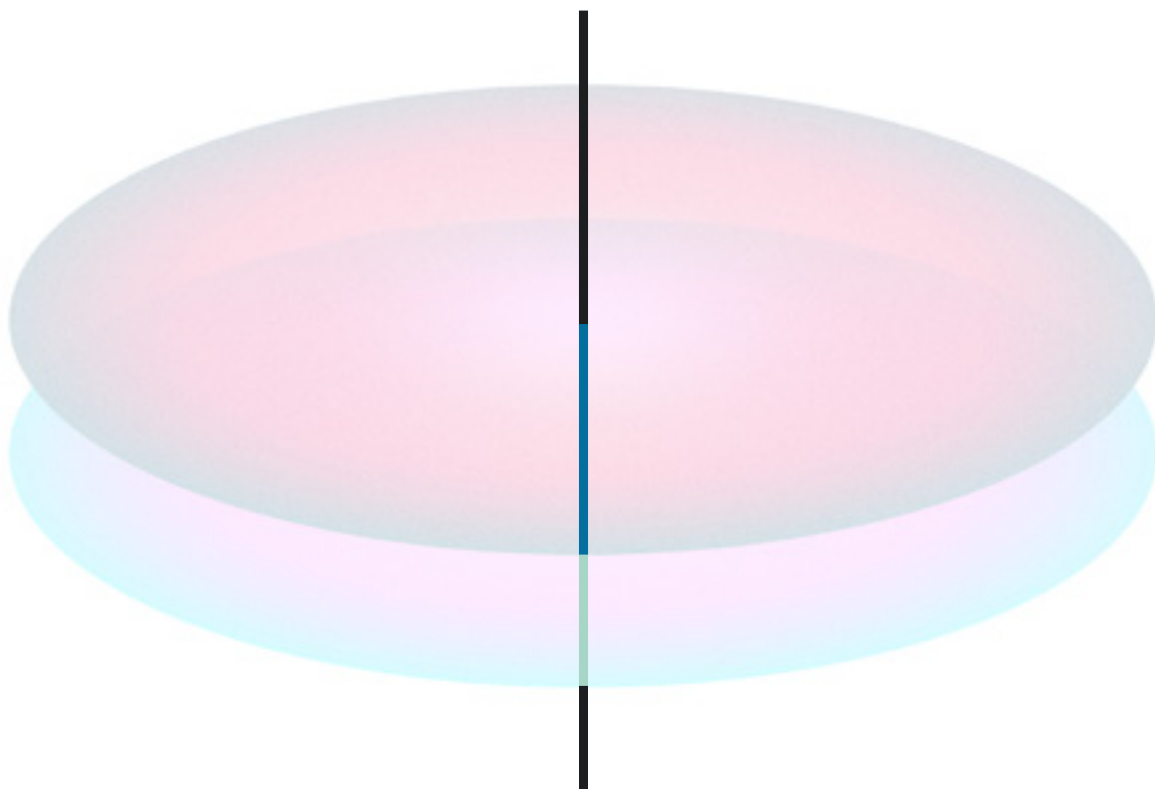


Developing a Theory of Conceptual Contextualisation
of Competence-based Education:



**A Qualitative Study of Multiliteracy in
the Finnish Curriculum Framework**

Lauri Palsa

LAURI PALSA

**Developing a Theory of Conceptual Contextualisation
of Competence-based Education: A Qualitative Study of
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Looking at the past must only be a means of understanding more clearly what and who they are so that they can more wisely build the future

- P. Freire

Abstract

Competence-based education (CBE) has become a central topic in transnational education policy. The approach has been applied at various education levels around the world, and it has been promoted by various international actors, such as the *Organisation for Economic Co-operation and Development* (OECD) and the *European Union* (EU). During the latest curriculum reform, the Finnish education system took a step towards CBE as new transversal competences were introduced into the national level core curricula (Uljens & Rajakaltio, 2017). Even though CBE has been studied widely, there is a need for contextual understanding (Nordin & Sundberg, 2016; Weninger, 2017b). In this dissertation, I focus on the contextualisation of CBE within the Finnish curricular framework of basic education. The results provide conceptual tools to understand, develop and implement a competence-based curriculum.

This dissertation is constructed on two interrelated levels following the inductive logic of grounded theory research. Firstly, on a more specific—micro—level, I focus on the individual concept of multiliteracy to understand how it is contextualised in the Finnish curricular framework. On a more general—macro—level, I study the curricular contextualisation of the CBE. Based on these research topics, I locate this dissertation to cross the following three areas of educational research: 1) on the micro level, the results offer new contextual knowledge about multiliteracy for literacy studies (Kulju et al., 2018; Mills, 2010; Zhang et al., 2019); on the macro level, the results provide new knowledge 2) in the field of curriculum studies, addressing curricular contextualisation in particular (Fernandes et al., 2013; Leite et al., 2020) and 3) in the field of education studies, focusing CBE (Priestley & Sinnema, 2014; Sinnema & Aitken, 2013; Voogt & Erstad, 2018).

This dissertation consists of three published peer-reviewed research articles and an integrative chapter synthesising the dissertation. The curricular contextualisation of CBE is studied in this research using the method of qualitative content analysis. The broader methodological framework is oriented from qualitative grounded theory research. The research data consist of international peer-reviewed research articles collected in 2015 (n=14) and Finnish local curricula collected in 2017 (n=219) and in 2019 (n=220). The first sub-study (Palsa & Ruokamo, 2015) focused on the relationship between the conceptualisations of the concept of multiliteracy in the Finnish core curriculum and the international research discussion. The second sub-study (Palsa & Mertala, 2019) addressed the contextualisations of the concept of multiliteracy within the Finnish local curricula for basic education. The third

sub-study (Palsa & Mertala, 2020) focused further on the contextualisation of multiliteracy in the specific disciplinary settings of social studies and mathematics in the lower secondary education.

On the micro level, the findings clarify the relationship between the conceptualisations of multiliteracy between the national level core curriculum and the international research discussion. In addition, the research provides new contextual knowledge about how multiliteracy is contextualised in the local curriculum in general and in the disciplinary settings of social studies and mathematics on the levels of rationale (the ‘why?’), definition (the ‘what?’), and practice (the ‘how?’).

On the macro level I introduce new theoretical concepts—conceptual contextualisation and disciplinary contextualisation—and a theory, which helps in understanding the different dimensions of the conceptual contextualisation of CBE. The research findings support education through the development and implementation of the curriculum.

Tiivistelmä

Osaamisperustaisuus on noussut kansainväliseen koulutuspolitiikan keskiöön yhteiskunnallisten muutosten, kuten globalisaation ja digitalisaation myötä. Tämä näkyy opetussuunnitelmien kehittämisessä ympäri maailmaa. Maailman muutokseen on pyritty vastaamaan painottamalla opetuksen tuloksia, kuten määrittelemällä oppilaiden toivottua osaamista opetuksen sisältöjen kuvailujen sijaan. Osaamisperustaista opetusta on edistetty monen eri kansainvälisen organisaation, kuten OECD:n ja Euroopan unionin toimesta. Viimeisimmän opetussuunnitelmauudistuksen myötä osaamisperustaiseen opetukseen siirryttiin myös Suomessa (Uljens & Rajakaltio, 2017). Vaikka osaamisperustaiseen opetukseen on kiinnitetty paljon huomiota kansainvälisesti, on tuotu esiin tarve ymmärtää tarkemmin, kuinka käsitteitä on määritelty paikallisesti (Nordin & Sundberg, 2016; Weninger, 2017b). Tämän tutkimuksen tavoitteena on tarkastella laaja-alaisen osaamisen kontekstointia suomalaisen perusopetuksen opetussuunnitelmaviitekehyksessä. Tutkimustulokset tarjoavat käsitteellisiä työkaluja osaamisperustaisen opetussuunnitelman ymmärtämiseen, kehittämiseen ja implementoinnin tukemiseen.

Tutkimus on rakennettu kahteen toisiinsa linkittyvään tasoon. Laajemmalla makrotasolla tarkastellaan osaamisperustaisen opetussuunnitelman kontekstointia yleisesti. Laaja-alaisen osaamisen kontekstointia tarkastellaan erityisesti monilukutaidon osalta. Tarkemmalla mikrotasolla tutkimuksessa tarkastellaan erityisesti monilukutaitoon liittyviä ulottuvuuksia. Tutkimuksellisten tasojen myötä väitöskirja osallistuu eri tutkimuskeskusteluihin ja -perinteisiin. Mikrotasolla tutkimuksen tulokset tarjoavat uutta tietoa lukutaitotutkimuksen kentälle erityisesti monilukutaidosta ja siihen liittyvistä näkökulmista paikallisella tasolla (Kulju et al., 2018; Mills, 2010; Zhang et al., 2019). Makrotasolla opetussuunnitelmatutkimuksen osalta tulokset tarjoavat uutta tietoa opetussuunnitelmakontekstoinnista (Fernandes et al., 2013; Leite et al., 2020) erityisesti käsitteellisestä näkökulmasta sekä osaamisperustaisesta opetuksesta (Priestley & Sinnema, 2014; Sinnema & Aitken, 2013; Voogt & Erstad, 2018).

Väitöskirja koostuu kolmesta kansainvälisestä vertaisarvioidusta artikkelista sekä yhteenveto-osiesta. Osaamisperustaisen opetuksen kontekstointia suomalaisessa perusopetuksen opetussuunnitelmaviitekehikossa tutkitaan tässä väitöskirjassa laadullisen sisällönanalyysin avulla. Tutkimuksen laajempi metodologinen viitekehys pohjautuu laadulliseen Grounded theory -tutkimukseen. Tutkimusaineisto koostuu vuonna 2015 kerätyistä kansainvälisistä vertaisarvioiduista tutkimusartikkeleista (n=14) sekä vuosina 2017 (n=219) ja 2019 (n=220) kootuista paikallisista suomen-

kielisistä perusopetuksen opetussuunnitelmista. Ensimmäisessä osatutkimuksessa (Palsa & Ruokamo, 2015) tarkasteltiin perusopetuksen opetussuunnitelman perusteiden määritelmää monilukutaidosta suhteessa kansainväliseen tutkimuskirjallisuuteen. Toisessa osatutkimuksessa (Palsa & Mertala, 2019) tarkasteltiin, kuinka monilukutaito oli määritelty yleisesti paikallisissa suomenkielisissä perusopetuksen opetussuunnitelmissa. Kolmannessa osatutkimuksessa (Palsa & Mertala, 2020) tarkasteltiin, kuinka monilukutaito oli määritelty oppiainekohtaisesti matematiikan ja yhteiskuntaopin osalta paikallisissa opetussuunnitelmissa erityisesti luokka-asteilla 7–9.

Osaamisperustaisen opetuksen osalta makrotasolla tutkimuksen tuloksina esitellään kaksi uutta käsitettä—*käsitteellinen kontekstointi* sekä *oppiainekohtainen kontekstointi*—sekä teorian, jonka avulla voidaan tarkemmin ymmärtää osaamisperustaisen opetussuunnitelman kontekstointiin liittyviä ulottuvuuksia. Mikrotasolla tulokset osoittavat miten opetussuunnitelmaperusteissa esitetty monilukutaidon määritelmä suhteutuu kansainväliseen tutkimuskeskusteluun ja miten käsite kontekstoidaan paikallisissa opetussuunnitelmissa yleisesti sekä erityisesti matematiikan ja yhteiskuntaopin osalta perustelujen (miksi?), määritelmien (mitä?) sekä käytäntöjen (miten?) tasoilla.

Tutkimustulokset tukevat opetussuunnitelman kehittämistä ja implementointia erityisesti käsitteellisen opetussuunnitelmakontekstoinnin osalta. Tutkimus avaa myös tarkemmin monilukutaitoon liittyviä paikallisia näkökulmia ja auttaa siten hahmottamaan syvällisemmin, miten käsite voidaan ymmärtää paikallisesti niin yleisesti kuin oppiainekohtaisesti matematiikan ja yhteiskuntaopin osalta.

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Research is often metaphorically compared to marathon running. As a long-distance runner, at this phase of my dissertation process, I have the confidence to consider the comparison. Commonly, this figure of speech refers to the long duration of these processes. From this perspective, the analogy is quite thin because I have learned that they have much more in common. Both research and marathon running have taught me to focus on essentials while envisioning the future to step towards paths previously unknown. Both activities have taught me about myself, who I am and what matters most. Both journeys bring highs and lows, sometimes being quite challenging and other times flowing effortlessly. However, the most important similarity is that for both activities, we recognise the people who have supported our efforts because such people help us reach the finish line. Thus, I dedicate this dissertation to all the people who have supported me throughout this adventure.

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Helsinki, June 2021

Lauri Palsa

List of Original Articles

The thesis is based on the following original articles, which will be referred to in the text by their Roman numerals I–III.

- I Palsa, L. & Ruokamo, H. (2015). Behind the concepts of multiliteracies and media literacy in the renewed Finnish core curriculum: A systematic literature review of peer-reviewed research. *Seminar.net—International Journal of Media, Technology and Lifelong Learning*, 11(2), 101–119.
- II Palsa, L. & Mertala, M. (2019). Multiliteracies in local curricula: Conceptual contextualizations of transversal competence in the Finnish curricular framework. *Nordic Journal of Studies in Education Policy*, 5(2), 114–126.
- III Palsa, L. & Mertala, M. (2020). Disciplinary contextualisation of transversal competence in Finnish local curricula: The case of multiliteracy, mathematics, and social studies. *Education Inquiry*.

The articles can be found at the end of the dissertation. Article I and the accepted manuscripts of Articles II and III are reproduced with the kind permission of their copyright holders.

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List of Abbreviations

CBE	Competence-based Education
OECD	Organisation for Economic Co-operation and Development
EC	European Commission
EU	European Union
NLG	New London Group
NLS	New Literacy Studies
TENK	Finnish National Board on Research Integrity
UNESCO	United Nations Educational, Scientific and Cultural Organization

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1 Introduction

The relationship between the development of education and the changes in the surrounding world creates an endless cycle for scholarly and policy interest. How to make education the most relevant and meaningful for learners in a world that, with all of its diversity, is in a constant movement? As the world is in a state of continuous and complex change, there is not a fixed understanding of the necessary abilities, knowledge and skills for tomorrow's societies. This makes the issue of defining curriculum contents a matter for discussion in educational policy making. Traditionally, the curriculum has focused on educational inputs, that is, describing the contents that should be taught in schools (Priestley & Philippou, 2019; Psifidou, 2009; Sinnema & Aitken, 2013). However, the focus has increasingly been placed on the outcomes of education, that is, to determine the skills and knowledge that pupils should acquire through their education (Williamson, 2013, pp. 20–21). This change from a subject-specific perspective towards competence-based education (CBE) has been recognised as one of the most significant trends in national curricular development (Gervais, 2016; Lobanova & Shunin, 2008; Nordin & Sundberg, 2016; Priestley & Sinnema, 2014). Simply put, what are the pupils expected to be able to master when educated?

The rationale behind this change of perspective is argued based on the relevance of education. For example, Erstad and Voogt (2018, p. 21) highlight this challenging relationship between societal change and the development of educational systems by stating 'the needs for new skills and competencies are already existing in society, while the youngsters entering the school system now will be leaving this system and entering the labor market in 10–15 years'. When taking into account the pace of technological and societal change, more applicable aims are favoured over a fixed set of described knowledge. Competences are often characterised as being transversal, multidimensional and associated with the ability to cope with complex situations (Voogt & Roblin, 2012). For instance, the European Commission (2018, p. 2) argues:

In particular, it appears no longer sufficient to equip young people with a fixed set of skills or knowledge; they need to develop resilience, a broad set of competences and the ability to adapt to change.

During the latest curriculum reform, the Finnish education system took a step towards CBE as new transversal competences were introduced into the national-level core curricula (Uljens & Rajakaltio, 2017). From a historical and international

perspective, this step is not unprecedented but is rather in line with a relatively widely implemented approach in education globally (Gervais, 2016; Le Deist & Winterton, 2005; Pepper, 2011; Tchibozo, 2010).

The competences that will be needed in the future have been discussed by educational scholars and policymakers around the world (Tahirsylaj & Wahlström, 2019). Even though there may be some similar features and characteristics between the proposed conceptualisations, no final consensus has been achieved (Erstad & Voogt, 2018, p. 26). However, the broadening understanding of literacy is commonly understood as part of the presented competence frameworks (Erstad & Voogt, 2018; Voogt & Roblin, 2012). In relation to the implemented CBE, a new key concept—multiliteracy—was introduced into the Finnish educational system during the latest curriculum reform (Kupiainen, 2016). Multiliteracy, defined as ‘the competence to interpret, produce and make a value judgement across a variety of different texts’ (FNBoE, 2014, p. 22), is set as part of the continuum of literacy education in Finland (Halinen et al., 2015; Kauppinen, 2010).

Even though literacy education is traditionally seen as part of the responsibility of the discipline of the mother tongue and literature, multiliteracy crosses the disciplinary boundaries. In the Finnish core curriculum for basic education, multiliteracy is developed in all school disciplines, progressing from everyday language to mastering the language and ways of constructing knowledge in different disciplines (FNBoE, 2014). According to Luukka (2013), teachers in every discipline should consider how the goals related to multiliteracy are reflected in their everyday teaching (Luukka, 2013). The broadening conception and transversality of literacy can pose a challenge for disciplinary teachers who may have not considered literacy as part of their responsibilities. How should multiliteracy be understood in the context between the disciplines? This notion calls for empirical research focusing on the disciplinary ways to contextualise the competence concepts that cross disciplinary boundaries.

Another aspect to illustrate the variety of the competence conceptualisations is the relationship between the international discussion and national conceptualisations. Education always takes place in a certain context, and the curriculum is socially, politically, historically and culturally located therein (Hooper, 1971). Even though various actors have promoted CBE in the international setting, the ways in which the competences are implemented in national contexts can vary (Halász & Michel, 2011; Nordin & Sundberg, 2016; Weninger, 2017). More specifically, the diversity of CBE becomes more nuanced when the local contexts are considered more closely. To support the understanding of the recontextualisation of transnational education policies, more nuanced research into this international-national relationship of the conceptualisations of CBE is needed.

The Finnish formal education system is characterised by the hybrid model to organise educational steering (Lavonen, 2017). On one hand the core curriculum—

within the responsibility of the education state authority—supports and steers the provision of education. This promotes the equal implementation of comprehensive basic education. On the other hand the local curricula—within the responsibility of local education providers—set out the foundation for the contextually relevant daily school work (FNBoE, 2014). In Finland, the local curriculum is understood as a way for pedagogical development (Lavonen, 2017; Mølstad & Hansén, 2013). This is supported by the high level of autonomy of the local educational authorities and teachers have.

The Finnish curricular framework offers a particularly interesting setting to study the contextualisation of CBE for the following three main reasons: 1) the Finnish hybrid model of educational steering with a high degree of autonomy of educational providers at the local level (Lavonen, 2017); 2) the function of a local curriculum as a tool for pedagogical development (C. E. Mølstad & Hansén, 2013); and 3) multiliteracy as a new concept in the Finnish educational context, with only little research done so far (Kupiainen, 2016). Based on these grounds it is interesting to explore how CBE, an educational approach familiar from global policies, is contextualised in the curricular framework at the national and local levels.

I locate this dissertation to cross three different areas of educational research. Firstly, I contribute to the research field of literacy studies (Joutsenlahti & Kulju, 2017; Kulju et al., 2018; Lucey et al., 2013; Takeuchi, 2015) by offering an overview of and insights into how multiliteracy is contextualised in the Finnish curricular framework. Secondly, I contribute to curriculum research and especially to the field of curricular contextualisation by analysing the conceptual ways in which multiliteracy is defined in the nationwide curriculum and how it is interpreted and reconceptualised in the local settings. However, instead of focusing on commonly studied aspects of contextualisation, such as the actual education contexts—namely the schools (e.g. Garin et al., 2017; Paliwal & Subramaniam, 2006; Sahasewiyon, 2004; Smith, 2002) or teachers' perspectives (Autti & Bæck, 2019; Leite et al., 2020; Li, 2006)—I study the contextualisation within the local educational policies. Thirdly, I contribute to the research field of CBE. Transversal competences are commonly explored from the perspective of educational development, for example, in relation to various aspects of education including methods, evaluation, environments and resources (e.g. Atenas et al., 2015; Gómez-Gasquet et al., 2018; Piispanen & Meriläinen, 2019). Thus, I situate this dissertation in the wide area of research on competence-based curricula (Priestley & Sinnema, 2014; Sinnema & Aitken, 2013; Voogt & Erstad, 2018; Weninger, 2017b). Next, I introduce the research aims, the research questions and the structure of the dissertation.

2 Aims, Research Questions and Structure of the Dissertation

In this dissertation, I study the curricular contextualisation of a transversal competence of multiliteracy within the context of Finnish basic education. I have constructed the dissertation on two different theoretical levels based on the inductive logic applied in this research. Firstly, on a more specific—micro—level, I focus on the contextualisation of the individual concept of multiliteracy. Based on the analysis of this specific concept, it is possible to broaden the scope to address wider questions. On a more general—macro—level, I study the curricular contextualisation of CBE. Besides providing new empirically based knowledge, I present a theory of the curricular contextualisation of CBE. This enables me to achieve several interrelated aims at the theoretical, societal and practical levels (Table 1). Each of the three sub-studies and the integrative chapter of the dissertation contributes to the overall aims of the dissertation.

Table 1 Aims of the Dissertation

	Micro level	Macro level
Theoretical aim	To deepen the knowledge about multiliteracy as a transversal competence, I study the conceptualisation of multiliteracy in relation to the international research discussion (sub-study I) and within the Finnish local curricula in general (sub-study II) and in the disciplinary settings (sub-study III).	To further the understanding of the curricular contextualisation of CBE, I introduce the theoretical concepts of <i>conceptual contextualisation</i> and <i>disciplinary contextualisation</i> (sub-studies II & III) and a theory to understand the dimensions of the curricular contextualisation of a transversal competence (integrative chapter of the dissertation).
Societal aim	To support the development of multiliteracy education at a national level, I provide new knowledge about the concept in relation to the international research discussion (sub-study I) and deepen the contextual understanding of multiliteracy in the Finnish curricular framework (sub-studies II & III).	To support the development of education at a national level I provide new contextual knowledge of the implementation of the CBE across Finland (sub-studies II & III). The developed theory (integrative chapter of the dissertation) can help to develop national curricula in future and to design possible additional support.
Practical aim	To support contextually aware multiliteracy education, I provide knowledge on how the concept is contextualised across the Finnish local curricula in general (sub-study II) and within the disciplines of mathematics and social studies (sub-study III).	To support the curricular contextualisation at the local level, I illustrate the different dimensions of the curricular contextualisation that can be used to guide the planning of the implementation of CBE (sub-studies II & III, integrative chapter of the dissertation).

I intend to achieve the aims illustrated in Table 1 by answering the following research questions:

1. How is the definition of transversal competence of multiliteracy contextualised within the Finnish curricular framework of basic education?
 - 1.1 How is the concept of multiliteracy defined in the international research literature and how do these definitions relate to the definition provided in the Finnish National Core Curriculum for Basic Education?
 - 1.2 How is multiliteracy
 - o rationalised,
 - o defined and
 - o to be developed in Finnish local curricula for basic education at the transversal and discipline levels?
2. How is the transversal competence of multiliteracy conceptually contextualised in the Finnish local curricula for basic education?
 - 2.1 How the conceptual contextualisations of the transversal competence of multiliteracy are made in the local curricula?
 - 2.2 How are disciplinary contextualisations of the transversal competence of multiliteracy structured in local curricula?

Through these research questions, I take into account two interrelated theoretical perspectives (macro/micro). Firstly, more specifically—on a micro level—research question 1 focuses on the different contextual definitions of the concept of transversal competence of multiliteracy. The second research question focuses on from the macro perspective on the ways and structures of the curricular contextualisation of CBE in general. I answer these questions based on the research conducted in the sub-studies. Based on the empirical findings, I further the knowledge in this dissertation by presenting a theory for the contextualisation of CBE. I have structured the dissertation as illustrated in Figure 1.

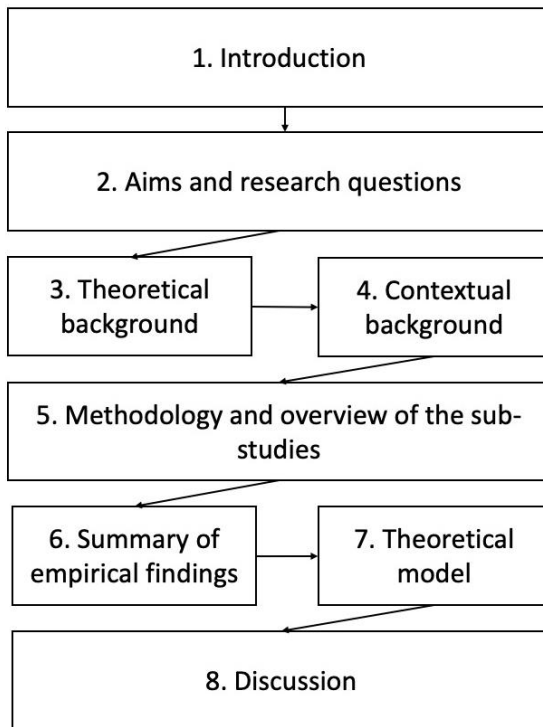


Figure 1 Structure of the Dissertation

Next, after the introduction and presenting the aims of the research, I provide theoretical and contextual background to help the reader to understand how this study is situated within the theoretical discussions in the areas of curriculum studies, CBE and literacy studies. I describe the contextual background in relation to the Finnish curricular framework and the relevant educational approach and concepts. After the background sections, I present the design of the dissertation and discuss the individual sub-studies. I have divided the results into two sections based on the main research questions. Firstly, I present the empirical findings of the analyses and then from a theoretical perspective, I introduce the theory of conceptual contextualisation that has been developed. In the concluding section of this dissertation, I evaluate the overall dissertation, discuss the implications and offer suggestions for future research.

3 Theoretical Background

The research participates in three separate academic discussions in the field of education research (Figure 2). From a specific—micro level—perspective, I construct new knowledge in the field of literacy studies concerning multiliteracy, whereas, from a broader—macro level—perspective, the study is situated in both the fields of curricular contextualisation and CBE.

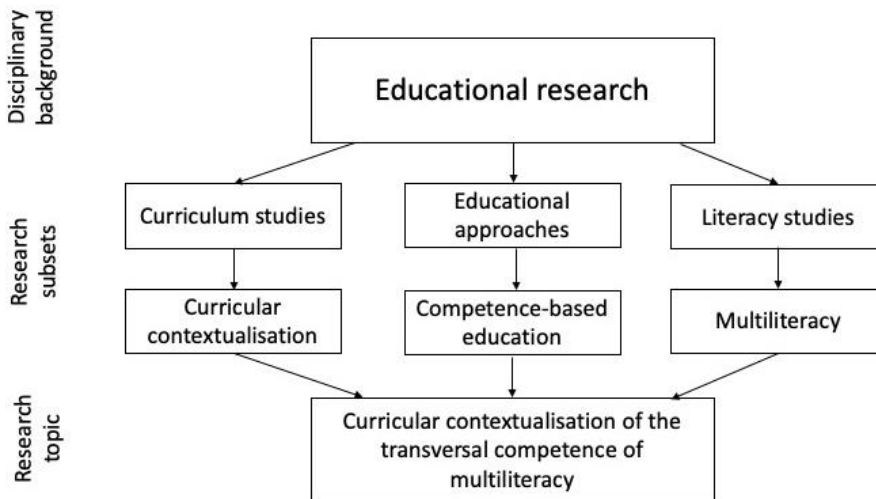


Figure 2 Theoretical Background of the Dissertation

The following sections provide the theoretical and contextual background to support the further understanding of the research and are guided based on these perspectives. Firstly, I describe the relationship between this study and the broader understanding of curriculum theory, curricular contextualisation and curriculum reform. Next, I discuss CBE to provide the necessary background to understand the role of transversal competence in the Finnish curriculum for basic education. The last sections of this chapter focus on the theoretical and contextual aspects of multiliteracy.

