Visual Voice: Exploring Youths' Visual Design Thinking Through Visual Literacy

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Dedicated to my Mother and Daughter, who define me!

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Abstract

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This research aims to enhance youth's visual design thinking (VDT) skills through the frequent use of visual literacy (VL). By emphasizing the importance of arts-based research (ABR), this research provides youth with a platform to explore their creative potential and generate new ideas for addressing societal issues. The research found that encouraging youth to express their feelings and perceptions through arts-based interventions was essential to their creative development. This research presents the results of an artistic experiment conducted on a small group of youths from Rovaniemi, Finland. The research was conducted at the University of Lapland, Finland, under the project *Acting on the Margins: Arts as Social Sculpture* (AMASS), a Horizon 2020–2023-funded research project.

There has been no examination or discussion of visual literacy (VL) awareness through studies focusing only on arts-based methods (ABMs) that facilitate the integration of artistic and personal inquiry. This research contributes to filling this gap by exploring the main question that encompasses this fundamental research: **How can the visual design thinking (VDT) skills of youth be improved through visual literacy (VL)?** This research question was analysed in five publications from different perspectives, providing validation through multiple perspectives. The first publication investigates the connection between creative processes and the visual literacy (VL) of youth. The second publication discusses the interpretive role of documentation in the context of artistic co-creation processes. The third publication explores the role of participatory arts-based methods (ABMs) in expressing pluralist values in youth. The fourth publication examines how to enhance children's visual Design Thinking (VDT) skills using the prototype VDT model. Lastly, the fifth publication validates that youth's creativity can be boosted through frequent visual literacy (VL) engagement.

During working on the five publications, the research was designed in order to assess artworks collected from this creative process. An interpretive phenomenological

analysis (IPA) was used as a philosophical framework. This multi-layered qualitative research presents findings from a participatory arts-based research (ABR) approach that elicits students' creative expressions through their personal artworks. Analyses of data collected from interviews, research diaries, focus groups, note-taking and artworks were conducted using topical, thematic, content and reflexive analysis methods. The Common European Framework of Reference for Visual Literacy (CEFR-VL) was used as an assessment tool. In addition, the Visual Design Thinking (VDT) model was introduced as new knowledge for improving and scaling interventions. With this methodology, the research aims to demonstrate that visual literacy (VL) is crucial to developing visual design thinking (VDT) competencies that enable young people to enhance their knowledge and build skills, including self-assessment, beliefs, judgments and behaviours.

The five publications further clarify that arts-based methods (ABMs) open up new approaches to society's challenges for exploring the unknown that can provide insights into the underlying narratives. ABMs offer an accessible and creative way to represent and express the complexities of personal and social issues. They also provide a platform for the development of new skills and the sharing of knowledge. Finally, they can facilitate collaboration, dialogue and social change. There are several objectives within the five publications resulting from this research. The first is understanding the importance of visual literacy (VL) and determining whether having visual competency (VC) can assist young people in developing both their formal and informal learning skills. The second is to provide youth with knowledge about pluralism and how to reapply it to their design thinking (DT). The third is to illustrate youth's perception, interpretation and meaning-making through creative artistic processes to stimulate their visual thinking (VT). Finally, they should enhance their reflections in a way that can influence their creative viewpoints. It is essential to foster open-ended, exploratory and collaborative learning activities that allow youth to construct their knowledge.

As a result, this research supports that the umbrella term 'visual literacy' (VL) encompasses a variety of skill, knowledge and attitude clusters, including the cluster known as 'visual design thinking' (VDT). Additionally, this research has found that frequent engagement with visual literacy (VL) can enhance youth's creativity and provide them with a *visual voice* that supports their visual design thinking (VDT) skills. Finally, it verifies that visual literacy (VL) can boost youth's *creative mindsets* and facilitate attitude change and decision-making.

Keywords: Visual literacy, Visual competency, Visual design thinking, Visual voice, Interpretive phenomenology, Arts-based research, Youth

TIIVISTELMÄ

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Tämän tutkimuksen tavoitteena on parantaa nuorten visuaalista suunnitteluajattelua (VDT) käyttämällä visuaalista lukutaitoa (VL). Korostamalla taidelähtöisen tutkimuksen (ABR) merkitystä, tutkimus tarjoaa nuorille alustan tutkia luovaa potentiaaliaan ja luoda uusia ideoita yhteiskunnallisten ongelmien ratkaisemiseksi. Tutkimus osoitti, että nuorten rohkaiseminen tunteiden ilmaisuun ja havannointiin taidelähtöisillä interventioilla oli olennaista heidän luovan kehityksensä kannalta. Tämä tutkimus esittelee pienellä rovaniemeläisellä nuorisoryhmällä tehdyn taiteellisen kokeilun tuloksia. Tutkimus tehtiin Lapin yliopistossa Horizon 2020–2023 -rahoitteisen tutkimushankkeen Acting on the Margins: Arts as Social Sculpture (AMASS) puitteissa.

Visuaalisen lukutaidon (VL) tietoisuutta ei ole tutkittu tai keskusteltu pelkästään taidelähtöisiin menetelmiin (ABM) keskittyvissä tutkimuksissa, joka helpottaa taiteellisen ja henkilökohtaisen tutkimuksen yhdistämistä. Tämä tutkimus auttaa osaltaan täyttämään tätä aukkoa pohtimalla: **Miten nuorten visuaalisen suunnittelun (VDT) taitoja voidaan parantaa visuaalisen lukutaidon (VL) avulla?** Tutkimuskysymystä analysoitiin viidessä eri julkaisussa, mikä tarjosi validointia useista näkökulmista. Ensimmäinen julkaisu tutkii luovien prosessien ja nuorten visuaalisen lukutaidon (VL) välistä yhteyttä. Toinen julkaisu käsittelee dokumentaation tulkitsevaa roolia taiteellisen yhteisluontiprosessin kontekstissa. Kolmas julkaisu tutkii osallistavien taidelähtöisten menetelmien (ABM) roolia nuorten moniarvoisten arvojen ilmaisussa. Neljännessä julkaisussa tarkastellaan, miten lasten visuaalista suunnitteluajattelua (VDT) voidaan kehittää prototyypin VDT-mallilla. Lopuksi viides julkaisu vahvistaa, että nuorten luovuutta voidaan lisätä säännöllisen visuaalisen lukutaidon (VL) avulla.

Julkaisuihin liittyvän työskentelyn aikana arvioitiin prosessin aikana kerättyjä taideteoksia. Filosofisena viitekehyksenä käytettiin tulkitsevaa fenomenologista analyysiä (IPA). Tämä monitasoinen kvalitatiivinen tutkimus esittelee havaintoja

osallistavan taidelähtöisen tutkimuksen (ABR) lähestymistavasta, joka herättää opiskelijoiden luovan ilmaisun heidän henkilökohtaisten taideteostensa kautta. Haastattelujen, tutkimuspäiväkirjojen, fokusryhmien, muistiinpanojen ja taideteosten avulla kerätyn tiedon analysointi tehtiin ajankohtaisilla, temaattisilla, sisältö- ja refleksianalyysimenetelmillä. Arviointityökaluna käytettiin yhteistä eurooppalaista visuaalisen lukutaidon viitekehystä (CEFR-VL). Lisäksi Visual Design Thinking (VDT) -malli otettiin käyttöön interventioiden parantamiseksi ja skaalauttamiseksi. Tällä tutkimusmenetelmällä pyritään osoittamaan, että visuaalinen lukutaito (VL) on ratkaiseva tekijä visuaalisen suunnittelun (VDT) kompetenssien kehittämisessä, jotta nuoret voivat parantaa tietojaan ja rakentaa taitojaan, mukaan lukien itsearviointi, uskomukset, arvioinnit ja käyttäytyminen.

Viisi julkaisua selventää edelleen, että taidelähtöiset tutkimusmenetelmät (ABM) avaavat uusia lähestymistapoja yhteiskunnan haasteisiin tutkia tuntematonta, mikä voi tarjota oivalluksia taustalla oleviin tarinoihin. Taidelähtöiset menetelmät tarjoavat helppokäyttöisen ja luovan tavan kuvata ja ilmaista henkilökohtaisten ja sosiaalisten asioiden monimutkaisuutta. Ne tarjoavat myös alustan uusien taitojen kehittämiseen ja tiedon jakamiseen. Lopuksi ne voivat helpottaa yhteistyötä, vuoropuhelua ja sosiaalista muutosta. Tämän tutkimuksen tuloksena syntyneissä viidessä julkaisussa on useita tavoitteita. Ensimmäinen on visuaalisen lukutaidon (VL) merkityksen ymmärtäminen ja sen määrittäminen eli voiko visuaalinen kompetenssi (VC) auttaa nuoria kehittämään sekä muodollisia että arkioppimistaitojaan. Toinen on tarjota nuorille tietoa moniarvoisuudesta ja siitä, miten sitä voidaan soveltaa uudelleen suunnitteluajatteluunsa (DT). Kolmas on havainnollistaa nuorten havaintoja, tulkintoja ja merkityksenmuodostusta luovien taiteellisten prosessien avulla stimuloidakseen heidän visuaalista ajatteluaan (VT). Lopuksi tulisi parantaa nuorten mahdollisuuksia vaikuttaa heidän luoviin näkemyksiinsä. On tärkeää edistää avointa, tutkivaa ja yhteistyöhön perustuvaa oppimistoimintaa, jonka avulla nuoret voivat rakentaa tietojaan ja taitojaan.

Tämä tutkimus tukee sitä, että kattotermi ”visuaalinen lukutaito” (VL) kattaa erilaisia taitojen, tietojen ja asenteiden klustereita, mukaan lukien klusterin, joka tunnetaan nimellä ”visuaalinen suunnitteluajattelu” (VDT). Lisäksi tämä tutkimus on osoittanut, että säännöllinen visuaalinen lukutaito (VL) voi lisätä nuorten luovuutta ja tarjota heille visuaalisen äänen, joka tukee heidän visuaalisen suunnittelun (VDT) taitoja. Lopuksi se vahvistaa, että visuaalinen lukutaito (VL) voi edistää nuorten luovia ajattelutapoja ja helpottaa asennemuutosta ja päätöksentekoa.

Avainsanat: Visuaalinen lukutaito, visuaalinen osaaminen, visuaalinen suunnitteluajattelu, visuaalinen ääni, tulkitseva fenomenologia, taidelähtöinen tutkimus, nuoriso

Acknowledgements

Looking to the Future: A Legacy of Gratitude

As I embark on this new phase of my academic and professional journey, I do so with a profound sense of responsibility. The acknowledgements expressed in this piece of writing remind me that my achievements are intertwined with the support and contributions of others. This realization carries with it an enduring commitment to pay forward the kindness, knowledge and encouragement that have been bestowed upon me.

At the heart of any successful doctoral journey lies the unwavering guidance and mentorship of academic advisors. Their role extends beyond that of a teacher; they are a compass, guiding through the uncharted territory of research. I consider it a blessing that I was under the supervision of such wonderful mentors, whom I will always admire. First and foremost, the legacy of my first academic supervisor, Dean and Professor Satu Miettinen, will forever guide my approach to mentoring future scholars. Her dedication, kindness and wisdom have shaped not only my research but also the kind of scholar and mentor I aspire to be. My second academic supervisor, Professor Melanie Sarantou, has been the North Star who illuminated my path. Her tireless support, sage advice, and unyielding belief in my potential propelled me forward when the road seemed the most intimidating. Her dedication to nurturing not just my academic growth but also my personal development has been a gift beyond measure. My third supervisor, Professor Kaarina Määtä, kindly agreed to share her expertise when I started writing my dissertation in the last year of my PhD, and it was tremendously helpful how she supported me along the way. To my supervisors, I owe a debt of gratitude that words can scarcely convey. My dissertation is a testament to their profound influence on my academic life.

The guidance and feedback from my dissertation examiners, Professor Andrea Kárpáti and Lecturer Mirja Niemelä, have honed my critical thinking and research skills. Their expertise, critical feedback, and dedication to fostering my academic growth were pivotal. Both have challenged me to think more critically, refine my research questions and engage more deeply with the existing literature. Their feedback, delivered with patience and encouragement, guided me towards producing a dissertation that I am proud to present. In my professional endeavours, I will continue to seek mentorship and guidance, recognizing that learning is a lifelong pursuit. I want to extend my heartfelt thanks to both examiners for their time, expertise and commitment to my academic success.

I offer my heartfelt gratitude to Professor Heidi Pietarinen, who exemplifies the essence of teamwork and companionship. Our discussions enriched my academic journey, and I am thankful for the friendships that blossomed amidst the rigour of research. I will always cherish those conversations fondly. In addition, the collaborative spirit I experienced with my peers serves as a reminder of the power of teamwork and the diversity of perspectives that can shape research. As I progress in my career, I will actively seek out opportunities for collaboration, knowing that it is through collective effort that we can advance knowledge and address complex challenges. I humbly extend my gratitude to the generosity of the research participants and collaborating partners from the AMASS project (under which this research is conducted) who have illustrated the power of partnership in my research.

Behind the scenes of the academic journey are the unsung heroes—the administrative staff and librarians. I have been blessed with such kind people who have shown their dedication to handling logistical matters, providing access to resources and ensuring the smooth functioning of academic processes. I am grateful for their professionalism and willingness to go the extra mile to support international students like me. Their contribution to my academic success is significant, and I want to acknowledge their role in making my journey smoother.

Above all, in recognizing the unwavering support of all the people I mentioned earlier, I am reminded of the importance of maintaining strong connections outside the academic realm. Their persistent belief in my abilities has been a source of strength. I want to express my profound gratitude to my beloved parents, whose sincere prayers and heartfelt wishes constantly kept me safe and moving forward. I will never be able to thank them enough for their unconditional love and support. I am very grateful to have them as my parents. I would also like to convey my sincere gratitude to my better half and our precious daughter, who have witnessed the ups and downs of this journey. In particular, the untiring support of my husband has been my rock, providing emotional sustenance during moments of doubt and exhaustion. The amount of understanding and encouragement from my dear three siblings (*my childhood best friends*) were the pillars upon which I leaned when the academic load felt impossible. I would also like to thank my extended family, relatives and friends who have remained devoted companions despite the distances caused by my studies, as well as relocating to a new country. Their love and support sustained me, and I am immensely grateful for the role they played in my academic and personal life achievements.

As I conclude this academic chapter and look towards new horizons, I am reminded that the true beauty of academia lies not only in individual achievement but in the collective effort that propels knowledge forward. Each acknowledgement is a tribute to those who have been the pillars of my doctoral journey, and for their unwavering support, I am profoundly grateful.

Finally, this legacy of gratitude is not just a reflection on the past but a commitment to the future. It is a pledge to honour the support, mentorship and inspiration I have received by paying it forward and continuing to pursue knowledge, collaboration and excellence in my academic and professional pursuits. For me, the broader academic community has set the bar for excellence in my field. I will strive to contribute meaningful research, engage in scholarly discourse and mentor emerging scholars, aiming to uphold the standards of academic rigour and innovation. As I move forward, I do so with humility, knowing that my achievements are built upon the contributions of many, and I am determined to leave a legacy of gratitude in all my future endeavours.

Sincerely grateful,
Amna Qureshi
Rovaniemi, Finland, 2023.

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AMASS
acting on the margins. arts as social sculpture

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 870621.

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TRUST PromoTing Sustainable PRactices for Digitalizing IndigenoUS CulTural Heritage - Global North and South Juxtaposed

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III *The International Visual Literacy Association* (IVLA), United States, provided funding for the research's dissemination in 2023. A non-profit association of researchers, educators, designers, media specialists, and artists dedicated to the principles of visual literacy.

INTERNATIONAL VISUAL LITERACY ASSOCIATION

Permission Acknowledgements

This dissertation is an article-based research that includes five original (I–V) peer-reviewed publications. All publications are published and are attached at the end of this dissertation. I was graciously granted permission by all the publishers and co-authors to reproduce all (I–V) publications.

List of Original Publications and the Author's Contributions

Publication I

Qureshi, A., Sarantou, M., & Miettinen, S. (2022). Meaning-making and interpretation through personal mandalas in the context of visual literacy. *Journal of Visual Literacy*, 41(3-4), 247-260. https://doi.org/10.1080/1051144X.2022.2132625

I had primary responsibility for the publication. The pilot workshop was an integral part of the fundamental research. In addition to collecting and analysing interviews, I conducted the workshop, which included three parts: a photography-based pre-task, drawing a personal mandala (artwork), reflection (essay writing) and open discussion. This publication discusses the second and third parts of the workshop. I wrote the main text in collaboration with two additional authors who were generous with their help and support.

Publication II

Qureshi, A. (2021). Documentation of Reflective and Interpretive Representation of Youth: A Study through Rudimentary Photographic Close-ups in the Context of Visual Literacy. In R. Vella, & M. Sarantou (Eds.), *Documents of Socially Engaged Art* (pp. 241–260). International Society for Education Through Art (InSEA). https://doi.org/10.24981/2021-DSEA

This publication was primarily my responsibility as the sole author. From the pilot workshop of the research (Publication I), I mainly focused on the first part, the photography-based pre-task. My goal in planning this pre-task was to clarify the participants' positions during the pilot workshop.

Publication III

Pietarinen, H., Qureshi, A., & Sarantou, M. (2022). *Flag*: A shared horizon. In S. Miettinen, E. Mikkonen, M. C. Loschiavo dos Santos, & M. Sarantou (Eds.), *Artistic Cartography and Design Explorations Towards the Pluriverse* (pp. 217–227). Routledge. Routledge Advances in Art and Visual Studies https://doi.org/10.4324/9781003285175-22

> In my role as second author, I primarily focused on the concept of pluriverse among youth by incorporating arts-based methods. Moreover, I addressed the importance of visual literacy in the publication. Aside from doing all the digital work—videography and photography—I produced a short documentary, listed in the appendices.

Publication IV

Qureshi, A., Sarantou, M., & Miettinen, S. (2022). Improving Children's Visual Literacy by Fostering Visual Design Thinking Through Arts-Based Methods. DMI: Academic Design Management Conference proceedings; Design Management Institute: Academic Design Management Conference, pp. 806–817. https://www.dmi.org/page/ADMC2022Proceedings

> This publication was primarily my responsibility. During the summer of 2021, I organised a workshop with children in collaboration with the Faculty of Education at the University of Lapland. I collected and analysed the interview data. With the help of my other two contributors, I wrote most of the text.

Publication V

Qureshi, A. (2023). Engaging youths through visuals. In A. Kárpáti (Ed.), *Arts-Based Interventions and Social Change in Europe* (pp. 39-50). New York, NY: Routledge. https://doi.org/10.4324/9781003376927-7

> The publication is solely mine. In this chapter, I structured the overall findings and discussion of the entire research after analysing the first four (I–IV) papers. Nevertheless, final outcomes were set aside for the conclusion of the dissertation. These will be discussed in Chapter 6 of the dissertation's discussion section.

List of Exhibitions and the Author's Contributions

I Miettinen, S. (Artist), Pietarinen, H. (Artist), Konttinen, K. (Artist), Riikonen, M. (Artist), Mikkonen, E. (Artist), Sarantou, M. (Artist), Qureshi, A. (Artist), & Nuutinen, A. (Artist) (2021*). Reflections – Mirroring structures and complexities in pluriversal art-based dialogues with youth* [Exhibition]. University of Lapland, Finland.

This installation was created with the workshop participants and authors. Partially installing and covering the event digitally was my responsibility. Research data presenting results from Publication III were presented at this exhibition.

II AMASS (2022). Active Witnesses: *The voices and faces of participants in socially engaged art projects.* Group show. [Exhibition]. University of Lapland, Finland.

A showcase of AMASS project research results was held to present the project's progress. I was responsible for the graphic design of the entire exhibition as well as the research data presenting results from Publication III (*Flag*: A shared Horizon) were included in this exhibition.

III Miettinen, S. (Artist), Kontio, T. (Artist), Qureshi, A. (Artist), & Hiltunen, M. (Artist) (2022). *AMASS Symposium* [Exhibition]. Corvinus University, Budapest, Hungary.

The AMASS Symposium, held at Corvinus University in Budapest, Hungary, featured an exhibition. Research data presenting results from Publication IV were included in this exhibition.

IV Qureshi, A. (Artist) (2022a*). Integrating Visual Design Thinking with Creative Processes to Enhance Children's Visual Literacy* [Exhibition]. Gallery Kopio, University of Lapland, Finland.

This exhibition featured artworks created during the summer workshop in 2021. Additionally, I conceived the installation based on the research results. Research data presenting results from Publication IV were included in this exhibition.

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List of Abbreviations

Visual Literacy VL
Visual Competency VC
Visual Thinking ..... VT
Design Thinking ..... DT
Visual Design Thinking ..... VDT
Arts-Based Research ..... ABR
Arts-Based Methods ..... ABMs
Interpretive Phenomenological Approach ..... IPA
Common European Framework of Reference for Visual Literacy ..... CEFR-VL

Concepts Discussed in the Research

Visual Voice ..... *Visual Voice*
Creative Mindset ..... *Creative Mindset*

New Knowledge Introduced in the Research

Visual Design Thinking Model ..... *VDT Model*

"Visual Literacy is a form of critical thinking that enhances intellectual capacity."

BRAIN KENNEDY

1. INTRODUCTION

To introduce the research holistically, I have divided the introduction chapter into three sections. The first section explains the background and motivation for the research. The second section discusses the research focus and context. Finally, in the third section, the dissertation structure is explained to ensure that the reader follows what has been researched.

1.1 Research Background and Motivation

To effectively communicate ideas in a visually compelling way, I draw on my knowledge of art and design principles. As a visual communicator, I often visualise ideas before communicating them verbally. In my opinion, it is a form of *visual voice* that can also be found in the literature (Burke, 2007, 2009; Köngäs et al., 2022; Papaloukas et al., 2017; Stupples, 2007). *Visual Voice* is a powerful concept and tool that can be used to express one's thoughts and feelings. It transcends language barriers to convey a message to a broad audience. This is why I believe it is a valuable skill to have as a visual communicator. Upon relocating to a distant Arctic region in Finland for my doctoral studies, I decided to expand on this concept. Based on this concept, I was inspired to conduct meaningful research.

As a visual thinker, it is necessary to consider many perspectives when interpreting a single visual. In my position as an outsider, I was like a Tabula Rasa (Pinker, 2002), with no memory or knowledge whatsoever, and I was getting the information in its natural state. To make informed decisions regarding the design of the study, I soon realised that I had to first identify the level of visual literacy (VL) of the target group (youth), which was influenced by their culture, environment and K–12 education. In other words, my research seeks to provide youth with a *visual voice* that can support their VL through visual design thinking (VDT). I have researched and tested what supports this concept using a previously existing model and my invented model derived from the literature. I will introduce and discuss the models in Chapters 2 and 5, respectively.