3.1 Curriculum

From a broad perspective, this dissertation is situated in the academic tradition of curriculum studies, for its part addressing curricular contextualisation. From the theoretical perspective, curriculum is a concept that has raised a lot of interest but no consensus about the definition has been achieved (Kelly, 2009; Schiro, 2013; van den Akker, 2004). Thus, it is useful to scrutinise different dimensions related to the concept.

A curriculum can vary based on its scope. Van den Akker (2004) distinguishes four different levels of curriculum. Macro-level curriculum refers to the widest sense of curriculum, covering, for example, the education system of a whole society or nation. Meso-level curriculum illustrates the curriculum covering the scope of a certain institution or individual school. Micro-level curriculum describes the curriculum taking place in a certain classroom. In addition, the narrowest level of curriculum is the nano-level curriculum, which can be understood as curriculum for a specific individual. (van den Akker, 2004, p. 2.)

Curriculum can have different meanings based on the perspective being scrutinised. Schiro (2013), for example, differentiates four curricular ideologies which are based on the assumptions and views of how certain central educational aspects are understood. Firstly, scholar academic ideology views the curriculum as the extension of academic disciplines which helps the learners to understand the knowledge accumulated by the academic culture. Secondly, the social efficiency ideology views the aim of the curriculum to support the learners in developing adequate skills required to function in society. Thirdly, the learner-centred curriculum ideology emphasises the needs of the individual and their special intellectual, social, emotional and physical features. Fourthly, the social reconstruction ideology prioritises the possibilities of education to facilitate the development of a more just society. (Schiro, 2013.) This variety of curriculum ideologies offers one central explanation for why it is difficult to achieve consensus. As different views can be partly contradictory and impossible to realise comprehensively, value judgements and compromises need to be made. Thus, it is important to consider the societal power relations and the prestige of various stakeholders involved in curriculum formation (Pinar, 2012).

There is also a variety of different traditions of how the curriculum and its role have been understood. These traditions are connected to different cultures. One central distinction of the traditions is between *lehrplan*—common in German-speaking countries and regions—and *curriculum*—familiar in English-speaking, Anglo-American countries (Horlacher, 2018; Saari et al., 2017). These two terms imply different kinds of reasoning and types of thinking about schooling. According to Horlacher (2017), *lehrplan* emphasises the priorities of teaching and is related to the concept of *bildung*, illustrating the holistic idea of the pure development of the

individual. Thus, in *bildung* thinking, it is seen to be important to keep the school education separate and autonomous from the surrounding society (Saari et al., 2017). The curriculum tradition, in contrast, highlights the question of the worth of knowledge and the importance of the needs of the society, such as the working-life (Horlacher, 2018; Saari et al., 2017). According to Saari et al. (2017) both of these traditions are evident in the Finnish curriculum. The high-level autonomy of Finnish teachers illustrates the *bildung* tradition connected to *lehrplan*, whereas the discourses related to behavioural sciences and capitalist market logic also connect the Finnish education system to the tradition of curriculum thinking (Saari et al., 2017). As expressed by Wang et al. (2018, p. 2092), ‘Finnish Curriculum can trace its origins back to Bildung culture, with its aims of cultivating holistic, moral individuals and individual rationality, even if the emphasis is inevitably influenced by current societal needs learned from the Anglo-American curriculum tradition’. This hybrid perspective has raised challenges for Finnish teachers in interpreting the curriculum. This is evident, for example, in the structure of the Finnish core curriculum, which divides the general part considering all education—including transversal competences—from the subject-specific parts (Salminen, 2018).

A curriculum is always formed in a certain context defined, for example, by political, social, cultural and economic interests and the history of the community (Turunen, 2011, p. 2). A broad understanding of the concept of curriculum requires an acknowledgment of its multidimensionality (Table 2).

Table 2 Overview of the Dimensions of Curriculum

Dimension of Curriculum	Description	Active Stakeholder
Planned/Intended	Official formal educational policy document	Curriculum designers / Education authorities
Interpreted/Implemented	Educational practices based on the planned curriculum	Teacher
Actualised/Received	Learning based on the experienced teaching practices	Pupil
Assessed	Curriculum content areas being assessed	Teacher / Education authorities
Hidden	Socialisation of schooling that serves to transmit tacit messages to pupil	Pupil

A curriculum is not limited only to the official version of the curriculum as a formal written document—a planned curriculum—but rather, more dimensions can be identified (see, for example, Kelly, 2009; Kurz et al., 2010; Stabback, 2016). As Marsh states, the curriculum ‘becomes a reality when teachers implement it with real students in a real classroom’ (Marsh, 2004, p. 65). Thus, while a planned curriculum

represents the intentions of the curriculum designers, the educational practice can be understood as an interpreted or implemented curriculum. There is also a distinction between the aimed educational practice and how it is actualised from the pupil's perspective. This refers to received curriculum (Kelly, 2009). Various school practices can have educational potential. For example, assessment can be understood as a form of curriculum (Porter, 2004). In addition, the hidden curriculum refers to a socialisation process that tacitly transmits values, principles and attitudes to pupils (Kentli, 2009). Various stakeholders and multifaceted understandings of the concept illustrate curriculum as a 'complicated conversation' (Pinar, 2012, p. 214).

Instead of covering all the dimensions of the curriculum, in this dissertation, I put emphasis on the multifacetedness of the planned curriculum but also scrutinise it from the perspective of the interpreted curriculum. In a multilevel curricular framework as in Finland's, which consists of a broader planned curriculum (national-level core curriculum) that creates the basis for the preparation of the planned curriculum in a certain context (local curriculum), the preparation of the local curriculum involves the interpretation and contextualisation of the broader curriculum. Thus, the local curriculum can be understood to combine both the dimensions of the planned *and* the interpreted curriculum at the same time. This nuanced perspective on the concept of curriculum can benefit the further understanding of the curricular contextualisation.

3.1.1 Curricular Contextualisation

Education systems vary, for example, on how centralised the manner the teaching is steered through the curricula (Creese et al., 2016; UNESCO, 2005). In centralised curricular frameworks, a standardised view of education organisation is emphasised, whereas in decentralised education systems the local contexts are emphasised more, and the local actors have more influence on defining the educational contents and practices (EASNIE, 2017, p. 12; West et al., 2010). Curricular contextualisation is one of the central themes in discussions about teaching and learning as more focus and attention are given to the different contexts and realities of the practical education (Fernandes et al., 2013; Garin et al., 2017). Contextualisation can refer to the instructional strategies to link the learning of 'foundational' skills and academic content by focusing the teaching in a specific context (Kalchick & Oertle, 2010). However, no consensus about the meaning of the concept has been achieved. Based on their literature review, Fernandes et al. conclude that 'curricular contextualisation is presented in the literature as a key concept able to promote meaningful learning—and a potential tool for constructing egalitarian educational processes' (Fernandes et al., 2013, p. 419). Context-based approaches in education can help to make connections between the educational concepts and 'real-world' applications (King et al., 2008) aimed, for example, at increasing the authenticity of education (Weninger, 2017a). This has been seen to make the education more interesting and motivating

(Leite et al., 2018). In addition to the academic success, curricular contextualisation is used to promote students' development in general, such as supporting critical thinking and active citizenship. In addition, contextualisation can develop education towards broader inclusivity—by contextualising the education, it is possible to take into account the diverse backgrounds of the students (Fernandes et al., 2013; Leite et al., 2020). Contextualisation highlights not only the meaningfulness and relevance of the curriculum to the pupils but also the need to understand curriculum development and teaching in a broader manner (Fernandes et al., 2013). Curricular contextualisation relates to various other educational approaches, such as place-based education (McInerney et al., 2011), situational education (Tennant, 2000), authentic learning (Roach et al., 2018) and community-based education (Baldridge et al., 2017).

However, several challenges have been identified in the process of contextualisation in different education systems. For example, in Portugal, it has been noted that the national curriculum can complicate the process of contextualisation if the amount of mandatory content is too high and the teachers do not have sufficient time (Leite, et al. 2018). Similar challenges have also been recognised in Norway (Rød & Bæck, 2020). Another identified challenge for the contextualisation is related to the standardisation of the education. For example, the existence and the meaning of regular national exams does not encourage contextualisation or deviance from the formal contents of the curriculum but rather focuses on success in the exams. As explained by Leite et al. (2018, p. 447), 'the teachers felt that preparing students for the national exam demands that all extra time be spent reinforcing content instead of reinventing and using new strategies'. Alternatively, the design of the national curriculum can enable teachers to consider the local perspective, for example, through creating and enacting local contents in education (Rød & Bæck, 2020).

Various aspects of curricular contextualisation have been identified (Fernandes et al., 2013). Firstly, a *place-based* approach highlights the importance of place—including cultural aspects—to pupils. In *student-based* curricular contextualisation the teaching is adapted to the interests, needs and experiences of the pupils (Leite et al., 2018). *Pedagogical practice-based* curricular contextualisation highlights the role of teachers and focuses on the pedagogical activities that take place in the educational setting. An approach highlighting *cultural diversity* in curricular contextualisation takes into account the diversity of the pupils when designing the pedagogical processes. Also, *disciplinary contents* can be understood as main elements of curricular contextualisation. As explained by Leite et al. (2018, p. 446), curricular contextualisation 'allows teachers to relate disciplinary content to students' previous knowledge and to show that the apparently abstract curricular content is useful and applicable in real-life situations'.

Instead of situating this dissertation as a specific approach in the curricular contextualisation discussions, I will propose an alternative take on the issue—a

competence-based curricular contextualisation. Such an addition is needed as the role of CBE can transcend the different curricular areas, such as pedagogical practices and disciplinary contents (see Section 3.2), and thus requires a broader approach than is offered by the existing models.

3.1.2 Curriculum Reform

One of the central ways to develop an education system is through curricular reforms (Lavonen, 2020; Marsh, 2004, p. 116). This is a way to keep the education up to date in relation to the developments and trends in the surrounding world. Curriculum reform can take various forms depending on its aims and broadness. Such reforms can be categorised, for example, as additive reforms (i.e. introduction of new programmes), external reforms (i.e. changes in qualifications or certifications), regulatory reforms (i.e. new core curriculum) and structural reforms (i.e. changes in education structures) (Plank, 1988). Curriculum reforms are contextual, taking place in a certain society, culture and education system (Pietarinen et al., 2017).

Curricular reform is a multifaceted process which involves a variety of stakeholders. One of the central features of curriculum reform is the coherence of the curriculum (Sullanmaa, 2020). This consists of the following three different elements: 1) consistency of the intended direction; 2) an integrative approach to teaching and learning; and 3) alignment between objectives, content, and assessment. However, different stakeholders at various levels within the educational system can have different understandings about the coherence (Sullanmaa, 2020). The success of educational reform has been studied from the perspective of educational leadership. A central aspect of curricular reform is the work of various stakeholders and their conceptual awareness, their contextual knowledge and their ability to translate the ideas behind the reform into practice (Uljens & Rajakaltio, 2017, p. 64). These aspects are evident in the research on curricular contextualisation (Fernandes et al., 2013; Leite et al., 2020).

Teachers play an important role in educational reform, such as in the way they contextualise the curriculum in practice. As Salminen (2018, p. 5) describes, ‘the realisation of the curriculum’s goals in the everyday life of the school requires that the curriculum manages to properly guide teacher’s work’. In addition to the design of the curriculum, teachers’ curriculum competence plays an important role in the process. This competence is not a simple set of skills; rather, its development is a broad and long-lasting process. In addition to the knowledge and work experience, teacher education also is in a key position to provide teachers the needed competences to successfully work in relation to the educational reforms and introduced curricula. It can be assumed that teachers face several curriculum reforms during their professional career. Thus, the education on curriculum competence should not focus on the implementation of only a certain type of a curriculum but provide more applicable and broader professional competence. (Salminen, 2018.)

3.2 Competence-based Education

CBE has gained a lot of interest over the last few decades. From a historical perspective, the origins of CBE are usually traced to the 1960s and 1970s (Gervais, 2016; Morcke et al., 2013; Tchiboza, 2010). Since then, the field has broadened widely, and the discussion has become multifaceted (Frank et al., 2010; Gervais, 2016; Hernández-de-Menéndez & Morales-Menendez, 2016; Le et al., 2014). Global developments and different traditions have led to different conceptualisations, practices and understandings within CBE (Le Deist & Winterton, 2005; Tchiboza, 2010; Gordon et al., 2009; Ananiadou & Claro, 2009).

CBE is promoted for various reasons. One prominent theme is that CBE is better suited to the needs of contemporary (and future) working life than content-based education (Gordon et al., 2009; Le Deist & Winterton, 2005). The idea of promoting the relevance of education in relation to working life through competences has been seen as illustrating the growing impact of the labour market on education systems (Halász & Michel, 2011, p. 290).

Competences are conceptualised in different fields, such as through international and national policy initiatives and academic research (Tahirsylaj & Sundberg, 2020). Besides the formal conceptualisation, competences are also used in everyday settings (Mäkinen & Annala, 2010). In academic discussions CBE has been scrutinised from different perspectives including behaviourist, functionalist and humanistic learning theories (Gervais, 2016). Despite the growing interest, there is no consensus about the meaning of the concept, not even within specific disciplines (see for example, Fernandez et al., 2012).

In addition to the conceptual perspective on competences, it is also important to consider the structural aspect of CBE (i.e. the role of competences within the curriculum). According to Erstad and Voogt (2018), competence frameworks can differ based on the relationship between the generic and transversal competences and the core subjects. Disciplinary competences are particular to the specific discipline, whereas transversal competences are more generic competences that transcend different fields. Different competences are most commonly integrated into the education systems across the curriculum rather than as separated subjects (Ananiadou & Claro, 2009; Voogt & Roblin, 2012).

In CBE, the focus moves from the educational contents (input) to the mastering of specific competences (outcomes). Simply put, the defined competences specify what the pupil is expected to be able to do after their education (Hernández-de-Menéndez & Morales-Menendez, 2016). According to Tchiboza (2011), one of the central characteristics of CBE is to promote the pupil's ability to mobilise different resources to master complex situations. Instead of just defining the contents of the different school disciplines, the competence-based curriculum also emphasises various other aspects pupils are

expected to master, such as different attitudes, skills, abilities, behaviours and values (Halász & Michel, 2011).

In addition to outcome-based education, CBE has strong links to other educational approaches as well (Ford & Meyer, 2015; Morcke et al., 2013). Similarly, various concepts are used in the discussions focusing on CBE. These include terms such as skill, know-how, capacity, ability, aptitude and capability (Halász & Michel, 2011; Tahirsylaj & Sundberg, 2020; Teodorescu, 2006). Competences are also closely related to the notion of competency. Even though both concepts have differing traditions, they are often used in a similar manner and even as synonyms. The term competence may be more evident in the European setting and competency is emphasised more in the American tradition (Anderson-Levitt, 2017; Mäkinen & Annala, 2010). One way to perceive the difference between these conceptualisations is that competences are used to highlight categorisations of skills, whereas competencies are used to emphasise the activities and potentials of individuals in terms of what kind of processes are required in successful performance (Mäkinen & Annala, 2010). However, the line between these perspectives is not completely solid in the sense that there is no consensus about the definitions and the concepts are used interchangeably manner (Tahirsylaj & Sundberg, 2020). In addition, it has been noted that the term competence is more and more commonly defined in a broader and more holistic manner which blurs the boundaries between the perspectives (Mäkinen & Annala, 2010). In Europe, different terms have been used to describe competences, such as generic, core and key competences or basic skills (European Commission/EACEA/Eurydice, 2012; Gordon et al., 2009). In this research, CBE refers to all educational approaches aiming to develop the competences of pupils (Anderson-Levitt, 2017). In this dissertation, I acknowledge the diversity of the conceptualisations but for contextual clarity I focus on the concept of competence. Competence is used by the Finnish policy makers (Halinen et al., 2015; Halinen, 2018) and in the English translation of the Finnish core curriculum as well (FNBoE, 2014). A more nuanced understanding of the educational approach can be pursued by illustrating how the approach is adopted and conceptualised in different parts of the world.

3.2.1 Competence Frameworks

CBE has been implemented throughout the educational continuum. One of the central features of the approach is the link between education and the wider society. The idea behind CBE is strongly related to the applicability and relevance of education, such as from the perspective of working life and societal participation (Gervais, 2016). From this perspective, it is understandable that a lot of the development of CBE has been done in the context of vocational education (Tchibozo, 2010). According to Ford and Meyer, employers' expectations have pushed the educational institutions to design education models that align with

the working life (Ford & Meyer, 2015). Besides vocational education, CBE has been applied in various educational settings, such as in primary and secondary education (European Commission/EACEA/Eurydice, 2012), in higher education (Sorensen et al., 2017) and in lifelong learning (Pepper, 2011), such as in-service training and human resource development (Le Deist & Winterton, 2005).

CBE is promoted, applied and developed in various parts of the world in different contexts. After its introduction in the United States, Canada and the United Kingdom, CBE approaches were applied in other countries, such as in Australia, New Zealand, South Africa, China, in Mexico and Central American countries and also in Europe (Gonczi, 2000; Tchibozo, 2010; Wang et al., 2018), including the Nordic countries, such as Finland. Ananiadou and Claro (2009) found that different competences had been adopted in the national curriculum in many OECD countries (Ananiadou & Claro, 2009). However, it is important to note that often the scope of the implementation of CBE can be exaggerated, and from the global perspective, the approach is not as widely integrated into education systems (Anderson-Levitt, 2017). One of the reasons for the wide implementation of the educational approach is that it has been promoted in the transnational educational policies and by various international actors. The importance of developing competences is recognised, for example, in the EU (European Commission/EACEA/Eurydice, 2012). In Europe, the rationale for CBE in the 1990s originated from the unemployment crisis (Tchibozo, 2011). CBE has been seen to have potential to develop the qualification of the labour force and to promote labour mobility (Le Deist & Winterton, 2005). In Europe, the implementation of the key competences in the educational systems is analysed by a specific network, KeyCoNet (European Commission/EACEA/Eurydice, 2012). The development of competences is also a priority of the Nordic educational policy through the agenda proposed by the Nordic Council of Ministers (2021). This international diversity in CBE creates a need to further understand how the educational approach is implemented and contextualised in different educational settings.

In addition to the definition of the term competence, another question is to determine what the specific competences are. Over the years, many different competence frameworks have been introduced (European Commission/EACEA/Eurydice, 2012; Gordon et al., 2009). There are a great deal of similarities and consistency between the contents of the introduced frameworks, but they differ extensively in terminology and categorisations. Common themes of the competences are related to collaboration, communication, ICT literacy and social and/or cultural competences (Voogt & Roblin, 2012, p. 315). Frameworks often focus on foundational competences, meta-competences and life competences (Erstad & Voogt, 2018). Competences can also be interrelated in the sense that the development of one can facilitate the acquisition of another. Some educational practices can

also support the development of various competences (European Commission/EACEA/Eurydice, 2012; Hernández-de-Menéndez & Morales-Menendez, 2016). This conceptual diversity can result in difficulties in educational planning and development when there is no uniformity of the educational approach, or it can be understood differently. The conceptual variance of the competences illustrate their role as part of the educational policy in which variety of different stakeholders with differing aims and worldviews are involved (Kinnari, 2020). Defining competences is a matter of choices and value judgements. Some aspects are included, while others are excluded. From this perspective, the CBE should be evaluated in terms of the contents of the competences defined in the specific context.

Implementing CBE at the level of practice is a complex process that—at different levels—involves the participation of different stakeholders and educational steering structures, such as education policies. A more strategic approach is needed in the implementation of CBE (European Commission/EACEA/Eurydice, 2012). For example, Eurydice highlights the importance of the national curriculum as a way to direct and guide the efforts at the local level. According to the report, the autonomy of the schools and growing decentralisation are important to take into account. The implementation can be supported by clarifying competences associated with the different areas of the curriculum (European Commission/EACEA/Eurydice, 2012).

3.2.2 Competence-based Education in Transnational Education Policies

A question about the meaning of competences is at the heart of the educational policy initiatives concerning CBE. Frameworks for CBE are often presented and promoted by many of the international actors working in the field of educational policy and have supported the implementation of CBE at the national levels (Ananiadou & Claro, 2009). Particularly the work by the OECD and EU/EC has been influential on CBE (Tahirsylaj & Sundberg, 2020). To illustrate the role of CBE in transnational education policies and differing perspectives, I refer to three different examples. These examples were chosen based on their significance and varying perspectives. In addition, they have different geographical scopes. The first and second frameworks highlight the global perspective while the third focuses on the European level.

Firstly, an example influencing the understanding of competences from a global perspective is the *Definition and Selection of Competencies: Theoretical and Conceptual Foundations* (DeSeCo) programme launched in 1997 by the OECD. This programme aims to provide a theoretical and conceptual basis for competences. DeSeCo classifies competences under the following three main categories: 1) using tools interactively, 2) interacting in heterogeneous groups and 3) acting autonomously (OECD, 2005). The presented competence frameworks are not static but they are updated and new frameworks are presented, for example, based on the 'new risks

and opportunities related to the recent socio-economic and ecological paradigm shift' (Rychen, 2019, p. 2). The latest conceptualisation of competences by the OECD is related to the Learning Compass 2030 programme, which includes three transformative competences as one of the central parts of the broader framework. These competences that are based on the original work of DeSeCo are 1) being able to create new value, 2) reconciling tensions and dilemmas and 3) learning how to be responsible.

Secondly, as an example to illustrate the humanistic perspective on competence development, I refer to the influential report *Treasure within* by UNESCO which proposed four pillars of education (Delors, 1996). These pillars, namely 1) learning to know, 2) learning to do, 3) learning to live together and 4) learning to be, were proposed to form the basis of education for life-long learning. Thus, they can be understood as competences required of every pupil to develop. What is relevant to acknowledge is the role of the pillars in representing a vision of the future. As argued in the report, 'choosing a type of education means choosing a type of society' (Delors, 1996, p. 41). Because these pillars were aligned with the moral and intellectual values of UNESCO, the framework was more humanistic and less instrumental and market-driven than similar initiatives at the time (UNESCO, 2015).

Thirdly, from European level policies, one example of the latest competence frameworks is the *Council Recommendation on Key Competences for Lifelong Learning* (2018). It is aimed at providing a common European reference framework on competences, for example, to the policymakers, education providers and the learners themselves. This framework consists of eight competences, as follows: 1) literacy; 2) multilingualism; 3) numeric, scientific and engineering skills; 4) digital and technology-based competences; 5) interpersonal skills, and the ability to adopt new competences; 6) active citizenship; 7) entrepreneurship; and 8) cultural awareness and expression. This framework situates as part of the longer tradition of the CBE policy in the EU, which connects the areas of educational, economic and social policy (Telling & Serapioni, 2019). In the policy initiative, the competences are reasoned to be needed for personal fulfilment, health, employability and social inclusion.

These three examples of the competence frameworks introduced by the OECD, UNESCO and the Council of the European Union illustrate that the educational approach of CBE can be understood to be an important part of global and international policy initiatives. CBE is a matter of education policy, promoted by various stakeholders, that often transcends national boundaries. In addition, these examples illustrate that competences are not neutral but rather are linked to the broader perspectives based on the aims of the stakeholders. The competences introduced by the OECD are rationalised from the perspectives of globalisation and modernisation that play a part in creating a more diverse and interconnected world. In the DeSeCo programme, competences are seen as a part of human capital

important for sustainable development and social cohesion (DeSeCo, 2020). However, based on the broader aims of the OECD, the rationale behind the DeSeCo programme has been connected to market logic. Through competences, it is possible to standardise differing education systems and thus promote the competitiveness of the societies (Miettinen, 2019). The four pillars as the basis for education proposed by UNESCO illustrate a more humanistic approach to the development of education by considering the growth of the whole person to be a foundational part of education (UNESCO, 2015). In the European policies, CBE was presented as a solution to various challenges as early as the 1970s. The shift from the time in the private sector towards human resource assessment and the general dissatisfaction with dated disciplinary knowledge paved the way for the foundation phase of CBE in EU policies, whereas, at the beginning of 2000s, the meaning and role of CBE increased due to the growing economic salience in education. In addition, after the great recession, in the early 2010s, the scope of CBE widened to cover ideas of fostering cohesion and intra-European solidarity. (Telling & Serapioni, 2019.) In the latest framework, competences are rationalised to be important for personal fulfilment, a healthy and sustainable lifestyle, employability, active citizenship and social inclusion (Council Recommendation on Key Competences for Lifelong Learning, 2018).

Thus, it is important to acknowledge that even though the presented frameworks may have similar features, they are not identical, and critical evaluation is needed. From a critical perspective, the power relations behind the competence descriptions cannot be neglected. By explicating the standardised skills and knowledge pupils are expected to master, competence conceptualisations represent a construction of the ideal citizen. This can be understood as a way of governance (Kinnari, 2020). According to Kinnari (2020, p. 326), ‘the key competences construct normative citizenship of the European information society’. And this applies in the national contexts as well. In Finland, the competences introduced in the curriculum illustrate the knowledge, skills, attitudes and values that the designers of the curriculum view that individuals need ‘in order to live a good and meaningful life and to be able to function and work as a constructive member of society.’ (Halinen, 2011, p. 78). From a broader perspective, competence descriptions are aptly adjusted to reflect the vision of the future societies and world their presenters have. For example, in Finland, the curriculum designers have noted that in addition to the individual perspective, ‘descriptions of competencies include a vision of the desirable development of society’ (Halinen, 2011, p. 78). To further evaluate the values and aims of the competences, it is important to focus them on the context in which they are implemented.

In addition, it is valuable to notice that—within the international policy initiatives—competences are not only promoted through the introduction of formal frameworks but also through evaluations and assessment (Miettinen, 2019).

For example, the Programme for International Student Assessment (PISA) by the OECD evaluates a variety of competences, such as a global competence (Sälzer & Roczen, 2018) and specific competences in science education (Lavonen & Laaksonen, 2009).

3.3 Multiliteracy in New Literacy Studies

The importance of literacy is widely recognised, and it has gained a lot of scholarly interest around the world. Literacy is a central concept to describe decoding and encoding texts (Purcell-Gates et al., 2006), namely the ability to read and write. This traditional view can be understood as a formal type of literacy conception (Vlieghe, 2015). Traditionally, literacy has been seen as a key factor from economic, democratic and participatory perspectives, and it has been argued to greatly influence the lives of individuals creating bright future prospects (Kalman, 2008). Literacy has been viewed as so important that there is a wide acceptance of defining it as a human right (Moretti & Frandell, 2013). Despite the broadly recognised importance, there is no universally accepted definition of what literacy means or what constitute the criteria for being literate (Keefe & Copeland, 2011). Direct definitions can fail to cover the complexity of literacy. As argued by Kalman (2008), a more nuanced understanding of contextual and local literacy practices is needed.

Through various societal, cultural and technological developments and changes in the world, the notion of literacy has broadened. For example, the evolution of digital technologies and media culture have brought about new means and possibilities for communication, information and expression (Picard, 2015). This broadening notion of literacy is related to the multifacetedness of text as well. Media text can be constructed using various forms of communication, such as visual elements and images, sounds and audio and written forms (Buckingham, 2003). Cultural developments such as globalisation and growing possibilities for cultural interconnectedness have made visible the need to understand different ways of meaning-making. In addition to traditional literacy, this broadened understanding has led to new conceptions and conceptualisations of literacy (Stordy, 2015), such as media literacy (Potter, 2013), cultural literacy (Hirsch, 1983), information literacy and meta-literacy (Mackey & Jacobson, 2011). These broadening and evolving notions of literacy are rooted in the conceptualisations of the new literacy studies (NLS) (Street, 1997).

Compared to traditional views on literacy, NLS are based on changing ideas about language and literacy. From the perspective of NLS, literacy is not understood as a technical ability but rather as a social practice. Street (1997) illustrates the multiplicity of literacies with the concept of social literacies. This refers to the idea that literacy is embedded into social practices situated in certain contexts. As

expressed in relation to formal education, Street (1997, p. 48) highlights that ‘the school, like other contexts, has its own social beliefs and behaviours into which its particular literacy practices are inserted’. Thus, rather than a single conception of literacy, the meaning of the concept always depends on the social context. NLS can be understood to focus on culturally contextual literacies (Street, 2005). In NLS, the traditional standardised view of literacy is conceptualised representing the *autonomous model of literacy* (Street, 2005). In this model, literacy is assumed to have a positive influence on people, such as in regard to economic success and higher cognitive skills. In addition to literacy, NLS highlights the role of other social factors, such as political and economic realities and social structures (Gee, 2008, p. 80; Street, 1997). This *ideological model of literacy* focuses on the contextually varying literacy practices and conceptualisations. Literacy is seen to be always embedded in certain worldviews, and thus no literacy conceptualisation is neutral but is rather ideological (Street, 1997). As explained by Gee (2008, p. 67), the traditional view of literacy ‘cloaks literacy’s connections to power, to social identity, and to ideologies, often in the service of privileging certain types of literacy and certain types of people’. Over the years, the field of NLS has broadened and diversified. For example, Mills (2010) noted that different research studies in NLS take into account the developing media culture, namely the influence of digital technologies on communication practices.

In NLS, the work of the New London Group (1996), or NLG, has been especially influential. Cooperation between scholars around the world and disciplinary perspectives resulted in a theory and conceptualisation of a pedagogy of multiliteracies. This pedagogical approach consists of four central elements, namely situated practice, overt instruction, critical framing and transformed practice. Cope and Kalantzis (2009) have further developed these aspects into the more understandable *pedagogical acts* or *knowledge processes*. These include experiencing, conceptualising, analysing and applying. The authors highlight the fact that these different processes do not form a pedagogy in a singular way but rather they are a way broaden the pedagogical repertoire for educators. Firstly, experiencing acknowledges that human cognition is contextual. This relates, for example, to the connections between school learning and pupils’ experiences from everyday life and between familiar and unfamiliar texts. Secondly, conceptualisation refers to a knowledge process in which learners have an active role in explicating tacit knowledge and making generalisations from the particular. In the education context, analysing refers to functional analysis—for example, reasoning, analysing logical and textual connections and drawing conclusions—or the analysis of power—for example, the understanding and evaluation of different perspectives, interests and motives. Applying refers to the process of applying knowledge and understanding in different situations, such as evaluating their validity or creatively taking into account the interests and experiences of learners. (Cope & Kalantzis, 2009, pp. 185–186.)

The original work introducing the pedagogy of multiliteracies has inspired scholars around the world (Zhang et al., 2019). In the primary school setting, even though multiliteracies have been studied on the basis of the work by the NLG, the studies address the issue from various theoretical perspectives. According to a review by Kulju et al. (2018), these include social semiotics, multimodality, sociocultural and sociolinguistic theories. These theories relate to the earlier notions of the NLS. As explained by Mills (2010), literacy in the theoretical tradition is commonly understood as a variety of changing purposeful meaning-making practices that are utilised in different social and cultural contexts. The social aspect relates to the notion that knowledge is constructed in a certain groups instead of the cognition of individuals themselves. (Mills, 2010.) The explication of these approaches can further the understanding of the theoretical relevance and foundations of multiliteracies. These theories emphasise the role of diversity and the contextuality of literacy.

According to Zhang et al. (2019, p. 35) the framework of multiliteracies reflects ‘the extension and oscillation of the existing traditions and epistemologies of literacy’. Behind the original conceptualisation of multiliteracies are two interrelated changes and developments—globalisation and technological development. Plurality in multiliteracies relates closely to both of these developments. Based on the societal changes in the world, the NLG identified several abilities in their original article. According to them, teachers need to help students develop skills to ‘speak up, to negotiate, and to be able to engage critically with the conditions of their working lives’ (The New London Group, 1996, p. 67). In addition, students should be prepared to negotiate

regional, ethnic, or class-based dialectics; variations in register that occur according to social context; hybrid cross-cultural discourses; the code switching often to be found within a text among different languages, dialects, or registers; different visual and iconic meanings; and variations in the gestural relationships among people, language, and material objects (The New London Group, 1996, p. 69).

The NLG (1996, p. 69) also explain that students can develop meta-cognitive and meta-linguistic skills when they appose different languages, discourses, styles and approaches.

Within formal education, literacy has been traditionally seen as part of language education. However, as the conception of literacy has broadened, more focus has been put on a nuanced interdisciplinary perspective of literacy education and the role of language in different settings. Language awareness is a term that has been used since the 1980s to describe the consciousness of language and its use in schools (Fairclough, 1992, p. 1). The term *knowledge about language* is also used in a similar manner (Andrews & Lin, 2017). Language awareness consists of the notion that

teachers need to be aware of the ways in which the language and text are employed in their disciplines to represent and construct reality (Harmanen, 2013). There are different conceptions about language awareness depending on, for example, the rationale for language awareness. Fairclough (1992) differentiates the approaches of critical and non-critical language awareness by highlighting the social aspect of language and the relationship between power and language. According to Fairclough (1992, p. 6), 'linguistics which contents itself with describing language practices without trying to explain them and relate them to the social and power relations which underlie them, seems to be missing an important point'. Another aspect related to language awareness relates to the specific use of literacy and language within the different disciplinary settings. Disciplinary literacy is a concept that captures the discipline-specific ways of knowing, cultures and means to construct knowledge and critique (Moje, 2015).

4 Contextual Background

To support the reader in understanding the dissertation in a thorough manner, I describe the context of the research in this chapter. The chapter is constructed in line with the theoretical background consisting of the topics of curricular contextualisation, CBE and multiliteracy. Firstly, I describe the curricular framework within the Finnish education system to provide further knowledge about the situational possibilities of the contextualisation. Secondly, in relation to CBE I illustrate how transversal competences were introduced into the Finnish education system during the latest curriculum reform and what kind of role they have within the curriculum. In the last section, I focus specifically on the transversal competence of multiliteracy. In addition to presenting the definition of multiliteracy in the Finnish core curriculum, I discuss the conceptual variance of the term.

4.1 The Curricular Framework in Finland

In Finland, the educational steering has been organised through multilevel curricular framework. As illustrated in Figure 3, the core curriculum as a regulation creates the basis for the local curricula, designed by the local education providers, mostly the municipalities. The annual plans of individual schools are formed based on the local curricula.

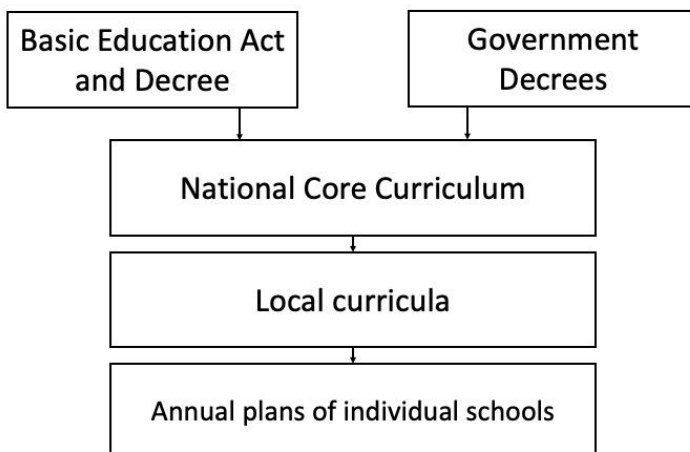


Figure 3 Curricular Framework in Finland

The aim of the national-level core curriculum is to guarantee educational equality and high quality across the nation by providing a set of common values, curricular content, educational objectives and evaluation criteria that needs to be applied in the municipal and school-level curricula (Krokkfors, 2017; Lavonen, 2017; Vitikka et al., 2016, p. 84; FNBoE, 2014, p. 9). In addition to public education, the few private schools in Finland also have to develop their local curriculum in accordance with the same national core curriculum (Halinen et al., 2015, p. 138).

In Finland, the frequency of curricular reforms for basic education is approximately once in a decade. The latest core curriculum was published in 2014 and the previous ones in 2004, 1994, 1985 and 1970. It is important to notice that curriculum work is not done solely as a national process but that the context is broader. For example, Uljens and Rajakaltio (2017) have noted that in the Finnish curriculum work individual, local, national and global perspectives are visible. In Finland, the preparation of the core curriculum is usually conducted as a process led by a top-down approach from the educational administration to the level of a single school, but there is a strong emphasis on the local perspective representing a form of bottom-up approach in educational development (C. E. Mølsted, 2015). This hybrid model of curriculum implementation is seen to provide an effective way to facilitate sustainable education reform, such as by supporting collective learning for those involved (Tikkanen et al., 2019).

The preparation of the core curriculum is a long process. In Finland, the planning work for the national core curriculum—published in 2014—started in 2012. The work was organised and led by the Finnish National Agency for Education, but its role can be understood as a mediating one. The agency coordinated the process and enabled the participation of various stakeholders, such as education experts, researchers, administrators, teachers, teacher trainers, trade unions, authorities, non-governmental organisations and other organisations, in the preparation process, for example, through working groups and online consultation groups. (Lavonen, 2020; Uljens & Rajakaltio, 2017.) The national core curriculum is prepared in line with the governmental acts and decrees¹, and it has a regulatory status (FNBoE, 2014; Halinen et al., 2015). Contrary to the process in some other countries, the curriculum reform in Finland is led mainly by the officials rather than by politicians (Pietarinen et al., 2017).

Curriculum designers are in a key position to decide how transnational educational policies are taken into account in the national setting (Sivesind et al., 2016). According to Uljens and Rajakaltio, during the preparation process in Finland, the experts from the Finnish National Agency for Education reviewed

1 Basic Education Act (628/1998), Basic Education Decree (852/1998), Government Decrees on the national goals of education and distribution of lesson hours in basic education (422/2012) and (378/2014), and Government Decree amending the Basic Education Decree (423/2012).

the current research and evaluations made in Finland and internationally. The educational policy and transnational educational trends from different countries were also mapped out, and the documents published by the EU and OECD were studied as well (Uljen & Rajakaltio, 2017, p. 427). These include the analyses of the 21st-century competences (Lavonen, 2020).

During the latest curriculum reform in Finland one clear transition and change was a move towards a competence-based approach in education by introducing new transversal competences. As Uljen and Rajakaltio (2017, p. 432) state, 'while the curriculum 2004 put emphasis on contents, the curriculum 2014 emphasises the general objectives in terms of key competencies'. According to Halinen et al. (2015, p. 139) one of the key principles in curriculum reform was the 'enhancement of and high level of transversal and subject competences'. The transversal competences introduced in the Finnish core curriculum are seen to have many similarities with the competence frameworks presented at the level of the EU (Uljen & Rajakaltio, 2017, p. 431). This can be understood as an outcome of transnational policy transfer based on the international assessments and frameworks (Sivesind et al., 2016, p. 358).

After the publication of the core curriculum in 2014 the educational reform continued through the development of the local curriculum—approved on the 1st of August 2016—and the planning of the annual plans for individual schools. The phased implementation of the new curriculum started at the beginning of the 2016–2017 school year (Halinen et al., 2015). The National Agency for Education supported the implementation of the curriculum in various ways, for example, by providing supporting materials, through networks and on websites, such as *e-Perusteet* (Uljen & Rajakaltio, 2017). To understand the relationship between the national level core curriculum and the local curriculum, I refer to the study by Mølsted (2015, p. 455) as she states that the Finnish local curriculum is 'defined as a pedagogical tool for conceptualising and supplementing the national curriculum and is legitimised through the emphasis on the process as conceptualisation'. Local curricula play an important part in the educational steering and curricular framework since they both define the implementation of the national targets presented in the core curriculum and describe the tasks considered important locally.

When preparing local curricula, the education providers are instructed to supplement the aims and content defined in the national-level curriculum (FNBoE, 2014, 2014, p. 9). However, this does not mean that education providers receive strictly defined guidelines or regulations for the implementation; quite the contrary: when preparing local curricula, education providers are instructed to identify 'what the potential local emphases of the transversal-competence areas defined in the Core Curriculum [are], and how these emphases are manifested in practice' (FNBoE, 2014, p. 25). Without clear rules and guidelines from the national level, the education providers have a high level of autonomy in the preparation process

of the local curriculum. This opens up the possibility for the development of the local curriculum (Mølstad, 2015). Depending on the local setting, the preparation can take various forms. For example, there are different strategies to organise the local curriculum work and involve various stakeholders, such as education officers, principals, teachers, parents, guardians, youth workers and local organisations in the process (Lavonen, 2017; Pyhältö et al., 2018; Tikkanen et al., 2019).

The local curriculum is not a static document but a pedagogical tool that can be updated when needed. For example, Autti and Bäck (2019) describe the realities of the preparation of the local curriculum by highlighting the central role of principals and teachers. According to their study, based on the high level of pedagogical freedom, the teachers participate in the actual writing of the local curriculum document while making concrete decisions about contextualisations at the same time. For example, Lavonen (2017, p. 7) describes that the preparation of the local curriculum

allows teachers to consider different variations in the circumstances they encounter in their local schools and the differences in their students' competences and backgrounds. Therefore, the preparation and implementation of the local curriculum offer the opportunity to provide equal circumstances for learning.

The high level of pedagogical freedom is based on the teachers' professionalism. The main areas of professionalism include teachers' knowledge base and their willingness and skill towards cooperation as well as towards lifelong learning (Lavonen et al., 2015). These professional areas are essential for the development of local curriculum and contextualisation. Firstly, teachers have the ability to understand and to contextualise the general aims and content, such as transversal competences, presented in the curriculum to their teaching from the perspective of their knowledge base. Secondly, collaboration skills are needed when the local curriculum is prepared in cooperation with other educators and stakeholders outside the school setting. Thirdly, the skill of lifelong learning is needed in relation to curriculum development especially in times of curriculum reforms. The development of school practices and the implementation of the curriculum is also continuous. Autti and Bäck (2019) refer to a case in which the local curriculum is considered and evaluated on a monthly basis and is processed by the municipal board every year.

As the Finnish curricular framework combines both centralised and decentralised perspectives within educational steering, it offers a valuable possibility to study how the central educational concepts of the national-level documents are contextualised in the local settings. This can be understood as a process of curricular contextualisation. This dissertation is situated in the implementation phase of the latest regulatory curriculum reform in Finnish basic education, and it particularly addresses the aspects related to the contextualisation of the competences. In this dissertation,

I have taken this continuous curriculum implementation and development into consideration by analysing datasets created at two different points in time. For the analyses in the sub-studies of this dissertation, the local curricula were searched for the first time after the publication of the first versions of the local curricula—in the spring of 2017—and for a second time after possible revisions made by the education providers—in the spring of 2019.

4.2 The Competence-based Curriculum in the Finnish Education System

During the latest curricular reforms in Finland, the competences were introduced at several educational levels (Kupiainen, 2016; Mertala, 2018; Palsa, 2020; Uljens & Rajakaltio, 2017). Compared to CBE curricula in other nations, such as in China, the competences are highly integrated in Finland (Wang et al., 2018). As stated in the Finnish core curriculum for pre-primary education (FNBoE, 2016, p. 16)

the development of transversal competence begins in early childhood and continues throughout one's life. It is strengthened gradually over the course of the learning path through studies connected to different fields of knowledge and skills and in everyday activities and interaction.

In Finnish basic education, transversal competences are introduced as part of the general part of the national core curriculum. Transversal competence is defined as an 'entity consisting of knowledge, skills, values, attitudes, and will' (FNBoE, 2014, p. 20). To understand the aims of the competences, they are important to evaluate in terms of the value base of the broader educational context. The core values of the Finnish basic education are respecting the uniqueness of every pupil and guaranteeing the right to a good education, promoting each pupil's growth as a civilised human being, equality and democracy, cultural diversity and a sustainable way of life (FNBoE, 2014; Halinen, 2018). Transversal competence is aimed to promote and reflect these values.

As illustrated in Table 3, the framework for transversal competence in basic education consists of the seven transversal competence areas (Halinen et al., 2015, p. 140; Rasi et al., 2019, p. 98). These competences are referred to in the curriculum through numbered abbreviations. The definitions of these competences are similar to the competence frameworks promoted in the international policies, such as the DeSeCo framework mentioned earlier (Lavonen, 2020; Uljens & Rajakaltio, 2017).

Table 3 Transversal Competence Framework in the Finnish Core Curriculum for Basic Education

No. of transversal competence	Transversal competence area
1	Thinking and learning to learn (T1)
2	Cultural competence, interaction and self-expression (T2)
3	Taking care of oneself and managing daily life (T3)
4	Multiliteracy (T4)
5	Information and communication technology (ICT) competence (T5)
6	Working life competence and entrepreneurship (T6)
7	Participation, involvement and building a sustainable future (T7)

In the Finnish core curriculum for basic education, transversal competence is defined to be developed in every discipline. This can be seen to diversify the perspectives towards the specific competence. Despite the fact that competence definitions cover the scope of all disciplines, they leave room to consider how they are interpreted in different disciplines. In the Finnish National Core Curriculum for Basic Education, various educational areas are described. These include the tasks, objectives and content areas of education as well as the learning environments, working methods, guidance, differentiation, support and assessment. However, the seven above-mentioned transversal competences are not described but only linked to specific general disciplinary objectives through numbered abbreviations (from T1 to T7). The following citation (Halinen et al., 2015, p. 146) illustrates an example of subject-specific learning goals in social studies to which multiliteracy is linked:

Social studies:

to guide the pupil to practise ethical evaluation skills related to different human, societal and economic questions

to encourage the pupil to examine societal activity as well as different communities and minority groups from a variety of viewpoints and with an open mind.

A discipline-specific definition of the transversal competence is issued subject to local decisions by education providers. As explained by Rasi et al. (2019, p. 97), ‘when the teacher defines subject-related learning goals, competence development objectives should also be defined’. However, this definition is not only under the responsibility of the individual teacher but also the education provider in general responsible for the local curriculum. According to the national core curriculum (FNBoE, 2014, pp. 102, 158, 285), the education provider should decide and explicate the objectives of transversal competences at different grade levels and

their local emphases and describe how the transversal competences are developed. According to Halinen et al. (2015, p. 140) the local education providers are ‘encouraged to promote the development of these competences and to consider their own innovative ways in reaching these goals’. Thus, a more nuanced understanding of the disciplinary aspects of transversal competences is needed.

4.3 Multiliteracy in the Finnish Core Curriculum for Basic Education

As discussed in the Section 4.2, one of the seven transversal competences introduced in the Finnish National Core Curriculum for Basic Education is termed multiliteracy—a new concept in the Finnish education system (Kupiainen, 2016; Mertala, 2018; Palsa et al., 2019). In addition to basic education, multiliteracy crosses the curricular framework across early childhood education, pre-primary education and general upper secondary education. There are several reasons for multiliteracy to be included in the national core curriculum framework (Kupiainen, 2016; Mertala, 2018; Palsa, 2020). According to Finnish policymakers (Halinen et al., 2015), multiliteracy was integrated to address the diversified ways to mediate information. In addition, two central reasons identified for promoting multiliteracy were the noted declining tendency to read and the growing disparity between the general public’s literacy levels, which are expected to lead to exclusion and lack of participation. Policymakers state, ‘it is necessary to find new means to teach literacy and emphasise the importance of literacy in school’ (Halinen et al., 2015, p. 142). The following broad citation² (Table 4) illustrates the comprehensive definition of the concept of multiliteracy as described in the Finnish core curriculum. Besides the rationale and definition of the concept, the core curriculum also describes ways to develop pupils’ multiliteracy (Palsa, 2020).

² The complete definition of the concept of multiliteracy is included in the contextual background section of the dissertation to support the further understanding of the conceptual analyses.

Table 4 General Definition of Multiliteracy

Definition of multiliteracy in the Finnish National Core Curriculum for Basic Education

Multiliteracy is the competence to interpret, produce and make a value judgement across a variety of different texts, which will help the pupils to understand diverse modes of cultural communication and to build their personal identity. Multiliteracy is based on a broad definition of text. In this context, the text refers to knowledge presented by systems of verbal, visual, auditive, numeric and kinaesthetic symbols and their combinations. For example, text may be interpreted and produced in a written, spoken, printed, audiovisual or digital form.

The pupils need multiliteracy in order to interpret the world around them and to perceive its cultural diversity. Multiliteracy means abilities to obtain, combine, modify, produce, present and evaluate information in different modes, in different contexts and situations, and by using various tools.

Multiliteracy supports the development of critical thinking and learning skills. While developing it, the pupils also discuss and reflect on ethical and aesthetic questions. Multiliteracy involves many different literacies that are developed in all teaching and learning. The pupils must have opportunities to practise their skills both in traditional learning environments and in digital environments that exploit technology and media in different ways.

The pupils' multiliteracy is developed in all school subjects, progressing from everyday language to mastering the language and presentational modes of different ways of knowing. A precondition for developing this competence is a rich textual environment, pedagogy that draws upon it, and cooperation in teaching and with other actors. The instruction offers opportunities for enjoying different types of text. In learning situations, the pupils use, interpret and produce different types of texts both alone and together. Texts with diverse modes of presentation are used as learning materials, and the pupils are supported in understanding their cultural contexts. The pupils examine authentic texts that are meaningful to them and interpretations of the world that arise from these texts. This allows the pupils to rely on their strengths and utilize contents that engage them in learning, and also draw on them for participation and involvement. (FNBoE, 2014, pp. 22–23.)

Besides the general definition of multiliteracy covering the whole of basic education, the national core curriculum includes a specific definition for different grade levels for the gradual development of the transversal competence (Halinen et al., 2015, pp. 144–145). The curriculum designers' aim for the systematic development is illustrated in Table 5 by presenting the definition of multiliteracy specific to the lower secondary education.

Table 5 Specific Definition of Multiliteracy for Lower Secondary Education

Definition of multiliteracy for the levels of grades 7 to 9

The pupils are guided to deepen their multiliteracy by expanding the range of texts in the teaching and learning of all subjects. In this context, texts mean information expressed by systems of verbal, visual, auditory, numeric, and kinaesthetic symbols and their combinations. The emphasis is on practising the pupils' analytical, critical, and cultural literacy. The pupils practise using all of their sensory faculties and utilising different ways of knowing diversely in their learning. Producing, interpreting, and communicating information are practised in ways characteristic of different subjects and in cooperation between subjects. The pupils are also encouraged to use their multiliteracy when participating and being involved in their own surroundings, the media, and the society. School work offers plenty of opportunities for practising these skills in a cooperative setting.

The emphasis in multiliteracy development increasingly shifts to context and situation-specific texts. The pupils' multiliteracy is advanced by introducing them to narrative, descriptive, instructive, argumentative and reflective text genres. Cultural, ethical, and environmental literacy are supported in teaching and learning. Texts related to working life are also analysed and interpreted. The pupils develop their consumer and financial skills by familiarising themselves with texts that treat the topics in a versatile manner and by learning about the contexts in which they are used. Numeracy is advanced for example when assessing the reliability of opinion poll results or the cost-effectiveness of a commercial offer. The pupils are guided in developing their visual literacy by using different modes of image interpretation and presentation. Media literacy is developed by being involved in and working with various media. The pupils are encouraged to express their views using different means of communication and involvement. (FNBoE, 2014, p. 283.)

One important feature of multiliteracy is its transversality across the disciplines. A common way to connect multiliteracy to the disciplines is through the concepts of language awareness and disciplinary literacies. According to Halinen et al., a linguistic paradigm shift highlights the importance of multiliteracy. Language is not only a matter of teaching and learning, but it also relates to the value basis of education and school culture in general. (Halinen et al. 2019, p. 147.) Luukka (2013) describes that teachers in different disciplines should reflect upon how the aims of multiliteracy are taken into account in everyday teaching. In different disciplines, the contents can be addressed from a language-awareness perspective by studying the specific textual practices. Luukka's (2013) notion about the variance of disciplinary textual practices illustrates the idea that disciplines can approach the same texts and symbols, such as numbers, from different perspectives.

As multiliteracy was a new concept in the Finnish education system during the time of the publication of the core curriculum (Kupiainen, 2016), several aspects of the description of the concept raise interest and have guided this research. Most notably, multiliteracy is defined in a very broad sense, leaving a lot of room for interpretation. The broadness of the concept relates, for example, to the variety of the texts and its role as an umbrella concept for different literacy and disciplinary variance. Firstly, when taking into account the variance of different texts and the limited resources of education, one question is related to the prioritisation of texts—what are the most important texts that should be taken into account in multiliteracy and what could be left out? Secondly, as multiliteracy is supposed to be developed in all disciplines, how should the concept be understood in different disciplinary settings, and how is the

competence supposed to be developed in practice? The third aspect of the broadness of multiliteracy relates to the variety of the literacy landscape. If multiliteracy is seen as an umbrella concept including a variety of different literacies, how are these literacies selected, defined and prioritised in education? Fourthly, the Finnish national core curriculum does not describe how multiliteracy should be defined in local curricula. Thus, there can be various ways that the concept is understood. To summarise, the broadness of the concept, curricular inconsistency and the variance of the terminological understandings and contextual differences highlight the need for and importance of the conceptual clarification of the transversal competence of multiliteracy. On one hand, to understand the concept in a more nuanced manner, the focus can be put on academic discussions to place the conceptualisation against the broader backdrop. On the other hand, it is important to take into account the diversity of the local contexts.

5 Methodology

Based on the aim of this research, I situate this dissertation within the broad and versatile tradition of qualitative research. On one hand, qualitative research typically aims to create idiographic knowledge by emphasising certain phenomena and highlighting the importance of the contextuality of the research topic, the importance of language and meaning and the socially constructed nature of social reality. On the other hand, qualitative research is characterised by reflexivity, relationality and interactivity. (Dahler-Larsen, 2018, p. 867; Sandelowski, 2004.)

Qualitative research is not a specifically homogenous research methodology but rather an umbrella term covering a collection of different approaches which may have some similar characteristics (Denzin & Lincoln, 2018a). These relate, for example, to the importance of the researcher's position, the nature of the data, a focus on the process, an analytical approach and the perspectives of the participants of the research (Bogdan & Biklen, 2007). Due to the diversity of the qualitative research practices, methods and methodologies, a more accurate and nuanced focus is needed to describe the theoretical underpinnings of an individual study.

In the following sections, I introduce and discuss the methodological approach applied in this dissertation—the grounded theory-oriented qualitative research approach—and offer an overview of the sub-studies as well as present the data collection process and the analysis methods in more detail. In line with Egbert and Sanden, I understand methodology as ‘a reasonable plan for gathering and analysing information that responds to a line of research inquiry’ (Egbert & Sanden, 2014, p. 75).

5.1 Grounded Theory-oriented Qualitative Research

I describe my methodological approach as grounded theory-oriented qualitative research. By using the word ‘oriented’, I mean that, while the central methodological features and guiding principles of grounded theory provide a suitable perspective and concepts to describe the methodological characteristics of this dissertation, no variant—such as Glaserian (classical grounded theory) (Glaser & Strauss, 1967), Straussian (Strauss & Corbin, 1990), Charmazian (constructivist grounded theory) (Charmaz, 2006) or Clarkeian (situational analysis) (Clarke, 2005)—of it is has been followed as such. The main differences can be summarised as follows.

Even though the research aim is in line with the Glaserian perspective to form a theory based on the data, the main difference is related to the ontological underpinnings. Glaserian tradition is based mostly on objectivism and positivist ontologies where the role of the researcher is to uncover and report some objective and external reality (Timonen et al., 2018; see also Alammari et al., 2019; Birks et al., 2019). In this research, I acknowledge my role as researcher as an interpreter of the data and the role of language in constructing social realities. Thus, my purpose is not to explicate an objectivist reality but to describe the ways in which language has been used in the analysed conceptualisations. This also causes my research to deviate from the Straussian strand of grounded theory, which, according to Timonen et al. (2018) is based on objectivist theoretical underpinnings as well.