Additionally, this research focuses on one of six artistic experiments conducted as part of the 2020–2023 European Union Horizon 2020 research project, *Acting on the Margins: Arts as Social Sculpture* (AMASS) (see Appendix). The AMASS project served as a basis for discovering the margins and challenges in the field of VL among children and youths. This experiment was implemented predominantly

in Finnish Lapland over 2021–2022 in the Arctic city of Rovaniemi. The research, in particular, aimed to empower young participants to express themselves within the VL through creative processes.

In addition to the experience of conducting research at the University of Lapland, the AMASS project greatly impacted the research progress. The project's objective further strengthened my motivation to work in this field. Thus, I began by exploring the importance of creativity and self-expression through the artwork produced by the participants throughout multiple workshops documented in the publications.

Initially, the study focused only on youths aged 19–22 with a background in art and design. Due to the study's scope, the target population gradually widened as the research developed. Understanding how youth acquired VL through formal and informal experiences was crucial. Hence, I also had to investigate the trajectory of VL in the younger population to understand its effects on young people, such as those 10 years and older. As COVID-19 peaked during the research period, conducting more workshops was impossible, so a further study between the 13–18 age group remains that I aim to undertake in my post-doctoral research. Thus, a total of 37 youths participated in this research: 16 between the ages of 10 and 12 and 21 between the ages of 19 and 22.

1.2 Research Focus and Context

While VL is an effective form of literacy, it still suffers from a lack of attention and awareness (Matusiak et al., 2019), as it does not emanate intuitively and needs to be learned (Ausburn & Ausburn, 1978). It has a wide-ranging impact on critical thinking (Messaris, 1994; Moore & Dwyer, 1994), empathy (Kangas, 2019), educational performance (Council of Europe, 2001; Fransecky & Debes, 1972) and, most prominently, self-awareness (Jung, 1964, 1976). The significance of VL has been acknowledged by researchers, artists, designers, visual artists and professionals, but despite this wide-ranging acceptance, it is still marginalised in various disciplines (Little et al., 2015). This remains weakly evidenced in the literature.

In the phase of the educational trajectory, with experiences of bridging margins from youth to early adulthood, identity processes are critical, and the need for self-expression can be intensified. The involvement of VL stimulates students to explore avenues for responsive creative expression and facilitates the growth of their self-confidence as expressive and creative thinkers. Self-confidence can be learned through informal and formal learning settings in the early years of education, which may manifest in later years.

Several studies have examined how educators can promote VL in educational settings (Bendito, 2007; Bleed, 2005; Lopatovska et al., 2016; Kaya, 2020). However, VL awareness has not been examined or addressed in studies solely through arts-

based methods (ABMs) that facilitate the inclusion of artistic learning processes in K–12 education. To fill this gap, research is needed. Studies reveal that research on VL is still in its infancy, even in an advanced, media-saturated location like Hong Kong, where there is an overload of images and visuals (Cheung & Jhaveri, 2016). However, many studies focus on VL's impact in the 21st century and discuss its potential influence only (Supsakova, 2016). The current research also adds novelty to the field, since it is derived from and created by youths from Rovaniemi, Finland's Arctic city. Through their artistic results, the youths demonstrated the significance of VL in early childhood education from an artistic perspective.

This research focuses on the educational trajectory phase of life, encompassing experiences between youth and early adulthood, a time when identity processes are critical and self-expression is more pronounced. Four main objectives drive this study. The first is understanding the importance of VL and whether it can give youth a broader perspective on their formal and informal learning development. The second is to provide youth with knowledge about pluralism and how to reapply it to their design thinking (DT). The third is to stimulate youth's visual thinking (VT) by illustrating their perception, interpretation and meaning-making through creative artistic processes. Lastly, they should enhance their reflections and influence their *creative mindsets*.

Ulger (2015; 2018) claimed that creativity begins with the perception of the visual world. The concept of creativity is universal but varies due to individual differences (Runco and Jaeger, 2012; Stokes, 2016). Hence, to address this gap, this research examines how the involvement of VL stimulates students to explore avenues for responsive creative expression and facilitates them in growing their confidence as expressive, creative and critical thinkers (Qureshi et al., 2022b).

In order to understand the chronology of the findings and the overall process of using the artworks as case studies while developing the scientific papers, a timeline image is crucial. An overview of the research process can be seen in the timeline (see Figure 1), which reveals the artistic and scientific parts of my research journey.

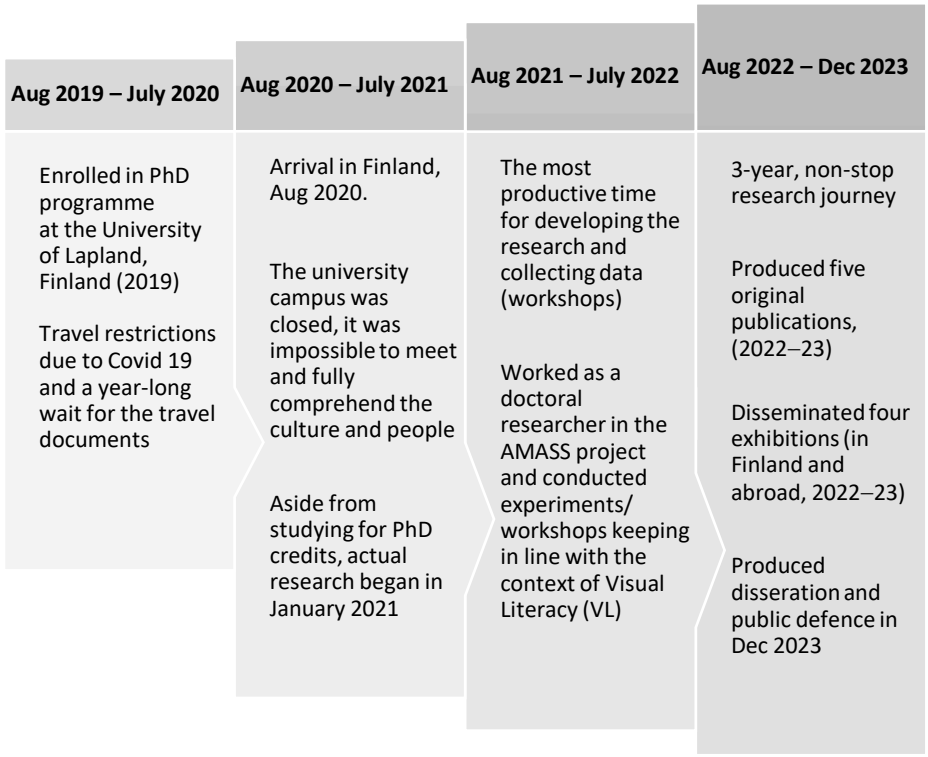


Figure 1: Timeline of the research process

1.3 Structure of the Dissertation

This dissertation contains seven chapters. The content of each chapter is described below.

Chapter 1 introduces the readers to the background and motivation of the research while highlighting the gap in the current research field. It also describes the focus and context.

Chapter 2 discusses the theoretical framework and established theories that cover the key concepts used in this research. These are visual literacy (VL), visual design thinking (VT), and *visual voice.* At the end of the chapter, a literature gap is identified.

Chapter 3 describes the main research question and five sub-questions that emerged from the publications. In addition, the research objectives are outlined.

Chapter 4 discusses the research design, philosophical paradigm, strategies and methodological choices addressed in the five publications. The adopted data collection methods, analysis and ethical choices are also discussed.

Chapter 5 presents the main findings and results from the five publications, summarised under their respective headings.

Chapter 6 revisits the research questions, the importance and relevance of the findings and how they answer those questions. It also includes a discussion of the reservations and limitations of this research. At the end of the chapter, reliability and ethical considerations are briefly discussed.

Chapter 7 concludes the dissertation by summarising the lessons learned, future directions and final author's remarks.

"One eye sees, the other feels. Art does not reproduce what we see; rather, it makes us see."

PAUL KLEE

2. THEORETICAL FRAMEWORK

This research is based on a comprehensive understanding of theories. Three main theoretical paradigms, visual literacy, visual and design thinking and the concept of *visual voice*, are discussed in this chapter. First, VL is defined, and then its fundamental theory and the added value of the concept of 'competency'—which is the combined use of knowledge, abilities and attitudes in (subject) particular settings—are examined. Second, VT and DT are examined in more detail and combined into one entity to develop a Visual Design Thinking (VDT) model. Third, a focus on plural narratives is presented, emphasising the need for youth to be given a *visual voice* through creative processes. An overview of the theoretical framework of the research is shown in Figure 2.

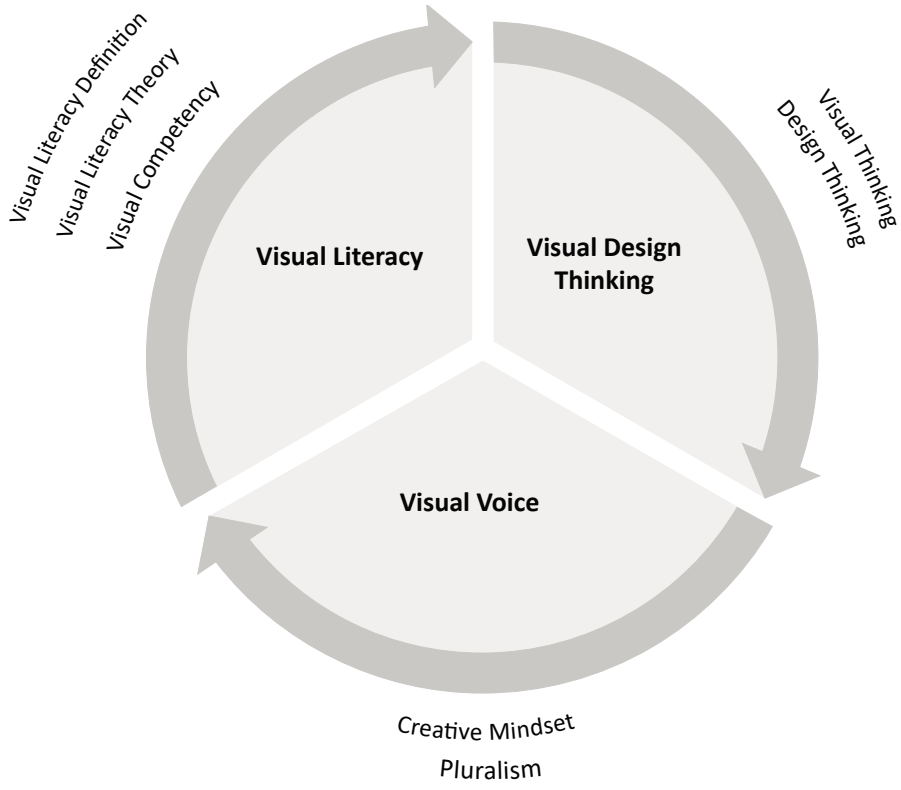


Figure 2: Overview of the theoretical framework of the research

2.1. Visual Literacy

Braden (1996) articulated that 'visual literacy refers to the use of visuals for the purposes of communication, thinking, learning, constructing meaning, creative expression, [and] aesthetic enjoyment' (p. 65). VL is an ongoing discussion about how we interpret images, how we use visuals to convey meaning, and how we become visually literate. It is, by nature, an organic concept that constantly evolves as our world changes. Prehistoric pictorial communications and other symbol systems were examples of visual messages that existed before text-based communication, but there is no single definition of VL that has gained the support of the academic community studying the subject. As a result, a definition of VL that has the approval of the scientific community is still evolving.

Continuing the works of Arnheim (1969) and Fransecky and Debes (1972), VL is an approach to grasping archetypal understanding and the semantics of images. Digital media have dramatically influenced the way we understand VL today. Interacting with digital technologies does not provide a true sense of learning and cannot replace the real thing. Keeping this in view, this theoretical framework begins with a detailed explanation of VL. Here, I introduce the definition and theory of VL employed specifically in this research.

2.1.1. Visual Literacy Definition

VL is an ever-evolving concept (Serafini, 2017) and can be simply defined as the ability to read images. When looked upon, this term first appeared in 1969 when John Debes, the founder of the International Visual Literacy Association (IVLA), defined the term as follows: 'Visual literacy refers to a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences'. This was revised by Fransecky and Debes (1972, p. 7) and has been used by the IVLA as its official definition since 1989 (Pettersson, 1993, n.p.). The revised version is as follows:

> Visual literacy refers to a group of vision competencies that a human being can develop by seeing and, at the same time, having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects and symbols, natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communications.

However, there are numerous definitions of this relatively new term. Each visual literalist has come up with a similar idea but supplemented it with their own perspective (Avgerinou & Pettersson, 2011; Qureshi et al., 2022b). The definitions that already exist often have discipline-specific additions. In attempting to fully understand this diverse concept, which has many variations, there is still a lack of clarity. Consequently, I had difficulty highlighting the importance of VL through multiple definitions; therefore, for this research, I chose to follow Fransecky and Debes' (1972) revised definition.

2.1.2. Visual Literacy Theory

For this research, it is crucial to discuss the underlying theory of VL. It is a widely known concept that emphasises the ability to comprehend, interpret and produce visual images and symbols. It includes a variety of abilities and skills related to visual communication, including interpretation. The same has served as my research's central focus throughout.

Parras-Burgos et al. (2018) report that various disciplines have contributed to the theory of VL, but the foundation is still unclear and not clearly seen in the research, as Moore and Dwyer (1994) state. They argue that VL has its roots in four major fields of study: *linguistics, art, psychology and philosophy*. As per Avgerinou and Pettersson (2020), a coherent theoretical framework can facilitate a deeper understanding of this concept. They describe VL theory as having five pillars: *visual communication, visual language, visual learning, visual perception and visual thinking.* Using the comparison of these two theories, I initiated this research with a focus on the psychological domain—*perception and interpretation* (Qureshi et al., 2022b). I found that the VL theory provided a more comprehensive approach to understanding the psychological aspects of visual communication. Thus, I used the theory to answer my research questions and draw meaningful conclusions.

2.1.3. Visual Competency

Visual competency (VC) is the method by which the concept of VL is applied (Hug, 2011). VL can be improved by honing VC. The idea of 'competency' first appeared in educational theory 40 years ago, but it has only recently gained popularity as a result of global conversations on the comparability of educational outcomes (Schönau et al., 2020).

The researchers of the European Network for Visual Literacy (ENViL) decided to launch a research project on the concept of 'competency' in visual literacy in 2012 in response to a number of international developments that were perceived as a political threat that could result in a (further) marginalisation of visual literacy (Schönau et al., 2020, p. 59). The findings were released as the first prototype of the Common European Framework of Reference for Visual Literacy (CEFR-VL) writing (Wagner & Schönau, 2016). The ENViL researchers believed that the absence of clearly

defined competencies was the reason why there were no connections between current empirical educational research and curriculum development in school subjects (Schönau et al., 2020, p. 59).

The following definition is utilised in research conducted by the researchers of ENViL, from which this study draws its knowledge: 'The combined use of learnable knowledge, skills and attitudes in specific (professional) situations that are relevant for the domain'. (Wagner & Schönau, 2016, p. 98). This definition demonstrates that the idea of 'competency' encompasses a number of different sub-concepts that are typically taken for granted (Schönau, 2019).

2.2. Visual Design Thinking

Visual design thinking (VDT) is one of the many skill, knowledge and attitude clusters that fall under the umbrella term 'visual literacy' (VL). According to Bresciani (2019), the scientific discourse on mental imagery first arose in 1972 with McKim's publication '*Experiences in Visual Thinking*'. A visual reasoning mechanism introduced by sketching was identified by Goldschmidt (1991) and popularised by the term 'visual design thinking' (1994), which recognised the necessity of learning to optimise visual and design thinking instead of making decisions based on intuition alone. Based on this understanding, the following literature guides the framework for visual design thinking.

2.2.1. Visual Thinking

Cognition based on visual processing is known as visual thinking (VT). Rudolf Arnheim (1969) first introduced the concept of educating the visual sense. In his argument, he asserted that VT can be applied everywhere and in various fields and disciplines. Our perceptions of concepts are determined by the ideas surrounding them. We act through perception and think through thought. However, a visually stimulating object that is unfamiliar is more engaging than one that is already familiar. In our everyday lives, we are surrounded by stimuli that correspond to our intellect, according to Feeney and Hogan (2017). The process of translating intangible concepts into tangible forms helps us re-perceive and further elaborate on them. By visualising these concepts, we refine our thinking and connect our ideas to the real world. VT enables information to be processed and visualised more effectively, helping us render thoughts into a tangible form (Ware, 2010).

Designers such as Cross (2011) and Goldschmidt (1991; 1994; 2003) confirm that the ability to convey ideas through charts, diagrams and quick sketches—either through conventional drawing materials or a project management tool—can help others comprehend these ideas more easily. Goldschmidt claims that 'when it comes to conception and the reasoning that it entails, imagery is a powerful tool' (2003, p. 84).

Qureshi et al. (2022) note that 'visualisation is paramount in DT because it facilitates collaboration and communication, creates a common understanding, speeds up the process for more rapid innovation cycles and leads to actionable insights' (Shimojima, 1999). As a result, visuals are needed to better understand how they are used within the different phases of DT, the principles they convey and the effects they have on the cognitive, emotional and social dimensions of DT. Without VT, some logical solutions may not be possible because VT can help identify patterns, call out problems and even allow a new perspective to emerge (Hortin, 1980; Qureshi et al., 2022b). VT also provides a means to represent abstract concepts in visual form, making it easier for learners to understand them. It can also provide an efficient way to communicate complex ideas within the context of DT. Finally, VT can be used to create a more interactive and engaging learning environment.

Here, I list the fundamental elements of VT, supported by the literature and other findings: **Images and symbols**: using pictures, icons and symbols to visually express ideas, concepts or things; **Diagrams**: drawings to represent relationships, processes or hierarchies, such as flowcharts, mind maps, and Venn diagrams; **Colour:** using colour to categorise, emphasise or express meaning within an image; **Lines and shapes:** these are used to draw attention to relationships, boundaries or sequences; **White/negative space**: the use of white or negative space in graphics to establish harmony, clarity and readability; **Typography:** the art of mixing and matching fonts and text styles to visual aspects and improving readability; **Hierarchy:** use visual hierarchy to convey importance or order, such as in greater font sizes or prominent placements; **Textures and patterns:** The use of textures and patterns offers depth, context or visual interest; **Icons and pictograms**: widely recognised icons and pictograms can help clarify difficult material; **Digital platforms**: utilizing digital tools and apps to effectively produce and manipulate visual representations; **Storytelling**: by using the art of storytelling, creating narratives or stories using images to pique interest and successfully communicate ideas; **Visual metaphors:** these are images or analogies that are used to clarify and simplify complicated ideas through the use of visual components. All these elements highlighted in bold can be combined and tailored to produce effective visual aids for a variety of tasks, including brainstorming, problem solving, education and communicating.

2.2.2. Design Thinking

Borrowing from Melles et al. (2012), Qureshi et al. (2022) noted that DT consists of five phases that may help create novel solutions for the problems a particular group of people faces. The five stages of DT are empathise, define, ideate, prototype and test, which need not follow any particular order or time frame (Wolniak, 2017). As reported by Gupta and Lewin (2020), DT is generally defined by Razzouk and Shute (2012) as an analytical and creative process that involves opportunities for experimentation, prototyping, feedback gathering and redesign. Prior to moving

into ideation and design, DT seeks to understand the user's experience (Cross, 2011; Qureshi et al., 2022a). This approach acknowledges that understanding the user's needs and context are paramount to the success of the design, and that the most effective solutions may emerge from an iterative process of understanding, problem identification, experimentation and refinement. As Bresciani (2019) explains, co-creation and collaboration should be supported by DT sessions and visualisations, supports Qureshi et al. (2022). According to Bresciani (2019), co-creation and collaboration should be supported by combining visual and design thinking sessions, an argument that Qureshi et al. (2022) reinforce.

Using DT in this manner can foster the development of creative thinking abilities. Ultimately, DT encourages *creative mindsets* that build creative confidence (Rauth et al., 2010). Children's education can be significantly impacted by visually literate mindsets, according to Howard et al. (2015). Visual literacy not only encourages creativity but also increases the ability to think critically and problem-solve (Howard et al., 2015). Through co-creation and collaboration, DT sessions and visualisations can help foster these skills in children, thereby improving their educational experiences (Qureshi et al., 2022a). This is backed up by research suggesting that a creative mindset is linked to higher levels of confidence and problem solving (Rauth et al., 2010).

Brown (2009) notes that, in recent years, DT has become a popular method used by a wide range of organisations around the globe. At the inception of DT, the design company IDEO and the Stanford Hasso Plattner Institute of Design were the leading forces applying DT to business and societal problems (Cross, 2011; Kernbach & Nabergoj, 2018). Kernbach and Nabergoj state the following:

> In design thinking, interdisciplinary teams work on design challenges in which they aim to identify where the problem is by empathising with the user through observation and interviewing. Based on this understanding, they aim to define a problem statement that inspires and guides solution finding, which is also known as a 'point of view' (POV). Based on this problem statement, ideas on how to find solutions to those problems are created, first by thinking divergently about possible solutions and then by choosing and converging the best possible solution. Based on these ideas, prototypes are created in the form of tangible physical objects or drawings that invite users and team members to test them, give feedback and refine the solutions. (2018, p. 362).

Here, I list the primary elements of DT, which typically include the following, supported by the literature and other findings: **Empathise**: recognise the requirements and viewpoints of users or stakeholders; **Define**: clearly stating the issue or difficulty that needs to be solved; **Ideate**: to come up with a variety of

original ideas and solutions; **Create**: creating a low-fidelity prototype allows for the testing of potential solutions; **Test**: implement user testing to gather input and improve prototypes; **Iterate**: repeat a procedure to continuously enhance and perfect the solution; **Implement**: to put into practice and use the finished answer; **Communicate**: effectively communicate the answer to all relevant parties; **Collaborate**: encourage interdisciplinary teams to collaborate by using the word 'collaborate'; **User-centred**: maintaining the end user's perspective throughout the process.

2.2.3. Visual Design Thinking Model

Although VT and DT are often confused, they go hand in hand; they have very different connotations and purposes and are used in different situations (Qureshi et al., 2022a). As a result of combining both, VDT results. Despite the fact that VT and DT have the same objectives, they approach them from different perspectives. In VT, the concept is perceived visually. In contrast, DT involves finding and choosing solutions to the idea, which is followed by the process of testing the solution. By combining them, I propose a model that includes both processes, which has never been discussed in the literature. Hence, this is the new knowledge that I introduce in my research. I visualise the VDT model in Publication IV to test this combined concept, as shown in Figure 3.

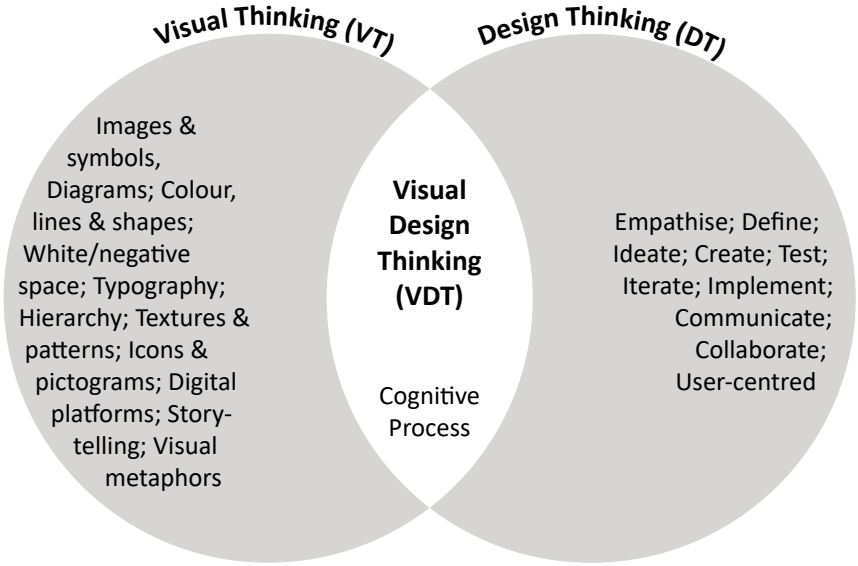


Figure 3: Visualisation of Visual Thinking (VT) and Design Thinking (DT) combined into Visual Design Thinking (VDT) model.

Through the integration of VT and DT into VDT, the research presents a methodology for designing and tailoring creative interventions for participants, allowing them to gain creative confidence by stimulating their level of VL. Due to this combination, VDT, among many other skills, knowledge and attitude clusters, becomes part of the VL umbrella concept. I tested this methodology with children and youth through an iterative and qualitative process. To address demanding learning reforms, such as developing shared visual languages that can describe meaning, the current research used VT and DT to create a VDT learning prototype for improving and scaling interventions. The prototype VDT model illustrates the pedagogical consequences of using it with children. Educational programmes are creative ways to increase children's awareness of their surroundings through formal and informal learning, and the model is an important theoretical contribution to the pedagogy of art and design. Applying the model during the project, it demonstrated how art and design can serve as a catalyst for citizen education by developing thoughtful, resourceful and innovative adults to manage the future of our environment.

Thus, VDT is a cognitive process that can help develop new skills, refine competencies and develop *creative mindsets*—strengthening creative confidence in becoming visual design thinkers—all of which contribute to visual learning.

2.3. Visual Voice

Visual voice has evolved into an established concept in many fields, including the arts. It is the idea that visual images, such as paintings or photographs, can convey a message as effectively as words. It encourages people to see the world differently, look at things that are not traditionally seen and find meaning in them. For the purpose of this research, I employ this concept as a participatory method for cultivating relationships between data informers and data informants, as this allows free expression, learning and relationship development across racial, gender and social boundaries.

Visual voice can be a powerful tool for creating understanding, empathy and collaboration between different groups of people. Providing a space for free expression encourages people to share their stories, perspectives and experiences on a more personal level. This helps break down barriers between different groups, foster productive dialogue and create a more inclusive environment. Hence, it provides an opportunity to foster trust and develop meaningful partnerships between researchers and community members.

Stupples (2007) articulates that as early as the 1970s, it became increasingly apparent that all images have culturally specific roles as *visual voices*—expressing feelings and desires and giving expression to culturally bound concepts, traditions and histories. Using this concept enabled the establishment of a *creative mindset*

among the research participants, and the pluralistic approach provided a framework for finding and establishing the *visual voice*. The *creative mindset* and pluralistic approach are explained as follows.

2.3.1. Creative Mindset

A mindset informs how a person views and interacts with the world (Howard et al., 2015). 'Creative mindset is a theory of practice', states DeGraff and DeGraff (2020, p. 8). It is not intended to provide an in-depth clinical explanation of creativity mechanisms or a comprehensive list of creative techniques. Being creative means thinking creatively, feeling creative and expressing yourself consistently. Creativity opens up opportunities and possibilities since it helps to enjoy the creative process and embrace innovation. By being creative, we can see and solve problems more imaginatively and innovatively. A creative mind broadens our perspective and helps us overcome prejudices because it broadens the mind and expands its horizons. In addition to lateral thinking and visual reading, creative thinking skills may include copywriting, artistic creativity, problem solving, analytical thinking and divergent thinking.

It is a mindset that has the ability to explore and try new things, as well as see connections in new ways. There is no denying that mistakes must be made to reach novel results. In actuality, what prevents us from taking action is the fear of what will happen if we make a mistake, which stems from what we fear will happen if we do. We need to remember that mistakes are part of the creative process. They should not be feared but instead embraced as opportunities for growth. We can unlock our creative potential and reach new heights by embracing mistakes and staying open to new ideas. A well-known phrase from American psychologist B. F. Skinner that resonates with people from many areas of life (Evans, 2018; MacMillan, 2003) is also applicable here: 'A failure is not always a mistake; it may simply be the best one can do under the circumstances. The real mistake is to stop trying' (Skinner, n.d.).

'Youths can cultivate a creative mindset through VL' (Qureshi, 2023, p. 39). Palmer and Matthews (2014) articulated that VL is the ability to interpret, negotiate and make meaning from information presented in an image. It helps to develop critical thinking and problem-solving skills, which are essential for success in today's world. Practising VL can be a great way to foster creativity in youths. VL can also help equip youths with valuable skills, such as thinking outside the box and spotting patterns. By regularly engaging in VL activities, youths can better understand the world and become more creative and innovative.

2.3.2. Pluralism

Based on Escobar (2011; 2018), Griniuk (2022) elucidates that the pluriverse consists of diverse practices from diverse communities and backgrounds that are interconnected and interrelated. This concept challenges the traditional view of the

universe as a homogenous and unified system. Instead, it celebrates the differences and connections between different ways of knowing and being. This appreciation of diversity allows for a more inclusive and equitable approach to decision making. This approach also encourages a more holistic and integrative approach to problem solving, where the richness of different perspectives is taken into account. By integrating the concept of plurality, we can create solutions that are better adapted to our modern world's complex realities.

The pluriverse connects multiple ontologies and provides a realm in which many worlds can co-exist (Escobar, 2021). This allows us to find creative and robust solutions tailored to different communities' needs and preferences. A pluriverse perspective is based on the principles of equity, recognition and respect for diversity. It seeks to create a more just, liveable and sustainable world. Pluriverse is a way to recognize and celebrate the world's multiple realities and promote solidarity and collaboration between different groups of people. It also encourages us to think beyond our individual perspectives and recognise all living things' interconnectedness. This approach seeks to build on existing knowledge and to foster collaboration and mutual learning across societies, cultures and generations. It also seeks to ensure that decision-making processes are inclusive, transparent and accountable.

Participation is key to pluralism, as was the focus of the research. Pluriverse communities strengthen art and design, an under-researched combination in the pluriverse debate (Miettinen et al., 2022). It is a powerful tool for creating meaningful and lasting change in society. It encourages us to challenge the status quo and embrace diversity and inclusivity, claims Yoko Akama and Joyce Yee (2019). A pluriverse is a powerful reminder of the power of collective action. This can be accomplished through collective dialogue and collaboration. Pluriverse provides us with a platform to connect with people from different backgrounds and build meaningful relationships. It is an ideal space to share ideas, experiences and perspectives. Pluriverses are a valuable resource for those who seek to understand and appreciate the diversity of the world. They can be a catalyst for creative solutions to global issues and places to foster collective action.

"The art and science of asking questions is the source of all knowledge."

THOMAS BERGER

3. RESEARCH AIMS AND QUESTIONS

This dissertation consists of five publications (I–V) that have been published through peer-reviewed processes: one in a journal, one as a conference proceeding and the rest published as book chapters (see list of original articles and author's contribution, see p. xv). To compile the dissertation, all publishers involved in this research granted permission to reprint and use the research material.

In addition to the already established theories of VT and DT, I was intrigued by the commonality between supporting and enhancing youth visual learning. This research aims to benefit youth by visually analysing and interpreting their creative perception through an artistic approach, thus enhancing their understanding of how being visually literate can facilitate attitude change and decision making, and how youth's *creative mindsets* can be positively impacted. Based on my personal motivation regarding the research context, project requirement (AMASS) and potential of this artistic experiment, the main research question of this dissertation, which overarches this fundamental research, is as follows:

How can the visual design thinking (VDT) skills of youth be improved through visual literacy (VL)?

This research question was investigated through five publications that contributed to AMASS, a Horizon 2020–2023-funded research project. The aim of this question is to explore the implications of the new model that was introduced by the author of this research in Publication IV, referred to as the Visual Design Thinking model (VDT model) (see Qureshi et al., 2022a). It contributes to the field of art and design as new knowledge. My research led me to discover this new model after testing several arts-based experiments with children and youth.

During the process of working on the five publications, there were many sub-questions, which were then consolidated into one sub-question in each publication. Each publication now contain questions that serve the main research question.

Publication I

This was a pilot study where a workshop with youths was conducted with the themes of VL. The aim of this publication was to illustrate the youths' perceptions, interpretations and meaning-making through the artistic and creative processes to stimulate their creative and critical thinking. Through this workshop, I was able to

gain a better understanding of the level of VL among youth. Two publications were produced from this workshop. The first was published as an open-access paper in the *Journal of Visual Literacy* published by Taylor and Francis, Routledge, titled 'Meaning-Making and Interpretation through Personal Mandalas in the Context of Visual Literacy'. In this paper, the application of the Common European Framework of Reference for Visual Literacy (CEFR-VL) model offered new avenues for improving the competencies within the current empirical educational research and curriculum development in school subjects. According to the model and further enhancements recommended by the authors, these sub-competencies can produce visually literate youth who can tackle the digital technology that is expected to continue to advance at a high rate in the future. The sub-question that emerged from this publication was as follows:

What is the connection between creative processes and the visual literacy (VL) of youth?

Publication II

The second publication emerged from the pilot VL workshop titled 'Documentation of Reflective and Interpretive Representation of Youth: A Study through Rudimentary Photographic Close-ups in the Context of Visual Literacy'. It was published as a sole author book chapter by InSEA Publications. The aim of this study was to interpret the importance of documentation in the artistic co-creative process. The documentation process allowed the participants to communicate and discuss with one another, broaden their prior knowledge and explore their VC, which led to the participants' personal expression. The distinctiveness of this paper made it possible for this research to advance because it captures experiences and processes that could otherwise go unspoken because they are difficult or perhaps impossible to put into words. The sub-question explored in this publication is as follows:

How can documentation, interpretation and reflection of the artistic processes (such as rudimentary photographic close-ups) improve the *creative mindsets* of youth?

Publication III

The third publication, titled '*Flag*-A Shared Horizon', aimed at the role of participatory arts-based methods to express youth's pluralist values. This paper was published by Routledge as a book chapter. It describes *Pluriverse* as a theoretical and practical framework for design, as well as a methodology that directs design efforts towards equity and sustainability objectives. This 'autonomous design' supports teamwork and place-based strategies. The sub-question that emerged from this publication was as follows:

How can arts-based methods (ABMs) be used to expand the boundaries of visual literacy (VL) to encourage pluralism in youth?

Publication IV

The fourth publication, titled 'Improving Children's Visual Literacy by Integrating Visual Methods to Foster Visual Design Thinking Through Unconventional Creative Processes', proved to be a ground-breaking research publication, as it introduced a new paradigm called the Visual Design Thinking (VDT) model (2022). It describes the prototype VDT model and illustrates the outcomes of using it pedagogically with children. Educational programmes are creative ways to increase children's awareness of their surroundings through formal and informal learning, and the model proved to be an important theoretical contribution to the pedagogy of art and design. The sub-question of this publication is as follows:

How can the Visual Design Thinking (VDT) model assist in stimulating children's VDT abilities?

Publication V

The fifth publication, titled 'Engaging youth through visuals', aims to boost youth's creativity through frequent engagement with VL. The purpose of this article was to provide evidence that exposure to tasks that fall under the umbrella of VL can increase young people's creativity. All four of the previous publications have contributed to this framework. The sub-question asked in this publication was:

How can arts-based methods (ABMs) improve the visual thinking (VT) of the youth and contribute to a better understanding of the prototype VDT model?

"Design is a way of life, a point of view. It involves the whole complex of visual communications: talent, creative ability, manual skill, and technical knowledge."

PAUL RAND

4. RESEARCH DESIGN – IMPLEMENTATION OF THE STUDY

The research design is discussed in this chapter, which is divided into four sections. In the first section, I discuss the philosophical paradigm adopted in the research. The second section discusses the research strategies and methodological choices. In the third section, I discuss the data collection methods and analyses of the publications. Finally, in the fourth section, I summarise the entire research design in Table 1.

Therefore, to cater to the aim of this research and to answer the central question of this research, **How can the visual design thinking (VDT) skills of youth be improved through visual literacy (VL)**, many sub-questions emerged that are summarised in Chapter 3. However, even before these sub-questions, many aspects were considered, which eventually led to the sub-questions and the central question of this research. These are worth mentioning in order to obtain a thorough background of the methodology adopted. They are: (i) What is the level of VL among Rovaniemi's youth?; (ii) Does VT enhance mental imagery, visualisation, interpretation and problem-solving?; (iii) How can VT contribute to the meaning-making processes of young children and youths?; (iv) How can young children and youths acquire basic knowledge of VL's importance in creative learning processes?; and (v) How can the forms of documentation, interpretation and reflection assist in artistic processes?

As reported in Chapters 1 and 3, this research has contributed to the European Union Horizon 2020–2023-funded project *Acting on the Margins: Arts as Social Sculpture* (AMASS). This project investigates the arts in relation to societal challenges, especially in marginal regions in Europe. Moreover, this research followed the guidelines of the Finnish National Board on Research Integrity (TENK, 2023), as reviewed by the ethics committee of the University of Lapland in Finland. Among all five publications conducted in this context, this experiment specifically focused on a selected group of Finnish youths' VL in Rovaniemi, indicating the necessity of arts-based learning in formal and informal education. The youth services provided by the city yield many opportunities for the inclusion and well-being of young people (City of Rovaniemi, 2023), but they lack arts involvement from the VL perspective (Qureshi, 2023).

Five publications were published as part of this evolving artistic experiment. This chapter discusses the research design approach and its philosophical relationship to the topic. As can be seen in Figure 4, the overview of the research design was inspired by the research onion by Saunders et al. in 2009 and 2012. The literature suggests that the research onion guides the researcher through all the steps that need to be taken

when developing a research methodology, supports Alhonsuo (2021). Melnikovas (2018) observes that the research onion concept can be used as a solid basis for the development of coherent and rational research designs. Further, the author supports Raithatha (2017), who argues that an educational model can be developed based on the research onion model. Based on these viewpoints, I organised the research design into six layers that were examined and planned to create an effective research plan.

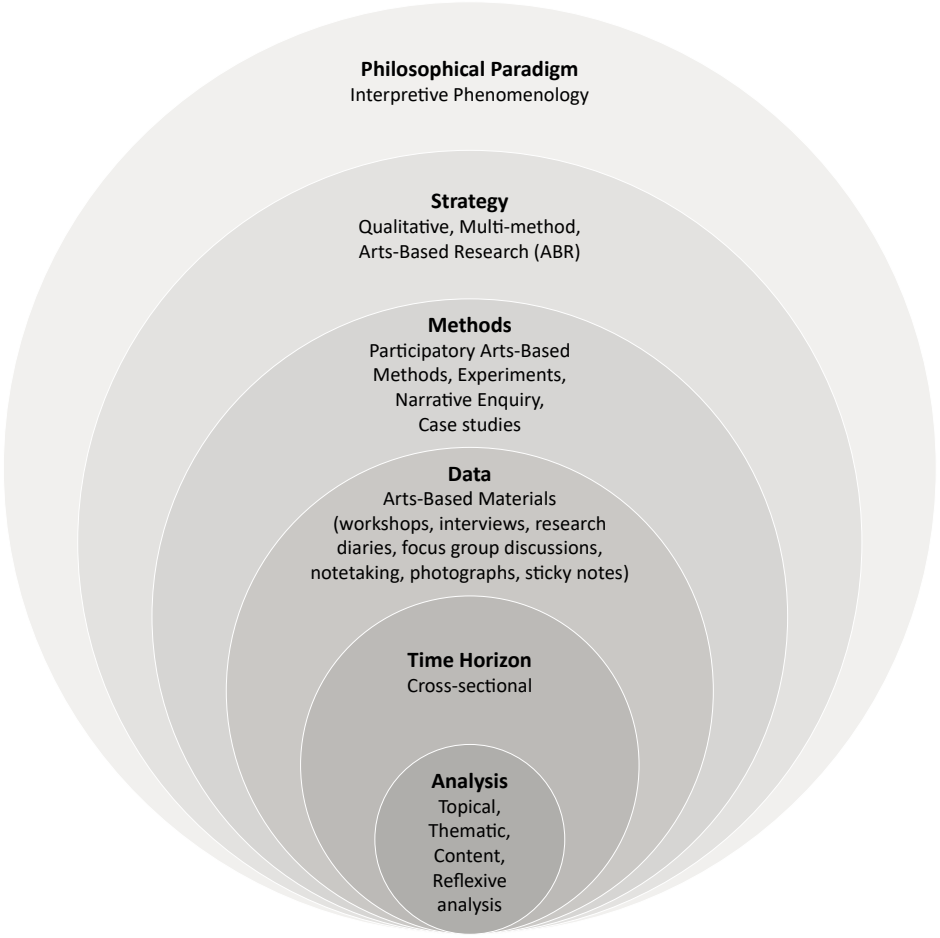


Figure 4: Overview of Research Design

4.1 Philosophical Paradigm—Interpretive Phenomenology

Phenomenology is an approach that focuses on the lived experiences of a particular individual or group (Cambridge Dictionary, 2021). The term refers to phenomena (things that exist can be seen, felt, tasted, etc.) and how we experience them

(Collins Dictionary, 2021; Messaris, 1987; Yenawine, 1997). Essentially, it is the essence, meaning and structure of the lived experience. Smith (2018) reports that phenomenology, as a discipline, differs from, yet is related to, other important areas of philosophy, such as ontology, epistemology, logic and ethics. As a discipline, phenomenology has existed in various forms for centuries, but during the early 20th century, it took on its own form in the works of Husserl, Heidegger, Sartre and Merleau-Ponty, among others. It has various implications, forms and traditions, including transcendental, existential and hermeneutic phenomenology (Moran, 2000; Schwandt, 1994; Smith, 2011).

According to Merleau-Ponty, perception is communication between a person's own body and the world he or she perceives, in which a person actively and passively expresses the world seen in collaboration with others (Moran, 2000). He regarded perception as the basis for human experience. In this research, I approach empirical data through the phenomenological paradigm to seek the connotation of subjectivity. Data collected from the workshops were analysed using the interpretive phenomenological approach (IPA), a blended approach that aimed to provide a detailed examination of the lived experience of a phenomenon through participants' subjective experiences and personal perceptions of objects and events. In contrast to other approaches, in IPA, the researcher performs an active role in the interpretive process (Smith, 2004; Tuffour, 2017).

By applying Merleau-Ponty's (1945) phenomenological perception theory to the data through IPA, which contributed to phenomenology, particularly phenomenological approaches to the body, perception and consciousness in relation to nature, I aimed to understand the data more clearly. However, he separated the concept of perception from the artists themselves, making it more credible. Upon careful examination of this concept through the literature, I found that the first step in the phenomenological approach is called 'epoche', a Greek word that means to refrain from judgement, abstaining from or distancing from the everyday, ordinary way of perceiving things (Moustakas, 1994). According to epoche, one of the first steps of this analytical process is not to be biased or to manipulate the data to change the meaning of the results. It is essential that the researcher participate throughout the group's data collection phase as it develops. This method aims to better understand different viewpoints, assumptions and prejudices about a phenomenon so that authors can approach the phenomenon from a fresh perspective without making assumptions or imposing results too early.

The next stage after epoche is 'phenomenological reduction' (Smith, 2005), in which the researcher magnifies the data without letting any other medium interrupt its actuality and uncovers the deep meanings they hold. Once done, the data are organised into meaningful clusters to determine their repetition, relevance and dissimilarities. Then, it is deciphered through themes to identify the categories, creating an 'imaginative variation'. With these imaginative variants, the researcher

can determine the themes and analyse them for profound elucidation. This allows the identification of the final structure of the analysis from the whole group experience, concludes what the whole phenomenon in that particular group means and synthesises the essence and meaning gained from experience (Dahlberg, 2006; Moustakas, 1994; Macann, 1993). This approach formed the basis of this research philosophy.

4.2 Research Strategies and Methodological Choices

Initially, it was difficult to determine the most appropriate research strategy for this research. This is because many methodologies could fit this artistic participatory study, including ethnography, experiments, narrative enquiries and case studies. Therefore, I chose to adopt a multimethod qualitative methodological approach, which is discussed individually in each publication. During the course of each publication, rich, insightful data were collected; it was mostly photographed, videotaped, then transcribed and analysed with the final artwork made by the participants, all of which were incorporated into the overall analysis. I will attempt to provide a description of the raw data, as well as the final data, which were collected and analysed during the publication process.

Publication I

A pilot study on VL was conducted as part of the experiment. In applying the interpretive phenomenological approach (IPA) along with the participants, the study's authors also participated. This workshop took place in 2021 at the University of Lapland with the students from Faculty of Arts and Design, which included three parts: (i) a photography-based pre-task, (ii) drawing a personal mandala (artwork), and (iii) reflection (essay writing) and open discussion. I produced two publications as a result of this workshop. Based on the last two steps of the workshop, the first case study (Qureshi et al., 2022b) estimated VL levels among youth aged 19–22 living in Rovaniemi, Finland. In the first part of the workshop, there was a pre-task involving photography, so it was imperative to prepare a separate publication, which will be discussed in more detail later.

A multimethod qualitative approach appeared to be the most appropriate approach, considering the differences in the methods of data collection. Using creative artistic processes to stimulate young people's creative and critical thinking, this study illustrates youth's perception, interpretation and meaning-making (Qureshi et al., 2022b). The workshop comprised participatory observation, focus group discussions, interviews, reflections, drawing (mandala making) and a questionnaire (see Appendix 5, p.103).

Figure 5: Visual Literacy workshop (pilot study) at the University of Lapland, 2021

Figure 5 illustrates the process of making a mandala in the VL workshop. In accordance with COVID-19 restrictions, only five people were allowed to attend the workshop. Figure 5 shows that one of the participants attended the workshop online.

The questionnaire was designed to assess participants' VL levels and understanding of the concept. Analysis of the questionnaire and reflection data was done using thematic analysis. In addition to the three-day (five-hour workshop each) reflections, the essays written by the participants were transcribed and colour coded under the themes of perception, interpretation and meaning-making (see Appendix 6, p.105).