In terms of Charmazian constructivist grounded theory (Charmaz, 2014; Ralph et al., 2015), my dissertation focuses on a more general-level description with the purpose to provide an overview of the conceptual contextualisations of the transversal competence of multiliteracy. This also relates to the aspect that causes the dissertation to deviate from the Clarkeian strand of grounded theory (Clarke, 2005) in which the context as well as the process are emphasised. As explained by Timonen et al. (2018, p. 3), this requires 'that the conditional elements of the situation need to be specified in the analysis of the situation itself as they are constitutive of it and not merely framing it'. Instead of focusing on the situations of the analysed data, in this research I have analysed contents and definitions from formal documents, including both international research articles and local curricula from the different municipalities.

Constant comparison (Glaser & Strauss, 1967; Strauss & Corbin, 1990) is a central method in grounded theory research. According to Amsteus constant comparison can be made in two different ways based on the relation to the data. In the first type, all the data are coded and then analysed, whereas in the second type the data are only explored to identify characteristics which help to create categories and develop theoretical ideas (Amsteus, 2014, p. 74). Instead of the constant comparison method, I have used the conventional and directed qualitative content analysis method (Hsieh & Shannon, 2005) in this dissertation.

What then locates my research within the grounded theory tradition(s) are 1) a purpose to construct theory based on data analysis (Apramian et al., 2017; Glaser & Strauss, 1967), 2) theoretical sampling as a guiding principle for the data collection (Chun Tie et al., 2019; Conlon et al., 2020) and 3) a heavy emphasis on the data (Birks & Mills, 2015; Conlon et al., 2020; Timonen et al., 2018). While these methodological elements are not exclusive to grounded theory research, the discussion around grounded theory helps to form a background and conceptualise the methodological elements illustrating the broader methodological approach of this research. These three elements and their implementation in this dissertation are summarised in Figure 4 and are further discussed in the following chapters

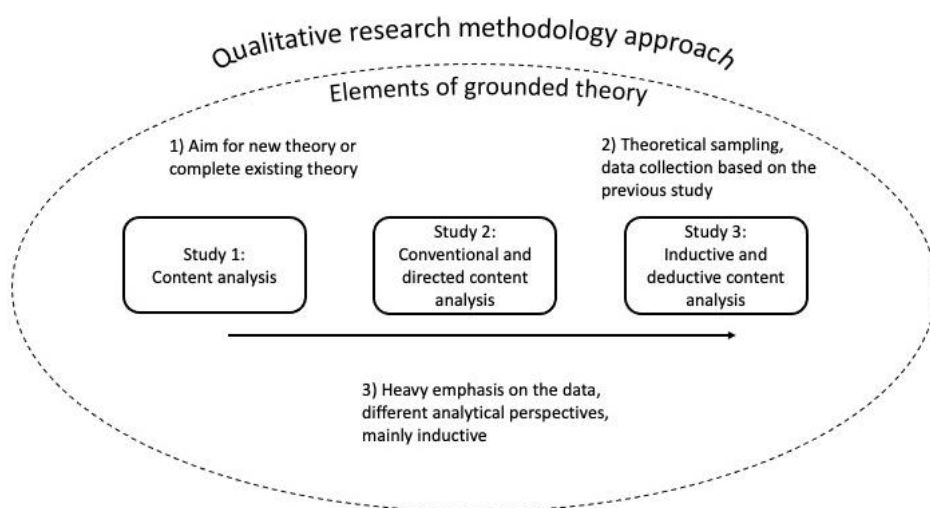


Figure 4 Methodological Overview of the Grounded Theory-oriented Qualitative Research

5.1.1 Theorisation Based on the Data

One of the central features of grounded theory is its purpose of creating theory. As stated by Glaser and Strauss (1967) in their seminal work, grounded theory can be defined as the discovery of theory from data. The different traditions of grounded theory have different views on the role and nature of the theory (Apramian et al., 2017). The notion of theory itself can also mean different things. As illustrated by Timonen et al. (2018), the grounded theory method can lead to the formation of a comprehensive theory that encompasses all the different aspects, but it can also aim for new or better conceptualisations or frameworks that links the different concepts. In this research, in line with Jaccard and Jacoby (2010, p. 28), I understand theory as a set of statements about the relationship between different constructs. In curriculum research, approaches to theorising can differ based on the aims. According to Marsh (2004), *prescriptive theorists* attempt to create models and frameworks that will presumably lead to the best possible curricula for schools. *Descriptive theorists* are more interested in identifying the realities of curriculum to understand the development process and how it takes place. The third approach identified by Marsh is that of the *critical-exploratory theorists* who attempt to find weaknesses in the previous curriculum development to find new solutions emphasising, for example, what the curriculum might be. In this research, I combine two of these approaches. My theory building is grounded in the empirical data—following the tradition of descriptive theorising—and it is motivated by the aim to offer new insights to support curriculum development—following the tradition of prescriptive theorising. I conclude the results of this dissertation by presenting a theory for the curricular contextualisation of CBE.

By studying how the transversal competence of multiliteracy is contextualised in the Finnish curricular framework of basic education, I can clarify both the conceptual aspects of the curricular contextualisation of CBE and the contextual features of the concept of multiliteracy. This enables me to construct—grounded in the data—from a macro-level perspective, a theory of the conceptual contextualisation of CBE but also to construct new contextual knowledge on the concept of multiliteracy from a micro-level perspective to highlight the diversity of the concept and the meaning of local context. Even though the purpose of the theory constructing perspective in this research is to identify, abstract and describe the different features and dimensions of both of these endeavours, I do not suggest covering all the possible aspects related to contextualisation. On the contrary, through empirical research, I highlight the importance of context and the possibility of completing the knowledge through future studies. Rather than aiming to develop a formal theory that would transcend the situational contexts, my purpose is to construct a theory that is grounded in the specific setting—in this case, within the context of the current curricular framework in the Finnish educational system. In this dissertation, I illustrate the relationship between developed theory and the empirical data through various data extracts.

5.1.2 Theoretical Sampling

Data in grounded theory research are formed through a phased, step-by-step approach, termed theoretical sampling. This is a central characteristic in the process to form a theory in grounded theory research (Conlon et al., 2020). Even though each sub-study of this dissertation is an independent academic work with specific data and results, they all contribute to the broader research aims. Through these distinct phases aiming at answering the overarching research aim, it is possible to reflectively design the data collection in a way that can strengthen the broader understanding of the phenomena under study. More descriptively, theoretical sampling refers to the logical process of data collection that enables taking into account earlier data and the consideration of the researcher (Birks et al., 2019; O'Reilly et al., 2012; Timonen et al., 2018). According to Timonen et al., one of the core principles of grounded theory research is to be open to the data. This can mean, for example developing and changing the research questions through the research process (Timonen et al., 2018, p. 6).

My starting point was to have a broader theoretical understanding of the newly introduced concept of multiliteracy (in Finnish: *monilukutaito*). The first sub-study (Palsa & Ruokamo, 2015) focused on the relationship between the conceptualisations of multiliteracy in the national-level curriculum and the international research discussions. Based on the result, I decided to turn the focus to the local contexts within the national setting. In the second sub-study (Palsa & Mertala, 2019), I focused on and highlighted the local conceptual understandings. The aim of the second sub-study was to understand how the general concept of multiliteracy was contextualised within the local curricula for basic education. The results of the study revealed that

a more sufficient understanding of the transversality would require putting more emphasis on the disciplinary perspectives. Thus, the third sub-study (Palsa & Mertala, 2020) focused particularly on the curricular contextualisation of multiliteracy from a disciplinary perspective—namely social studies and mathematics. In the integrative chapter of this dissertation, I combine the results of these sub-studies to deepen the understanding and to present new knowledge in the form of a new theory.

5.1.3 Heavy Emphasis on Data

One of the characterising features of the grounded theory research applied in my research methodology is the strong relation to the data. In grounded theory research, many different materials can be used as research data (Birks & Mills, 2015; Timonen et al., 2018, p. 6). In sub-study I, I studied international peer-reviewed research articles (Palsa & Ruokamo, 2015), and in sub-studies II and III, I studied Finnish local curriculum documents (Palsa & Mertala, 2019; Palsa & Mertala, 2020).

In the research articles, I focused particularly on the definitions of the concept of multiliteracy. The same applies to the local curricula texts, which have been constructed in a certain context—in this case as part of the Finnish educational system—for a certain purpose—as part of the formal educational steering—and for certain stakeholders. According to the national core curriculum both national targets and tasks considered important locally are set out and implemented in the local curriculum. The local curriculum in Finland is defined as a strategic and pedagogical tool that steers the work of the education providers and schools (FNBoE, 2014, p. 9). In the local curricula, I focused on two types of descriptions, both the general and disciplinary definitions of the transversal competence of multiliteracy. In Section 5.2, I present the overview of the sub-studies, and in Section 5.3, I introduce in more detail the methods for the collection, processing and analysis of these datasets.

5.2 Overview of the Sub-studies

In addition to this integrative chapter of the dissertation, the research consists of three interrelated sub-studies, which all contribute to answering the main research question (Table 6). All the studies are published in peer-reviewed international scientific journals. The first phase of this research (Palsa & Ruokamo, 2015) addresses the definitions of multiliteracy in the international setting to provide background to understand the elements and dimensions of the concept in the national context. The following phases of this research (Palsa & Mertala, 2019; Palsa & Mertala, 2020) focus more closely on the contextualisation of the transversal competence within the national setting in Finnish local curricula. The final phase of the research (integrative chapter of the dissertation) concludes the produced knowledge by presenting a theory of the conceptual contextualisation of CBE.

Table 6 Overview of the Sub-studies

No. of the sub-study	I	II	III
Research topic	Definitions of the concept of multiliteracy in the international research literature.	Conceptual contextualisations of the transversal competence of multiliteracy in the Finnish local curricula.	Disciplinary contextualisations of the transversal competence of multiliteracy (mathematics / social studies) in the Finnish local curricula.
Research questions	How is the concept of multiliteracy defined in the recent research literature?	How is the transversal competence of multiliteracy conceptually contextualised in the Finnish local curricula for basic education? How is multiliteracy a) rationalised, b) defined, and c) described to be developed in Finnish local curricula for basic education?	How are disciplinary contextualisations of the transversal competence of multiliteracy structured in Finnish local curricula? How is the transversal competence of multiliteracy contextualised in the disciplines of mathematics and social studies in Finnish local curricula for lower secondary education?
Research data	International peer-reviewed research articles (n=49) from which the random sample (n= 14) of definitions of multiliteracy/multiliteracies were randomly selected for further analysis.	Finnish local curricula for basic education (n=219) from which the conceptual contextualisations of multiliteracy were included for the further analysis (n=62).	Finnish local curricula for basic education (n=220) from which the disciplinary contextualisations were included for the further analysis (n=69).
Data analysis methods	Qualitative content analysis.	Qualitative content analysis (conventional and directed content analysis).	Qualitative content analysis (inductive analysis and deductive content analysis).
Contribution to the main research question at micro level	To understand how the concept of multiliteracy is defined in the recent research literature and to evaluate the relationship to the definition presented in the Finnish National Core Curriculum for Basic Education.	To understand how multiliteracy is defined in the local contexts from the perspectives of rationale, definition and practice.	To further understand how multiliteracy is defined in the local contexts within different disciplines (social studies/mathematics) from the perspectives of rationale, definition and practice.
Contribution to the main research question at macro level	To highlight the relationship between the educational key concepts introduced nationally and the conceptualisations made in the international research discussion.	To understand how the conceptual contextualisations of a transversal competence are made in the local curricula.	To further understand how the conceptual contextualisations of a transversal competence are made in disciplinary settings (social studies/mathematics).

5.3 Collection, Processing and Analysis of Datasets

Next, I introduce and discuss the research methods—the procedures to gather and analyse the data (Egbert & Sanden, 2014, p. 75). In this dissertation, I have studied two types of data consisting of three different datasets (Figure 5).

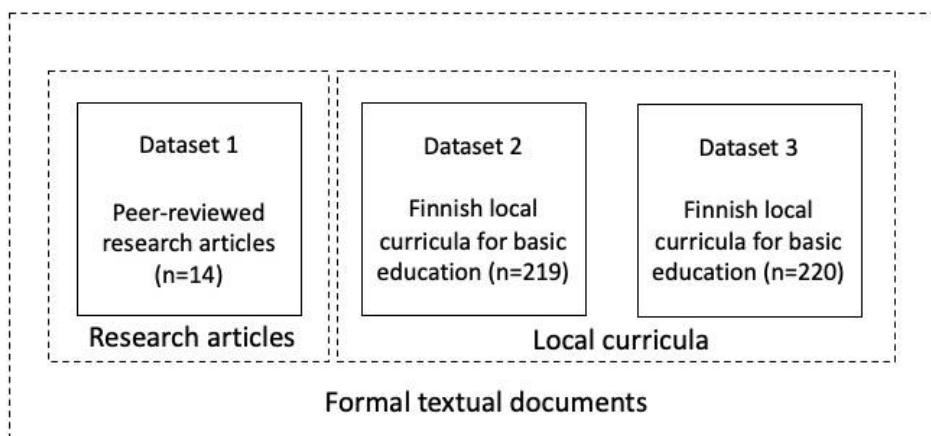


Figure 5 Overview of the Datasets

I have analysed conceptualisations of multiliteracy a) in the peer-reviewed international research articles and b) in the Finnish local curricula. Despite their differences, all the analysed datasets have many similar features. Both datasets form textual data (Ralph et al., 2014; Scott, 2004) that are highly contextual, sensitive and written in a formal manner. Peer-reviewed research articles have their original features based on the many conventions for academic publishing, such as the discourse used (Remache, 2013; Sionis, 1997) or structure of the scientific articles (Leong et al., 2018). The language is affected, for example, by the guidelines of the publishing journal or the particular scholarly discipline. Generally, the emphasis in scientific articles is on clarity and precise language, highlighting the importance of accurate definitions. Commonly, academic research articles are written by scholars to communicate with the academic field. The language used in local curricula is influenced by its position as part of the official and normative educational steering. The local curricula are prepared by the local education providers, such as local education authorities and educators of the stakeholders involved in the local education (Lavonen, 2017; Uljens & Rajakaltio, 2017). During the data searches, the local curricula were up to date and effective formal documents for educational steering. These kinds of ‘naturally occurring’ empirical materials are familiar especially in qualitative research (Peräkylä & Ruusuvaori, 2018, p. 669). For both of

the dataset types, I have divided the following chapters into three sections. In these sections, I introduce the collection, processing and analysis of the datasets.

5.3.1 Analysing Research Articles

In the first phase of this research (sub-study I), I conducted a systematic literature review to understand how the concept of multiliteracy is defined in the recent research discussions. Systematic review (Finfgeld-Connett, 2014; Grant & Booth, 2009) is a widely used research methodology across various disciplines. The motive behind using this method was the introduction of the new concept of multiliteracy to the Finnish education system. The newness of the concept and the broad definition created the need to understand the theoretical background of the concept. Research articles can be seen as relevant data for conceptual understanding when taking into account their effort to employ clear communication and accuracy in conceptual definitions. International peer-reviewed research articles were searched using various databases, including ERIC (ProQuest), Academic Search Elite (Ebsco), ScienceDirect (Elsevier), SpringerLink, SAGE Journals and Emerald Journals. These databases were selected based on their multidisciplinary nature and relevance to multiliteracy research. The use of multiple databases and search engines provides comprehensive search results (Bramer et al., 2017). To emphasise the topicality of the discussion, I limited the scope to the previous five years (2010–2014). The focus of the literature review was on the definitions of the concept of multiliteracy in singular or multiliteracies in plural, so the search was directed to the theoretical and empirical research articles published in English with ‘multiliteracy’ or ‘multiliteracies’ listed as a keyword. The search yielded 92 references.

After excluding the search results that did not fit the inclusion criteria—such as book reviews, editorials, opinion letters, lesson plans and works published in other languages—the dataset consisted of 49 multiliteracy research articles. However, when taking into account the need for contextual sensitivity and the accuracy of the analysis, I decided to limit the data further. If the dataset is too large, there is a risk of losing some important nuances of the data or having too much redundancy (Finfgeld-Connett, 2014). It has been noted that the median number of analysed articles in systematic literature reviews in other disciplines is 14 (Hannes & Macaitis, 2012) which can be analysed through the method of content analysis (Finfgeld-Connett, 2014). Thus, a random sample of 14 articles was included for the further analysis. From the perspective of the research question, relevant data were extracted from the articles to a separate data matrix. These extracted data included the general publication information of the articles in addition to the specific conceptual information including the definition of multiliteracy and reference details if external definitions. For the multiliteracy definitions in these 14 articles, the amount of analysed data consisted of 9011 words covering 23,5 pages in Calibri font size 12 with a double line spacing between the definitions.

Even though a variety of different analysis methods can be applied in literature reviews (Onwuegbuzie et al., 2012), I used the content analysis method to analyse the extracted data. Content analysis is a commonly used method in qualitative research, and, instead of a certain strictly defined analysis technique or procedure, it can be understood as a methodological framework consisting of different approaches (Hsieh & Shannon, 2005; Mayring, 2015). In qualitative content analysis texts are interpreted in relation to their origin and effect (Mayring, 2015, p. 369). In this dissertation, all the analysed datasets, including research articles and local curricula, are explored in relation to the characterising communicative contexts. In line with the research question, the research articles were analysed from the conventional approach following the inductive logic of content analysis (Thomas, 2006) emphasising the nature and contextuality of the data. As the focus of this analysis was on the highly contextual multiliteracy definitions, excessive processing (for example, deconstruction or abstraction) of the data was avoided (Finfgeld-Connett, 2014). In practice, the initial close reading of the definitions revealed the main difference between the multiliteracy definitions in the research articles compared to the one presented in the national core curriculum. As this main difference between the pedagogical and outcome-based approach to multiliteracies was easily notable, it guided the further analysis. The aim was to describe in which of the research articles multiliteracies were addressed as a pedagogical approach and in which multiliteracy was seen as an outcome of education similar to the interpretation in the Finnish education system.

5.3.2 Analysis of the Local Curricula

In the second and third sub-studies of this dissertation, I focused on the Finnish local curricula for basic education to understand how the concept of multiliteracy was contextualised at the local level. In dataset 2, I explored the general definition of the concept covering the whole scope of Finnish basic education, whereas in dataset 3 I scrutinised how the concept was contextualised within the disciplinary settings of mathematics and social studies within the grade levels 7–9, covering lower secondary education. Dataset 2 was formed in 2017 and dataset 3 in 2019. The processes of the searches, processing and analysing were undertaken similarly to support the validity of the research. Only the analytical perspectives at the macro level differed based on the research questions. Since the local curriculum in Finland is not a static steering document but can be updated when needed (Autti & Bæck, 2019; FNBoE, 2014), the two data searches aimed to strengthen the topicality of the dissertation. The second search of the local curricula was made during the spring of 2019 to ensure that the most updated versions would be included in the study. Various local curricula were updated in subsequent years after their original publications.

Local curricula are prepared by the local educational providers, mainly the municipalities in Finland, and they are applied separately for different languages,

such as Finnish, Swedish and Sámi. This study limited the lingual scope to Finnish curricula to foster validity and to avoid translational confusion during the analysis. Methodological challenges related to cross-language data have been discussed within the context of qualitative research where language and interpretation have an important role (Squires, 2009). Even though I have studied Swedish in my formal education, in the research setting, I recognised a risk of misinterpretation in the data analysis phase. Misunderstanding of the specialised language use could lead to a decreasing level of validity of the analysis results. One option would have been to use translation services but I also considered the associated risks here, such as possible misunderstanding, misinterpretations and loss of an intended meaning (Smith et al., 2008). I searched the local curricula using a specific web portal, ePerusteet, offered by the National Agency for Education for publishing the local curricula. I made additional searches on the websites of those municipalities whose local curricula I did not find in the ePerusteet web portal.

During the time of the data searches, there were 311 municipalities in Finland (Statistics Finland, 2020). For dataset 2, local curricula were found from 266 municipalities, covering 86% of the Finnish municipalities. For dataset 3, local curricula were found in 276 municipalities, covering 89% of all the municipalities. It is possible for the education providers to prepare the local curriculum independently or in cooperation with other municipalities in the region. Also, each municipality can publish an individual local curriculum even though it would have previously participated in the regional curriculum work. Where possible, I focused on the municipal-level curriculum rather than the regional level to highlight the contextuality. Dataset 2 consists of 207 municipal and 12 regional curricula, whereas dataset 3 covers 208 municipal and 12 regional curricula. Even though the number of analysed regional curricula is the same between the datasets, not all curricula are identical. Dataset 3 includes two regional curricula that were not available in the search phase for dataset 2, whereas dataset 2 includes two regional curricula that were excluded from dataset 3. This is because all the local curricula of these individual municipalities were available in the phase of the curriculum search for dataset 3. However, in line with the research question, both types of the curricula—municipal and regional level—were combined as one dataset, and the division is not present in the study results. Dataset 2 consists of 219 and the dataset 3 includes altogether 220 distinct local curricula.

The lack of curricula—45 municipalities in dataset 2 and 35 municipalities in dataset 3—is reasoned from the perspectives of language and technical questions. Not all municipalities provide basic education in Finnish, the local curricula were not made available online or there were technical issues on the municipal website. In many municipalities in which I could not find a Finnish curriculum, a Swedish curriculum would have been accessible. During the time when the search for the dataset 3 was conducted, there were 16 official Swedish-language municipalities

in Finland and 15 bi-language municipalities in which the major language was Swedish (Statistics Finland, 2020). During the search for dataset 2, the previous version of the curriculum was the only one available on many municipalities' websites. For dataset 3, it is important to note that not all municipalities provide lower secondary education as the responsibility can be shared together with a neighbouring municipality which also provides the local curriculum. For example, in certain municipalities, the number of children is too low to arrange the education for certain levels.

After the searches, the definitions of the transversal competence of multiliteracy were collected from all the retrieved curricula and transferred to a separate data matrix for further analysis. It is important to highlight that as a transversal competence, in addition to the general definition, multiliteracy is also defined in the local curricula in disciplinary- and grade-specific descriptions. For dataset 2, the definitions focused on the general conceptualisation of multiliteracy covering the scope of the whole basic education, whereas for dataset 3, the conceptualisations of multiliteracy in the disciplinary settings of mathematics and social studies in lower secondary education were included. For dataset 2, all the general definitions of multiliteracy were read through and compared to the original definition described in the national core curriculum. In this first phase, I identified the curricula in which any changes to the original definition were made and separated them from those in which the original definition was kept unchanged. All the definitions that deviated from the original definition were included in the further analysis. These are referred to as contextualised conceptualisations. As illustrated in Figure 6, in most of the local curricula the definition of multiliteracy in dataset 2 was maintained as the original presented in the national core curriculum.

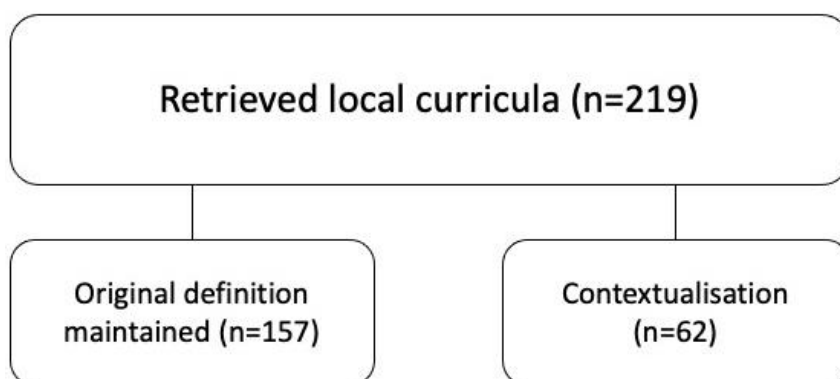


Figure 6 Conceptual Contextualisations in Local Curricula (Dataset 2)

According to this phase, in 72% (n=157) of the local curricula, the multiliteracy definition was maintained as in the national core curriculum. Thus, 62 local curricula (Figure 6)—in which any changes to the original definition were made—were included for the further analysis in dataset 2. For the 62 contextualisations in the local curricula, the amount of analysed data consisted of 4522 words covering 16 pages (Calibri font size 12 with double line spacing between the contextualisations).

Dataset 3 consisted of the definitions of multiliteracy made in the specific disciplinary settings. In this study, two different disciplines, social studies and mathematics, were chosen as subjects of research based on the differing academic underpinnings. The natural sciences form the basis for mathematics, and social sciences create the background for social studies. In the Finnish national core curriculum, this difference is also evident in the aims of the disciplines. One of the main tasks of social studies is to support pupils' growth into active, responsible and enterprising citizens, whereas in mathematics, the focus is on developing logical, precise and creative mathematical thinking (FNBoE, 2014, pp. 418, 374). A dualistic disciplinary perspective can illustrate the variance of contextualisation in a more nuanced manner than the analysis of a single discipline. In addition, the comparison between two separate academic disciplines can provide an opportunity for more in-line analysis than a comparison between academic disciplines and arts or crafts. Both of these chosen disciplines are different in their natures (Krzywacki et al., 2016; Virta & Yli-Panula, 2016). Disciplines have specific concepts and knowledge structures and they relate differently in out of schools contexts, such as to the everyday lives of pupils (Roberts, 2014; Young, 2008; Young & Muller, 2013). As mathematics focuses more particularly on teaching the disciplinary conceptual system and structures, social studies is related more closely to the outside context and society.

More accurately, the focus in the analysis of dataset 3 was not on basic education in general, covering grades 1 to 9, as in dataset 2, but more specifically on lower secondary education, grades 7 to 9. This scope was decided upon based on the specific educational nature of the particular grade levels. In the Finnish nine-year compulsory education system (Morgan, 2014), grades 1 to 6 are commonly taught by the classroom teacher, whereas in the upper grades the education is organised based on discipline-specific teachers. This would presumably encourage the local curriculum designers to put more emphasis on the disciplinary contextualisation of the transversal competences. To extract the relevant data for the further analysis, the chapters describing the disciplines of social studies and mathematics were reviewed from all the found local curricula. Since the transversal competences—including multiliteracy—are not defined in the disciplinary settings in the Finnish national level core curriculum, it was straightforward to form the data. All the disciplinary conceptualisations of the concept of multiliteracy made in the specific disciplines under scope were retrieved and transferred to a separate data matrix for further

analysis. As illustrated in Figure 7, according to this phase in 43 local curricula (19.5% of the explored curricula), multiliteracy was described in the disciplinary setting, thus included in the further analysis.

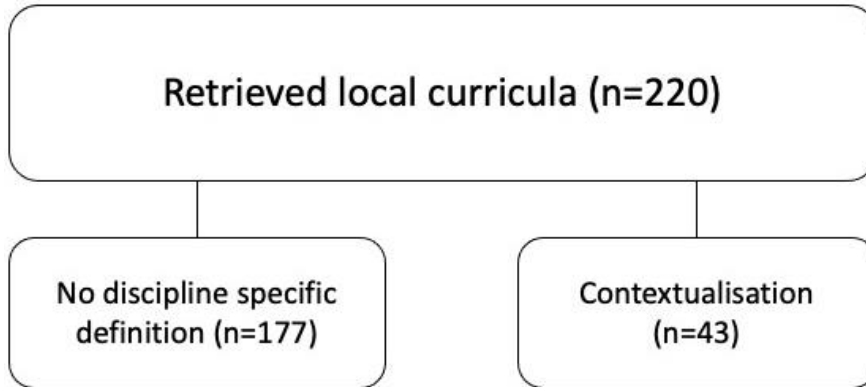


Figure 7 Disciplinary Contextualisations in the Finnish Local Curricula (Dataset 3)

These contextualisations were not evenly distributed between the disciplines. As illustrated in Figure 8, in some of the local curricula, the contextualisation was made in both the disciplines, and in the rest, the contextualisation was made in only one of the analysed disciplines.