In addition, this study examined how VL affected students' learning and determined whether it should be emphasised in K–12 learning. The data collection and transcription were followed by a validation of Visual Competency (VC) using Wagner and Schönau's (2016) Common European Framework of Reference for Visual Literacy (CEFR-VL) prototype model during the writing of the publication. The model enabled an understanding of the research process and how data collection methods produced new knowledge about the skills and attitude changes of the participants. I elaborate on the implications of this model during the study in Chapter 6.

Publication II

The second research cycle (Qureshi, 2021) was an extension of the first study and focused on the same group of youth's documentation, reflection and interpretation skills. This research strategy uses photography to document the artistic process (Meron, 2019). Photovoice is a specific practice that merges photography with participatory methods. Some refer to this as a method for conducting arts-based action research (Chilton & Leavy, 2014, p. 209).

As part of the pre-task phase of the VL workshop (2021), the participants were asked to take close-up photographs of everyday rudimentary objects in an abstract manner, highlighting the lines of the objects. Following this, they discussed how these graphical images spoke to them. Each photo reflected a unique representation and perception due to its lighting, clarity and aesthetics. During the discussion, each participant offered stimulating clarifications, thus establishing differences in perceptions, interpretations and meaning. This prompted further questions and debates, leading to a more in-depth understanding of the images and their implications. Ultimately, the discussion ended with each participant having a deeper understanding of the images and their effects on the viewers. As they named each photo and gave it a title, they discussed how the close-up images affected their feelings. In order to analyse the reflections, all of the interviews were recorded with their consent and transcribed for thematic analysis on four topics: (i) association of photographic images, (ii) co-creation appreciation, (iii) smooth generation gap and (iv) co-created visual language and culture. This activity served two primary purposes. First, it examined how participants used a camera to document a simple item and give it meaning. Second, it helped them see through each other's perspectives and have a dialogue about their understanding. Moreover, focus group discussions and note-taking were used as research methods.

In addition, visual language and cultural representations were examined in relation to the role of VL among youths and how they can foster visual reflexivity and understanding. For this purpose, the study employed two methodological approaches. First, reflexivity (Finlay, 1998; 2002a; Hammond & Wellington, 2020), examining one's beliefs, judgments and practices during the research process and how they might affect the research. The second is constructivism (Hall, 2013; Mills et al., 2006; Schwandt, 1994), which argues that individuals acquire knowledge of the world and can be positively constructed based on their experiences. Furthermore, constructivism argues that individuals acquire knowledge of the world through their experiences, and that we can construct it in a positive way. As a result of this constructivist approach, the participants actively constructed their own knowledge based on their own experiences. As Elliott et al. (2000) and McLeod (2019) note, knowledge is better expanded when participants create it themselves while engaging in an interpretive co-creative process. See Figure 6 for a demonstration of the brainstorming process during the VL workshop (2021).

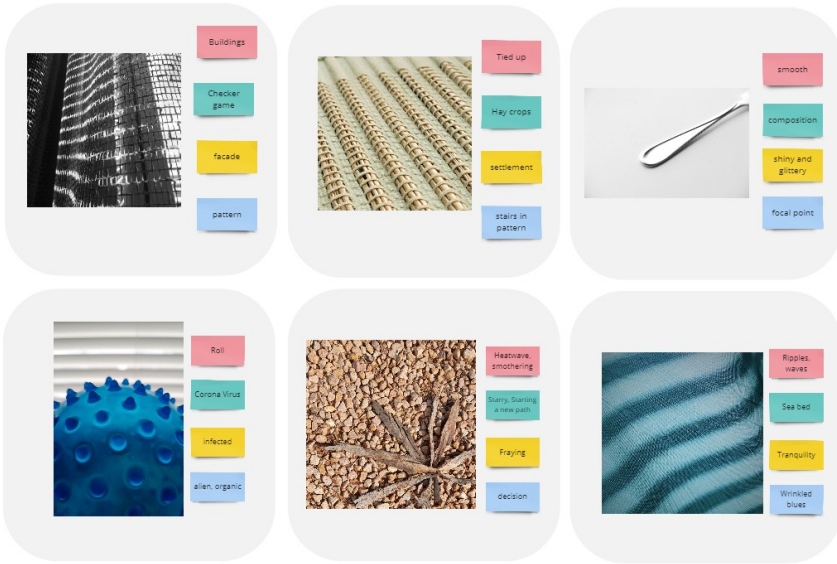


Figure 6: Pre-task photography; Brainstorming (digital screenshot), Visual Literacy workshop at the University of Lapland, 2021

Publication III

For ABMs to be effective, they must be combined with narrative enquiry, as Akimenko et al. (2017) confirm. In this publication (Pietarinen et al., 2022), youth's voices were visualized and mirrored to re-engage with their own experiences post-COVID-19. As part of the research strategy, the participants (aged 19–22) explored their own narratives and art choices to explore the boundaries of VL and derive novel ideas about what they wanted to achieve in the future. In this study, ABMs and narrative enquiry were the primary methods of investigation. These methods helped to create a space of dialogue, interaction and creativity. Using these methods, a colourful and kinetic installation emerged from an installation called *Flag* in the university space. The term *Flag* was chosen to identify the installation as a significant event in the lives of the youth following the COVID-19 period.

The study revealed that ABMs and narrative enquiry are effective for exploring identity and subjectivity. It also demonstrates the importance of combining these two methods for successful enquiry. For example, the researchers found that combining narrative enquiry with ABMs enabled participants to explore multiple layers of identity, to understand the dynamics of social relationships and to reflect on their own personal stories. This enabled the participants to gain a more in-depth understanding of their identities, which was valuable to the research study. Additionally, the combined approach provided a more holistic view of the participants and their experiences.

The *Flag* workshop lasted 28 hours and was divided into six working days. The workshop encouraged students to express their ideas, thoughts and feelings through materials and colours. Various textile materials, fabrics, beads, etc., were provided to build the installation. Reflections, focus groups and lectures were held periodically. Each was recorded and later analysed as part of the publication-writing process. Figures 7 and 8 show that the participants engaged in a focus group and lecture discussion. The participants were also asked to write a short essay about their final experiences, which were transcribed and analysed for new perspectives. The material-based workshop encouraged a better understanding of how to use colours and textures to express their ideas. It also provided the youths and author–researchers with knowledge about pluralism and how to incorporate it into their redesigning thinking processes (Pietarinen et al., 2022).

Figure 7: Focus group discussion, Flag workshop at the University of Lapland, 202

Figure 8: Lecture discussion, Flag workshop at the University of Lapland, 2021

Publication IV

This study conducted by Qureshi et al. (2022a) assessed VL levels among children. To do so, an arts-based research (ABR) strategy that involved creative activities was adopted. The study involved a sample of 16 children between the ages of 10 and 12 who were asked to engage in activities such as nature mandala making, creating stories and narrating reflections. The study aimed to assess whether creative arts-based activities positively impacted children's VL levels, with improved performance on tasks that demanded VL skills (Jasińska-Maciążek et al., 2022). It also provided insights into the potential development of VL from an early age and how it can be cultivated over the years (Lee et al., 2020). The study was conducted with parental consent (see appendices 7–8, p. 107–110), since underage children were involved. It was clarified that neither the children's faces nor their names would be disclosed. All parents gave consent to participate in the study.

Research diaries, storytelling, interviews and visual data were the qualitative data collection methods used in this study. The children were given a brief overview of the mandalas to begin the workshop. A brief introduction to this art form was followed by an outdoor exploration of natural objects, including pinecones, stones, flowers and leaves, to design their nature mandalas. Combined with narrative enquiries, interviews and visual material collected, the workshop data provided a rich dataset

for analysis. A detailed journal was kept for each student, which contained an analysis of four topics. The first journal entry described how the participants saw their mandalas; they were prompted to give the mandalas a title and an explanation of what they saw. The second entry describes the immediate emotions associated with their creation. As part of the third entry, they gave their individual feedback on how they could improve the mandalas. The fourth entry was more reflective and included ideas for future creation.

By the end of the workshop, the children had many reflective thoughts, which were then analysed to identify four-topic analytical themes. Throughout the workshop, the children actively participated in short interviews, and their responses were recorded and transcribed. When connected with the ABMs, it enabled the exploration of the deeper meanings of the mandalas analysed by the children. There is a clear indication of the involvement of the children in Figures 9 and 10.

Figure 9: Nature mandala I, summer workshop at the University of Lapland (2021)

Figure 10: Nature mandala II, summer workshop at the University of Lapland, 2021

Publication V

In this study, I examined all the methods employed throughout the experiment. Multimethod qualitative methods were compared to determine what worked well and what did not. I looked at interviews, focus groups, field observations and surveys for this study. I compared the effectiveness of each method in collecting data for the experiment. The ABMs involved mandala making, photography, observations, interviews, portfolios, documentation, writing descriptive narratives about the experiences and sharing views on how the artistic processes enhanced the participants' perceptions, interpretations and meaning-making skills. Qualitative methods allow participants to express their thoughts and feelings creatively (Leavy, 2015). This enabled me to gain a more comprehensive understanding of their experiences. Additionally, this approach allowed for more natural conversations, resulting in rich-quality data. To understand the research's main question, these thoughts and feelings will be discussed further in Chapter 6. It also allowed for a more in-depth exploration of the participants' experiences, enabling a more thorough exploration of the different aspects of the research topic.

4.3 Data Collection Methods and Analyses of the Publications

Initially, I analysed the data using the IPA based on the data collected through various ABMs. Next, I analysed it through a number of other analysis methods, such as thematic, topical, reflexive, narrative and content analyses. The act of seeing varies from person to person, as supported by Merleau-Ponty (1962, p. 67): 'Nothing is more difficult than to know precisely what we see'. Therefore, viewing the world through the participants' eyes was essential to evaluate their visual knowledge.

Publication I

This study was conducted as a pilot study to answer the research questions and gather research data. Therefore, a workshop comprised of three phases was organised, which focused on (i) students' learning, (ii) how to explore their creative expression and (iii) evaluating their level of VL awareness by engaging them in an artistic, creative process. Several data collection methods were applied to avoid making assumptions about the participants' artwork and to keep the study free of prejudgment. These included an online qualitative questionnaire (open-ended survey), interviews, focus group discussions and observation. Through the interpretation and meaning-making of the artworks (personal mandalas), youths bridged the gap between artistic and personal concerns, which will be discussed in Chapters 5 and 6.

Each person has his or her own individual perspective and understanding of a text, image or other media. This can lead to different interpretations of the same thing based on the individual's background, culture and beliefs. Therefore, interpretation is subjective and unique to each person, supporting Messaris (1987; 1994). This process occurs in the mind and is influenced by individual biases. This is the process that helps us comprehend the experiences we encounter, focusing on meaning, expressions, emotions or a personal response that relates to our experience (Qureshi et al., 2022b). A person's perception and interpretation cannot be the same as another's. Thus, the data were analysed using a phenomenological approach to understand the participants' subjectivity perspectives. The workshop data were assessed using IPA, which demands that the researcher play an active role in interpreting the participants' subjective perceptions and experiences of objects and events (Smith, 2004; Tuffour, 2017).

During the workshop, the visual data collected from the participants' personal mandalas provided insight into their artistic expression(s), as can be seen in Figure 11. The mandalas allowed insight into the participants' inner worlds and provided evidence of their experiences. The findings from IPA and the visual data provided a holistic overview of the workshop.

Furthermore, a VDT prototype model was employed to improve and scale interventions addressing demanding learning reforms, such as VL development and VC. The study demonstrated a novel means of introducing this model, enabling

youth to direct their own creative learning experiences. It provides valuable insight into how ABMs and focus group discussions can enhance problem-solving skills and develop *creative mindsets* in young people. Additionally, the analysis indicated that incorporating children's perspectives into ABMs was crucial for transforming them into forms of learning that could be incorporated in formal and informal learning settings (Ware, 2010).

Figure 11: Personal mandalas created by the participants, Publication I, 2022

Publication II

In this study, thematic analysis of the visual images photographed by the participants helped them construct a representation of their own personal experiences and interpretations (Knoblauch et al., 2008). This added substantial knowledge to the group. This deeper understanding of their own experiences, as well as of their

teammates, helped them build empathy and trust (Miettinen et al., 2016). This enabled them to work together more effectively and productively. Significant questions emerged regarding young people's reflexivity and how reflection contributes to their personal representations. This gave the group valuable insight into their own strengths and weaknesses in visual communication. Figure 12 features some of the participants' unique contributions and highlights the importance of visual images in the VL context. It also highlights how the participants' experiences and the documentation role affected their interpretations of the group's experiences.

It was primarily through the use of this artistic reflection analysis that an effective research tool for interpretivism was established. Collective knowledge was built through research. This collective knowledge allows researchers to gain a better understanding of the subjective experiences of the phenomena being studied. The analysis of these data provided valuable insights into the social context, helping to inform new and better interventions. As a result of the introduction of this method, it was possible for the participants to acquire new knowledge, language and skills, enabling them to think critically, reflect on each other's perspectives and experience the phenomenon from the perspective of each individual. This ultimately resulted in the participants having more meaningful conversations and a deeper understanding of the social context. Additionally, the method created a safe and supportive environment to foster open dialogue and collaboration.

Figure 12: Close-up object photographs taken by the participants, Publication II, 2021

Publication III

For this study, a narrative enquiry process was combined with a reflexive analysis process. The collected data provided insight into the subjective and emotional reactions of the participants during the workshop. There is evidence that the use of ABMs in research, in combination with experimental and improvisatory methods of analysis, can lead to significant impacts (Levine, 2013). During the arts- and material-based workshops, notational data were collected. Participants in the workshops were able to test, evaluate and compare a number of artistic methods, as well as how they could be used to transform them into a thoughtful and insightful process by using the same approaches and methodologies. Pietarinen et al. (2022, p. 219) borrows from Coemans and Hannes (2017, p. 41) that 'ABMs often generate "interesting types of data" that can be difficult to interpret'. Additionally, they assert

that alternate forms of expression, increased participation, and discourse can be achieved in conjunction with narrative enquiry.

Figure 13: Selective photos of the Flag installation designed by the participants, Publication III, 2022

The participants developed a better understanding of how to create a more inclusive design process, while also gaining more confidence in their ability to express themselves. In conclusion, the workshop was an effective way to engage the participants, foster their creativity and teach them new skills. This workshop also helped to identify the most important elements of redesigning, such as collaboration and design thinking. It provided a platform for youths to explore and reflect on different ways of creating collaborative redesign projects. The outcomes of this workshop were very encouraging and provided new insights for future research.

Publication IV

I conducted this study as part of a qualitative phenomenological investigation into children's reflexive activity during a summer workshop that was held at the University of Lapland in the summer of 2021. The research examined children's views on their creative processes. The research aimed to explore the children's perspectives on their own creativity, as well as their understanding of their experiences and the outcomes of their work. Through in-depth interviews and observations, this study aimed to capture the nuances of their creative process. The analysis of the data revealed a range of insights into the children's creative processes, including insights into the role of motivation, the importance of feedback and the influence of collaboration. The children were asked to reflect on their experience of creating mandalas with naturally found objects. The application of this ABM led to the invention of the Visual Design Thinking (VDT) model (Qureshi et al., 2022a), which involves unconventional, creative processes to assess children's existing VL and determine how it can be facilitated.

Analyses of children's artworks were conducted according to four analytical themes. As part of the workshop, the children participated in short interviews during which their responses were recorded and transcribed. IPA provided an effective framework for analysing an experience-based phenomenon from the perspectives of both the participants and the researcher. It became possible to explore the deeper meanings underpinning the mandalas that the children analysed through their narratives of their experiences. Figure 14 highlights a few of the nature mandalas designed by the participants.

Figure 14: Selective photos of the nature mandalas designed by the participants, Publication IV, 2022

Publication V

The data collected from the participatory mixed-method experiment's case studies were analysed using a qualitative ABR approach (Barone & Eisner, 2012; Leavy, 2017) with the assistance of the phenomenological approach (Merleau-Ponty, 1962; 2004). The aim was to identify key themes and relationships between the data collected. The analysis was then validated through different transcribed coded data to ensure the accuracy of the results. Finally, the results were used to develop the study's conclusions. The ABR approach allows the researcher to examine the data from multiple perspectives (Leavy, 2015), while the phenomenological approach focuses on the subjective experiences of the participants in the study (Merleau-Ponty, 1962; 2004). Using these two approaches simultaneously allowed me to gain a better understanding of the experiences of the participants and analyse the data from a more holistic perspective in order to gain a deeper understanding of the data. To ensure the accuracy of the results, I triangulated the data collected from the two

approaches using qualitative interviews and surveys. This allowed me to validate the findings and draw meaningful conclusions from the data. Furthermore, it enabled me to uncover the multiple layers of meaning that were underlying the participants' experiences and to interpret their significance for my research field as a whole.

In this publication, the entire experiment results were synthesised and presented comprehensively. The ABMs involved mandala making, photography, observations, interviews, portfolios, documentation, writing descriptive narratives about the experiences and sharing views on how the artistic processes enhanced the participants' perceptions, interpretations and meaning-making skills. In all four previous publications, the data were analysed using thematic, content, topical and reflexive analyses of the visual images and artwork that the participants produced. This helped identify common patterns in the data and gave insights into how artistic processes impacted the participants. The data were also analysed to identify how the artistic processes affected the participants' feelings and perspectives. The analysis was used to understand how art can be used as a tool for self-expression and self-exploration.

Additionally, a summary of the findings was presented across all four publications, which highlighted the importance of art-based interventions in developing creative thinking skills. This allowed the participants to reflect on their experiences, sharing their insights into how their aesthetic processes and artistic activities changed their perspectives and enhanced their understanding of the world (Wozniak et al., 2016). It also allowed them to better understand themselves and the world around them, leading to positive outcomes, such as increased self-awareness and creative confidence. The findings suggest that art-based interventions are an effective tool that can help individuals develop creative thinking skills, enhance their understanding of the world and deepen their reflections on their experiences. Moreover, they can also provide new ways of problem solving and self-expression.

Through art, participants could explore their thoughts, feelings and emotions in a safe and creative space. These interventions also enabled participants to create a supportive and accepting environment, promoting a sense of belonging, connection and community (Sarantou et al., 2018). Arts-based interventions can help individuals develop self-awareness and self-esteem. According to Miettinen et al. (2019), ABR can accomplish a number of goals, including promoting community healing, empowerment, and well-being as well as providing a way to transform and empower both individuals and society at large.

4.4 Summary of the Research Design

The data collected, methods and analyses of each publication are summarised in Table 1. The purpose of this table is to describe the research questions in every publication, thereby assisting the main research question of this research: **How can the visual design thinking (VDT) skills of youth be improved through visual literacy (VL)?**

Table 1: Summary of research design

Publication #	Research questions in each publication	Data collection method	Data collected	Analysis
Publication I Meaning-Making and Interpretation Through Personal Mandalas in the Context of Visual Literacy	What is the connection between creative processes and the visual literacy of youth?	ABM workshop, participatory observation, focus group discussions, interviews, reflections, online questionnaire, CEFR-VL model (N = 4)	Written and visual notes, artwork and photographs	Qualitative content analysis (text and visual)
Publication II Documentation of Reflective and Interpretive Representation of Youth: A Study Through Rudimentary Photographic Close-ups in the Context of Visual Literacy	How can documentation, interpretation and reflection of the artistic processes (such as rudimentary photographic closeups) improve the *creative mindsets* of youth?	ABM workshop, Photography, participatory observation, focus group discussions, interviews, reflections (N = 4)	Written and visual notes, sticky notes, photographs	Reflexive and thematic analysis
Publication III *Flag*: A Shared Horizon	How can arts- and material-based methods be used to expand the boundaries of visual literacy to promote plural expression in youth?	ABM workshop, participatory observation, focus group discussions, interviews, research diaries, note-taking and reflections (N = 13)	Written and visual notes, short essays, installation photographs and short documentary	Qualitative content analysis (text and visual)
Publication IV Improving Children's Visual Literacy by Integrating Visual Methods to Foster Visual Design Thinking Through Unconventional Creative Processes	How can the Visual Design Thinking (VDT) model assist in stimulating children's VDT abilities?	ABM workshop, participatory observation, focus group discussions, interviews, note-taking, reflections (N = 16)	Written and visual notes, artwork and photographs	Topical analysis
Publication V Engaging Youth Through Visuals	How can arts-based methods improve the visual thinking of youth and contribute to a better understanding of the prototype VDT model?	ABM workshop, participatory observation, focus group discussions, interviews, research diaries notetaking, reflection (N = 37)	Written and visual notes, sticky notes, short essays, artwork and photographs	Topical analysis

"Creativity is allowing yourself to make mistakes. Art is knowing which ones to keep."

SCOTT ADAMS

5 RESULTS

The findings can suggest potential solutions and recommendations for further research in the area. They should be helpful in informing future policy decisions and actions. The results of the qualitative analysis of the fundamental research are discussed hereafter. Hence, this chapter is divided into six sections. The first five sections present the results from each publication, and the last section summarises them in Tables 2, 3, 4, 5 and 6. It further illustrates the competencies applied in the research to enhance VDT under the VL umbrella (see Table 7) and dissemination activities (see Table 8).

5.1 Connection between Creative Processes and Visual Literacy of Youth

Publication I, the pilot study of the research, opened up the dialogue with the following sub-question: **What is the connection between creative processes and the visual literacy of youth?** For the purpose of this publication, the author discusses the mandala-making intervention, but the photography session—an independent process of enquiry—is discussed in Publication II (Qureshi, 2021).

Produce, Respond and Reflect

The data collected from the VL workshop (2021) focused on students learning how to explore their creative expression and evaluate their level of VL awareness. This was done by engaging them in an artistic, creative process. It also helped to understand the connection between creative processes (such as mandala-making and photography) and the VL of youth participants. The purpose of the mandala-making workshop was to motivate and communicate participants' feelings and interpretations to stimulate their creativity, which is a crucial skill required to tackle daily life complexities effectively (Treffinger et al., 2002). Due to the nature of the qualitative data and with the help of an analytical tool, CEFR-VL (Schönau et al., 2021), the contribution of interpreting and meaning-making of artworks by youths in the VL context resulted in bridging the gap between artistic and personal inquiries. Based on the analytical tool, three subdomains—*produce*, *response* and *reflection*—were discussed to explain the concept of VL.

After the workshop, students assessed the effectiveness of telling stories, sharing experiences to facilitate creativity and interpreting co-created visuals to recognise

different interpretations. The workshop catalysed *knowledge*, developed *skills* and changed the *attitudes* of participants through tasks of visual perception and creation. The arts-based intervention related to the key competencies in the CEFR-VL model constituted the fundamental dimensions of VL—*produce*, *respond* and *reflect* (Schönau & Kárpáti, 2019; Schönau et al., 2021). The CEFR-VL model enabled the author to understand the research process and how the methods of data collection produced novel knowledge about the skills and attitude changes of the participants, as identified in their reflections. This implies that *producing*, *responding* and *reflecting* are the key components of VL.

The reflection session on the research was the most valuable part, as it helped the researcher conclude the findings. During the reflection session, the participants were eager to share their personal experiences of mandala-making. Participants revealed exciting facts regarding their selection of certain signs, symbols and colours. One participant said:

> *It was interesting to play with the idea of water but also texture, and also adding this contrast of the yellow in there because the yellow stands out. You look at it, especially from afar. I thought it was good. I had a lot of fun with this.*

In this statement, the participant identified three elements of learning: (i) choice of colour, (ii) texture and (iii) personal experience. There is an association of blue with an idea to represent water, using yellow as a contrasting colour to compliment blue, texture as it represents water and the personal joy of depicting mood and emotion in the mandala-making process. This demonstrated that VL enabled the participants to make connections between similarities and differences and to demonstrate their knowledge of colour theory.

Regarding cultural backgrounds and related meaning-making, another participant stated: *'If people grow up in different cultural backgrounds, they understand patterns, or they interpret patterns in different ways. . . . Different colours mean different things in different cultures'.* As argued by Hofstede (2011), many factors aid in dimensionalising culture, and those cultural differences allow us to become more individualistic, as different viewers have different connotations. This results in a variety of different patterns in mandalas with diverse overall meanings.

As a result of the reflections of mandala creators on their working process and the resulting artwork, conscious or unconscious awareness of visual language was recognised; they expressed the significance of meaning-making based on mandala visual language and realised that VL is influenced by previous experiences and various personal circumstances. Some participants wrote reflective narratives highlighting the significance of this artistic process and the role it played in enhancing their creativity and self-expression*:*

> *The activity provided me with rest in the way that creative activity can let my mind rest, regenerate and re-enact creativity through thoughts, expressions and mark-making in this case. It was relaxing, and at times, I felt swept into another reality, almost when you are in a half-dream state. It was transportive. In this sense, the activity reminded me of the power of creative rest that every person needs, and that time should be generated in our lives for our unconscious abilities to be nurtured and even expressed.*

Participants recognised the role of VL and described how reading and meaning-making influenced their interpretation and evoked critical thinking. The maturity of the insights revealed by the participants illustrated their profound interest in creative activities, such as artistic practice, art education and design. *'Visual literacy, I believe, opens up the world in interpretation and discovery of others and the self'.* Another participant stated, *'Visual literacy gives us a chance to think about what can be denoted from the visual world, but it also allows us to think about the connotations making us critical thinkers, which is vital as human beings'.*

The narratives also indicated the participants' appreciation of the practice of learning to read images. With this acceptance, VL grew even more important within the group:

> *The realisation of how powerful and clear visual language can be and how much potential there is in visual literacy. And definitely, that there is still a lot to learn in order to be able to express myself in a really visual, literate way, but also to understand others in their visual expressions. This workshop just showed me another way to train exactly this task*.

Another participant expressed:

> *The theme of visual literacy is very important, and this activity enabled me to be more mindful of the visuality of everyday life: how to observe and notice lines, shapes and colours more consciously. Although our minds are usually too filled with information, and we struggle with overstimulation most of the time, it was a great workshop to draw attention to our ability to read texts. I suppose life is made out of texts, symbols and signs, and they feed our perceptions, also our unconscious ones.*

5.2 Creative Mindsets of Youth in the Context of Visual Literacy

Publication II examined the following research question: **How can documentation, interpretation and reflection of the artistic processes (such as rudimentary photographic closeups) improve the *creative mindsets* of youth?** This was a pre-task assigned to the participants of the VL workshop, which is now discussed as Publication II on its own, since it covers a very significant aspect of the research. The role of VL is examined in this study as to how visual language and cultural representations can nurture one's *creative mindset*. Furthermore, it discussed the participants' experiences and how documentation affected the group's interpretation of their experiences. The key findings of this publication are discussed and summarised in the following themes: (i) association with the photographic images, (ii) co-creation appreciation, (iii) smooth generation gap and (iv) co-created visual language and culture; all of these themes enabled the participants to better reflect on their *creative mindset*.

Art Worlds

'The participants became aware of the associations that resonated through the photographic images' (Qureshi, 2021, p. 248). This allowed the participants to reflect better on their personal creativity and to express their opinions to gain new knowledge about general societal phenomena, including the same ideas that often came up. The co-creation experience was valued even though the participants were in a blended physical and digital environment. This allowed them to participate in a process that demonstrated that staying in a hybrid digital space does not limit artistic expression.

All the participants expressed their enthusiasm, despite the generation gap between youth and researchers. To support this process, the researchers stepped out of their research role and took part in the participants' 'artworlds' (Becker, 1982; 2008), experiencing their ideas around co-creation. A critical perspective on social art was introduced by Becker, who explained that 'art worlds consist of all the people whose activities are necessary to the production of the characteristic works which that world, and perhaps others as well, define as art' (p. 34), further stating that 'art is social in being created by networks of people acting together and proposes a framework for the study of differing modes of collective action, mediated by accepted or newly developed conventions' (p. 369). This perspective encourages researchers to analyse the social dynamics that drive the creation and interpretation of art, particularly in terms of the shared conventions and collective actions of people in the art world. Becker's perspective emphasises the need to understand the social context of art in order to appreciate its complexity, which can be seen in the ways it is produced, circulated and interpreted.

The primary value of the current study was to perform it together, because youth and researchers had similar experiences and views. This created a common visual language for the group in that specific space and time. By using visual methods of learning and exchanging views, they were able to grasp both perspectives: art and design. This helped them to understand the complexity of the study and to create a new way of looking at the research. This shared visual language enabled a more meaningful and robust exchange of ideas.

During the discussion about how specific effects were recorded in the photos, the emotional impact was also discussed. There was a noticeable difference in meaning between certain images that shared line, shape, colour and gradient elements. The participants also identified the significant influence of these photos on evoking moods and emotions. As a result, they talked about different angles, lines, shots, directions and how light helped them comprehend each photograph. They concluded that when the composition of a photo is well thought out, the photographer can convey a powerful story within a single image. This makes photography a powerful means of communication and a great way to evoke emotions in viewers.

While translating the photographic images, the participants contributed different meanings. One of the participants commented, '*It reminds me of the surface of the waffle cone, and I can even feel the taste of it'.* The other participant added, *'It is a kaleidoscopic image that makes me feel nostalgic'.* The next participant said, '*To me, this is giving an idea of growth, moving forward or even upwards'.* Another participant remarked, *'How sturdy and militant-looking this is!'* Inspired by this deep, diverse and multi-layered thinking, it led to the concept of stimulating innovation within the task.

Despite the generation gap between the youth and researcher, all contributed to interpreting the photos, thus creating a common visual language within them. They were able to change their thinking significantly by entering each other's 'art worlds' (Becker, 1982; 2008) and added more value to their artistic collaborations in a social setting. This proved to be the most valuable part of the research. This is because it provides tangible ideas for how to use interpretive and reflective processes to refine creativity. The research showed that creativity is an iterative process, a form of enquiry that requires ongoing reflection and interpretation. It revealed that creativity is not just a set of skills but an exploration of the self, fostering growth in understanding, insight and awareness. It also confirmed that such introspective creative processes generate powerful emotional experiences, guiding seeing and thinking, ultimately leading to awareness and a sense of self.

5.3 Expanding Boundaries of Visual Literacy by Embracing Pluralism Through Arts-Based Methods

Publication III focused on the sub-question: **How can arts-based methods be used to expand the boundaries of visual literacy to encourage pluralism in youth?** During this study, *Flag*, a mixed-media installation, served as a metaphor for the plural social processes in which students engaged. This included discussing, exploring, creating and expressing.

Pluralism Through Arts-Based Research

Arts-based research (ABR) can support pluralism. ABR has been used to explore complex social issues and highlight the importance of diversity. It can provide the space to understand and appreciate different perspectives and allow members of society to coexist and share their experiences. This study uses the term 'pluralism' to refer to a framework of multiplicity, for example, of societies, individuals, ideas and actions. Borrowing from Nandy (2010, p. 2), pluralism can be understood as social diversity and tolerance of others' beliefs, even when these beliefs are different or diverse; therefore, pluralism can be understood as a social value. Tsirogianni and Gaskell believe that social values stem from lived human experiences, describing them as 'socially collective beliefs and systems of beliefs that operate as guiding principles in life' (2011, p. 2).

Flag, a mixed media installation, served as a metaphor for plural social processes students engaged in, including discussing, exploring, creating and expressing. It also served as a metaphor for the plural life experiences during the pandemic. This was expressed through the manifold of colours, textures, materials and stories the participants used to build the installation. It was built in a context of risk-taking, exploration, incompleteness and interpretability. It conveys the idea that plurality is created during the interaction between youth and their environment. During the process, working as a group highlighted how hands-on work based on methodologies such as do-it-yourself (DIY) and do-it-with-others (DIWO), shared authorship, may offer various and multiple ways of working (March, 2021; Grisoni, 2012; Lovell et al., 2014). The *Flag* installation was exhibited at the See Youth Conference at the University of Lapland (2021) (see Figure 15). Furthermore, part of the installation was exhibited at the AMASS exhibition held at Valo Gallery, Arctic Centre, Finland (see Figure 16).

The installation was well received by both audiences. *Flag* enabled the rethinking of artistic processes that are underpinned by students' narrative identities, including those of the artists–researchers, creating an unusual relationship and interplay between their stories and the environment. Their individual experiences were able to help them make sense of their identities during challenging pandemic times, which were aggravated by ongoing disruptions and disconnections. They

expressed their plurality of identities through their multi-coloured and textured installations.

Through discussions, storytelling and installation, they shared their individual experiences. The participants wove their stories of isolation because of the pandemic, narrating them as verbalisations of their own identities. Students' sense-making supported place-bound identity work (Akimenko, 2018, p. 136–137). The workshop strengthened their interaction skills and provided an opportunity for positive interaction with the university community, making invisible encounters visible:

> *The workshop has an important meaning and a message—how we describe our feelings through art. Not everything must be spoken or written; it can also be told through art, painting and creating. The way we built this installation really helped me sit down and think about the past year and how I personally felt.*

Figure 15: Flag installation designed by the participants; see Youth Conference Exhibition at the University of Lapland, 2021

Figure 16: Flag installation designed by the participants, Valo Gallery at the Arctic Centre, Rovaniemi, Finland, 2022

One of the students referred to the pandemic crisis as a defining epoche for the current youth generation. During the workshop, the participants became personally engaged with one another, discovering links between storytelling and the sharing of personal perspectives. In accordance with Barone and Eisner (2012), feelings and expressions manifest through engagement in the process of expression, similar to the thoughts of youth during the workshop:

> *It is all about the process. Without this process, there is no art. Our work is far from complete, and it may change shape along the way, but I think the end result will be great anyway. However, I consider the process itself to be more important than the end result. I also believe that through this workshop, each of us has learned something new about ourselves, about each other and about art.*

In addition, they addressed the benefits of a reflective approach to research. As Pillow (2003) reminds us, research can become more extensive upon retrospection. The group discussed the co-created data extensively, exchanging ideas and perspectives on how to present the installation in an extensive space. From this

process, personal reflections were enhanced, which proved beneficial for the post-pandemic context.

The *Flag* workshop, was a metaphor for life and connections between youth and friends. It was an invisible structure for physical activity that enabled them to cope with post-pandemic times. One youth participant reminisces:

> *We had a long and eye-opening conversation about COVID-19 with our group. It started by talking about the feelings we had during the corona pandemic and the colours we felt. Everyone shared their own experiences. I really feel like it made us even closer. We do the installation together and follow a mutual plan.*

The visual message was designed to engage everyone in the work process and to holistically experience space and the environment. The installation was meant to be a physical representation of the new interconnections that were established throughout the process. It serves as a tool to help them understand the complexities of the pluralisms in space and the environment and to better comprehend their new world. By engaging with the visual message, they had the opportunity to appreciate the 'pluriverse' described by Escobar (2011).

5.4 Improving Children's Visual Literacy

Publication IV examined the following sub-question: **How can the Visual Design Thinking (VDT) model assist in stimulating children's VDT abilities?** This study examined youths' VL through their co-creative processes, as they used ABMs to stimulate their *creative mindsets*, hence harnessing their VDT abilities. The study introduces a VDT model. Creativity is not just a single idea but rather a series of solutions designed to serve a particular purpose. The primary goal of the present research was to use ABMs as tools for evaluating children's VDT abilities, thereby expressing their VL.

Visual Design Thinking Abilities

Through a four-topic analysis, this study presented results by engaging children in VDT processes. This enabled the children to express their emotions and cognitive experiences while enhancing their reflections in a way that could impact their *creative mindsets.*

The study is based on two primary conceptual constructs, collaboration and reflection within a dialogic context. A meaningful co-creating experience requires enough time for thoughtful discourse and narratives, which can be attained through empathy (Miettinen et al., 2016). Considering this, the children were provided with

a lively and enjoyable environment, enabling them to experience an empathic role in the design process, which led to peer-to-peer learning and enabled them to explore their self-reflective work. This approach not only provided them with knowledge but also enabled them to develop critical skills that could be applied to future projects. In addition, it gave the children a sense of ownership and pride in their work.

In addition to shaping our perception of the world, our mindset also shapes how we react to it. Looking at children's development from a creative point of view, children of all ages produce the most unique and original mental and physical creations. Additionally, children behave in different ways when working creatively as individuals or in groups, claims Thomson (2009). Co-creation among children can be practised in various formats. For instance, there are numerous ways to engage children in the creative process, thus enabling them to adopt a *creative mindset*. These include: (a) making them work together as team members, (b) helping them collaborate and present ideas while offering them supportive input and (c) offering them the freedom to express their views to each other without critical judgement. Any method discussed, conceived and co-created—that is, the collaboration—provides children with an opportunity to learn a variety of subjects in different contexts. Children's creativity can be enhanced when they work in teams and have the freedom to express themselves. The current study provides noteworthy findings from the four selective topic analysis entries from each participant. These are (i) titles, (ii) emotions, (iii) feedback and (iv) reflection.

Children, although young and naive, had a sense of symbolism that went beyond the literal meaning. It also showed that they were fascinated by the visualisation of natural objects, prompting them to verbalise their thoughts into names and, thus, enter the cognitive stage (Bjorklund & Causey, 2017). The children's entries, based on their feelings, suggested that they could interpret certain symbolic aspects and connect them to their learning experiences. They could make connotations and express their emotions, such as a feeling of contentment. They did this while learning and playing, interchanging and expressing the positive connotations between yellow flower petals and yellow sun rays. Additionally, the making of a nest as a way to show care for birds illustrates the children's connections to the natural environment and feelings of hope and optimism. *'It gives me a happy feeling that I can play and learn at the same time'.* Others said, *'I see the sun in my mandala, and the yellow flowers are the sun rays', 'I made a nest for the birds to rest'* and *'I see hope in my mandala'.* The children's expressions demonstrated that their mandalas were created with the input of VT and DT. They were able to interpret symbolism and express personal meanings based on reflections on the visual appearance of their creations. As a result of VDT, children were able to conceptualise, reflect, plan and express their sense of purpose, ability and agency.

These few examples of instant responses from the children, which carry profound meaning, show that they entered a phase of emotional intelligence during the

workshop (Hansenne & Legrand, 2012; O'Neil, 1996). This also shows that the children engaged in learning processes, expressing their feelings about their creations with positive attitudes and *creative mindsets*. The participants analysed and discussed what could be improved. Specifically, one participant stated:

> *I see the nest as a deep hole, but it looks like a comfortable nest for birds. If more twigs were used at the centre of the nest, then I would not think of it as a deep hole. I don't like deep things!*

Thus, using personal emotions, the participant expressed his feelings about the nest-like mandala. Because the child was fearful of being in the deep hole, he proposed an iteration—based on VT and DT—to make the nest better so that it could provide a sense of protection instead of being a deep hole. This expressed a positive attitude and a *creative mindset*.

During the workshop, the reflections shared by the young children demonstrated the need to supplement informal learning settings with open dialogue and reflective practice, both inside and outside the classroom (Pflaum, 2021). The results of the study showed that creative activities could be an effective tool in enabling VL development among children. The findings of the study highlighted the importance of actively engaging in visual art activities, as well as the need to create safe and active spaces for children to express and explore their creativity (Green, 2014). Furthermore, this developed the VL and the ability to interpret visual data critically.

Data from the research were exhibited at the Kopio Gallery, University of Lapland (2022), along with an installation interpreting the results. Based on the participants' VDT abilities, Figure 17 shows their artistic understanding. The installation was designed to explore how participants used DT to interpret the data. It also revealed how participants' VDT skills could be used to create unique insights into the data. Thus, it provides an artistic perspective and a deeper understanding of the artistic design process. Participants were given a glimpse into their artistic worlds by the installation (Becker, 1982). Besides being shaped like a mandala ascending from the top, it was made from non-organic manmade materials, in contrast to the materials used in nature mandala workshops. The intricacies of the installation were designed to provoke a response from the audience and help them connect with the data on a deeper level. The finished piece reflected the participants' VDT skills and a testament to the power of art in understanding data.

Figure 17: Installation and research data. Gallery Kopio, University of Lapland, Finland, 2022.

An exhibit of the research data was displayed during the AMASS symposium at Corvinus University, Budapest, to reveal the research design process (see Figure 18). Qualitative data were visually presented in the exhibit (Silverman, 2001; 2013; Thornton, 1987). It provided a unique opportunity for attendees to experience the research process firsthand and gain insights into the data.

Figure 18: Research data exhibited at the AMASS Symposium, Corvinus University, Budapest, Hungary, 2022

5.5 Art-Based Research–A Messy Process

Publication V investigated the impact of the qualitative, multi-method experiment on the whole, using an arts-based research strategy. The sub-question asked in this publication was: **How can arts-based methods improve the visual thinking of youth and contribute to a better understanding of the prototype VDT model?** The assessment methods contributed to a better understanding of VT as a tool, which led to the idea of the VDT model (Qureshi et al., 2022a).

Implementing research requires a research strategy. Research methodology encompasses both theoretical and practical approaches, guiding the selection and use of research methods. Social research projects using an arts-based methodology are based on the creative arts. As Leavy commented, 'ABR values aesthetic understanding, evocation and provocation' (2017, p. 191). Leavy asserts that 'the arts offer us a unique way to understand the world through these approaches, as they are most commonly used when the aim is to explore, describe, evoke, provoke or unsettle' (2017, p. 191). Furthermore, Leavy affirms that 'the arts-based paradigm is enormously diverse' (p. 191). According to Leavy (2015, p. 5), ABR can be viewed as a "umbrella category" or as a collective research approach that combines at least

28 arts-based methodologies into a "partial lexicology of terms," as reported by Sarantou et al. (2019, p. 3).

Leavy notes that practitioners use equally numerous valid terms to describe artistic forms of research (2017, p. 3), but 'the multiplicity of approaches and knowledge areas that have developed in this research field are brought together under the umbrella term of ABR, including arts-based and a/r/tographical research, to name a few' (Leavy, 2015, p. 15; Saranotu 2019, p. 3).

ABR practice is a generative and emergent process, open to the unexpected. This is because there are so many artistic genres and specific art practices, as well as different theoretical frameworks and philosophical approaches. Therefore, the data appear jumbled. As Leavy notes, 'even when we have a plan for how a particular enquiry will proceed, in practice, it can and often *ought* to be a messy process' (2017, p. 191). Cook (1998) encouraged the value of a messy process. 'If we miss out the messy bit, if we tidy everything up to fit in a system, the creative part of our work can be lost' (p. 106). Taking this mess apart and examining it critically for its intrinsic value and what it has to offer after it is out in the open may be the next research phase. Therefore, identifying what needs more reflection and investigation after collecting data that appears to be a mess can start the process of unravelling hidden results.

As per Leavy (2017), ABR is an iterative process of testing, reflecting, and revising. It involves a cycle of testing ideas in practical contexts, assessing results and re-evaluating the approach in light of new insights or evidence. This can help build a better understanding of the actual needs of a situation. 'It is a transdisciplinary approach to knowledge building that combines the tenants of the creative arts in research contexts' (Leavy, 2017, p. 4). Generally speaking, ABR is a paradigm (Chilton & Leavy, 2014; Gerber et al., 2012; Leavy, 2015; Rolling, 2013). Since I initiated this research, I have become aware of the differences between research strategies and methods. I used a participatory approach to collect data from the community, analyse the 'messy' data and devise a solution that resulted in proposing a prototype model. It is important to note that solutions can range from tangible solutions on an individual level to intangible solutions, such as policy changes that can be implemented (Coghlan & Brydon-Miller, 2014; Leavy, 2018).

VL-Themed, Arts-Based Research Experiment at Large

The findings within this VL-themed, arts-based experiment yielded four promising outcomes: (i) VL is an essential form of literacy that children and young adults ought to be encouraged to learn and develop throughout their various learning stages because it fosters introspection; (ii) the reflections shared by the children and youths demonstrated the need to supplement formal and informal learning settings with open dialogue and reflexive practices both inside and outside the classroom. Thus, the reflections helped articulate the content of one's imaginative expressions; (iii) in addition to enhancing creativity, boosting self-esteem and

cultivating individual emancipation, the studies also demonstrated that progressive arts-based collaborative processes can facilitate idea sharing and understanding; and (iv) empowering youths to engage in social innovation through creative processes can help them become positive agents of change in society.

Hence, the overall impression is that improved VL articulation can be attained by observing VT in action to increasingly facilitate the process of making youths better visual thinkers. This can be done by introducing tangible activities, such as hands-on workshops and art-based projects, that help them think and communicate through visual elements. Such activities can help develop their creativity and help them understand the importance of VL. Albert Einstein once said, 'I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world', Hasday (2000) recalls in his book.

The experiment discussed in this publication exhibited promising results. Exemplary narratives of the participants' experiences abound, such as:

> *For me personally, if I look at it [personal mandala], this is also a thing of art. We have embedded stories into our mandalas, knowingly or unknowingly. But those stories then become detached from us in the artwork itself, and those stories are there for other people to start to read and interpret and make their own meanings from.*

> Another noticeable comment from a participant:

> *I have had my challenges understanding this kind of work. It is to be seen whether art-based study is something I'll want to explore more. Sure, I have already learned from this experience many things I can use later. So far, I have at least learned to trust the process and tolerate uncertainty. I've also found that I very much like studying a concept and how it can be interpreted in visual form.*

All of these comments by the participants showed that they developed their creativity and problem-solving skills. They also became more aware of the importance of being open-minded and having an inquisitive mindset. They have also become more attuned to the idea that creativity does not always have to come from within but can also be drawn from external sources and even from the ideas of others. This is an important lesson for problem-solving and creative thought processes. Additionally, the ability to be open to new ideas and perspectives is a key skill for anyone looking to make the most of their creative potential.