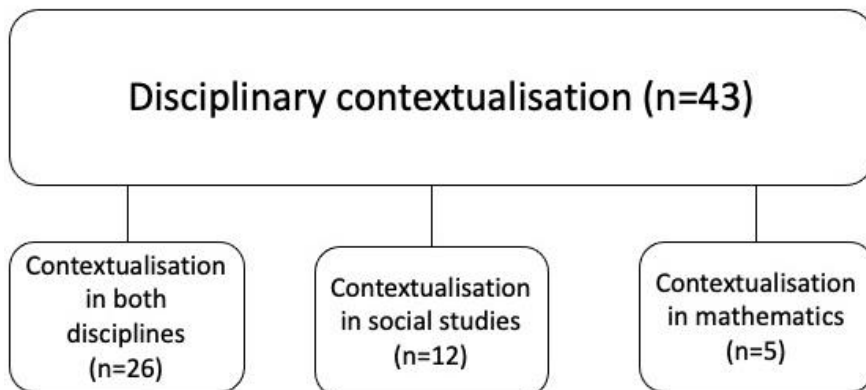


Figure 8 Disciplinary Contextualisation in Social Studies and Mathematics (Dataset 3)

From all the 43 local curricula where contextualisation of the concept of multiliteracy was made, in 26 (11.8% of the analysed curricula) contextualisation

was made in both the disciplines under scope, while in 17 local curricula, contextualisation was made in only one of the disciplines. Thus, the data for the further analysis included 69 disciplinary contextualisations (38 in social studies and 31 in mathematics). In practice, the textual data were organised in a specific data matrix with separate sections for both of the disciplines. For the 38 contextualisations in social studies, the amount of analysed data consisted of 2648 words covering 10,5 pages in Calibri font size 12 with double line spacing between the contextualisations, whereas for the 31 contextualisations in mathematics, the amount of analysed data consisted 2742 words covering 10 pages in Calibri font size 12 with double line spacing between the contextualisations.

In qualitative research, the data analysis can be understood as a way to organise and reduce the data based on their essence that can then lead to theories (Walker & Myrick, 2006, p. 549). Following the research questions, both of the datasets were analysed from two perspectives based on the separate research questions.

Firstly, on the macro level, the data were analysed using the conventional content analysis method to understand how the contextualisations were made and how they were structured as part of the disciplinary settings. The conventional content analysis method—following inductive logic in the analysis (Thomas, 2006)—allows the emphasis to be put on the interpretation of the textual data ‘through the systematic classification process of coding and identifying themes or patterns’ (Hsieh & Shannon, 2005, p. 1278). This is reasonable since the designers of local curricula have a great deal of freedom to decide how the contextualisation is made (Tikkanen et al., 2019; Venäläinen et al., 2020). In the national core curriculum (FNBoE, 2014), the contextualisation is encouraged, but no explicit specific instructions or format are provided.

In practice, the contextualisations in both datasets 2 and 3 were read through several times carefully to get in-depth understanding about the contents of the data. Then, different categories were iteratively formed based on the comparison of the individual data extracts to find similarities and differences. This reducing procedure helps to clarify the essential aspects of the data (Mayring, 2015, p. 373). In the analysis of dataset 2, I focused on the specific ways in which the contextualisations were conceptually made compared to the original definition presented in the national core curriculum. My interest was to compare and to define for every contextualisation the way in which it differed from the original definition. I highlighted the differing parts of the definitions and marked the reason. In this phase, the following four types of contextualisation were found: *emphasis*, *specification*, *description* and *expansion*.

To understand how the contextualisations were structured within disciplinary settings, the contextualisations of dataset 3 were analysed by focusing on their role within the disciplinary descriptions. As the structure of the disciplinary descriptions for the local curricula followed the format of the national core curriculum, such as including the disciplinary aims, grade-specific descriptions and content areas, the

analysis was relatively straightforward to make. In every curricula, I identified and described how the definition of multiliteracy was arranged within the disciplinary descriptions. In this phase, four different types of disciplinary contextualisations were found, including *general disciplinary contextualisation*, *objective-specific disciplinary contextualisation*, *grade-based contextualisation* and *content-based contextualisation*. According to Walker and Myrick (2006, p. 549), in grounded theory the data analysis is a way to move the data from transcripts to theory. I present the theory based on the analyses of this dissertation in Chapter 7.

Secondly, on a micro level, both the datasets were analysed using the directed content analysis method (Hsieh & Shannon, 2005) following deductive logic (Kyngäs & Kaakinen, 2020). This offered the possibility for a more structured procedure (Mayring 2015, p. 373) to focus on the multiliteracy contextualisations from the individual perspectives of rationale, definition and practice (as described in Section 3.3.1). In practice, the analysis of the individual datasets started by combining all the definitions into the same document and then reviewing each definition of the multiliteracy based on the three analytical perspectives. This was done by highlighting the words and sentences in different colours which addressed the different perspectives. After all the definitions were scrutinised, the different parts of the data were rearranged into new documents based on the three analytical perspectives to enable more nuanced analysis. For example, in dataset 2, the contextualisations were divided into three separate data sheets. In contrast, in the analysis of dataset 3, the data sheets were also grouped specifically by discipline. Thus, dataset 3 consisted of six different data sheets. These sets of data were then read again several times, and the data were thematically grouped based on the commonalities and differences found. Simply put, the aim was not to comparatively analyse the data based on the different curricula but rather to provide an overview of the phenomena more generally. From this perspective the analysis can be understood as a conceptual synthesis (Gough et al., 2012). The results of these analyses are presented in the Section 6.2.

5.4 Researcher Position

Reflexivity is one of the central ways to promote quality in qualitative research (Berger, 2015). Research, in this case a set of sub-studies and an integrative chapter of the PhD dissertation, is constructed in a certain contextual situation through the active involvement of the researcher. To understand and to evaluate the validity of the research, it is thus important to reflexively take into account the positionality of the researcher. Positionality here refers to the position I have chosen in relation to the research (Savin-Baden & Major, 2013, p. 71). By disclosing and reflecting my positionality, I can help the reader to understand the motives behind the research

which relate to the nature of the knowledge constructed and the possible impact on the research (Lin, 2015). Positionality can relate to the subject of the research, to the participants of the research and to the actual research process and context (Savin-Baden & Major 2013).

Initially, I was interested in understanding the conceptualisations of multiliteracy. In 2015, when I started the dissertation, the Finnish core curriculum for basic education had just been published the previous year. I noticed that the new concept of multiliteracy introduced in the curriculum document had many similar features with other literacy concepts that were more familiar to me. When I had studied for my master's degree in education with a major in media education, concepts such as media literacy, digital literacy and information literacy had been part of the common academic vocabulary. I also noticed that the definition of multiliteracy presented in the core curriculum was made in an abstract manner, leaving quite broad room for interpretation. Against this background, I had two purposes in the first sub-study. I wanted to broaden the theoretical background of the concept by introducing the international multiliteracy discussion to the Finnish national context and also to understand the link between the concepts of multiliteracy and media literacy. These purposes position my research in the interpretative research paradigm (Lin, 2015, p. 25).

However, the results indicated that the Finnish conceptualisation of multiliteracy seemed to be quite unique, so the next logical step was to examine the local understandings further. As I was conducting an article-based dissertation, I had the opportunity to redesign the research plan based on the new knowledge produced in the previous sub-study. This supported the relevance of the research process. In the second and third sub-studies, I focused specifically on the concept of multiliteracy instead of including other literacy concepts. As I was considering the role of multiliteracy within the curricula, I realised that the analysis of the concept of transversal competence offered me an opportunity to understand the broader phenomenon of CBE as well. Through the analyses of the local conceptualisations of transversal competence, it was possible to offer new knowledge on how the contextualisation of CBE was made within the Finnish curricular setting. This led to the design of one of the main findings of this dissertation, the theory of the conceptual contextualisation of CBE.

In this dissertation I have analysed formal written textual documents, a data type familiar in the qualitative research paradigm (Peräkylä & Ruusuvuori, 2018). Rather than involving actual research participants in the research, the analysed datasets consist of conceptualisations of multiliteracy both in international research articles and Finnish local curricula for basic education. In relation to the data, my positionality has been aligned with the interpretative research paradigm. In this paradigm the researcher is positioned to describe and analyse the object of the research rather than entering into dialogue with the participants (Lin, 2015). From

the perspective of validity, two perspectives are important to take into account. On one hand, I have analysed naturalistic data (Jupp, 2006), which I was not able to influence beforehand. On the other hand, I have not been able to communicate with the developers of the original documents, such as the curriculum designers, to confirm the interpreted meanings of the contextualisations.

My research interest has been based on two different positions illustrating the process and context of the research. Firstly, I have created the studies and written the dissertation as part of my doctoral education at the University of Lapland. This has offered me a solid foundation for the literacy and education research, theoretical interest and also the value of the meaning of contextuality. The northern perspective can make visible the role of distance and the local uniqueness. Secondly, throughout the course of the dissertation, I have been working full time at the National Audiovisual Institute (KAVI), a national public authority for media education. This has led me to consider the meaning, value and impact of the research more broadly. As I have worked in my profession to develop media education nationally in Finland, I wanted to link the results of the research outside academia as well. My societal and practical aims in this dissertation are rooted in my desire to develop and further the common good. This can be done by contributing to the education system through the curriculum development and further support for local contextualisations.

I have conducted this dissertation and its sub-studies in a cross-language environment. As a Finnish PhD candidate analysing data in Finnish and publishing in English-language journals and writing this dissertation in English, I have been aware of crossing different boundaries. As the role of English in global scientific publishing is so strong (Kushner, 2003), I considered it almost self-evident that it was necessary to publish in English-language journals—*Seminar.net*, *Nordic Journal of Studies in Education Policy*, and *Education Inquiry*—with a wider potential readership. This enabled me to participate in the international scientific discussion more widely. This is important as CBE is a widely implemented education approach in different parts of the world. Thus, there are better possibilities of utilising the results and findings developed in a relatively narrow language area, such as in Finland. However, I recognise that there are certain specificities to be taken into account. One of the most important is related to my translation and writing process in a language other than my first language. In qualitative research, meanings and interpretation are commonly valued as highly important. In writing about the results and data in a different language, it is important to take caution that the meanings are not lost during this process (van Nes et al., 2010). I have endeavoured to be consistently accurate in this process of evaluating the possible meanings and to be aware of my cross-language position.

As one's positionality is not a stable stance, it is important to take into account the course of time. As dissertation research is a long process, the position of the researcher can change and evolve through the years. This is evident in the article-

based dissertation process. Through reflection, I can identify ways in which my different positions in my daily profession have influenced in the research interest. During the first sub-study, I worked at KAVI as a project researcher, which helped me to understand the meaning of the theoretical background in regard to the development of local education practices. During the second sub-study, I worked as a project manager in an EU-funded project that involved a great deal of European cooperation. This helped me to understand the international aspect of the development of national education systems. For example, CBE is not implemented only in Finland but is part of the broader transnational education policy discussions and a matter of active promotion by various international stakeholders, such as the EU and OECD. This notion helped me to acknowledge the difference in the conceptualisations between international and national contexts. During the third sub-study, I worked as a senior adviser with a professional focus to develop media literacy policy in Finland. Through the preparation process, I had the opportunity to travel and meet many professionals from different backgrounds around Finland. This clarified even further for me the importance of the contextuality of educational practice and of diversifying my understanding within the educational system. This supported my interest in further exploring the local curricula but also in sharpening the focus of the conceptualisations of the transversal competence between different disciplinary perspectives.

6 Summary of the Empirical Findings

The results from the sub-studies are re-constructed in this dissertation to provide a more systematic overview of the findings. Firstly, as a micro-level finding, I describe the relationship between the conceptualisations of multiliteracy in the Finnish core curriculum and the international research discussion (Section 6.1). Secondly, I explore how the concept of multiliteracy is contextualised in the Finnish local curricula (Section 6.2). Thirdly, on the broader macro-level, I explain how the conceptual contextualisation was made in the Finnish local curricula (Section 6.3).

Based on the new knowledge provided by the empirical findings, I contribute to the academic discussion by presenting a theory of the conceptual contextualisation of CBE (Chapter 7). The findings presented in these chapters are discussed in the Chapter 8, which is structured based on the theoretical, societal and practical aims of the overall research.

6.1 Relationship between Conceptualisations of Multiliteracy in the Finnish National Core Curriculum for Basic Education and the International Research Literature

The first main finding of the research is the clarified relationship between the conceptualisation of multiliteracy in the Finnish national core curriculum and international academic research. Overall, multiliteracy in the Finnish national core curriculum is defined as a transversal competence, the description of the outcome of education. However, the international peer-reviewed research articles mainly refer to multiliteracy/multiliteracies as a pedagogical approach (Figure 9). This differentiates the conceptions of multiliteracy between the Finnish core curriculum and the international research field.

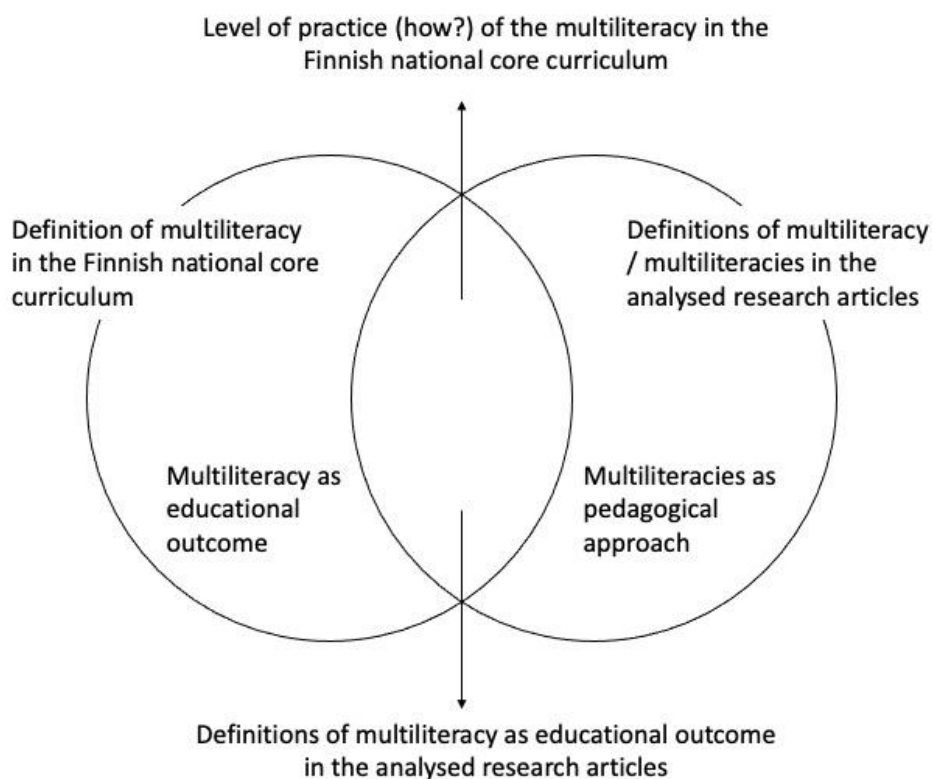


Figure 9 Relationship between Conceptualisations of Multiliteracy

The analysis of the research articles made evident that the concepts of both multiliteracy and multiliteracies cross various fields of research. Despite this diversity, the origins of the concepts can be traced based on the citation patterns. In almost all of the articles included in the analysis, multiliteracy was originated to the work by a group of researchers who arranged a meeting in New London, New Hampshire, in 1994, and the publishing of their article, ‘A pedagogy of multiliteracies: Designing social futures’ in 1996. This group was the aforementioned New London Group (NLG). In 10 of the analysed 14 articles, references were made either to NLG’s original multiliteracies article from 1996 (The New London Group, 1996) or to their later writings (Cope & Kalantzis, 2000, 2009).

Originally, multiliteracies were not defined as a distinct set of abilities or educational outcomes as interpreted in the Finnish national core curriculum but rather as a pedagogical approach for English literacy teaching (Cope & Kalantzis, 2009; The New London Group, 1996). An illustrative feature of its approach is that it addresses the various modes of meaning, which are ‘dynamic representational resources, constantly being remade by their users as they work to achieve their various cultural purposes’ (The New London Group, 1996, p. 64). This approach continued

in the later writings of the members of the original group (Cope & Kalantzis, 2000, 2009). The next citation illustrates how Tan and Guo (2014, p. 31) researched the use of the multiliteracies pedagogy in secondary education:

We implemented the New London Group's (Cope & Kalantzis, 2000) pedagogy of multiliteracies in 2 year two (14-year-old) English language classrooms, in collaboration with their language arts teacher (Tan & Guo, 2009; Tan et al., 2010). The New London Group's (Cope & Kalantzis, 2000) pedagogy of multiliteracies was suitable for the school as it offered a framework for the collaborating teacher to include a range of semiotic modes of meaning-making in a wide array of multimodal texts that the students were likely to encounter in their everyday lives

As illustrated in Figure 9, the division between the conceptualisations is not clear-cut. Instead of mutually exclusive, the conceptualisations in regard to pedagogy are rather interrelated and even overlapping to a certain extent. On one hand, the definition presented in the Finnish national core curriculum (2014) describes pedagogical practices related to multiliteracy. On the other hand, in some analysed research articles, multiliteracies or multiliteracy was seen as a set of communication abilities more in line with the Finnish conceptualisation. This is evident in the research article by Westby (2010, p. 64):

Students not only need to be able to communicate effectively in oral and written language, but they also need to communicate effectively in multimodal ways—they need to become skilled in multiliteracies.

This perspective is illustrated in the research by Ajayi (2011, p. 398) describing multiliteracies as a set of communication skills or abilities which students develop (educational outcome):

In this study, multiliteracies is used to refer to the ability to interpret and construct different possibilities of meanings made available by differing text types associated with digital technologies and multimodal texts such as the Internet, video games, digital video, visual images, graphics and layouts.

The relationship between the two types of conceptualisations—multiliteracy as an educational outcome and multiliteracies as a pedagogical approach—is an important finding to support the further discussion. The role of multiliteracy as an educational outcome reduces the role of the specific pedagogical approach. From the perspective of educational outcome, the emphasis is on the learning outcomes, not the pedagogical approaches or the ways in which they are achieved.

One important difference between the conceptions of multiliteracy in the Finnish national core curriculum and the international research is the singular and plural forms of the concept. In the Finnish context, multiliteracy is defined as singular ('monilukutaito'), whereas in the research setting, the concept is referred to in the plural, multiliteracies. In the Finnish core curriculum (2014), multiliteracy is emphasised as a text-related competence to interpret, produce and evaluate different kinds of texts in different contexts and situations through the use of various tools. As discussed in Section 3.3, according to the original definition by the NLG, both of the concepts *multi* and *literacies* should be read as plural (The New London Group, 1996). This approach highlights the notion of the multiplicity of communications channels and the increasing cultural and linguistic diversity. Multimodality is also evident in the Finnish conceptualisation of multiliteracy since it is based on a broad understanding of text. Texts are defined as information presented through various symbol systems, such as linguistic, visual, auditory, numerical or kinaesthetic or a combination of these. This aspect was emphasised in the analysed articles. As Ajayi (2011, p. 398) notes: 'Literacy has hitherto been defined as the ability to read and write print-based materials. However, this is increasingly becoming inadequate in the face of digital, multimodal and hybrid textual forms made possible by new media technologies.' This relates to the diversity of literacies.

The second feature of multiliteracy conceptualisation is related to the multiplicity of literacies. According to the original work by the NLG, literacy should not be understood strictly as the formal literacy traditionally taught in schools, but rather the pedagogy should take into account the various forms of literacies outside the school context. In the analysed articles, this perspective is evident in the study by Marshall et al. (2012) focusing on the use of different literacies in digital contexts. The next citation (Marshall et al., 2012, p. 46) illustrates how different forms of communication are combined in the use of different languages in a digital context:

Unlike Julia's sample of academic writing [...], Amy's communication via Facebook has many language forms associated with informal, digital literacies as well as a range of complex multilingual communication strategies.

In the Finnish curricular context, the diversity of literacies is also taken into account as multiliteracy is defined as an umbrella concept that covers a variety of literacy concepts. 'Multiliteracy involves many different literacies that are developed in all teaching and learning' (FNBoE, 2014, p. 22). However, these literacies are not defined or limited in the national-level core curriculum. This emphasises the importance of more nuanced national-level analyses, a topic to be discussed next.

6.2 Multiliteracy in the Finnish Local Curricula

The second main finding of the research depicts how the concept of multiliteracy is contextualised in the Finnish local curricula for basic education, both in general and in a disciplinary setting. I present the results in line with the research questions concerning the rationale, definition and practice of multiliteracy. As illustrated in Figure 10, the general definition—covering the scope of the whole curriculum—of multiliteracy was mostly contextualised at the level of practice, whereas the contextualisation of the level of rationale was made more infrequently.

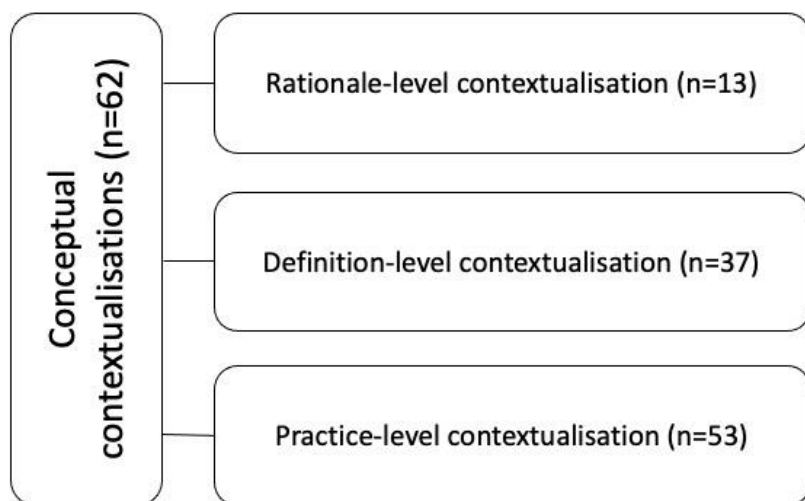


Figure 10 Levels of Conceptual Contextualisation of Multiliteracy in the Finnish Local Curricula

In other words, in 53 of the analysed local curricula in dataset 2 the ways in which multiliteracy can be developed were contextualised. In 37 local curricula the definition of the concept was contextualised. Only in 13 local curricula was the rationale contextualised. The levels are not mutually exclusive but rather complementary. This means that the conceptual contextualisation can vary from narrow to broad. The same contextualisation can cover the scope of one or more of the different levels. In 30 of the analysed curricula the contextualisation was narrow in nature, focusing only on one level, whereas in 11 of the curricula the contextualisation was made broadly, covering all the levels. It is important to note that the scope does not describe the depth or accuracy of the contextualisation. Rather, it illustrates how broadly the contextualisation covers the different levels.

Compared to general definition, the contextualisations differed in the analysed disciplines, social studies and mathematics. As illustrated in Figure 11, the concept

of multiliteracy was mostly contextualised at the level of definition in both the disciplines, whereas the contextualisation of the level of rationale was almost non-existent.

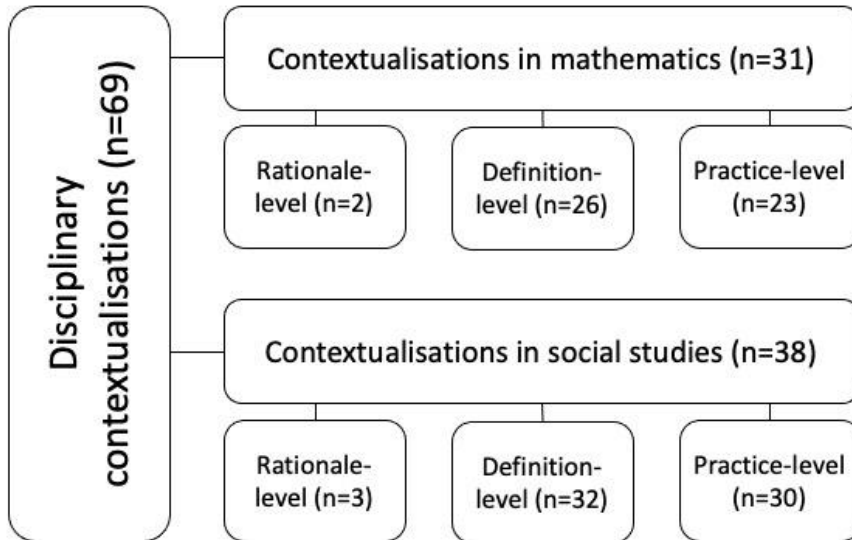


Figure 11 Levels of Disciplinary Contextualisation of Multiliteracy in the Finnish Local Curricula

From all the 69 found contextualisations made in these disciplines, 38 were made in social studies and 31 in mathematics. Of the contextualisations made in mathematics, in 26 the focus was on the definition of the concept. In social studies, the number was 32. Of the contextualisations in mathematics, 23 focused on the ways in which multiliteracy can be developed—on the level of practice. In social studies, 30 of the contextualisations focused on the level of practice. Rationale-level contextualisations were made in only two curricula for mathematics and in three curricula for social studies.

Next, I present the results more thoroughly based on the levels of contextualisation, rationale, definition and practice. I have structured all the sections following the same pattern. First, I focus on the transversal contextualisation of the general definition of multiliteracy, which covers the scope of all disciplines through grades 1 to 9. These results are based on the analysis of dataset 2. Then, I present the results focusing specifically on the disciplinary contextualisation of multiliteracy in social studies and mathematics in lower secondary education, covering grades 7 to 9. These results are based on the analysis of dataset 3.

6.2.1 How is Multiliteracy Rationalised in the Finnish Local Curricula?

6.2.1.1 Transversal Conceptual Contextualisation at the Level of Rationale

In 21% of the analysed local curricula (dataset 2) where the concept of multiliteracy was contextualised in any manner, the contextualisations focused on the rationale behind multiliteracy. This level of contextualisation describes how the need for multiliteracy is expressed in curricula. The contextualised rationale aligned with the same aspects as presented in the national core curriculum, as well added new contextual reasons for developing multiliteracy.

Multiliteracy was rationalised mainly to support identity construction, understanding cultural communication and developing critical thinking and learning skills. According to the analysis multiliteracy was also described in local curricula as supporting the pupils' opportunities to better understand the fragmented world around them and its phenomena. This perspective is evident in the following data extract illustrating the importance of multiliteracy in interpreting the world:

By supporting the development of the pupils' multiliteracy, they are given an opportunity to understand the surrounding world and its phenomena more diversely (Curriculum 62a).

Multiliteracy was also reasoned in terms of the daily environments of children, in which ICT and the media have a meaningful role. According to the contextualisation, education should consider this and support the development of abilities needed in these environments. According to the contextualised curricula, literacy has a great influence on the pupils' futures, and thus their multiliteracy should be developed. The next data extract illustrates how the importance of multiliteracy is rationalised from the perspective of equality:

Multiliteracy is a civic skill for the future. Everyone should be able to interpret and produce text in different modes in their lives (Curriculum 55a).

These different perspectives are familiar in the current literacy studies and other discussions about multimodal meaning-making. For example, in the original work by the NLG (1996, p. 61), it is highlighted that the basis for the development of the literacy pedagogy is to consider the multiplicity of communications channels and increasing cultural and linguistic diversity. This can be understood to support the possibilities for understanding the multifaceted world in which the pupils are living. According to Cope and Kalantzis (2009, p. 166), multilingualism refers to a variety of languages in 'professional, national, ethnic, subcultural, interest or affinity group contexts'. They also highlight the fact that national language is not a singular but that it can take several forms depending on the contextual factors (Cope & Kalantzis, 2009). Literacy has been seen as a way to connect the practices between

school and the everyday lives of young people. Through literacy education, there is thus a possibility of supporting the development of the relevant literacy competences of the pupils. Bjørgen and Erstad have studied the ways in which the classroom's digital practices become meaningful in the pupils' lives outside the formal education contexts. Rather than understanding the school and outside-school contexts as exclusive entities, their relationship can be understood from a more dynamic perspective. This relates to the pupils' understanding of the digital practices in the educational setting and their possibilities in their out-of-school contexts (Bjørgen & Erstad, 2015). These contextualised rationales for multiliteracy align with the reasons the Finnish policy designers have expressed when discussing the implementation of multiliteracy within the Finnish curricular framework. According to Halinen et al. (2015, p. 141), literacy is 'strongly connected to a person's self-development and involvement in society through the ability to understand, analyse and utilise texts'.

6.2.1.2 Disciplinary Contextualisations at the Level of Rationale

Within the contextualisations made in the discipline of social studies, multiliteracy was rationalised in 7.9% (n=3) of the analysed curricula (dataset 3). The rationale of multiliteracy was described from four different perspectives. First, multiliteracy was reasoned mainly from a participatory perspective. This means that the competence is described to support the pupils' understanding of themselves as part of the global world in order to understand and participate in the surrounding society, to promote interest in society and societal issues and to promote the active citizenship of the pupils and support them in having their voices heard. Second, the perspective highlights the disciplinary rationale. Multiliteracy was described as a requirement for social studies and to promote interest in the discipline. Third, the perspective focuses on economic reasons stating that multiliteracy helps with the understanding of economics to support personal finances and to evaluate the environmental effects of economics. Fourth, from the social cohesion perspectives multiliteracy was reasoned to foster acceptance, tolerance and the ability to dialogue with different kinds of people and to understand different communities and minorities. For example, in the following data extract, the relationship between multiliteracy and tolerance is explicated:

Sincere understanding of different communities and minorities requires versatile textual skills. For example, the different interpretations and opinions based on the same statistics become understandable when the pupil succeeds to identify with the role of interpreter. Thus, tolerance and the ability for dialogue with many kinds of people is developed. (Curriculum 16b.)

Within the discipline of mathematics, rationale-level contextualisation was found in 6.5% (n=2) of the analysed curricula (dataset 3). In these contextualisations, the

competence of multiliteracy was reasoned mainly from a disciplinary perspective by highlighting that multiliteracy supports not only the development of general learning skills but also the learning of mathematics. This aspect is highlighted in the following data extract:

The aim of the mathematics teaching is to develop pupil's multiliteracy. Good multiliteracy promotes the learning of mathematics. (Curriculum 19b.)

The results illustrate the differences in how multiliteracy is rationalised in social studies and mathematics. Even though both of the disciplines are academic disciplines—in contrast to arts and crafts—they have different approaches to multiliteracy. Differing rationales can help to describe the meaning of multiliteracy in a more relevant manner in regards to the disciplines. This relates to the general discipline-specific rationales. In social studies, the objective can be understood to support understanding and participation in society. Through trends such as globalisation and technological development, these objectives are increasingly connected to the diversifying literacy practices. For example, Baildon and Damico (2011, p. 7) explain the reconceptualisation of social studies from the perspective of new literacy:

globalization is changing the way people live their lives, creating new opportunities for global communications and interactions, and making people more aware of pressing global issues, such as global climate change and environmental degradation, social injustice and human rights, the impact of multinational corporations, militarization and terrorism, and global diversity and interconnectedness.

As a specific discipline, mathematics has a recognisable relation to various symbol systems. Thus, the multiliteracy perspective can support mathematical education. For example, Takeuchi (2015, p. 160) explores the meaning of the multiliteracies approach in supporting pupils' participation in mathematics education by 'highlighting the role of various languages and multimodal resources'. The multiliteracy approach can also support mathematical education by introducing new ways of expressing mathematical thinking. In their study, Joutsenlahti and Kulju present a multimodal languaging model to expand the ways of mathematical expression. They argue that, in addition to the evaluation of learning the different modes of mathematical expression support the learning of mathematical concepts (Joutsenlahti & Kulju, 2017).

6.2.2 How is Multiliteracy Defined in the Finnish Local Curricula?

6.2.2.1 Transversal Conceptual Contextualisation at the Level of Definition

The general definition of multiliteracy was contextualised in 63% of the analysed curricula (dataset 2). The multifacetedness of the concept and the differences in the local settings are evident in these contextualisations which were made in various ways in the local curricula. These contextualisations have many similar features as well as differences.

In many contextualisations, aspects presented in the multiliteracy definition made in the national core curriculum were emphasised. These include various abilities, such as critical thinking and the skills needed to obtain, combine, modify, produce, interpret and evaluate information in different contexts and situations. The broad conceptualisation of the text was highlighted as a basis for multiliteracy.

Multiliteracy was defined in a broad sense. For example, the use of the concept was compared to the way in which ‘general sophistication has been used previously’ (Curriculum 57) and defined ‘as the basis for all other broad-based competencies’ (Curriculum 40). Multiliteracy was also described as the ‘final aim in developing general literacy’ (Curriculum 52). In many contextualisations, the diversity of information and perspectives as well as the skills needed to curate relevance from the ‘flood of information’ were described as part of multiliteracy. According to contextualisations, the abilities for creative content production and flexible interpretation and the skills needed to use ICT and to learn how to learn are also included in multiliteracy. From a cultural perspective, the contextualisations included the abilities to understand various views of the world as well as multiculturalism as part of multiliteracy. In addition, the ability to master various concepts and understand and appoint different phenomena are part of multiliteracy.

Multiliteracy is defined in the national core curriculum in a broad manner leaving room for interpretation and to be defined through the local contextualisations. These aspects include, for example, explicating the different symbols related to the broad understanding of text and the sub-literacies of multiliteracy. In the general definition in the national core curriculum it is stated that ‘multiliteracy involves many different literacies that are developed in all teaching and learning’ (FNBoE, 2014, p. 22). Based on the analysed contextualisations, these symbols can be pictures, numbers, letters, maps, clocks and supportive sign-language signs. Pictures refer to artworks, pictures in textbooks, illustrations, comics, advertisements and animations. In the contextualisations the literacies mentioned to be included in multiliteracy are presented in Table 7.

Table 7 Sub-literacies in the Multiliteracy Contextualisations

Literacy concept	No. of mentions
Media literacy	6
Basic reading and writing literacies	5
Visual and pictorial literacy	5
Critical literacy	4
Numerical literacy	3
Digital literacy	3
Information literacy	3
Environmental literacy	2
Cultural literacy	2
Web literacy	1
Analytical literacy	1
Health literacy	1
Technical literacy	1
Technological literacy	1
Literacy of gestures and expressions	1
Social-situations literacy	1
Literacy in nonverbal communication	1

These explications make the abstract definition more concrete. However, it is important to note that compared to the overall number of the analysed contextualisations, it seems to be quite uncommon to specify the sub-literacies existing in the broader concept of multiliteracy. The most frequently mentioned literacy was media literacy, and it was brought up in only six of the analysed contextualised definitions. It is also notable that many of the literacies were mentioned only once. This illustrates the diversity of the multiliteracy.

Conceptual contextualisation at the level of definition supports making the concept more relevant in the local setting. In the contextualisations multiliteracy was related to the traditional view of general literacy. This aspect of multiliteracy was also evident in the original idea of the policy designers (Halinen et al., 2015) as they have highlighted the decreasing tendency among Finnish pupils to read and the growing gap between strong and weak readers. According to Halinen et al. (2015, p. 142), it is necessary 'to find new means to teach literacy and emphasise the importance of literacy in school'. The relationship between multiliteracy and traditional literacy brings up the question of the connection between other literacy conceptualisations as well. For example, Stordy (2015) has emphasised the influence of technological development on the field of literacies. As a variety of different literacy conceptualisations have been introduced to capture the dimensions of the development, there is a considerable need to consider the relationships between these concepts. This is especially important

as many of the literacy concepts have their own traditions' specific definitions and discussions. For example, in the field of media literacy, there are a variety of different definitions presented, and no consensus among the researchers has yet been achieved (Palsa & Ruokamo, 2015; Potter, 2013). Thus, as the definitions of the sub-literacies are not straightforward or apparent, the definition of the broader literacy conception cannot be taken for granted, either.

6.2.2.2 Disciplinary Contextualisations at the Level of Definition

In social studies, the contextualisations focused on the definition in 84.2% (n=32) of the analysed curricula (dataset 3), whereas in mathematics, the percent was 83.9 (n=26). As illustrated in Figure 12, the disciplinary contextualisations between the disciplines had shared features as well as differences.

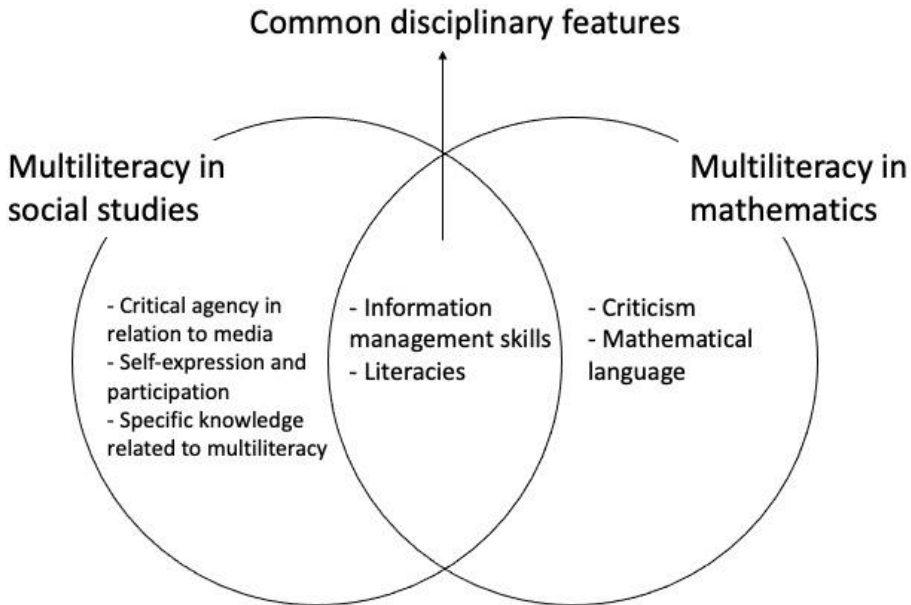


Figure 12 Distinct and Shared Features of Contextualisations between the Disciplines

The first common feature was to define multiliteracy based on *information management skills*. Information management skills refers here to the abilities to acquire, mix, edit, produce, present, share, interpret and evaluate different kinds of information. The ability to interpret and produce graphical presentations and to read pictures, statistics and diagrams were also aspects of multiliteracy shared by both disciplines.

The second common feature highlighted in both the disciplines is *multiliteracy as an umbrella concept*. This refers to the various literacies included in multiliteracy.

In both disciplines, media literacy, analytical literacy, picture literacy and numerical literacy were named to be included in multiliteracy.

In terms of the disciplinary differences, contextualisation in social studies had three specific aspects. These include 1) critical agency in relation to media, 2) self-expression and participation and 3) specific knowledge related to multiliteracy. The aspect of critical agency in relation to media emphasises the pupils' position, such as attitude towards media, and includes the abilities to critically assess the role and meaning of media and to critically interpret information and information sources, such as the internet, newspaper, film, television and social media. Critical agency in relation to media also included the use of different communication tools and the ability to protect privacy. From the perspective of *self-expression and participation*, multiliteracy was defined as the ability to express views and oneself by versatile means of communication and participation. This includes the ability to produce different texts, to know how to form and argue a justified opinion and to take into account different perspectives. Participatory media skills were also included in multiliteracy. Pupils were expected to be able to use multiliteracy to influence and participate in their own environment, in media and in society. In social studies this knowledge related to multiliteracy was contextualised as information about society in general, the role of media in society, economics, consumption and private housekeeping. Other topics included the effects of politics on common wellbeing and one's personal life, operating within the justice system and the open dialogue and principles of social decision-making, 'which are the basis of democracy' (Curriculum 16b).

However, the specific features in mathematics include *criticism* and *mathematical language*. Whereas in social studies the critical attitude was defined particularly in relation to media, critical attitude in mathematics was referred to in a more general manner as critical thinking and the ability to understand and question the surrounding world.

Mathematical language was a central disciplinary feature of how multiliteracy was contextualised in mathematics. For example, in one curriculum it was explicated illustratively, 'from the broad field of multiliteracy, [the pupil] knows especially the numeric, symbolistic, and pictorial areas that are essential to mathematics' (Curriculum 19b). In addition to the extract above, mathematical multiliteracy was defined as the ability to read, make, prepare and interpret different graphical presentations, pictures, graphs, statistics, tables and diagrams and to express oneself mathematically. Multiliteracy in mathematics was also described as including abilities to translate common language into mathematics and vice versa. Multiliteracy in mathematics was understood to support the use of disciplinary language to solve mathematical problems and to analytically and critically scrutinise mathematical solutions. Multiliteracy was contextualised to include analytical, logical and creative thinking required to solve mathematical problems.

Multiliteracies not only capture the variety of ways of meaning-making but also influence the relationship between the writer and text. As explained by Thibaut and Curwood, new technologies allow authors not only to write texts but also to design and produce them. ‘This, in turn, has affected the nature of the notion of authorship, shifting from a static text-author process to a more dynamic and dialectic process’ (Thibaut & Curwood, 2018, p. 49). This change of role is evident in the contextualisations of multiliteracy in both the analysed disciplines. In social studies, multiliteracy was connected to self-expression and participation. As the ways of participation are in constant flux, such as due to technological development, the disciplinary literacy practices should also reflect this and keep up to date. In mathematics, a typical way to contextualise multiliteracy was to highlight the role and meaning of the specific mathematical language that pupils were expected to learn. However, as Joutsenlahti and Kulju (2017) have noted, mathematical thinking can be expressed in various ways. By understanding the variety of the available literacy practices, it is possible to open up and broaden one’s participatory possibilities in the disciplinary settings. This could strengthen access to the disciplinary knowledge (Young, 2013; Young & Muller, 2013) and the mathematical participation of the pupils.

6.2.3 How is Multiliteracy to be Developed in the Finnish Local Curricula?

6.2.3.1 Transversal Conceptual Contextualisation at the Level of Practice

In terms of a general definition of multiliteracy, most of the conceptual contextualisations (85%) focused on describing the ways in which multiliteracy can be developed (dataset 2). These practice-level contextualisations consisted of four different aspects including the descriptions of 1) pedagogical approaches, 2) activities that can support the development of multiliteracy, 3) resources needed in multiliteracy development and 4) local stakeholders for possible cooperation.

Firstly, the analysed contextualisations illustrate that multiliteracy can be advanced from various pedagogical perspectives. One central feature of these approaches is the diverse nature of multiliteracy. For example, multiliteracy was described to be at the centre of all learning processes. The competence should be developed using various senses, synchronising different disciplines and using comprehensive, research-based and phenomenon-based pedagogies. Also, the pedagogic approach that supports imagination and inventiveness should be used to promote pupils’ multiliteracy. Multi-professional media education as well as local culture were also viewed as a possible way of developing multiliteracy. In another local curriculum, the importance of a teacher’s own reflections was highlighted:

To support multiliteracy, teachers should reflect what is taught, why and how (Curriculum 47a).

Secondly, the contextualisations describe different activities to develop multiliteracy. According to the data, multiliteracy can be developed in a local setting, such as through presentations, plays and other group projects; organising events and celebrations with related learning objectives; organising field trips; offering students the opportunity to participate in school communications; collecting yearbooks or using reading diplomas or specific multiliteracy diplomas; and encouraging students to participate in other student union activities and in different educational theme weeks and campaigns.

Thirdly, the resources needed for the development of multiliteracy were also mentioned as part of the practice-level contextualisations. Based on the analysed contextualisations, these resources include various learning materials, learning environments and equipment used as part of teaching and learning. Learning materials include, for example, different multimedia and hypermedia materials as well as local and global media and other materials that are meaningful for pupils. Teachers' know-how and skills were also emphasised as it was explained that multiliterate teachers use metacognition to develop their students' multiliteracy. The importance of both traditional and new ICT-based and digital learning environments was underscored.

The fourth aspect of the practice-level contextualisations focuses on local cooperation. Libraries were the most common actors for cooperation. More specifically these opportunities for cooperation with libraries included media education carried out at libraries, reading suggestions that professional librarians make and library orientations where the information search, the use of diverse sources of information and the educational use of the materials produced by libraries were introduced. Besides libraries, other possible actors for cooperation mentioned in the contextualisations include cultural and youth work, music institutes, local media organisations, schools for visual arts, local art communities, museums, theatres and cinemas.

The concept of multiliteracies was originally introduced by the NLG (1996) as a pedagogical approach to literacy education. This approach consists of several pedagogical aspects, including situated practice, critical framing, overt instruction and transformed practice. When conceptualising multiliteracy as a transversal competence—an educational outcome—a variety of different pedagogical opportunities open up. In the analysed local curricula, these include, for example, research-based and phenomenon-based pedagogies. Despite the different concepts, various pedagogical approaches are not necessarily exclusive in nature. For instance, Seglem and Garcia (2018) illustrate the implementation of a multiliteracies pedagogy to the inquiry-driven classroom. They describe how inquiry pedagogy can broaden the pedagogical approach in multiliteracies 'to focus on teacher and student questioning in classrooms and as means of extending classrooms into broader civic society' (Seglem & Garcia, 2018, p. 62). There seems to be no specific educational

activity regarding how to promote multiliteracy, but rather the conceptual contextualisations can be understood to provide a spectrum of different educational practices. This can support the planning of the educational activities in the specific educational setting. From a contextual perspective, this can be connected to the high level of autonomy of the teachers (Lavonen, 2017), a familiar feature in the Finnish education system.

6.2.3.2 Disciplinary Contextualisations at the Level of Practice

In social studies, 78.9% (n=30) of the disciplinary contextualisations addressed the level of practice. In mathematics, this percent was 74.2 (n=23). For both disciplines, multiliteracy was described to be developed in various ways. These contextualisations illustrated the 1) educational contents, 2) teaching equipment and texts and 3) educational methods and practices that support the development of multiliteracy.

Firstly, in both the disciplines there were similar educational contents mentioned that can be addressed to develop multiliteracy. These include issues related to consumption and economy. In social studies, multiliteracy was described to be developed, for example, by addressing the ways in which social questions, such as human rights, minorities, politics, laws and ethics, are considered in the traditional and social media. Other topics to be addressed include the role of media and the meaning of freedom of speech, trustworthiness and criticality and equality. However, in mathematics, specifically mathematical content, such as numbers, measurement units, equations, functions and mental calculations, were mentioned as educational contents related to multiliteracy.

Secondly various pieces of teaching equipment and texts were mentioned as ways to promote multiliteracy. These include both media equipment and media texts. For both disciplines, books—printed and digital—were mentioned as media that can be used as a way to develop multiliteracy. Text-wise, educational videos, pictures, tables, simulations, diagrams, drawings and plans were mentioned within both disciplines. Disciplinary differences related to equipment and materials roughly followed roughly the logic of the level of content; for instance, media was named as a key content in social studies, and the suggested materials included various forms of traditional and digital media. Different media include newspapers, magazines, television, ICT, computer games, websites, blogs and social media. Popular culture was also mentioned as a source for developing multiliteracy in social studies. Texts in social studies refer to videos concerning the local environment and culture, graphs, statistics, opinion polls, research and knowledge produced by different actors, such as public authorities, commercial stakeholders, communities and individuals. In mathematics, specific texts included charts, models, visual tasks, interactive tools, symbols and numeric symbol systems, geometrical forms, digital ways of expression, different measurement units and quality transformations.

Thirdly, various educational methods and practices were described in the disciplinary multiliteracy contextualisations. Shared practices for both disciplines included cooperative working methods, such as group work, and the production of different materials and information. In social studies, the methods and practices included various general educational methods, such as projects, discussions, essays, presentations and using and interpreting different texts as well as more discipline-specific methods. Multiliteracy was described as being developed by studying different human, social and economic issues and social events and phenomena from the perspectives of individuals, communities and society as well as at local, national and international levels. In the contextualisations made in mathematics, multiliteracy was described to be developed through problem-solving and by offering special support for verbal assignments, producing mathematical texts and understanding measurement units. Comparisons of product prices, following the use of money, solving problems from everyday life and assignments related to working life were also described as multiliteracy practices in mathematics. Other methods and practices included the production and interpretation of graphical presentations, presenting visual information as geometric ideas, making observations, utilising visual interpretation methods and using mathematical thinking.

Developing multiliteracy in practice is a diverse and multifaceted question, especially when considering the topic from a transversal perspective transcending different disciplines. The development of multiliteracy can require specific disciplinary awareness to ensure the relevance of the competence to the more accurate disciplinary objectives. As described by Cope and Kalantzis, a multiliteracies pedagogy takes into account the discipline-specific distinct discourses and a variety of modes of communication. Thus, it is also a matter across the field of disciplines. (Cope & Kalantzis, 2018.) By examining how multiliteracy is described to be developed in different disciplines, it is possible to strengthen the nuanced understanding about the different possibilities and to provide opportunities for reflective evaluation of suitable pedagogies, methods and practices, educational contents and equipment and texts.

6.3 Contextualisations of Multiliteracy in the Finnish Local Curricula

The third main finding of the dissertation focuses on the different ways multiliteracy is contextualised in the Finnish local curricula. Micro-level analyses focusing on the contents of the transversal competence of multiliteracy presented in the previous sections enabled me to understand the different ways in which the contextualisations were made and how they are structured in the curricula. In the following subsections, I present the results of the macro-level analyses.

6.3.1 How Were the Contextualisations of Multiliteracy Done in the Finnish Local Curricula?

Conceptual contextualisation can be done in different ways. In the analysis of dataset 2, I discovered four different ways in which multiliteracy was contextualised in the Finnish local curricula. As illustrated in Table 8, these include: emphasis, specification, description and expansion.

Table 8 Types of Conceptual Contextualisations

Name	Description	Data example
Emphasis	Highlighting or prioritising certain aspects of the competence.	Special attention is put on a strengthening the media criticality (Curriculum 37a).
Specification	Explicating and defining broadly defined aspects of the competence in a more concrete manner.	Multiliteracy is based on a broad understanding of text, that in addition to traditional written text includes sound, speech, facial expressions, gestures, movement, pictures and video material (Curriculum 56a).
Description	Explaining certain aspects of the competence in a way that is different to the original definition.	In multiliteracy, the development of spoken, read and written language and the utilisation of ICT and the development of competence through various learning environments are taken into account in a balanced manner (Curriculum 19a).
Expansion	Broadening the scope of the competence, covering more aspects than in the original definition.	Pupils need multiliteracy to interpret the surrounding world and to perceive its cultural diversity <i>and hidden communication</i> (Curriculum 6a, italics added).

The first type of contextualisation discovered in this study is *emphasis*. This type of contextualisation emphasises certain aspects of the competence that should be prioritised or highlighted in the local setting. The second type of conceptual contextualisation is *specification*. This type of contextualisation defines certain aspects more accurately compared to the original definition. Through contextualisation, it is possible to narrow down the room for interpretation and thus lessen the possible vagueness of the concept. In this research, the aspects of multiliteracy specified related, for instance, to certain sub-literacies and symbol systems. The third type of contextualisation identified in this research is *description*. This type refers to those contextualisations in which the competence is described in a different way to the original definition without changing the contents per se. Thus, through contextualisation, it is possible to describe the competence in a more locally relevant manner. The fourth type of contextualisation identified in this research is *expansion*. Even though the original definition of the competence can be broad in nature, through contextualisation additional aspects can be included within the conceptualisation. This can help to broaden the scope of the competence to cover aspects that are seen to be important in the local setting. Even though, these four types of contextualisations have their own characteristics, they are not

mutually exclusive, but may share similar features. Thus, these different ways of contextualising can be understood more as guidelines or perspectives rather than as a strict set of rules.

An awareness of different types of conceptual contextualisations can help in understanding the different possibilities in a more nuanced manner at the local level, particularly in decentralised educational settings, such as in Finland. As Lavonen (2017) has described, local curricula take into account the local context and strengthen the teachers' ownership of education. This can support making the curriculum more relevant for the teachers and thus providing support for the implementation of curriculum. Possibilities for contextualisation relate to the design of the broader curriculum, such as the national core curriculum (Vitikka et al., 2016). Mølstad (2015), for example, notes that the local contextualisation is influenced by the way in which the national curriculum is constructed. Different ways of conceptual contextualisation discovered from the analysed data can also help the designers of the national curriculum to define the educational outcomes, such as the competences, in such a way that they a) enable emphasising certain aspects of the competence, b) specify broadly defined aspects of the competence, c) describe the definition of the competence in a locally understandable and meaningful manner and d) allow a broadening of the scope of the competence from a local perspective.

6.3.2 *How Were the Contextualisations of Multiliteracy Structured in the Finnish Local Curricula?*

Multiliteracy contextualisations took different forms in the analysed curricula. In this research, I have identified four different types of conceptual contextualisations (Table 9). These types of contextualisations include: 1) general contextualisation, 2) objective-specific contextualisation, 3) grade-based contextualisation and 4) content-based contextualisation.

Table 9 Forms of Conceptual Contextualisation

Form of disciplinary contextualisation	Description	Data example
General contextualisation	General contextualisation describes how competence is taken into account in the scope of either the whole curriculum (transversal contextualisation) or in a specific discipline (disciplinary contextualisation)	[In mathematics] the aim is that pupils <ul style="list-style-type: none"> familiarise themselves with multiliteracy; know the mathematically relevant areas from the broad field of multiliteracy, such as the numeric, symbolic and pictorial areas; learn to produce, interpret and evaluate text and be critical towards it; maintain a mathematical interest in phenomena; pursue clear mathematical expression; and be responsible for their own studying and the results thereof. (Curriculum 19b.)
Objective-specific contextualisation	Objective-specific contextualisation describes how the transversal competence relates to the specific disciplinary objectives	O[bjective]4 T[ransversal competence]4. Accurate verbal and written forms of expression are practised in information production. (Curriculum 22b.)
Grade-based contextualisation	Grade-based contextualisation describes how transversal competence is taken into account in different grades within the specific disciplines	Grade 7. Multiliteracy: To support the pupil in becoming competent in exact mathematical expression, verbally and in writing. Grade 8. Multiliteracy: To guide the pupil in detecting and understanding the relationships between the things learned and to support the pupils in solving mathematical tasks that require logical and creative thinking and developing the skills needed in these tasks. Grade 9. Multiliteracy: To guide the pupil in developing information management and analysis skills and to guide the critical consideration of information. (Curriculum 23b.)
Content-based contextualisation	Content-based contextualisation describes how the transversal competence is related to the specifically defined disciplinary contents	Social studies: C[ontent area]1: T4 Criticality towards advertisements, rights and duties of citizens, understanding the diagrams of statistics. C[ontent area]2: T4 Running errands with the judicial system, recognition of efforts of political influence. C[ontent area]3: T4 Media literacy: consideration of electoral results and support of political parties. C[ontent area]4: T4 Criticality and the interpretation of references. (Curriculum 25.)

In the curricula analysed in this study, general contextualisation was the most common type of contextualisation. *General contextualisation* can refer from a transversal perspective to all different disciplines (transversal contextualisation), or it can cover the scope of an individual discipline (disciplinary contextualisation). All the multiliteracy definitions covering the scope of the whole curriculum in dataset 2 illustrate general types of conceptual contextualisations. In addition, most of the contextualisations (72.5%, n=50) analysed in dataset 3 were general in nature, illustrating how a particular competence is understood in the context of the whole discipline.