5.6 Summary of Results

The overall purpose of the research is to answer the primary research question: **How can the visual design thinking (VDT) skills of youth be improved through visual literacy (VL)?** Each publication included a sub-question that helped clarify the main research question. This allowed each study to focus on a specific aspect of the larger research question, enabling the researcher to pinpoint the results more accurately and draw more meaningful conclusions. In addition to the five publications, I will also describe the results of the disseminated activities that have contributed to the advancement of this research.

Peer-Reviewed Publications

Tables 2, 3, 4, 5, and 6 summarise the results in the five publications that have been peer-reviewed. The results are consistent across all five publications, indicating a high level of reliability. Overall, there are significant findings from this research that can be applied to other artistic research fields.

Table 2: Overview of research results, Publication I

#	Research Question	Results
I	What is the connection between creative processes and the visual literacy of youth?	• Participants were able to access the effectiveness of telling stories, sharing experiences to facilitate creativity and interpreting co-created visuals to recognise different interpretations. • The workshop catalysed *knowledge*, developed *skills* and changed the *attitudes* of participants through tasks of visual perception and creation. • The arts-based intervention related to the key competencies in the CEFR-VL model constituted the fundamental dimensions of VL – *produce*, *respond* and *reflect*. • New knowledge about the skills and attitude changes of the youth was identified in their reflections, thus implying a deep connection between already existing visual literacy among youth. • Participants recognised the role of VL and described how reading and meaning-making influenced their interpretation and evoked a critical thinking process.

Table 3: Overview of research results, Publication II

#	Research Question	Results
II	How can documentation, interpretation and reflection of the artistic processes (such as rudimentary photographic closeups) improve the *creative mindsets* of the youth?	The key findings of this publication are summarised in themes that enabled the participants to reflect better on their *creative mindset*. • Association with photographic images o The participants developed their personal expressions, thereby increasing their previous knowledge through interaction and discussion. o They became aware of the associations that echoed through the photographic images. This enabled the participants to reflect better on their inner creativity and give a *visual voice* to their opinions. • Co-creation appreciation o The co-creation experience was valued even though the participants were in a blended physical and digital environment. o Entering each other's 'art worlds' (Becker, 1982; 2008) changed their thinking significantly and added more value to the artistic cocreations in a social context. • Smooth generation gap o The primary value of the current study was to perform it together because the experiences and views of youth and researchers were very similar. o Despite the generation gap between the youth and researcher, all contributed to interpreting the photos, thus creating a common visual language within them. • Co-created visual language and culture o A common visual language arose within that specific space and time in the group. It was discussed that there is always the potential to incorporate visual methods of learning and exchange views to develop a 'common' visual and cultural language; this prompted them to grasp both perspectives: 'art and design'. o Creative processes generate powerful emotional experiences, guiding the manner of seeing and thinking and ultimately leading to awareness and a sense of self.

Table 4: Overview of research results, Publication III

#	Research Question	Results
III	How can arts-based methods be used to expand the boundaries of visual literacy to encourage pluralism in youth?	• *Flag*, a mixed media installation, resulted in two exhibitions that were metaphors for the various social processes students engaged in, including discussing, exploring, creating, and expressing themselves. • In a group setting, it was demonstrated how two approaches, do-it-yourself (DIY) and do-it-with-others (DIWO), can promote diversity and pluralism in the creative process. • *Flag* enabled the rethinking of artistic processes that are underpinned by the narrative identities of students, including those of the artists-researchers, creating a unique relationship and interplay between their stories and environment. • The workshop strengthened their interaction skills and provided an opportunity for positive interaction with the university community, making invisible encounters visible. • During the workshop, the participants became personally engaged with one another, discovering links between storytelling and the sharing of personal perspectives, as well as addressing the benefits of taking a reflective approach to research. • The new interconnections they were able to understand, build on and establish throughout the process were expressed in a very physical manifestation of the installation *Net*. This assisted them, at least to some extent, in shaping their new world of shared pluralisms, or what Escobar (2011) referred to as the 'pluriverse'. Through the installation of *Flag,* the message was also visible to the audience.

Table 5: Overview of research results, Publication IV

#	Research Question	Results
IV	How can the Visual Design Thinking (VDT) model assist in stimulating children's VDT abilities?	Through a four-topic analysis, this study resulted in the VDT model enabling the children to express their emotions and cognitive experiences while giving them the ability to enhance their VDT abilities that can impact their *creative mindsets.* • Symbolism o VT and DT helped the children select elements from their artworks and, through a reflection on the visual appearance of their creations, interpret the symbolism and express personal meanings. • Emotional Intelligence o Through the use of the VDT model, the children first conceptualise and then reflect and express their sense of care, ability, purpose, plan and agency. • Feedback o The children engaged in learning processes, expressing their feelings about their creations with positive attitudes and *creative mindsets*. • Reflections o During the workshop, the reflections shared by the young children demonstrated the need to supplement informal learning settings with open dialogue and reflective practice. o Moreover, the exhibits in two different locations demonstrated the impact of the visual presentation of the qualitative results. The event provided attendees with a unique opportunity to gain insights into the research process and the data collected.

Table 6: Overview of research results, Publication V

#	Research Question	Results
V	How can arts-based methods improve the visual thinking of the youth and can contribute to a better understanding of the prototype VDT model?	The inclusion of creative processes in formal and informal educational settings resulted in providing young children and youths with a deeper understanding of challenging concepts and therefore decreased anxiety in relation to demanding subjects. VL-inspired ABM methods helped to achieve new paradigms in the idea of suggesting educational policymaking, especially when embedded in science, technology, engineering, arts and mathematics education (STEAM) models. The findings of this VL experiment yielded four promising outcomes: • VL is an essential form of literacy that children and young adults ought to be encouraged to learn and develop throughout their various learning stages because it fosters introspection. • The reflections shared by the children and youths demonstrated the need to supplement formal and informal learning settings with open dialogue and reflexive practices, both inside and outside the classroom. Thus, the reflections assisted in articulating and expressing the content of one's imaginative expressions. • In addition to enhancing creativity, boosting self-esteem and cultivating individual emancipation, the studies also demonstrated that progressive arts-based collaborative processes can facilitate idea-sharing and understanding. • Empowering youths to engage in social innovation through creative processes can help them become positive agents of change in society. Thus, a totality that enhances VL articulation can be achieved by observing VT in action, which can make youths better visual thinkers (*creative mindset*).

Competencies applied in the research to enhance VDT under the VL umbrella

It is also critical to recognise the skillsets applied in this research to comprehend the function that VL plays in the creation of VDT. Therefore, it is important to note and evaluate the outcomes of the five publications in light of the CEFR-VL model competencies. The 16 sub-competencies of the CEFR-VL model are listed as follows: *Aesthetics, Analyse, Communicate, Create, Draft, Describe, Empathise, Envision, Experience, Experiment, Interpret, Judge, Perceive, Present, Use* and *Value*. All publications made use of each of these competencies in some capacity (see Table 7).

Table 7: CEFR-VL model competencies found in each publication (I-V)

ABMs used in each publication	CEFR-VL competencies used	Total number of CEFR-VL competencies used
Publication I *Painted mandalas*	Aesthetics, Analyse, Communicate, Create, Draft, Describe, Envision, Experience, Experiment, Interpret, Judge, Perceive, Present	13
Publication II *Rudimentary photographic close-ups*	Analyse, Communicate, Create, Describe, Envision, Experience, Experiment, Interpret, Judge, Perceive, Present, Value	12
Publication III *Youth workshop (material-driven)*	Aesthetics, Analyse, Communicate, Create, Draft, Describe, Empathise, Envision, Experience, Experiment, Interpret, Judge, Perceive, Present, Use and Value	16
Publication IV *Nature mandala-making*	Aesthetics, Analyse, Create, Describe, Envision, Experience, Experiment, Interpret, Perceive, Present, and Value	11
Publication V *Meditative creation and spontaneous reflection*	Aesthetics, Analyse, Communicate, Create, Draft, Describe, Empathise, Envision, Experience, Experiment, Interpret, Judge, Perceive, Present, Use and Value	16

Dissemination Activities

The use of ABMs as the basis for ABR can contribute to mass dissemination and add value, as it contributes to the development of *creative mindsets*. Dissemination is essential for the development of new ideas, experimentation and collaboration. It also helps to foster a culture of learning, exploration and innovation. This encourages creativity and encourages people to think outside the box. It also creates multiple platforms and experiences for audiences, providing them with various options. People can experience the outcome differently, give back to the community and take advantage of these results (Zimmerman, 2020). Consequently, this creates a plurality of outcomes and ways to enjoy research interventions.

According to Leavy (2017), Gerber et al. (2012, p. 41) define ABR as a method of enquiry grounded in a philosophy of the arts centred on the creative arts. Gerber's perspective entails that art is not simply capable of conveying truths or bringing about awareness (both of the individual as well as societal awareness) but can also help facilitate the process of bringing about truths. Leavy (2017) adds that this is a way in which preverbal knowledge can be valued, and it is one of the ways in one can acquire new information, such as sensory, kinaesthetic and imaginative data, through which one can gain knowledge of oneself or others (p. 195).

Dissemination of research findings is essential for the success of any research project, as it can lead to significant changes and advances in the field. Leavy (2017) affirms that ABR is used to capture, analyse, reflect and collect data but also to disseminate it, since the dissemination has high value and impact. It is not only about involving the participants or the community but also engaging the audience on a large scale. Dissemination involves the strategic distribution of information to the widest possible audience (Leavy, 2015). This can help spread awareness of important topics and lead to positive societal changes. It is an invaluable tool for making an impact. Researchers should share their results with other scholars in the field and use the appropriate outlets for dissemination, such as scientific journals, conferences and seminars. This will ensure that the research reaches the widest possible audience and has the greatest impact. Thus, it is important to mention that I was conscious of the importance of dissemination throughout the entire research, as it is an essential element in proving the impact and value of the research.

A number of different ways can be used to visualise research that has a very powerful impact on the audience. 'It is experiential knowledge that drives the use of arts-based learning methods, in which art is not just a tool but also a way of engaging people in the learning process' (Leavy, 2017, p.196–197). The research results were published as articles and presented at conferences and exhibitions as part of the research process. The outcome of the dissemination raises awareness of the broader impact of ABR on society and its pluralist meaning (Miettinen et al., 2019, p. 2). This approach allowed me to reach a broader audience and spark discussion and debate. I have delved deeply into the value of ABR through various visual dissemination

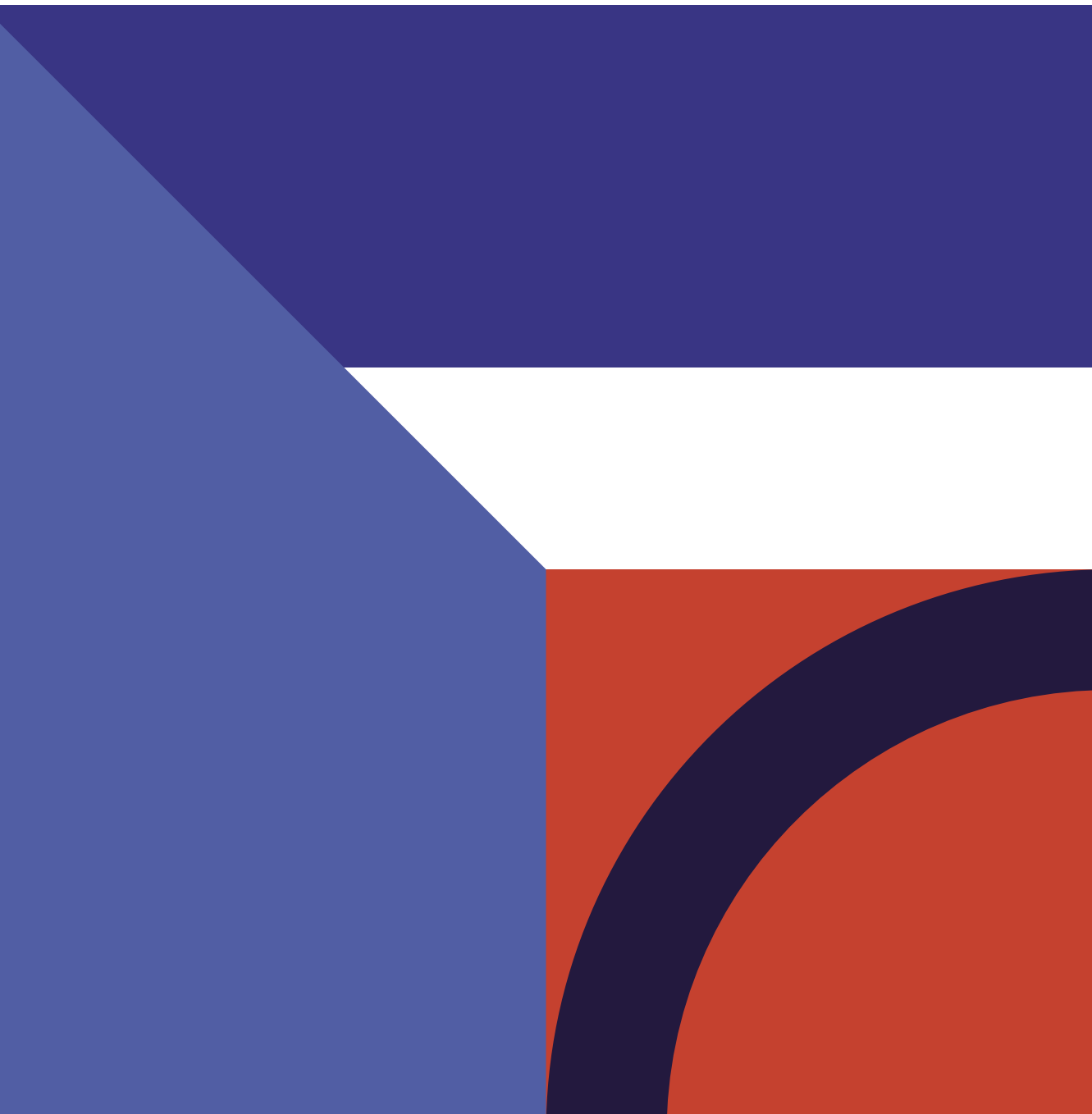
processes. This allowed for valuable insights that helped refine the overall research. Table 8 presents an overview of research dissemination activities.

Table 8: Overview of research dissemination activities

Publication	Dissemination Activities
I	• Paper presented at *Nordmedia Conference*, Iceland (August 18–2020) • Article published in *Journal of Visual Literacy* (open access) (2022)
II	• Book chapter published in *InSea Publications* (2021)
III	• Book chapter published in *Routledge Publications* (2022) • Paper Presented at *SeeYouth Conference* (Nov–Dec 2021) • Exhibited at *SeeYouth Conference* (Nov–Dec 2021) • Short documentary at *SeeYouth Conference* (Nov–Dec 2021). See Appendix 13 for the link • Exhibited at the AMASS exhibition: *Active Witnesses*. Rovaniemi, Finland (2022). See Appendix 14 for an online exhibition link. • Short documentary at AMASS exhibition: *Active Witnesses*. Rovaniemi, Finland (2022). See Appendix 14 for the link.
IV	• Paper presented at *Academic Design Management Conference* (ADMC), Toronto, Canada (3–4 August 2022). • Conference proceedings in *DMI: Academic Design Management Conference* (ADMC), Toronto, Canada (3–4 August 2022). • Independently exhibited at the University of Lapland, Finland (2022a) • Poster presentation at *AMASS Conference* (16–18 February 2022b) • Poster exhibited at Corvinus University, *AMASS Symposium* (9–10 June 2022c) • Exhibited at Corvinus University, *AMASS Symposium* (9–10 June, 2022d) • Abstract published in *AMASS Book of Abstracts* (2022)
V	• Book chapter published in *Routledge Publications* (2023) • Paper presented at *International Visual Literacy Association* (IVLA) Conference, Illinois, USA (2023). • Online platform *AMASS Narrative Webpage*. See Appendix 12 for the link

"Discussion and argument are essential parts of science; the greatest talent is the ability to strip a theory until the simple basic idea emerges with clarity."

ALBERT EINSTEIN



6. DISCUSSION

This chapter is divided into four sections. In the first section, I discuss my interpretation of the data collected by revisiting the key findings. The second section presents my understanding and interpretation of the revised definition of VL suggested by the participants. The third section discusses the reservations and limitations of the research, and the final section discusses its reliability and ethical considerations.

The research aimed to identify the most effective strategies for addressing the identified issues. In order to do that, the research uncovers the skills of VDT among youths based on their VL. The results of the study showed that VL can assist youth in developing these skills. Based on the data collected, strategies and solutions to improve VL using VDT skills among young people are discussed.

6.1 Revisiting Key Findings

The first two publications laid out the need for the study and provided a comprehensive overview of the issue. The third publication focused on the role of plural meaning in youth and how it affects their development. The fourth publication introduced the VDT model, while the final publication discussed the implications of the model and how it can be used to guide further research.

Publication I

The CEFR-VL model was found to provide a profound understanding of the research process in this study. As evidenced by their reflections, the study describes the methods used in data collection, which provided new insights into the participants' attitudes and skills. This implies that *producing, responding* and *reflecting* are the key components of VL.

There were several key themes that emerged from the artistic process described in the publication, most of which stemmed from the transcriptions of the data and the open coding process. They were (i) personal experiences while making art, (ii) perceptions, interpretations and meaning-making, (iii) VL as a language and (iv) personal creativity. The themes were used to elicit the essence of the participants' experiences. They experienced a progressive artistic process through which they learned to critically analyse and reflect to comprehend and share their lived reality, as well as their learning process. As supported by Bendito (2007) and Bowen (2017),

visually literate students are able to apply their acquired knowledge to real-world contexts and understand how visual representations may change the way they see the world and others. Through this artistic activity, they experienced an additional phase —the *creative mindset*. This enabled students to think outside the box and to be imaginative and innovative in their approach to problem solving. It also provided a platform for students to express their ideas in a visual format and cultivate a deeper understanding of the world.

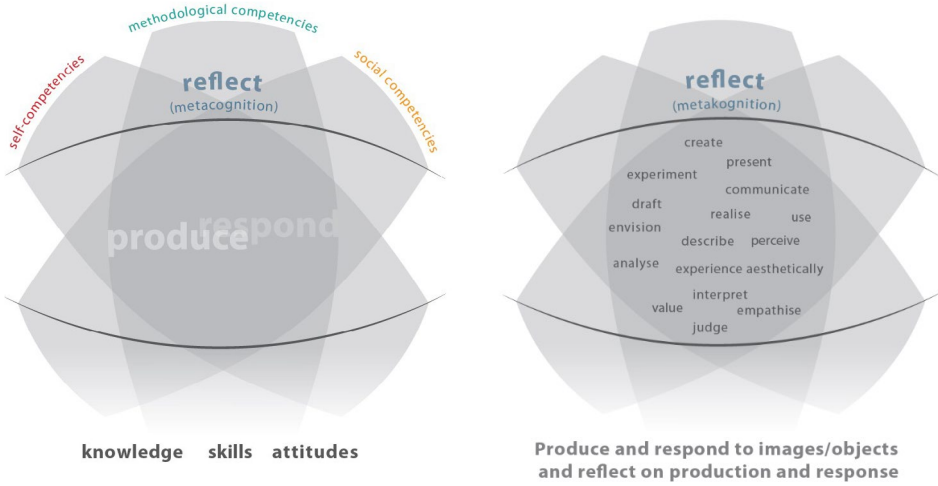


Figure 19: The ENViL competency CEFR-VL model: Basic dimensions of Visual Literacy (left), Differentiation of sub-competencies (right) (Wagner & Schönau, 2016: 67, 68)

According to the data collected during the VL workshop, all 16 existing sub-competencies from the CERF-VL model were found. Following the workshop, two more sub-competencies were identified that were not included in the CEFR-VL model. These are *improvisation* and *enquiry*. The original model is shown in Figure 19, and the suggested additional sub-competencies are listed in Table 9 with descriptions:

Table 9: Suggestion of additional sub-competencies in the CEFR-VL model

#	Sub-competencies	Description
1	Improvise	At the beginning of the VL workshop, participants were asked to share their insights, emotions, and ideas. Using their intuition, they were encouraged to describe their ideas spontaneously and to engage in dialogue without judging each other. Thus, it was established that during moments of doing, the elements of improvisatory processes share a causal relationship with each other, affirming Sarantou and Miettinen (2017).
2	Enquiry	Enquiry was evident in the VL workshop. The young learners were encouraged to question and become critical thinkers and enquirers. They were able to distinguish between facts and opinions, consider multiple perspectives and think critically and creatively. This enabled them to develop the ability to analyse, evaluate and synthesise information and to form reasoned arguments (Leavy, 2017).

Towards the end of the workshop, it was found that VL was a vital creative technique to learn and practice in order to enhance creativity and mindfulness. Hence, it can be concluded that creative processes that facilitate learning to appreciate images are of great value to art education. Furthermore, VL has the potential to be implemented in a variety of educational settings, from the primary to tertiary levels. It can also be used to encourage creativity and innovative thinking among all ages. Finally, VL can be a powerful tool for personal growth.

Publication II

Promising outcomes emerged from the open discussion of reflections on lived experiences. Participants found that when they reflected on their experiences, they could better understand the context of their work and build on their existing knowledge. The discussion revealed new insights that had not been previously considered. This allowed for further reflection and exploration of the topic. Reflection is a highly personal expression that can lead to personal transformation through deep thinking (Dewey, 1933). It can reveal increased self-awareness and personal growth. It encourages us to look at a situation from a different perspective and to think more deeply about our experiences. Through this process, we can better understand ourselves and our place in the world. It can help people make sense

of experiences in relation to themselves, others and contextual conditions while reimagining and/or planning future experiences for personal and social benefits (Ryan, 2014). It also allows us to gain a better understanding of our values and beliefs and to make decisions based on our values rather than our emotions. This can lead to more meaningful and fulfilling life experiences. Ultimately, reflective practice can help us build a stronger sense of identity and a more positive outlook on life. Hence, reflection can take place at multiple levels and can serve as a tool to help achieve more abstract or transformative levels of reflection. Reflection can also be used to develop skills such as critical thinking, problem solving, empathy and creativity. It can also help build resilience, enabling individuals to better cope with challenging situations.

Similarly, reflexivity leads to planning, conducting and writing about research and promotes an ongoing, recursive relationship between researchers' subjective responses and the intersubjective dynamics of the research process itself (Probst, 2015). This reflexive process encourages researchers to develop an understanding of their own biases, assumptions and perspectives and to be mindful of their roles and responsibilities as researchers (Probst, 2015). Furthermore, reflexivity enables researchers to be self-critical and accountable for their research findings. Researchers' reflexivity (Finlay, 1998; 2002a; Pillow, 2003) can pave the way for broader research. Through reflexivity, researchers can learn to better recognise and acknowledge the power dynamics in their research, including the power of the researcher over the research participants. This helps to create a more equitable research process that can ultimately lead to more meaningful results.