General contextualisation is the broadest type of contextualisation as it can cover all grade levels and all disciplines or particular discipline, whereas other types are more narrow in their scope. As the same discipline can consist of several different objectives, *objective-specific contextualisations* describe how the competence is related to a certain—more precisely defined—disciplinary objective. In dataset 3, 18.8% (n=13) were these types of contextualisations. I focused on the disciplinary contextualisations covering the whole of basic education (dataset 2) but also addressed the lower secondary education in particular (dataset 3), covering grades 7 to 9. In some of the analysed local curricula (8.7%, n=6) the competence was contextualised specifically for different grade levels. These types of contextualisations are termed *grade-based contextualisations*. This enables a focus on and description of the gradual development of the competence through the educational levels. The fourth type identified relates to the specific contents described in the curriculum. *Content-based contextualisations* connect the competence with the content areas of the specific discipline. In dataset 3, 7.2% (n=5) of the contextualisations were made in relation to the contents. Different types of contextualisation are not exclusive in nature. For example, in the analysed data multiliteracy was contextualised by describing what it means specifically in relation to the specific disciplinary objective at a specific grade level. Thus, the scope and accuracy of the different contextualisations can vary. However, this is not very common. In dataset 3, the different types of contextualisation were combined in only 7.2% (n=5) of the analysed curricula.

Competences can be conceptualised in different ways, which influences their role across the structure of the curriculum. ‘Disciplinary competences’ refers to the competences that are relevant for the specific discipline, whereas ‘transversal competences’ can be more general in nature, relating to several disciplines (Hernández-de-Menéndez & Morales-Menendez, 2016). The analysis of the data enabled me to identify the different forms in which CBE is contextualised across the disciplines. On one hand, conceptual contextualisation can be made in a transversal manner covering all the various disciplines, whereas on the other hand, through disciplinary contextualisation, it can be made more specifically. Different forms of contextualisation—namely general contextualisation, objective-specific contextualisation, grade-based contextualisation and content-based contextualisation—provide a way to further understand the relationship between different types of competences. As the transversal competence is contextualised in the disciplinary setting, the nature of transversal competences become more diverse. The same competence which is originally defined to transcend the disciplines has discipline-specific conceptualisations. Thus, for example, mathematical multiliteracy is different from multiliteracy within the setting of social studies.

7 Theory of the Conceptual Contextualisation of Competence-based Education

This research—the aims, analysis and the findings—is based on the data following the methodological tradition of qualitative research with key elements familiar from grounded theory research (Birks & Mills, 2015; Conlon et al., 2020). Following on the inductive logic from specific to more general, I form a theory based on the knowledge and main results provided through the individual sub-studies. The next figure illustrates how the sub-studies have contributed to the different aspects of the developed theory (Figure 13).

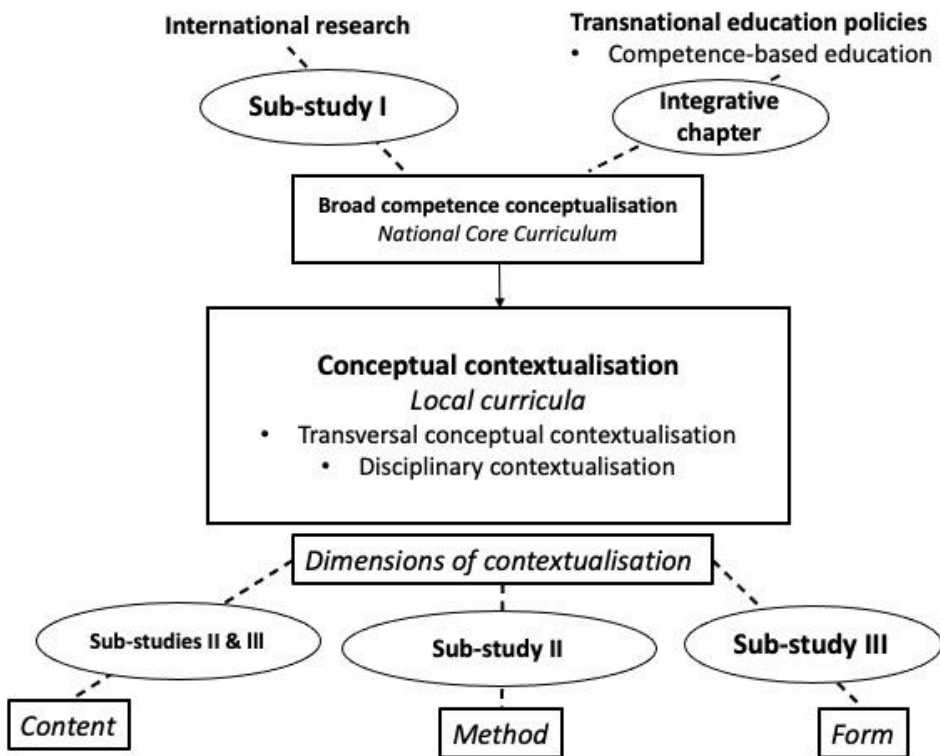


Figure 13 Contribution of the Sub-studies to the Theory

Curricular contextualisation is explored in this research through three datasets. Firstly, emphasis is put on the relationship between national-level conceptualisation and the international research discussion (dataset 1) and international education policies (integrative chapter of the dissertation). Secondly, the focus is put on the general contextualisation of the concept (dataset 2). Thirdly, curricular contextualisation is studied from a disciplinary perspective (dataset 3). In the theory I combine and illustrate the different dimensions I have found central to conceptual contextualisation. Even though the dissertation is situated within the Finnish education system, the theory enables the transcendence of situational boundaries and offers the opportunity to apply, to reflect to and to further develop the results. I use the model to depict the central terms and dimensions related to conceptual contextualisation and their relationships (Jaccard & Jacoby, 2010).

Following the inductive logic of grounded theory research, I broaden the scope from the empirical findings to address the broader, macro-level, phenomenon. Through the analysis of the contextualisation of specific transversal competences, namely multiliteracy, at the micro level within the Finnish curricular framework, I have the opportunity to contribute and to provide new knowledge in the academic fields of curricular contextualisation (e.g. Fernandes et al., 2013; Leite et al., 2018) and CBE (Andronache et al., 2015; Erstad & Voogt, 2018; Nordin & Sundberg, 2016; Voogt & Roblin, 2012; Yates, 2016) in general. Besides the added knowledge provided by the empirical findings, this dissertation contributes to the research field of curricular contextualisation by introducing a theory of the conceptual contextualisation of CBE (Figure 14).

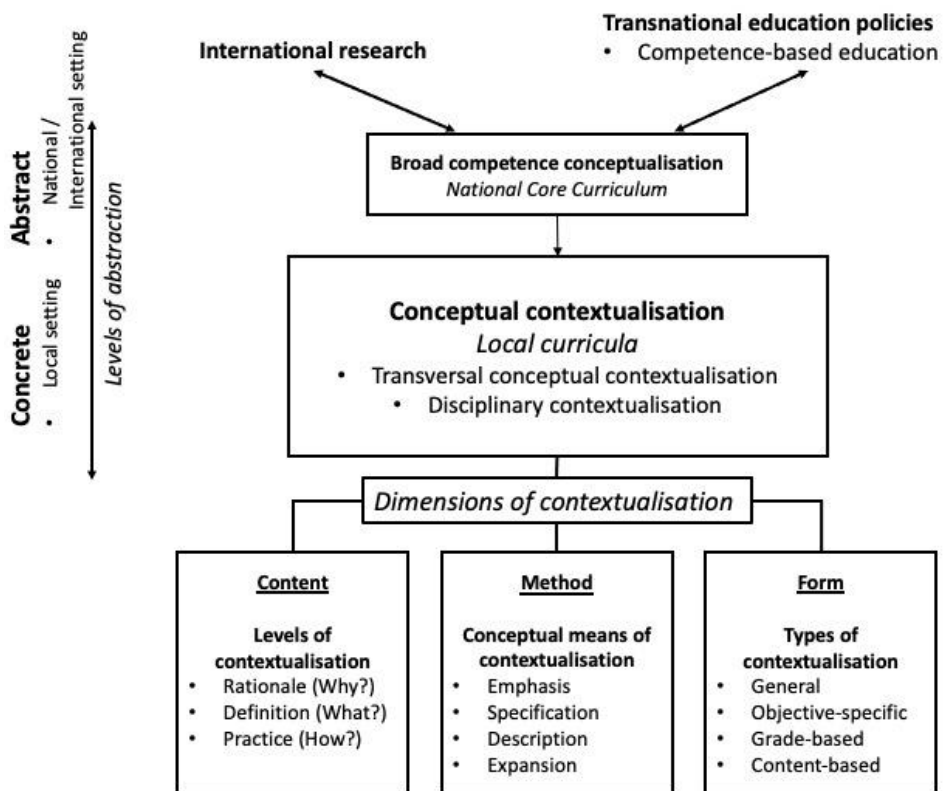


Figure 14 Theory of the Conceptual Contextualisation of Competence-based Education

Conceptual contextualisation illustrates the travel between different levels of abstraction, from abstract conceptualisations to more concrete descriptions. This can be understood as the difference between theoretical conceptualisations and more practical definitions. Conceptualisations made at the different levels of abstraction can have different roles and aims. Abstract conceptualisations, on one hand may provide the needed scope to capture the different perspectives, ideas and topics but they may not be as precise at the level of practice, thereby losing their definitive power (Sartori, 1970). Contextualised definitions, on the other hand, can be easy to utilise and understand at the level of practice, but they can be too accurate for broader purposes, thereby, decreasing their possibilities for applicability.

In this research, I understand the concept of theory, in line with Jaccard and Jacoby, as a set of statements about the relationship between different constructs (Jaccard & Jacoby, 2010, p. 28). This creates the basic structure for the model. In terms of competence conceptualisations, the conceptual contextualisation captures aspects from the abstract-level discussions to the actualisations in the local educational settings. This can mean contextualising definitions presented in

the international research discussion, international policy initiatives or nationwide core curricula at the level of practice such as in local curricula and disciplinary descriptions. Through globalisation and technological development, there are more possibilities for educational ideas, approaches and trends to travel in international discussions and initiatives. Broad conceptualisations made at the international levels are not, however, implemented directly within the national contexts, but rather the meanings can change (Mølsted & Karseth, 2016; Nordin & Sundberg, 2016; Weninger, 2017b; Yates, 2016). Thus, by constructing the model at the macro level concerning CBE in general, it can be applicable in addition to the Finnish multilevel curricular framework to other settings as well, where broadly defined CBE is intended to be implemented at the level of practice. The theory aims to support the understanding, analysis and implementation of CBE particularly from the conceptual perspective. As education is commonly steered through different kinds of discursive practices, such as written curriculum documents, it is important to have a conceptual understanding about those practices—in this case about curricular contextualisations. The scope of the competence contextualisation can vary from the whole curriculum document to the setting of a certain discipline. This division between transversal conceptual contextualisation and disciplinary contextualisation illustrates this difference.

Conceptual contextualisation consists of three separate but inter-related dimensions. The first dimension captures the actual contents of the concept. In terms of CBE, these include three different levels of rationale, definition and practice. Through this dimension, a) the need for competence can be reasoned in a locally relevant manner by describing why it is important to develop the competence, b) the competence can be defined in a locally relevant manner by describing what is meant by the competence and c) the development of the competence in teaching and learning can be described in a locally relevant manner by describing how the competence can be developed in practice.

The second dimension captures the method of conceptual contextualisation. This dimension enables an understanding of the means by which the conceptual contextualisation can be made. The different conceptual means include a) emphasis, b) specification, c) description and d) expansion.

The third dimension captures the forms of conceptual contextualisation. The four forms of contextualisations include a) general, b) objective-specific, c) grade-based and d) content-based contextualisations. These three dimensions are further discussed in the following sections.

7.1 Contents of Conceptual Contextualisation

From the perspective of content, conceptual contextualisation can be achieved at three different levels of rationale, definition, and practice (Table 10). These levels illustrate different perspectives that can be taken into account and contextualised in the local setting. Contextualisation does not need to cover all of the aspects, but rather it can be done according to the scope that is necessary. Thus, contextualisations can be narrow—for example, by covering only a certain level—or broader in their nature—by covering more levels.

Table 10 Levels of Conceptual Contextualisations

Level of conceptual contextualisation	Description
Rationale	Describing the reasons why it is important to develop the competence in a locally relevant manner.
Definition	Describing what is meant by the competence in the local setting.
Practice	Describing how the competence should be developed in the local setting.

Firstly—on the level of rationale—the argument for competence is described in a way that it is relevant in the local setting. This level of contextualisation helps to make the reasoning of the concept more understandable in a certain context and to answer the question of why it is important to develop competence. Contextualisation at the level of rationale can be made in a general manner transversally covering the whole curriculum or specifically for different disciplines, such as social studies or mathematics.

CBE is a widely promoted educational approach that has been argued from a variety of different perspectives. In Europe, for example, CBE has been promoted as a way to tackle economic recession and the unemployment crisis and to develop education itself (Tchibozo, 2010, pp. 193–194). CBE is seen to equip people with the necessary abilities to succeed in their constantly changing working life. Within educational practice, CBE has been argued to help to link school practice with the outside world. (Tchibozo, 2010.) However, the reasons for general CBE and the reasons for specific competences can differ. According to Voogt and Roblin (2012), among the different competence frameworks, there is a shared understanding about the need for competences in relation to communication, collaboration, ICT and social and cultural awareness (Voogt & Roblin, 2012, p. 308). In addition, the need for competences can focus and become more nuanced when scrutinising them from the perspective of the aims of individual disciplines. According to the analysed contextualisations these rationales were either educational, such as support for

learning in general or for certain disciplinary objectives, or broader reasons, such as abilities necessary in today's world, such as the role of ICT in pupils' lives or in the future, such as civic skills. Through conceptual contextualisation, it is possible to explicate these different rationales in relation to the local realities.

Secondly—at the level of definition—the competence is contextualised and defined in a locally relevant manner. According to the analyses, contextualisations at this level focused particularly on the aspects of the conceptualisation that were defined in a broad and abstract manner in the national-level conceptualisation, leaving room for interpretation or for the particular aspects that were seen as important to be emphasised in the local setting. In multiliteracy, these aspects relate to specifying broad concepts, such as 'symbol systems', or describing undefined sub-literacies of the concept.

When considering the required competences in current societies or in the future, various conceptualisations have been presented (Erstad & Voogt, 2018; Voogt & Roblin, 2012). This versatile discussion has led to a situation where the definitions of the concepts cannot be taken for granted. As explained by Erstad and Voogt (2018, p. 22), 'the field of competences is unclear, because frameworks describing twenty-first century competences use the same concepts in different ways and sometimes use different concepts for the same phenomena.' Many of the presented conceptual frameworks define competences in a broad and abstract manner. For example, Voogt and Roblin argue that the implementation of the competences in the curricula requires an operational definition of each of the competences. This would help to 'determine what should be expected from students at different age levels in terms of knowledge, skills, and attitudes.' (Voogt & Roblin, 2012, p. 317.) This can be done through contextualisation at the level of definition. In addition, contextualisation could support the explanation of the relationships between the various competences.

Thirdly—at the level of practice—the ways in which the competence should be developed in the local setting are described. According to the analyses of this dissertation, these practices consist of the following five different aspects: 1) pedagogical approaches, 2) educational activities, 3) educational contents, 4) resources and 5) cooperation. By focusing on the dimension of the content of the conceptual contextualisation, it is possible to further the local understanding of CBE.

A CBE curriculum as a form of outcome-based educational steering emphasises the skills, knowledge and attitudes pupils are expected to learn through the education (Gervais, 2016; Halász & Michel, 2011; Psifidou, 2009). This perspective leaves room for the educational design to find the ways to enable the most relevant and suitable educational practices. At the level of practice, conceptual contextualisation supports the design and description of the educational practice in a locally relevant manner. Developing CBE is a versatile educational endeavour combining different

perspectives and traditions. For example, the results of this dissertation have revealed that the educational practices designed to support the development of a single competence, namely multiliteracy, can vary to a broad extent, not to mention the variety of other competences (Erstad & Voogt, 2018; Voogt & Roblin, 2012). In addition, contextuality is important to take into account when designing the practices of CBE. It is difficult to describe all-encompassing educational practices that can transcend the boundaries of different educational settings since there are so many factors to be considered. Thus, emphasis should be put on the local realities and the competences of the professional educators in designing the educational practices (Hirsh et al., 2020). Conceptual contextualisation is a way to illustrate and explicate the contextual meanings at the level of practice. This can mean describing the relevant pedagogical approaches, educational activities, educational contents, possible resources or ways of cooperation from the local perspective in developing the pupils' competences.

7.2 Methods of Conceptual Contextualisation

Conceptual contextualisation can be done in different ways. In this dissertation I have identified four types of conceptual contextualisations which have their own conceptual purposes. Firstly, through emphases, it is possible to highlight or prioritise certain aspects of the competence. Secondly, specifications help in explicating and defining broadly expressed aspects of the competence more accurately and concretely. Thirdly, descriptions provide the conceptual means to explain the competence in a way that is different to the original definition, supporting, for example, the local understanding of the concept. Fourthly, expansions make it possible to broaden the scope of the competence, covering more aspects than in the original definition. Despite the close connections and similarities, these four types of contextualisation are not mutually exclusive. Thus, they can be understood more as guidelines or perspectives rather than as a strict set of rules. This can help in understanding the different possibilities of contextualisation in a more nuanced manner.

It is important to emphasise the comprehensive understanding and evaluation of concepts since they have a central role in organising education. Concepts help in perceiving the world and its phenomena and surroundings; they help to communicate issues and enable cooperation. Concepts help in gathering knowledge and information. Sartori (1970), for example, has described concepts as 'data containers'. The more accurately the concept is defined, the better the information value of the concept is. Broadly defined concepts may lack precise definition, and thus leaving room for multiple interpretations and possible misunderstandings. Concepts are essential for the educational steering because they, among other things, lay foundations for the shared aims of education, mutual understanding

and guidance for organising the educational practice. From the perspective of curriculum design, conceptual definitions offer building blocks to perceive the idea of the planned education (e.g. what are the main aims, priorities and perspectives for education?) and guide the organisation of the educational practice (e.g. how should teaching be conducted?).

7.3 Forms of Conceptual contextualisation

The scope of the contextualisations varies based on their forms and relation to the structure of the curriculum. The identified types of contextualisations help in analysing or designing the conceptualisation at the necessary level of accuracy. For example, on the one hand, as the general contextualisation can cover the scope of an individual discipline or even the whole education level, objective-specific contextualisation illustrates how CBE can be understood in relation to a certain disciplinary objective. On the other hand, grade-based contextualisation illustrates how a transversal competence is conceptualised in different grades, whereas content-based contextualisation describes how the competence relates to the disciplinary contents. Different types of contextualisation can overlap. Thus, it is possible to adjust the contextualisation based on the specific needs, such as by conceptualising the grade-level definition of the competence individually from different disciplinary perspectives.

Competences can be integrated into the curriculum through different ways, commonly in a cross-disciplinary manner rather than separate subjects (Ananiadou & Claro, 2009). As competences can be transversal or disciplinary in nature (Erstad & Voogt, 2018), it is important to focus the competences from a disciplinary perspective. Based on the findings of their meta-analysis of competence frameworks, Voogt and Roblin (2012, p. 317) recommend that CBE can be supported through the explication of the relationship between the competences and individual disciplines. This can be done through a nuanced evaluation of the structure of the curriculum, particularly in disciplinary settings. For example, the objective-specific conceptual contextualisation helps to describe and define the competences in relation to the discipline specific aims. This can support the explanation of the relevance of transversal competences within the disciplinary settings. In addition, Voogt and Roblin have identified the need for operational definitions of the competences to provide an understanding of what is expected from pupils at different ages. Grade-based contextualisation can provide the tools to support the curricular consistency (Palsa, 2020) for CBE.

CBE has often been presented as an alternative to traditional forms of educational organisation. As the focus has traditionally been on the educational inputs, expressing the importance of the curricular contents to be taught, CBE emphasises

the educational outcomes, defining the abilities pupils are expected to master after the education (Gervais, 2016; Le Deist & Winterton, 2005; Morcke et al., 2013). The results of the discipline-specific analysis of the contextualisation of CBE indicate that the boundaries are not as exclusive as they may seem at first. By connecting specific competences to the disciplinary content areas through content-based contextualisation it is possible to define the relationship between the competences and disciplinary knowledge requirements in a locally relevant manner. This creates an identifiable tension between different ways of organising and understanding the role of curriculum. However, the gap between these perspectives can be transcended by identifying the connections between the curricular contents of different disciplines and the expected competence outcomes.

8 Discussion and Concluding Remarks

8.1 Conclusions

I have constructed this dissertation on two different levels. On a specific—micro—level, I have focused particularly on multiliteracy as a transversal competence. Following the inductive logic of grounded theory, this has enabled me to examine more general phenomena. Thus, on a broader—macro—level, I have focused on the contextualisation of CBE in general. I have arranged this discussion part of the dissertation based on these levels. More specifically, I discuss the research findings reflectively in relation to the theoretical, societal and practical aims of this research (Chapter 8.1). In addition, I offer a reflective point of view for critical assessment by outlining key elements of ethical and methodological evaluation (Section 8.2). To further conclude, I also emphasise the implications of the results and explore possible directions for future research (Section 8.3).

8.1.1 Contextualisation of Multiliteracy

My theoretical aim at the micro level was to deepen the knowledge about multiliteracy as a transversal competence. I contribute to the field of literacy studies by clarifying the relationship between the multiliteracy conceptualisations in the Finnish national-level core curriculum and international level research articles (sub-study I) and by providing an overview of the multiliteracy contextualisations within the Finnish local curricula in general (sub-study II) and in the disciplinary settings of mathematics and social studies (sub-study III).

When multiliteracy was first introduced into the national core curriculum it was a new and unstudied concept in the Finnish education system (Kupiainen, 2016). This sparked my interest and created the need to understand the concept further and to situate it against a more solid background. Leading to the first main finding of the dissertation, the analysis of the definitions made in the international research articles (sub-study I) helped me to discover the roots of the concept in the original foundations of the work by the NLG (1996). This finding is in line with the result of the review article by Kulju et al. (2018), which concludes that almost all of their analysed multiliteracies articles were influenced by the work of the NLG.

However, the definition of multiliteracy is not as clear cut as it may seem. Palsa et al. (2019) divide the conceptualisations of multiliteracy even further. In addition to the pedagogy of multiliteracy, they differentiate the concept based on how the term 'literacy' is understood and its relationship to other literacy concepts. Firstly,

multiliteracy can be understood as an umbrella concept, that consists of different sub-literacies. This implies that the definition of the umbrella concept is determined by the definitions of the specific sub-literacies. Secondly, rather than an umbrella concept, multiliteracy can be understood as an individual literacy that has its own definition. This situates multiliteracy among other literacy concepts (e.g., Stordy, 2015), such as media literacy, information literacy and digital literacy. The conceptualisation of multiliteracy in the Finnish core curriculum combines these two types to understand the concept. Multiliteracy is an umbrella concept covering a variety of different literacies, but it is also provided with a specific definition. In addition, the third way to understand multiliteracy is to define it as a descriptive category of different literacies with a shared set of characteristics. This means that different literacy concepts addressing the literacy needs of digital media, such as media literacy, visual literacy and digital literacy (see, for example, Tyner, 2003), can be labelled as multiliteracies. Discovering and explicating the different ways that the same concept is understood can lead to a more nuanced discussion and the avoidance of possible confusions related to the conceptualisations. The first main finding of this dissertation is not, however, aimed at finalising the conceptualisations, but rather—quite the contrary—at supporting the research and furthering the discussion about multiliteracy.

My societal aim at the micro level was to support the development of multiliteracy education by providing new knowledge about the concept in relation to the international research discussion and by deepening the contextual understanding of the concept within the Finnish curricular framework (sub-studies II and III).

I have focused particularly on the contextualisation of multiliteracy in the disciplinary settings of social studies and mathematics. This can be understood more thoroughly from the perspective of language awareness and disciplinary literacies (Andrews & Lin, 2017; Moje, 2015). The results indicated both commonalities and differences in multiliteracy contextualisations within social studies and mathematics. Common features of both disciplines included that multiliteracy was conceptualised as an information management skill and as an umbrella concept that consists of a variety of different literacies. Distinctive features on the other hand included that, in social studies, pupils' agency and societal participation were emphasised, whereas the mathematics curricula highlighted abstract critical thinking and mastering the discipline-related language. These differences are understandable in the sense that, based on their academic foundations, both disciplines have their own objectives and key contents. For example, active citizenship is one of the central objectives in social studies, whereas thinking skills are emphasised in mathematics (FNBoE, 2014). Discipline-specific contextualisation of multiliteracy is understandable since, compared to other forms of language, in mathematics symbols and syntax are used in a distinct manner. This clarified relationship between the disciplinary conceptualisations illustrates the multifacetedness of multiliteracy. The concept can

have distinctive meanings based on the context and the perspective from which the definition is scrutinised. Thus, the shared understanding of the concept cannot be taken for granted.

Both disciplinary examples illustrate well the paradigmatic change of language education in the Finnish education system as facilitated by the concept of multiliteracy (Halinen et al., 2015). This change is closely related to the perspectives of language awareness and disciplinary literacies. As a transversal competence, multiliteracy has a special feature combining the specifically defined educational outcomes shared across the disciplines and the particular disciplinary textual practices. For example, according to Takeuchi (2015) metalanguage interactions can be limited in mathematics classrooms. Taking this into account, multiliteracy can provide the required opportunities to focus on the language practices of the specific discipline.

Language awareness and disciplinary literacies are commonly understood as part of multiliteracy by Finnish teachers. According to a recent survey, 79% of Finnish classroom teachers connected disciplinary literacies under the scope of multiliteracy (Kulju et al., 2020). However, it is important to note that 8% of the respondents disagreed with this notion. Despite the common understanding, one third of the teachers had taught it very little or not at all. Thus, language awareness is not systematically implemented in the educational practices, highlighting the need for analytical tools to support the contextualisation, especially at the level of practice.

From the point of view of language-awareness and disciplinary literacies, disciplinary contextualisations can support the explication of different literacy practices essential to the disciplines. This can support the reflection of teachers and help them to discuss and to build a common understanding between the disciplines. The aim for multiliteracy to promote the paradigmatic change in language education (Halinen et al., 2015) illustrates not only that CBE is changing education in relation to the specific competences and their relationship with the individual disciplines, but that specific competences can be used as facilitators for other purposes as well. Thus, multifaceted critical evaluation and discussion of the individual competences is needed when implementing CBE in general.

At the micro level, my practical aim is to support contextually aware multiliteracy education by providing knowledge of the ways in which the concept is contextualised across the Finnish local curricula in general (sub-study II) and specifically within the disciplines of mathematics and social studies (sub-study III). This helps not only to develop the local contextualisations but also to provide support for the development of educational practice.

I have focused on the different conceptualisations of the term 'multiliteracy'. The findings illustrate the broadness and versatility of the concept. As multiliteracy was introduced as a new concept into the Finnish education system in the latest curriculum reform, it is valuable to understand what kinds of meanings are given

to the concept. Analysing local curricula that are prepared across the country is a valuable means to pursue a comprehensive perspective on contextualisation. However, contextualisation does not end with the official published curriculum document, but goes further. The concept of the implemented curriculum (Marsh, 2004) illustrates how the curriculum is realised in practice. This educational practice is influenced, for example, by the ways in which the teachers understand the concept at hand. For instance, Rasi et al. (2019) suggest that, despite multiliteracy being widely implemented in the core curriculum, not all teachers are aware of what multiliteracy means in practice. According to an interview study (Ojaranta, 2019), teachers can understand the concept of multiliteracy in a quite similar manner. In particular, the characteristics including emphasis of multimodality, the broad understanding of text and the role of the concept in connecting people to the wider environment seem to be commonly shared. However, when focusing on the understandings from a larger perspective, differences begin to appear. Based on a survey study for primary school teachers, Kulju et al. (2020) conclude that multiliteracy is a complex concept and is interpreted in different ways. For classroom teachers, the most commonly shared feature of multiliteracy is the interpretation of different texts, whereas verbal communication skills were not as evident an aspect in relation to multiliteracy. A comprehensive understanding of the contextualisation of multiliteracy creates an important basis for further development of educational practice and innovation.