As a result of this documentation process, the participants developed their personal expression, increasing their previous knowledge through interaction and discussion. They began to realise that photographic images evoke associations. This enabled the participants to better reflect on their inner creativity and give a *visual voice* to their opinions. This helped them learn about common social phenomena as part of their everyday lives. This process also gave them access to a new language and the possibility of self-expression, which can be used for social transformation (Berg, 1989). Through this, they can understand and reflect on sociocultural issues in a more meaningful manner. The participants also gained insight into their own emotions and thought processes, which can be applied to other life situations. This created a sense of empowerment and confidence, allowing them to better express themselves and their ideas. Furthermore, this process facilitated critical thinking and problem-solving skills.

Publication III

It took several months for the installation to be completed, but the result went beyond that. Rather than thinking of beauty in terms of artefacts, Rautio (2010) suggested that it should be viewed as a concept that encompasses both the work

itself and what it entails. This means that beauty is not only found in the aesthetics of a work but also in the process of its creation and the environment in which it is created. In Rautio's view, beauty should be viewed as an experience, not just as a tangible object. By providing a pathway for the development of the university community and students, the workshop improved the sense of student plurality and beyond (Pietarinen et al., 2022). The workshop also provided a platform for students to engage in meaningful dialogue about their peers' creativity and the ways in which these ideas could be translated into tangible work. It allowed for a space of growth, exploration and development of ideas in an environment of support and collaboration. This resulted in a sense of inclusion and community for students and the entire university community.

Figures 15 and 16 in Chapter 5 illustrate the *Flag* installations at both exhibitions. Each exhibition created a holistic experience of space and the environment, as all participants were involved in the artistic process (Thornton, 1987). An atmosphere of pluralism, care and a shared horizon prevailed. Pietarinen et al. (2022) report that the students created an overwhelmingly vibrant green plant wall that covered the railing of a floor level of the installation area building towards the end of the *Flag* workshop. This addition to the installation symbolises their hope for a future that entails new growth, opportunities and continuity after the disruptions experienced in their young lives because of the pandemic. The idea of a sensitive but vibrant hanging piece of plant art was abandoned at the beginning of the workshop. However, in the final review, it seemed to be the strongest and inseparable part of the installation. Students kept their own vision and shared their needs during the workshop. This final piece of work reminded us that pluralism is not straightforward nor comfortable to always attain (Escobar 2021); instead, it shows hope for the future and a willingness to work towards shared goals (2022, p. 226).

Through these values, the youths wanted to express their beliefs and visions. It is an achievement that takes time. The *Flag* workshop gave the youths an opportunity to transcend beyond passivity and actively express their pluralist values and beliefs in a positive future. The *Flag* is a symbol of this inner realization and a reminder of the journey they have taken. It proved to be a symbol of hope and a statement of their commitment to creating a better world. For example, through *Flag*-making, the youths were able to express their values of inclusion, resilience and respect in a visual way that they could take with them and share with their peers.

Publication IV

Among other cognitive functions, VL involves critical viewing, critical thinking, imagining, visualising, inferring and building meaning, in addition to communicating and evoking feelings (Avgerinou, 2001). These skills are essential for being able to interpret visual information from the environment. VL can also help students gain a

deeper understanding of the world around them and negotiate their own identities. VL can give students the opportunity to be creative and independent thinkers. It has the potential to foster a lifelong appreciation of visual art and culture. Additionally, it can help students develop empathy and understanding (Kangas, 2019).

The four-topic analyses provided a structure for explicitly discussing some key advantages of visualisation and how it can shape the VTD model. According to the study, the VDT model provided children with innovation skills, empowerment, collaboration and artistic interventions through an enquiry-based process. This allowed the children to develop critical thinking skills, problem-solving skills and a better understanding of the world around them. The model also provided a platform for the children to express their creativity and imagination. Finally, it enabled them to make meaningful learning connections.

In addition to enhancing the children's VL, it also provided them with new information. Through ABMs, children had the opportunity to experience VT and DT holistically within the VDT model, which itself is a cognitive process. The use of ABMs enabled children to gain a greater understanding of VT and DT and, by doing so, made it easier for them to create links between the two concepts. This helped them develop a better understanding of the VDT model, which in turn improved their VL.

In order to encourage children to practise their VDT abilities, it is vital to provide them with opportunities. A learning process in which children can use their different senses and enhance their learning abilities, which are closely related to learning visually, should be provided. Thus, the current study established that VDT can be a stimulus for a *creative mindset* with a problem-solving attitude, showing that children can learn from a young age. Additionally, it encourages them to think about problem solving in a different way, as they can use their different senses to explore and understand the world around them.

The dissemination of empirical data in almost its original form can yield valuable insights from audiences (Eisner, 1981). A similar approach was taken during this publication's exhibitions. As a result of this approach, viewers were able to interpret the data in their own way, which deepened their engagement with the exhibition and gave me, as the researcher, insight from their point of view to further develop the research.

Publication V

It can be further discussed that youths became more creative through frequent VL engagement. Creativity can manifest in the form of technological advancements, artistic expression and innovative solutions to problems. VL also helped foster a sense of social connectedness and understanding between generations. Ultimately, it serves as a platform for youths to express themselves and become engaged citizens.

The VL-themed, arts-based experiment has shown promising results for Rovaniemi youth. Although the experiment was conducted only in this region, it can be adapted to other parts of Europe to analyse and interpret youths' creative perceptions. By doing this, researchers can gain valuable insights into the development of VL-themed art in the European region. In general, enhancing young people's understanding of how being visually literate can facilitate attitude changes and decision-making can have a positive impact on creative thinking and meaning-making capacities. This, in turn, can lead to increased self-confidence, the ability to view the world from different perspectives and an appreciation for the value of aesthetic experiences. Ultimately, this research can help shape the next generation's appreciation of the visual arts.

This research can help educators, professionals and policymakers to gain a better understanding of the impact of art on the development of young people. They can provide youth with the tools to think visually. This could help nurture creativity and encourage young people to think critically (Winston, 2015), as well as build the self-confidence needed to thrive in a rapidly changing world. This could also lead to an increase in academic success and better career prospects. Ultimately, this research can contribute to a more culturally vibrant and diverse society. It could also help foster a greater appreciation for art and its potential to open up new ways of thinking.

6.2 Visual Literacy Re-Defined

The participants were asked to redefine the VL through their own understanding. They developed innovative approaches and proposed new ways to use VL in their work. The results were inspiring and led to many productive conversations. This is how they recollected their learning and redefined VL (Qureshi et al., 2022b).

> *'The ability to emotionally and cognitively interpret or apprehend pictures or other visual images'.*
>
> *'The ability to read, understand and interpret meaning from the 'visual world' around us'.*
>
> *'The possibility of communicating with each other without spoken language, based on communication with symbols, colours, movements, shapes and other visible means'.*
>
> *'The act of reading, coding, decoding and giving a visual image a meaningful representation'.*

In all these definitions, the participants discussed VDT skills in the research. A key role played by VL in tertiary education is the teaching of students to become creatives, artists or designers, while creative and critical thinking are now viewed as key life skills for a digitally driven future (Vasilieva, 2018). Additionally, it links back to the researcher's chosen definition by Fransecky and Debes (1972), which affirms the presence of interpretation of visible actions, objects and symbols (whether natural or artificial), enabling visual comprehension and communication of a visual world. With this in mind and considering the research as a whole, I propose the following definition of VL:

> ***Visual literacy encompasses more than the ability to interpret and read visual data; it also involves the ability to express complex concepts in an understandable and accepted manner; the ability to formulate a visual voice for one's expression; and the development of a creative mindset, all of which foster creativity.***

6.3 Reservations and Limitations

Despite the success demonstrated in the research, COVID-19 was a significant limitation because fewer participants could attend; however, I consider this a minor shortcoming because it allowed the reflective factor of the research to be more detailed. The relationship between the researcher and the participants also became closer. However, the lack of participants with no artistic background limited the results of this research, and it needs to be re-experienced with mixed backgrounds. Due to the participants' educational backgrounds in art and design, there was a notable limitation to the study. Since the participants had pre-existing interests in art and creativity, the study may therefore produce different results if conducted with youths who do not have a previous art education background and are less interested or artistically inclined.

In addition, cultural representation from the perspective of VL can be examined more closely, with more variations. VL has the potential to broaden our perspectives and understandings of the world. It can help us look at cultures and perspectives in new ways. It can also help us develop empathy and appreciation for different cultures and points of view (Miettinen et al., 2016). Moreover, this research does not discuss the implementation of VL as a part of any curriculum. VL has the potential to help build bridges between cultures and promote understanding. It can also help us develop an appreciation for the beauty of different cultures. Therefore, it is essential to explore the possibilities of including VL in educational curricula.

Nevertheless, the current research represents only the preliminary realisation of the VDT model in the context of VL. Despite its limitations, the prototype is

a valuable starting point. To understand this fully, further research is needed, and longitudinal studies need to be conducted. Various ABMs can also be used to engage different ageisms, as well as on a large scale, to illustrate the implications of this model.

6.4 Research Reliability and Ethical Considerations

In Lincoln and Guba's (1985) view, evaluating the worth of a research study requires evaluating its reliability. In order to develop trust, it is necessary to establish the following: *Credibility*—the confidence that the findings are accurate; *Transferability*—demonstrating the applicability of the findings across a wide variety of contexts; *Dependability*—the ability to demonstrate that the findings are consistent and reproducible; and *Confirmability*—the extent to which the findings are influenced by the respondents and not the researcher's bias, motivation or interest.

Throughout the course of this qualitative artistic research, reliability was maintained. Strategies for ensuring trustworthiness in qualitative research projects, as discussed by Andrew Shenton (2004), included prolonged engagement, persistent observation, triangulation of data and peer debriefing. These strategies ensured that the study achieved its goal of producing reliable and valid results. The use of multiple methods and data sources allowed the researcher to corroborate evidence and gain a more comprehensive understanding of the topic. The research design was also considered for its methodological rigour, which ensured that the study was robust and reliable. Overall, the strategies employed in this study provide evidence of their credibility and trustworthiness.

In addition, this research followed the guidelines of the Finnish National Board on Research Integrity (TENK), as reviewed by the ethics committee of the University of Lapland in Finland. The participants were provided with informed and written consent prior to the start of each individual study (see Appendices 1-4, p. 93-101). The data collected from the participants was in the form of interviews, questionnaires, photos and videos. All participants and their guardians (where necessary) provided written permission to use their artistic results. Permission for the use of artistic results was provided in writing by each participant. Moreover, it was clearly specified that participants could withdraw at any time, even after the study ended. Throughout the research, written consent, both in English and Finnish, was obtained from the participants. See appendices 5–15, p. 103-113 for additional information.

"All creaton is in the art of seeing."

JOHN BERGER

7 CONCLUSION

This chapter concludes with three sections summarising the research. The first section discusses the lessons learned from this process. The second section covers future directions, and the last section is a reflection on the research from my perspective.

7.1 Lessons Learned

A number of positive conclusions were drawn, including that participants valued the co-creation experience. The use of documentation has proven to be a powerful method of building knowledge (Burnaford, 2007). This was a valuable part of the research since it provided tangible ideas on how to refine creativity through interpretive and reflective processes.

Additionally, in this study, the use of the CEFR-VL model opened new horizons towards enhancing the competencies, which were guided by the definition of Franskey and Debes (1972). In accordance with the model and with some additions suggested by the author, these sub-competencies can develop visually literate individuals who can cope with futures that continue to evolve visually rapidly. An individual's ability to process visual information becomes especially relevant in the digital age, where visual media and information are more accessible than ever before. This emphasises the need for individuals to effectively interpret and utilise visual information to stay informed and engaged in their respective communities.

Furthermore, the creative process adapted in the research was found to stimulate the participants' VDT abilities. The prototype VDT model can be viewed as a holistic cognitive process constituted by VT and DT that supports learning and stimulates *creative mindsets*. The empowering effect of sharing reflections brought the participants closer to each other. This created a creative learning environment, and they shared, listened to and reflected on each other's artwork. This helped validate that VDT is a cognitive process. While more studies are needed to establish the practical utility of this new model, the initial results support the effectiveness of using well-planned ABMs to analyse cognitive functions. Furthermore, the research found that enhanced VDT skills can enhance self-esteem and empower individuals by enabling and stimulating VL. It can also facilitate verbalising the outcomes and processes of creative expression. The child's perspective provided inspiration for building this new knowledge to comprehend the youth's visual language (Kárpáti & Gaul, 2013). This research has shown that understanding the visual language of

the youth is essential in order to effectively engage with them. It is important to acknowledge their unique perspectives when it comes to communication and the way they construct meaning. By recognizing their distinct ways of forming meaning and communication, we can create meaningful connections with them, as well as provide relevant content that resonates with their visual language (Qureshi, 2023). As a result, the research concluded that frequent participation in VL can boost youth creativity.

Visual dissemination of research contributes to scientific outcomes because we can visualise research in so many powerful ways (Leavy, 2017, p.196–197). To do that, I developed experiential knowledge, which was the motivation for using ABR (Leavy, 2017, p. 197). Within the dissemination process of this study, I integrated my own VDT skills into the dissemination process so that visuals were clearly evident in the various formats of dissemination (Leavy, 2017, p. 197). Through visuals, I effectively communicated my research and presented my findings to a wider audience. I have also gained an increased understanding of my research through visualisation. This has enabled me to share my research in more innovative and exciting ways. Visualisation has been paramount in my research. In addition, I have come to understand ABR's value better by utilizing multiple visualisation techniques. Visualisation has been an invaluable tool for me, allowing me to gain a deeper understanding of my research and share it with a wider audience in an engaging way. Furthermore, it has enabled me to appreciate the true value of ABR and its potential for creating meaningful visualisations.

7.2 Future Directions

The results discussed above can be adapted for longitudinal research to develop the method into a process that can be used to obtain a deep understanding and appreciation of the enhancement of VL. The participants' reflections indicated that storytelling and discussing creations together can be advanced and groundbreaking means of learning and exploration.

Additionally, it offers an opportunity for policymakers to rethink how to integrate the arts into education by embedding such progressive models and frameworks to create innovative learning outcomes as a means to profoundly impact the world. Educational and cultural policies that foster the development of youths' identities can be designed to increase the number of creative citizens. One way to motivate youth is to provide them with a sense of ownership of their artwork. Therefore, arts are vital components of education, and their inclusion in formal and informal educational settings can help young children and youths gain a deeper understanding of challenging concepts and decrease their anxiety in relation to demanding subjects.

To fulfil the needs of STEM industries, society must prepare citizens capable of advanced thinking (Yakman, 2008; Qureshi, 2024). STEM (science, technology, engineering and mathematics) focuses explicitly on scientific concepts, and STEAM (science, technology, engineering, arts and mathematics education) investigates these concepts through creative enquiry and problem-based learning methods. Embedding VL-inspired ABMs into STEAM models can also enable new educational policymaking paradigms (Qureshi, 2023, p. 48). STEAM models can assist in improving education for young adults by facilitating student enquiry, dialogue and creative thinking away from STEM models (Herranen et al., 2021; Yakman, 2008). In this regard, VL-inspired ABMs can contribute to formulating educational policy, since they provide meaning for both individuals and society.

7.3 Final Remarks

The study concluded that VL should be included in both formal and informal creative learning settings during early childhood. In the course of their development into adults, these early interventions will prove invaluable in helping them discover their *visual voice* and develop a *creative mindset*. VL is essential to the creative process because it provides the foundation for understanding and interpreting visual information. Furthermore, it provides the tools to critically analyse, manipulate and express one's visual ideas, thus fostering creativity, problem solving and effective communication along the way.

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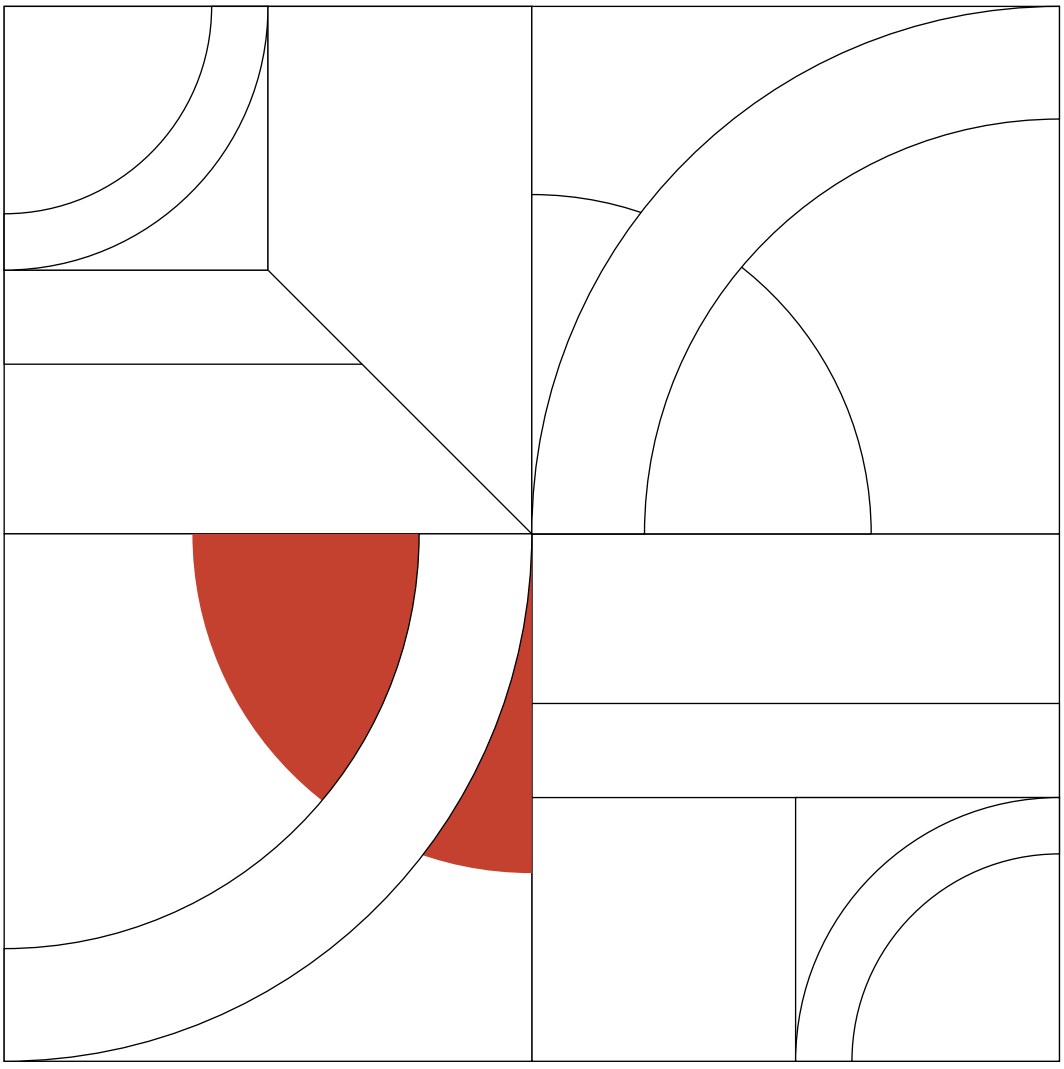
Appendix 1: AMASS Consent form (English version) 95

RESEARCH
APPENDICES



APPENDICES

Appendix 1: AMASS Consent form (English version)

APPENDIX D

INFORMATION SHEET AND INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Introduction:

The project "Acting on the Margin: Arts as Social Sculpture" (AMASS) has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 870621. The participating countries are Finland, the UK, Sweden, Malta, Italy, Hungary, the Czech Republic, and Portugal.

This project seeks to analyze, synthesize and promote the role of arts in societal challenges by departing from the perspective and the physical positioning of the marginal and contribute to the study of valuable experiences, insights and case studies from a marginal positioning.

The project also aims to research in-depth the 'margins within the margins': i.e. marginalized groups within each of the participating countries and these groups' involvement in the arts. By implementing artistic experiments that offer the possibility of transformation (hence, the title's reference to 'acting on the margins'), this arts-based action research will be used to 'sculpt' social groups, much in the sense that German artist Joseph Beuys gave to the term he coined in the 20th century—social sculpture.

You have been asked to participate in research led by Professor Satu Miettinen, Professor Mirja Hiltunen, Dr Maria Huhmarniemi and Dr Melanie Sarantou from the University of Lapland, Finland.

Before signing, please read this information about the project and ask if there is anything that you don't understand.

The aim of the study is to:

- Understand how the arts can be used a vehicle for impacting positively on our societies and communities.
- Understand and act on how the arts, and participation in the arts, can reduce isolation amongst women, children and minority groups from various marginal regions in Europe.
- Implement arts to educating women and children through tools and processes that are enabled by the arts
- Evaluate and develop new policy frameworks for using arts to overcome societal challenges
- How the arts and creative thinking can assist in overcoming alternative methods for tackling dominant power in institutions so that communities can connect and communicate more effectively and ways how to ensure that relevant policies that they feel are relevant are applied.

If you volunteer, you will be asked to participate in artistic expression, making, sharing and exhibition, whether it is through physical or digital means. The participation does not cause any inconvenience to you, or harm you in any way.

Data Collection:

The data will be collected through focus group discussions, unstructured interviews, art making processes, capturing art making processes and performances, observations and note taking. Additional methods with stakeholders will include round table discussions and surveys. Data will be collected by voice, photo and video recording, but written notes and text will also be used to capture ideas as data. The data will be securely stored on password protected devices or double locked at the University of Lapland for five years. Only the principle and collaborating researchers will have access to the data. Data will be deidentified and stored in way to ensure its confidentiality and your privacy. Findings will be shared through academic publication, but we will also use a high-quality website that will showcase the artistic work that our project will capture, giving due credits and recognition to the artists and their work.

Presentation of Data:

Parts of the data may be presented and published in books, journals and conferences, but these publications will be open source so that you can have access to all the published information. An open source and free MOOC will also be published through which you can have access to new ideas and our learning outcomes. The digital results of artistic recordings, videos, installations and stories will be published via our website as a narrative or story platform. Your participation may benefit many communities, societies and individuals across Europe who have to cope and manage societal challenges within the peripheries that experience or live in. Understanding, harnessing and using the transformative power of the arts and creativity as such is what we aim to accomplish, and your role is therefore pivotal in our research.

The mentioned researchers and University of Lapland are committed to protecting your privacy and personal data. The material will be processed in compliance with the applicable laws, regulations and ethical codes of conduct.

Withdrawing from the research:

Participation in this research is entirely voluntary. You can withdraw from the research without any consequences at any time.

☐ I understand the research and give my consent for participation in the research and having data collected. (By ticking this box and signing this form you give the consent to take part in the research described above.)

☐ I understand that photo and video materials will be digitally collected that may include my artwork and images of me and so may reveal my identity or that of my art work. (By ticking this box and signing this form you give consent to have video recordings and photographs taken that may reveal your identity.)

Both the participant and the researcher will have a copy of the consent form.

_____	_____
PRINT NAME / Participant	DATE (dd/mm/yyyy)
_____	_____
SIGNATURE / Participant	SIGNATURE / [Researcher name here]

If you have any questions concerning your participation, you may contact:

Melanie Sarantou, 0404844477

Satu Miettinen, 0404844367

Appendix 2: AMASS Consent form (Finnish version)

APPENDIX D

TUTKIMUSLUPA

Johdanto:

Hankkeelle "Aging on the Margin: Arts as Social Sculpture" (AMASS) on myönnetty rahoitusta Euroopan unionin Horisontti 2020-tutkimus- ja innovaatio-ohjelmasta avustussopimuksen N: o 870621 kautta. Osallistujamaat ovat Suomi, Englanti, Ruotsi, Malta, Italia, Unkari, Tšekin tasavalta ja Portugali.

Projektin tavoitteena on analysoida, syntetisoida ja edistää taiteen asemaa yhteiskunnallisissa haasteissa lähtökohtana ja näkökulmana marginaalinen fyysinen sijainti sekä arvokkaat kokemukset, näkemykset ja tapaustutkimus Euroopan reuna-alueilla.

Hankkeen tavoitteena on myös tutkia perusteellisesti ”marginaalien sisällä olevia marginaaleja”: toisin sanoen syrjäytyneitä ryhmiä kunkin osallistujamaan sisällä ja näiden ryhmien osallistumista taiteeseen. Toteuttamalla taiteellisia kokeiluja, jotka tarjoavat muutosmahdollisuuden tätä taiteellista toimintatutkimusta käytetään "veistämään" sosiaalisia ryhmiä, kuten saksalainen taiteilija Joseph Beuys määritteli 1900-luvulla sosiaalisen veistoksen käsitteellä.

Sinut on kutsuttu osallistumaan tutkimukseen, jota johtavat professori Satu Miettinen, professori Mirja Hiltunen, taiteen tohtori Maria Huhmarniemi ja taiteen tohtori Melanie Sarantou Lapin yliopistosta.

Tutkimuksen tavoitteena on:

- Ymmärtää, miten taiteita voidaan käyttää välineenä vaikuttaa myönteisesti yhteiskuntaamme ja yhteisöihimme.
- Ymmärtää ja toimia siten, että taiteet ja taiteeseen osallistuminen voivat vähentää naisten, lasten ja vähemmistöryhmien syrjäytymistä Euroopan syrjäisillä alueilla.
- Soveltaa taidetta naisten ja lasten kouluttamiseeni taiteen mahdollistamien työkalujen ja prosessien avulla
- Arvioida ja kehittää uusia politiikan puitteita taiteen käyttämiseksi yhteiskunnallisten haasteiden voittamiseksi
- Tarkastella kuinka taiteet ja luova ajattelu voivat auttaa paikallisia yhteisöjä löytämään vaihtoehtoisia tapoja kommunikoida päättäjien kanssa niin, että he pystyvät paremmin vaikuttamaan heille tärkeään politiikan tekemiseen ja siihen, että sitä sovelletaan.

Tutkimukseen osallistuminen on vapaaehtoista ja sinua pyydetään osallistumaan taiteelliseen ilmaisuun, työskentelyyn, jakamiseen ja näyttelyyn, olipa kyse sitten fyysisistä tai digitaalisista ilmaisukeinoista. Osallistuminen ei aiheuta sinulle haittaa tai vahingoita sinua millään tavalla.

Tutkimusaineiston kerääminen:

Tiedot kerätään ryhmäkeskustelujen, strukturoimattomien haastattelujen, taiteellisten prosessien, taiteellisten prosessien ja esitysten tallenteiden, havaintojen ja muistiinpanojen avulla. Lisämenetelmiä sidosryhmien kanssa ovat muun muassa keskustelut ja kyselyt. Tietoja kerätään ääni-, valokuva- ja videotallennuksella, ja kirjoitettuja muistiinpanoja ja tekstiä käytetään myös havaintojen tallentamiseen. Tiedot säilytetään turvallisesti salasanalla suojatuissa laitteissa Lapin yliopistossa viiden vuoden ajan. Ainoastaan tutkijat pääsevät voivat tarkastella ja käyttää aineistoa. Tiedot tunnistetaan ja säilytetään tavalla, joka varmistaa niiden luottamuksellisuuden ja yksityisyyden. Tutkimustuloksia jaetaan akateemisten julkaisun kautta, sekä korkealaatuisella verkkosivustolla, joka esittelee projektimme taiteellista työtä ja antaa taiteilijoille ja osallistujille tunnustuksen heidän työstään.

Tutkimusaineiston esittäminen

Osa tutkimusaineistosta voidaan esitellä ja julkaista kirjoissa, lehdissä ja konferensseissa. Nämä julkaisut ovat avoimen lähdekoodin tietoja, joten sinulla on pääsy kaikkiin julkaistuihin aineistoihin. Hanke julkaisee myös avointa ja ilmaista oppimateriaalia, jonka kautta voit saada uusia ideoita ja oppimistuloksia. Taiteellisen työskentelyn nauhoituksia, videoita, installaatioita ja tarinoita julkaistaan digitaalisessa muodossa verkkosivuillamme tarinallisessa julkaisualustassa. Osallistumisestasi voi olla hyötyä monille yhteisöille, yhteiskunnille ja yksilöille Euroopan eri aluilla, joissa on selviydyttävä ja hallittava syrjäisiin seutuihin liittyviä yhteiskunnallisia haasteita. Taiteen ja luovuuden muutospotentiaalin ymmärtäminen, hyödyntäminen ja käyttäminen sellaisenaan on tavoite, jonka pyrimme saavuttamaan ja roolisi on siksi keskeinen tutkimuksessa.

Mainitut tutkijat ja Lapin yliopisto ovat sitoutuneet suojaamaan yksityisyyttäsi ja henkilötietojasi. Aineisto käsitellään sovellettavien lakien, asetusten ja eettisten käytännesääntöjen mukaisesti.

Tutkimuksesta vetäytyminen:

Osallistuminen tähän tutkimukseen on täysin vapaaehtoista. Voit vetäytyä tutkimuksesta ilman seuraamuksia milloin tahansa.

☐ Ymmärrän tutkimuksen ja annan suostumukseni tutkimukseen osallistumiseen ja tietojen keräämiseen. (Valitsemalla tämän ruudun ja allekirjoittamalla tämän lomakkeen annat suostumuksen osallistua yllä kuvattuun tutkimukseen.)

☐ Ymmärrän, että valokuva- ja videomateriaalit kerätään digitaalisesti ja että aineisto voi sisältää taideteoksiani ja kuviani minusta ja siten paljastaa henkilöllisyyteni tai taideteokseni tekijyyden. (Kun valitset tämän ruudun ja allekirjoitat tämän lomakkeen, annat suostumuksen ottaa sellaisia videotallenteita ja valokuvia, jotka saattavat paljastaa henkilöllisyytesi.

Sekä osallistuja että tutkija saa kopion tästä tutkimus- ja dokumentointiluvasta.

_____	_____
NIMI / Osallistuja	päivämää (päivä.kuukausi.vuosi)
_____	_____
ALLEKIRJOITUS/Osallistuja	TUTKIJAN NIMI

Jos sinulla on kysyttävää tutkimuksesta, ota yhteyttä
Melanie Sarantou, 0404844477.

Appendix 3: AMASS Media Release Form (English version)

MEDIA RELEASE FORM

For artists, designers and creatives for shared artistic (or other authorship) and media release. This agreement is made between the participant and AMASS including all project partners and associated funding organisations.

Date

Name of Participant

1. **The art project has been explained to me and the purpose of my involvement in it.**

☐ I am over 18 years. I understand.

☐ I am under 18 years, and required to have this form signed by a parent or guardian. I understand.

2. I grant permission for AMASS to document via photo, video or voice recordings, and/or edit, my likeness, image, voice, interview and performance. I agree that AMASS may use and part of the documentation for, but not limited to exhibition, publication, educational and website purposes.
3. I may withdraw my permission to be recorded via photograph, video and audio from the AMASS project at any stage.
4. I waive any right to royalties or other compensation related to the use of the documented results, which may be used in diverse settings within unrestricted geographical location. I understand that as the subject of photography or videography I have no claims to copyright or other rights as participant in any artistic or design processes or actions and/or as audience member.
5. I grant permission for photograph, video and audio recordings to be taken of my arts, works and processes during the duration of the art project. The recordings may be taken for the purpose of documenting art, processes and practices of participating individuals and groups, and documented representations of my work may be selected for use in media releases, marketing and promotion of installation exhibitions, exhibition displays and curation associated with the AMASS project.
6. I agree that documentations of my work can be reproduced without my consent in publications and promotional material by the project management team for AMASS. I will be acknowledged in all publications and promotional material.
7. I will retain copyright of my art and work produced solely by myself for AMASS projects.
8. My art and work cannot be reproduced for profit without my consent.
9. I approve group/joint copyright on 'collective' or 'joint' art and works produced that may tour as an exhibition in future years with no expectation of income from the exhibitions.

Print full name and signed (OR: Print full name and Signed by parent, guardian or caregiver of a person Under 18)

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Appendix 4: AMASS Media Release Form (Finnish version)]

MEDIA RELEASE FORM/ dokumentoinnin käyttölupa

Taiteilijoille, muotoilijoille ja muille luoville tekijöille dokumentoinnin käyttölupa
Tämä sopimus on tehty osallistujan ja AMASS-hankkeen välillä lukien mukaan projektin yhteistyötahot ja rahoittajat.

Päivämäärä

Osallistujan nimi

1. **Taideprojekti ja oma osallistumiseni siihen on selitetty minulle.**

☐ Olen yli 18-vuotias ja ymmärrän.

☐ Ollen alle 18-vuotias ja tämän lomakkeen allekirjoittaa huoltajani. Ymmärrän.

2. Myönnän AMASS:lle luvan dokumentoida valokuva-, video- tai äänitallenteiden avulla ja/ tai editoida kuvia ja muita talenteita. Hyväksyn, että AMASS voi käyttää dokumentaatiota näyttely-, julkaisu-, koulutus- ja verkkosivustoihin, sekä muihin vastaaviin tarkoituksiin.
3. Voin milloin tahansa peruuttaa luvan dokumentointiin (valokuvaus, videointi ja ääninauhurin käyttö) AMASS-projektista.
4. Luovun oikeudesta tekijänoikeuskorvaukseen, jotka liittyvät teosdokumenttien käyttöön monissa olosuhteissa rajoittamattomalla maantieteellisellä alueella. Ymmärrän, että valokuvan tai videokuvan kohteena minulla ei ole vaatimuksia tekijänoikeuksista tai muista oikeuksista taiteellisten tai suunnitteluprosessien tai -toimintojen osallistujana ja / tai yleisön jäsenenä.
5. Annan luvan valokuvien, videoiden ja äänitteiden ottamiseen taiteellisista produktiostani, teoksistani ja prosesseistani taideprojektin aikana. Nauhoituksia voidaan tehdä osallistuvien yksilöiden ja ryhmien taiteen, prosessien ja käytäntöjen dokumentoimiseksi, ja työni dokumentteja voidaan käyttää tiedotusvälineissä, näyttelyiden esittelyissä ja muissa vastaavissa tarkoituksissa AMASS-projektissa.
6. Olen samaa mieltä siitä, että AMASS-projektin johtoryhmä voi kopioida työni dokumentaatioita ilman suostumustani julkaisuissa ja mainosmateriaaleissa. Minun tekijyys tunnustetaan näissä materiaaleissa.
7. Säilytän yksin itselleni AMASS-hankkeisiin tuottamani taiteen ja teosteni tekijänoikeudet.
8. Taiteella ja teoksillani ei voi tuottaa taloudellista voittoa ilman suostumustani.
9. Hyväksyn kollektiivisen tai yhteisesti tuotettujen teosten ryhmäkohtaisen tai yhteisen tekijänoikeuden, joka voi tulla näyttelyksi tulevina vuosina ilman, että odotetaan tuloja näyttelyistä.

Allekirjoitus ja nimen selvennys (tai: alle 18 vuotiaan huoltajan allekirjoitus ja nimen selvennys)

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Appendix 5: Visual Literacy workshop Questionnaire

Visual Literacy Workshop

Thank you for your participation in the Visual Literacy workshop. Please answer these questions. This would help us understand the value of using visuals as one of the key arts-based methods in this research.

1. "The ability to apprehend or interpret pictures or other visual image". (Definition of Visual Literacy | Dictionary.Com, n.d.). How do you think in your opinion this is valid? Please specify. *

Long answer text

2. In your own words how would you redefine Visual Literacy? *

Long answer text

3. Are you of the opinion that Visual Literacy is a concept that relates to Art & Design but the word can also be applied widely in other contexts. Please explain your views. *

Long answer text

4. How do you think being visually literate could contribute to your own learning? *

Long answer text

5. How do you think making personal mandalas contributed to your learning during this workshop? *

Long answer text

Appendix 6: Visual Literacy workshop colour coded transcription example

Themes	Essay
	A short description about personal learning and experience through the workshop.
Quotes or models used by participants	**"One cannot invent symbols; wherever they occur, they have not been devised but conscious intention and wilful selection, because if such procedure has been used, they would have been nothing but signs and abbreviations of conscious thoughts. Symbols occur to us spontaneously, as one can see in our dreams, which are not invented, but happen to us." (Carl Jung, *The Undiscovered Self*, 1990, p. 70)**
Creativity Personal feelings	The activity provided me with rest in the way that creative activity can let my mind rest, regenerate and re-enact creativity through thoughts, expressions and mark making in this case. It was relaxing and at times I felt swept into another reality, almost when you are in a half-dream state. It was transportive. In this sense the activity reminded me of the power of creative rest that every person needs and that time should be generated in our lives for our unconscious abilities to be nurtured and even expressed.
Visual Literacy/ Visual language Perceptions	The theme of visual literacy is very important and this activity enabled me to be more mindful of the visuality of everyday life. How to observe and notice lines, shapes and colours more consciously. Although our minds are usually too filled with information and we struggle with over-stimulation most of the times, it was a great workshop to draw attention to our abilities to read texts. I suppose life is made out of texts, symbols, signs, and they feed our perceptions, also our unconscious ones.
Problem Question	The ability to be visually literate is a skill that I have recently become aware many people do not think about. There is much focus on reading the alphabet, to be able 'to read', but almost no attention is given to reading visuality outside of the alphabet. Children should learn this other way of reading just as actively as they are taught the alphabet, but it does not receive attention as it should in our school systems. Is it only left to the artists to discover how broad the activity of reading should go?
Solution	Visual literacy can bring us in contact with our emotions in different ways. Our activity was guided by our intuition, and I am sure that once the symbolisms in our mandala drawings are studied and analysed that we may be confronted with some nice and not so nice states of mind and realities that are underlying our 'visible personalities' or appearances. I believe there are many symbolisms for me to study and rediscover in my own mandala drawing. On the topic of visual literacy I have to seek recognition of matters not yet clear to me or what I even refuse to see as I am not ready to interpret it myself. There is unusual use of colours for example, but these are all a result of what was 'happening' as they were not invented, but expressed, hence it is a part of me and I need to use visual literacy to uncover those parts of myself. It may take years, or I may see it tomorrow, who knows?
Interpretations	It seems that documenting the drawing and viewing it from many different angles may assist in uncovering the meanings, which will obviously be subjective, the mark making may have to me. It would be interesting to share thoughts and readings in the group's mandala drawings to listen to the many interpretations they may have. Visual literacy I believe opens up the world in interpretation and discovery of others and the self. I also believe that the creativity of my present and past art-making are visualised in this mandala. It perhaps manifested unconsciously, but visual literacy may assist us to make more conscious and understand our own complexities and unexpressed emotions.

Appendix 7: Parental consent form (English version)

Student Parent / Guardian Consent Form

Using the attached form, we ask for your consent for your child to participate in the study.

Dear Parents/Guardians,

I am conducting a dissertation research at the University of Lapland focusing on the awareness of Visual Literacy amongst the young children and youth of Arctic City Rovaniemi, Lapland. My research is a part of the AMASS European-wide testbed, a Horizon 2020-funded research project that includes 35 experiments altogether. This specific workshop investigates the significance of creative freedom and self-expression through the visual analysis of artworks produced by the young children in a one day workshop.

I am asking for permission for your child to participate in this artistic workshop in which the children will be asked to collect natural materials from nature and build a personal mandala art*. During this workshop the children will not be photographed or videographed. However, the artwork created by them will be photographed and used for visual analysis while their opinions and discussions will be documented via voice recording. I have received permission from the AMASS project to do the research. This will not cause any extra action from you.

The material is collected and processed completely anonymously and confidentially so that not even the researcher knows the names or other personal information of the children participating in the study. No participant can be identified from the results of the research or the images taken.

Please return the research permit slip to your child's class teacher by --- June, 2021. I would like the research permit tag to be returned, even if you do not consent to your child's participation in the research.

Thank you for your cooperation. I will be happy to answer questions about the research.

Regards,

Amna Qureshi
PhD Researcher, University of Lapland, Finland.
Artist Investigator, AMASS
aqureshi@ulapland.fi
+358 40 324 5505

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Decision of the student's parent / guardian

Your child's name:

_____

My children are allowed to participate in the workshop in the summer camp of 2021. Circle your decision.

YES / NO

Parent's/Guardian's Name _____

Parent's/Guardian's signature

*Mandala Art: *A mandala is a circular structure with radial symmetry, meaning that the design radiates out symmetrically from the center. It is one of nature's more wonderful and perfect configurations.*

They can be found in flowers, tree rings, the sun, eyes, snowflakes, spider webs, sea shells, seeds, fruits, succulents, and more. Deriving from this concept children will be making mandala art with things collected from nature and sharing their views about their creative artwork.

See Examples:

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Appendix 8: Parental consent form (Finnish version)

Oppilaiden vanhempien / huoltajien tutkimuslupalomake

Liitteenä olevan lomakkeen avulla pyydämme suostumustasi lapsellesi osallistumisesta tutkimukseen.

Hyvät vanhemmat,

Teen Lapin yliopistossa väitöskirjatutkimusta, joka keskittyy lasten ja nuorten visuaalisen lukutaidon osaamisen kehittämiseen Rovaniemen arktisessa kaupungissa Lapissa. Tutkimukseni on osa Euroopan Komission Horizon2020 -ohjelman rahoittaman AMASS -hankkeen Euroopan laajuista testausalustaa, johon sisältyy yhteensä 35 tieteellistä kokeilua. Tutkimme pienten lasten luovan ja vapaan itsensä ilmaisun merkitystä päivän kestoisessa taidetyöpajassa.

Pyydän lapsellesi lupaa osallistua tähän taiteelliseen työpajaan, jossa lapsia opastetaan keräämään luonnonmateriaaleja luonnosta ja rakentamaan henkilökohtainen Mandala-taideteos*. Tämän työpajan aikana lapsia ei valokuvata tai videokuvata. Heidän luomansa taideteos kuitenkin valokuvataan ja sitä käytetään visuaalisen analyysin aineistona. Haluamme myös kuulla heidän mielipiteensä ja keskustella heidän tekemistään taiteista. Tämä keskustelu tullaan dokumentoimaan äänitallenteena. Olen saanut AMASS-projektilta luvan tutkimuksen tekemiseen. Tämä ei aiheuta ylimääräisiä toimia sinulta.

Aineisto kerätään ja käsitellään täysin nimettömästi ja luottamuksellisesti, jotta edes itse tutkija ei tietäisi tutkimukseen osallistuvien lasten nimiä tai muita henkilökohtaisia tietoja. Kukaan osallistuja ei ole tunnistettavissa tutkimuksen tulosten tai otettujen kuvien perusteella. Voit vetäytyä tutkimuksesta missä tahansa tutkimuksen vaiheessa, eikä sinulla ole velvollisuutta perustella päätöstäsi.

Pyytäisin sinua palauttamaan tutkimuslupalomakkeen lapsesi luokanopettajalle kesäkuussa 2021. Pyytäisin myös, että tutkimuslupalomake palautettaisiin, vaikka et suostuisi, että lapsesi osallistuu tutkimukseen.

Kiitos yhteistyöstäsi. Vastaan mielelläni tutkimusta koskeviin kysymyksiin.

Terveiset,
Amna Qureshi
PhD -tutkija, Lapin yliopisto, Suomi.
Taiteilijatutkija, AMASS
aqureshi@ulapland.fi
+358 40 324 5505

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Opiskelijan vanhemman/huoltajan lupa

Lapsesi nimi:

_____

Lapseni saa osallistua työpajaan kesäleirillä 2021. Ympyröi toinen vaihtoehdoista:

KYLLÄ EI

Vanhemman / huoltajan nimi

_____

Vanhemman / huoltajan allekirjoitus

* Mandala-taide:

Mandala on pyöreä rakenne, jolla on säteittäinen symmetria. Se tarkoittaa, että muotoilu leviää symmetrisesti keskeltä ulos. Se on yksi luonnon tekemistä täydellisistä muodoista.

Näitä muotoja löytyy mm. kukista, puurenkaista, auringosta, silmistä, lumihiutaleista, hämähäkinverkoista, simpukoista, siemenistä, hedelmistä ja mehikasveista. Tätä periaatetta käyttäen lapset tekevät mandala-taidetta luonnosta kerätyillä asioilla. He pääsevät samalla kertomaan näkemyksensä luovasta taideteoksestaan.

Tässä esimerkkejä:

amass
acting on the margins. arts as social sculpture

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Appendix 9: AMASS project

(Official webpage)
https://amassproject.weebly.com

Appendix 10: AMASS project

(University of Lapland webpage)
https://www.ulapland.fi/EN/Webpages/AMASS

Appendix 11: AMASS Conference

Dialogical Arts through Sustainable Communities: Acting on the Margins, redefining Empowerment, 16 – 18 february 2022
https://www.amassconference.com

Appendix 12: AMASS Narratives

Visually engaging youth project
https://amassproject.weebly.com/visually.html

Appendix 13: Flag – A shared horizon

(Short documentary)
https://vimeo.com/666742012?share=copy

Appendix 14: AMASS Exhibition

Active Witnesses
https://amassproject.weebly.com/exhibition-active-witnesses.html

Appendix 15: AMASS MOOC

(Massive open online course)
Introduction to Socially Engaged Arts: Diverse approaches for mitigating societal challenges through arts-based initiatives
https://www.amassmooc.com/