The first main finding of the dissertation clarified the relationship between the multiliteracy conceptualisations at the Finnish national level and in the international research discussion. From this perspective, further discussion about the pedagogy of multiliteracies could open up opportunities for teaching multiliteracy in the Finnish educational context. Even though multiliteracy is defined as an educational outcome—a transversal competence—in the Finnish context, the findings show that there are pedagogical elements in the contextualisations at the level of practice. For example, the contextualisations highlighted research-based and phenomena-based pedagogies as possible relevant approaches to multiliteracy education. Similarly, pedagogies based on the multiliteracies approach (The New London Group, 1996) could open up valuable opportunities for pedagogical development in Finnish basic education. Cope and Kalantzis (2015) have further developed the pedagogical orientations in their project Learning by Design. What was introduced as situated practice, overt instruction, critical framing and transformed practice—original elements of the pedagogy of multiliteracies—were updated to new knowledge processes consisting of experiencing, conceptualising, analysing and applying. Cope and Kalantzis (2015, p. 1) conclude that this framework focuses ‘on action rather than cognition—not what we know, but the things we do to know’. Further implementation of this pedagogical approach could provide beneficial support for the practice of multiliteracy, but it is important to consider the contextual

specialities of the educational setting, especially when the transversality and the role of multiliteracy across the disciplinary boundaries are taken into account.

Transversality of the competence highlights the meaning of multi-professional cooperation. This also opens up important aspects for further focus. The question about the understanding of the concept transcends the boundaries of school. As it is stated in the Finnish core curriculum, the development of multiliteracy requires cooperation with various stakeholders. According to the data, this most commonly means the work together with the local libraries. However, a shared understanding between the professional fields cannot be taken for granted. Ojaranta (2019) has noted that Finnish librarians were hesitant concerning the meaning of the concept of multiliteracy. Even though the concept has been promoted in the field of librarianship since the preparation of the Finnish national core curriculum, the meanings are still vague and uncertain (Ojaranta, 2019). However, a study focusing on the cooperation between schools and libraries highlights the possibilities of local curricula enabling local structural multiprofessional partnerships (Tikkinen et al., 2020). The findings suggest that the preparation of mutual curricular contextualisation can support a shared understanding, not only within schools and across the disciplines but also outside the school institution and multi-professional cooperation. Through common structures and mutual plans, cooperation is possible regardless of the interest of individuals or changes in staff (Tikkinen et al., 2020).

8.1.2 Contextualisation of the Competence-based Curriculum

From a theoretical perspective, at a macro level my aim has been to further the understanding of the curricular contextualisation of CBE. In this dissertation I have introduced new concepts: *conceptual contextualisation* and *disciplinary contextualisation* (sub-studies II & III) and presented a theory to understand the dimensions of the curricular contextualisation of CBE from a conceptual perspective (integrative chapter of the dissertation).

One main finding of the dissertation is the clarified relationship between the conceptualisations of a certain competence—multiliteracy—in the Finnish curricular framework and the international research discussion. This is an important observation since CBE is a common trend in the international education setting. CBE is promoted by various international actors and through different initiatives. Thus, CBE has been part of transnational education policies. There are different frameworks presented to capture the essential competences (Erstad & Voogt, 2018; Voogt & Roblin, 2012), illustrating the variety of the competences and definitions. Thus, it cannot be assumed that the concepts are understood in the same manner in different settings. This is evident in the research by Weninger who noted that the competence of media literacy was implemented in the national setting in Singapore with a limited scope compared to the international discussions. Certain perspectives familiar in international research discussions were omitted at the level of practice.

(Weninger, 2017b.) The theory presented in this dissertation is a useful analytical tool to understand the scope and different dimensions of the contextualised competence conceptualisations. This helps in understanding if the rationale, definition and practice presented for competence are comprehensive enough or if certain perspectives are limited.

At the macro level, my societal aim is to support the development of education at a national level. This is done by providing new contextual knowledge of the implementation of CBE across Finland (sub-studies II and III). The developed theory introduced in this dissertation can be utilised to understand and to explicate the different aspects of the competences. This can help both a) the further development of a nation-wide curriculum and b) in designing possible additional support.

To develop education, it is important to focus on the conceptualisation of the competences and their relationship within the curriculum in general. As expressed by Voogt and Roblin (2012, p. 317) national competence frameworks should be expressed in a clear manner. This can support the curriculum coherence (Sullanmaa et al., 2019). From the perspective of educational development, it is important that different stakeholders understand the educational practice in a consistent manner. According to Sullanmaa et al., to promote educational stakeholders' understanding of the practice at the local level, efforts should be made to facilitate the coherent understanding of the curriculum document (Sullanmaa et al., 2019). From the perspective of curriculum development, this could mean, for example, more explicit conceptual guidance of the possibilities for contextualisation. In the current core curriculum, it is not evident how the contextualisation should be made or what the central aspects are that need to be contextualised. For instance, the understanding of the possibilities of contextualisation of the concept of multiliteracy requires a relatively high-level local interpretation and understanding of the abstraction levels of the different aspects of the concept. If the process is not clear enough or it raises confusion, the contextualisation can be easier to deprioritise. To promote the conceptual contextualisation, it could be beneficial for local education providers if the designers of the core curriculum could provide further guidance, be more precise in highlighting the possible aspects that may need local discussion and point out questions that are important to consider. This could promote common understanding of the aims of the curriculum as well as the perceived curriculum coherence. In addition, explicit local contextualisations would provide information to other education providers at the local and at the national level about the local implementation of the CBE. Sharing understandings and local practices could support further educational development.

The competence-based curriculum is not equal to actual competence-based education (Beinert et al., 2020). For example, Eurydice (2012) has highlighted the need for a more systematic approach in the implementation of the CBE at the local level. In Finland, the national authority for the evaluation of education—the

Finnish Education Evaluation Centre—has pointed out several critical aspects of the implementation of the latest competence-based core curriculum (Venäläinen et al., 2020). For example, the multifacetedness of the key concepts requires more support and guidance for the education providers and schools to implement the contents of the curriculum. This can mean, for example, the need to clarify the central concepts. The multifacetedness and even the ambiguity of the educational concepts is easily understood in terms of the definition of multiliteracy as there are several aspects of the concept that are not specified, and a significant room is left for interpretation. This, however, should not be understood as a challenge but more as an opportunity to develop the educational practice from the local perspective. A theory of the conceptual contextualisation can thus provide the needed systematic support to understand the different dimensions that can be taken into account in determining what the concepts mean in certain local settings.

At the macro level, my practical aim is to support the curricular contextualisation of education at the local level. This is done by illustrating the different dimensions of the curricular contextualisation that can be used to guide the planning of the implementation of CBE (sub-studies II and III, integrative chapter of the dissertation).

Lack of contextualisation was one the essential results in this study. Contextualisation of the general definition of multiliteracy (dataset 2) was made only 28% of the analysed local curricula. In addition, disciplinary contextualisation in social studies and mathematics (dataset 3) was made only in less than one fifth (19.5%) of the analysed local curriculum. Even though the dissertation does not offer an explanation for this lack of contextualisation, the reasons may relate to several issues. First of all, CBE and the concept of multiliteracy were new concepts introduced into the Finnish curricular framework. Thus, there can be a certain level of uncertainty as to what these novel aspects may stand for in practice. Leaving the concept uncontextualised may illustrate the satisfaction with the original definition of the concept. However, this is unlikely due to the multifacetedness of the concept. In the core curriculum, the concept of multiliteracy is defined in a broad manner, leaving room for interpretation, for example, about the sub-literacies and symbol systems. The concept is not defined fully consistently through the curricular framework including early childhood education and care, pre-primary education, basic education and general upper secondary education (Mertala, 2018; Palsa, 2020). Another reason for the lack of contextualisation is more practical as the resources at hand can vary. Preparation of the local curriculum depends on the education providers, who have different resources available. For example, in small rural municipalities the same teachers may have the responsibility to teach several different disciplines (Autti & Bæck, 2019). Thus, they can be responsible for the contextualisation of all the seven transversal competences even for various disciplines. The situation is different in larger municipalities where there can be many people

working together in the same discipline and the work of contextualisation can be divided. Of course, this is not the only explanation since the concept of multiliteracy was contextualised and uncontextualised in both large and small municipalities.

Another explanation for the lack of contextualisation can be the high level of pedagogical autonomy of the Finnish teachers (Lavonen, 2017). From this point of view, the responsibility to contextualise the concepts is designated from the municipal level to individual professionals. However, educators' shared understanding of the concept cannot be taken for granted either (Kulju et al., 2020; Ojaranta, 2019). Comprehensive contextualisation of all the transversal competences is a demanding task for the individual teachers (Choppin, 2009; Davies, 2006). Without the explicit local municipal level contextualisation, there is a risk that the variance among individual schools within the same municipality in the transversal competence can be relatively broad. This is a question of equality. The differences in contextualisation highlight the question of pupils' rights to equivalent competences through comprehensive education. The more accurately the competences are defined, the less room there is for interpretative variance or confusion in the local education setting.

The conceptual contextualisation process can support the development of education since the participants taking part in the process can consider and discuss the possibilities of the competences from the local perspectives. This is especially the case if the local curriculum is conceptualised as a tool for pedagogical development (Mølsted & Karseth, 2016; Lavonen, 2017). Kulju et al. (2020) suggest that the ways in which multiliteracy is addressed in the mutual curriculum processes can influence the shared understanding of the concept. Conceptual contextualisation does not only help to define the contents of the competence in a locally relevant manner, but may help to describe the contents in a way that is more understandable and practical. Autti and Bæk (2019), for example, aptly describe the problems related to the implementation of the core curriculum that can appear as a growing division between the education authorities at the national level and the local educators. For teachers it may be hard to relate or even to understand some of the contents presented in the core curriculum since they are expressed so theoretically and the connection to the local context is seen as negligible. In Finland, teachers have an important role not only in preparation of the national core curriculum but also in the local curricula work (Lavonen, 2020). This highlights the need for particular professional competence. As explained by Salminen (2018), the teacher's curriculum competence has an important role in the educational reforms and implementation of the curriculum and thus the topic should be part of basic teacher education. The theory introduced in this research can support making the contents expressed in the national level curriculum documents more locally relevant and understandable by providing a systematic framework to understand the dimensions of the contextualisation and also by providing the conceptual means for contextualisation. This offers a framework suitable for teacher education in promoting the curriculum

competence of teacher students, especially from the points of view of CBE and contextualisation.

8.2 Evaluation of the Research

The diversity and broadness of the methodological discussion creates variety in the research evaluation. Assessment itself is a matter of academic debate, concerning, for example, the question of applicability of the evaluation criteria. Should qualitative research be evaluated in the same manner as quantitative research (Denzin & Lincoln, 2018b)? On the one hand there is a view in education research arguing for more general evaluation criteria that would apply in all types of research, although the opposite point of view exists, emphasising the importance of contextual evaluation focusing on the specific research (Torrance, 2018). Denzin and Lincoln (2018) identify three perspectives in the debate about the evaluation criteria. From the perspective of foundational epistemology, qualitative research does not have characteristics that require specific ways of evaluation but rather all research should be assessed in the same manner. On the other hand, the arguments from the quasi-foundationalist perspective emphasise the meaning of neopositivist ontology and constructivist epistemology and conclude that specific criteria for quantitative and qualitative research should be developed. Nonfoundationalists, in turn, highlight the limits of human knowledge and conclude that the commitment to pursue knowledge cannot be epistemological but rather is moral and political. Thus, the criteria for research evaluation should be moral and contextual in terms of pragmatism, ethics and politics. (Denzin & Lincoln, 2018.)

In this research I take the standpoint of emphasising the contextuality in research evaluation based on the diversity of research methodologies but also considering the importance of mutual understanding concerning principles of quality in research. In short, as there are so many ways to conduct research, for example, based on the inquiry needs, different methods of evaluation can be valuable. In addition, there is a risk that general criteria would influence the research practice in a narrowing manner, thus limiting the possibilities to design research for certain purposes (Birks, 2014). A starting point for the research design should be the specific knowledge interest and context, not specific evaluation criteria. However, general principles of research evaluation can support the shared discussion and promote mutual understanding. Instead of implementing certain general evaluation criteria, I address the quality of this research by reflecting it based on principles identified as essential for qualitative research (Birks, 2014). However, I acknowledge that since qualitative research itself covers various perspectives, it is important to apply the evaluation criteria to fit the specific methodological context. In this case, based on the sub-studies, I emphasise the evaluative perspectives essential to grounded theory.

8.2.1 Evaluation of the Sub-studies

The first sub-study of this dissertation focused on the definitions of the concept of multiliteracy in the international research literature (n=14). The study was conducted by myself (Author 1) and Professor Heli Ruokamo (Author 2). The research responsibilities were divided as follows. Construction of theoretical framework: Author 1 and Author 2; data collection: Author 1; data analysis: Author 1; writing the paper: Author 1. The results were discussed and agreed on by the authors.

Since multiliteracy was a new concept in the Finnish education system when it was introduced in the national core curriculum for basic education (Kupiainen, 2016), the analysis of the different conceptualisations helped to create a more solid theoretical background to understand the national conceptualisation of multiliteracy.

From a reflective perspective, the major methodological strengths and weaknesses of the sub-study relate to the construction of the research data. Firstly, I wanted to focus on the comprehensiveness of the data by covering a variety of different research databases during the search for the relevant research articles. The study focused specifically on the recent international peer-reviewed research literature (2010–2014). However, I controlled the number of analysed data (n=14) through random sampling even though I could have analysed all of the 49 articles found. I argued this decision based on the nature of the data. Since I explored the highly contextual multiliteracy definitions, I wanted to avoid excessive processing—for example deconstruction or abstraction—of the data (Finfgeld-Connett, 2014). Compared to the number of analysed definitions in other sub-studies, this might have been an overly cautious approach to the broadness of the dataset.

The second sub-study of this dissertation focused on the curricular contextualisation of a transversal competence in basic education. The study was conducted by myself (Author 1) and Dr. Pekka Mertala (Author 2). The research responsibilities were divided as follows. Construction of theoretical framework: Author 1 and Author 2; data collection: Author 1; data analysis: Author 1; writing the paper: Author 1 and Author 2. The results were discussed and agreed on by the authors.

The results of the study provide new understanding from two perspectives. Firstly, the sub-study contributes to the discussion addressing CBE by illustrating how the broadly defined competences such as multiliteracy can be defined in the local setting. In the study, the concept of *conceptual contextualisation* was introduced. Secondly, the sub-study contributes to the research discussion focusing on multiliteracy by explicating how the multiliteracy was rationalised (level of rationale), defined (level of definition) and described to be developed (level of practice) contextually in the local settings.

In sub-studies II and III, I focused on the local curricula as research data. This is both a strength and a limitation of this dissertation. On the one hand, comprehensive

analysis of the local curricula offers a way to understand the conceptualisations made within the dimension of the planned curriculum (Kelly, 2009). On the other hand, however, this limits the focus and excludes the perspective of the key participants of the educational practice—teachers and pupils. For example, through interviews or observations of the school practices it would have been possible to understand the curricular contextualisation in a more in-depth manner. In more practical terms, in both the sub-studies there are limitations in the data collection related to the lack of local curricula—45 municipalities were missing in dataset 2 and 35 municipalities in dataset 3. During the process this could have been taken into account more comprehensively by contacting the local education authorities to ask about the curriculum. This could have provided more data to be analysed and disclosed the reasons for the lack more accurately. However, I recognise that the scope of the analysed curricula covers Finnish municipalities relatively broadly—86% of the municipalities in dataset 2 and 89% in dataset 3.

The third sub-study of the dissertation focuses on the curricular contextualisation of a transversal competence in disciplinary settings in basic education, specifically in lower secondary education. The study was conducted by myself (Author 1) and Dr. Pekka Mertala (Author 2). The research responsibilities were divided as follows. Construction of theoretical framework: Author 1 and Author 2; data collection: Author 1; data analysis: Author 1; writing the article: Author 1 and Author 2. The results were discussed and agreed on by the authors.

The results of the study offer new insights into the discussion between content- and competence-based educations by introducing the concept of *disciplinary contextualisation*. In addition, the study engages with the discussion in the field of multiliteracy by offering insights into the ways in which multiliteracy is rationalised, defined and developed in the analysed disciplines.

In this dissertation, there have been two interrelated perspectives that have guided my research interest and process. From a micro-level perspective, the focus on multiliteracy has provided me the opportunity to scrutinise the individual concept in an in-depth manner thus providing a multifaceted approach. This focused scope supports the validity of the overall research process. However, from a macro-level perspective focusing on CBE in general, it may have been more fruitful to analyse another competence concept as well as to understand how the results of the whole dissertation might be transferable to settings of other competences. In this dissertation I studied the conceptual contextualisation of CBE in the disciplinary settings of social studies and mathematics. These are examples of academic disciplines with differing scientific backgrounds. However, as the transversal competences are studied across all the disciplines it would have been analytically beneficial to extend the scope of the study to include a discipline from, for example, the arts or crafts.

8.2.2 Evaluating the Quality of the Dissertation

Quality in qualitative studies refers to the rigour with which the research is done (Birks, 2014). In addition, as explained by the Finnish Advisory Board on Research Integrity (TENK), research needs to be conducted according to the responsible conduct of research to be ethical, reliable and credible. In this dissertation process I have followed the guidelines published by the advisory board (TENK, 2013). In addition, as explained in Table 11, Lincoln and Guba (1985) have developed an evaluation criteria for qualitative research based on the concept of trustworthiness. This criterion consists of the concepts of credibility, transferability, dependability and confirmability. These concepts help to evaluate how believable the findings are, how applicable they are in other contexts and to what extent the researcher's values have intruded in the findings (Bryman, 2012).

Table 11 Evaluation criteria of social research (Lincoln & Guba, 1985; Bryman, 2012)

Trustworthiness in qualitative research	Guiding questions
Dependability	<i>i.e. Are the findings likely to apply at other times?</i>
Confirmability	<i>i.e. Has the researcher allowed personal values to intrude to a high degree?</i>
Credibility	<i>i.e. How believable are the findings?</i>
Transferability	<i>i.e. Can the findings be applied to other contexts?</i>

I discuss the rigour of this dissertation further based on the framework developed in the Critical Appraisal Skills Programme (2018). The framework consists of ten questions focusing on the aims, methodology and position of the researcher, ethics and value of the research (Table 12).

Table 12 Evaluation Criteria for Qualitative Research (Critical Appraisal Skills Programme, 2018)

No.	Guiding questions for evaluation
1	Was there a clear statement of the aims of the research?
2	Is a qualitative methodology appropriate?
3	Was the research design appropriate to address the aims of the research?
4	Was the recruitment strategy appropriate to the aims of the research?
5	Were the data collected in a way that addressed the research issue?
6	Has the relationship between researcher and participants been adequately considered?
7	Have ethical issues been taken into consideration?
8	Was the data analysis sufficiently rigorous?
9	Is there a clear statement of findings?
10	How valuable is the research?

In this dissertation I focus on how the concept of the transversal competence of multiliteracy is contextualised in the Finnish curricular framework. This enables me to achieve various aims discussed in Chapter 2. From a theoretical perspective I contribute to the research discussions concerning CBE, curricular contextualisation and multiliteracy by introducing concepts of conceptual contextualisation and disciplinary contextualisation and by presenting a theory of the conceptual contextualisation of CBE. In addition, I provide new contextual knowledge about the ways in which multiliteracy has been contextualised in the Finnish local curricula. My societal aim focused on the development of education through curricular development and support for the implementation. In practice, I support the curricular contextualisation of education, thus developing educational practice. Based on these aims, I build explicit bridges between the theoretical, societal and practical aims for broad development. The results of the research are discussed and reflected further in the concluding chapter (Section 8.1) of the research based on these aims. The implications of the findings are also made visible from the perspectives of these aims (Section 8.3). An evaluation of the value of this research can be made through these levels.

I applied a grounded theory-oriented qualitative methodology in this study based on the research objectives and the data of the research. Methodological choices made in this research are further discussed in Chapter 5. I have followed the guidelines for the responsible conduct of research throughout my dissertation process, including the planning and conducting of the research as well as the publication of the results (TENK, 2013). As the approach of CBE and the concept of multiliteracy were both new aspects to the Finnish education system, no existing contextual discussion or theories were available to be utilised. Thus, forming the understanding based on the data in line with the grounded theory research was an appropriate approach to be applied. I studied multiliteracy definitions at international, national and local levels. The data consist of international research articles and Finnish local curricula, both of which are considered as textual documents that are commonly studied through the methods of qualitative research (Peräkylä & Ruusuvuori, 2018). I have analysed three datasets. Despite the differences in the separate datasets, such as the language being English (sub-study I) or Finnish (sub-study II and sub-study III) and the publication context between international research (sub-study I) and Finnish local education steering (sub-study II and sub-study III), they have many similar features. This supports the inner validity of the research. All the data analysed are written formal documents. Research articles follow the traditions of academic publishing, emphasising conceptual clarity. Curricular texts as official documents are part of educational steering written in a clear and formal manner.

Data were collected through a systematic literature review (international peer-reviewed research articles) and systematic search of local curricula. For local curricula, I included all the found documents in the analysis, whereas for research

articles I limited the scope through random sampling (N=14) to support the in-depth qualitative analysis. Additional analyses would have enabled the inclusion of a broader selection of articles in the study. The data search was conducted in 2015 and it focused on the previous five years (2009–2014) to cover the latest research. The scope would have been more comprehensive if the data search had been extended further. To validate the results I reflected the findings in the conclusion section of the dissertation in relation to other works focusing on similar topics (Kulju et al., 2018; Palsa et al., 2019). These works support the findings of sub-study I. To collect local curricula for analysis, I conducted two separate data searches, first in 2017 (sub-study II) and the second one in 2019 (sub-study III). Separate data searches enabled me to take into account the possible development made on local curricula after their implementation. The aim was to cover Finnish municipalities as extensively as possible. However, the Finnish versions of local curricula were not found in all of the municipalities (86% in sub-study II, 88.7% in sub-study III). The main reason for this lack of curricula was the focus on the Finnish curricula instead of the other official language. However, these municipalities could have been contacted to request the curriculum document for analysis or be asked for an explanation for the lack of the curricula.

In many municipalities in which a Finnish curriculum was not found, a Swedish curriculum would have been available. However, these curricula were excluded from the analysis due to the methodological challenges related to the analysis of cross-language data (Squires, 2009). This challenge could have been solved through trusted translation services (Smith et al., 2008) and further discussion about the interpretation made with the developer of the curriculum. The study could be broadened in future studies by focusing particularly on the local curricula made available in Swedish or in Sámi languages. I have focused particularly on the disciplinary contexts of social studies and mathematics to open up analytical perspectives to differing academic traditions. However, this is also a noticeable limitation of the research. By studying the contextualisation of CBE in other disciplines the results could be reinforced and the applicability of the constructed theory could be further evaluated. Extended research on the contextualisation of CBE in different disciplinary contexts would be a valuable future direction.

The datasets were analysed using qualitative content analysis methods following both inductive and deductive logic (Hsieh & Shannon, 2005; Thomas, 2006). This analysis method helped me to take into account the contextuality of the textual data (Mayring, 2015). As I have applied the methodological orientation of grounded theory, one central feature of this research is the close relationship with the data. This means that I have formed the categories of both types and forms of conceptual contextualisation inductively based on the analyses (Hsieh & Shannon, 2005; Thomas, 2006). In addition, I have focused on these analyses (sub-studies II & III) with a more structured perspective following deductive logic based on the levels of

contextualisation to understand the contents of the contextualisations. However, I formed this analytical framework based on the definitions of transversal competence in the national core curriculum which describes the reasons, definitions and practices related to each of the competences. Thus, even the more directed analyses applied have their roots in the contextual setting of the study, supporting the relevance of the research. From the point of view of trustworthiness, it is important to acknowledge that a certain level of interpretation is always related to qualitative content analysis (Graneheim & Lundman, 2004). This is one of the central methodological challenges of this dissertation. The quality of the qualitative content analysis is often pursued through multiple analysts whose inter-coder agreement (Mayring, 2015, p. 372) is seen to be meaningful for ensuring the validity of the results. However, I have conducted all the analyses alone, even though the results are discussed together with the co-authors of the sub-studies. Having another researcher conducting the analyses may have helped to support the validity of the results. However, the issue is not as straight forward concerning the interpretative aspect common in qualitative research. Two researchers with the same qualitative data may produce different results. With the explanation of the analysis procedures and explicating data extracts, I have provided the opportunity to evaluate the trustworthiness of the results of the analyses.

This dissertation consists of three sub-studies and the overall integrative chapter. In every sub-study, I had had individual research questions guiding the process based on the specific aims. I have answered these questions in the result sections of these studies individually. However, in this integrative chapter of the dissertation I have reconstructed and clarified the overall aims and research questions covering and linking the separate studies into a larger research entity. In the results section, I indicate a clear conclusion and statement of the findings based on the research questions and I have constructed the findings based on the micro- and macro-level perspectives of this research. I have discussed the findings further in the concluding chapters.

Dissertations have a special role in the academic field. As an individual research study, it contributes to the academic discussion, but it is also part of the doctoral education programme. This double role of the dissertation has an effect on my researcher position, which is important to acknowledge as part of the evaluation of the research. From the point of view of doctoral education, I highlight that during the overall process I have been responsible for conducting the studies in practice and the integrative chapter of the dissertation, which means, for example, that I was the sole researcher conducting the data collections and analyses. However, from the point of view of evaluation, this can affect the quality of the research. Another aspect relates to the researcher's expertise. According to Birks (2018, p. 224) the expertise of the researcher has an important role in the quality of the research, for example, in understanding the research terminology. I have taken both of these perspectives

into consideration through cooperation with experienced scholars. I conducted the first sub-study together with Prof. Heli Ruokamo and the second and third sub-studies with Dr. Pekka Mertala. Even though I was responsible for conducting the main parts of the actual research process, such as data collections and analyses, the processes and results were discussed together with the co-authors. This supported the terminological and methodological quality. All the sub-studies were evaluated in the international peer-review processes during the publication of articles. The analyses were also introduced and discussed in several academic conferences during the dissertation process. During the overall process, including the sub-studies and the integrative chapter of the dissertation, I conducted the research following academic ethical principles. In the following section, I further reflect the ethical aspect of the dissertation.

8.2.3 Ethical Evaluation

Since the field of research is wide and diverse, the ethical evaluation is important to consider the characteristics of the specific study in a contextually aware manner. According to Spicker (2007) the codes of ethics in social sciences focus mainly on the rights of the participants. Instead of people or other living subjects, I have studied openly published documents, research articles and local curricula. Thus, the ethical questions of this dissertation relate mainly to other areas of research, such as the processes of conducting the study and the relationship between the study and the surrounding world (see, for example, Christians, 2018). Ethics can be considered based on four perspectives covering impact, treatment of participants, disciplinary considerations and research relationships (Spicker, 2007).

Firstly, from the ethical point of view of impact, this study aims to promote education at various levels. Theoretically the dissertation contributes by providing new knowledge, concepts and a theory for the contextualisation of CBE. The societal aim of this study relates to developing education by supporting the development of national curricula in the future and designing possible additional support. In addition, my practical aim is to help the contextualisation of the competence-based curriculum and develop the educational practice.

Secondly, even though the research does not involve participants as such, the questions of confidentiality and anonymity are important to consider. I have analysed two types of datasets, consisting of research articles and local curricula. Both the datasets are public documents available online and do not include any sensitive materials. Concerning the first dataset, through evaluation I decided to disclose the analysed research articles in sub-study I because of the nature of research as an open endeavour. My analytical interest did not focus on any sensitive information but rather on the conceptualisations made, which are a typical part of research work. However, in sub-studies II and III, I decided to conceal the names of the municipalities whose curricula I analysed through pseudonyms and coding,

for example, 'Curriculum 1a'. In this research I focused on an overview of the contextualisation instead of the situation of individual municipalities.

Thirdly, the description of the design of the studies (Chapter 5) and the overall evaluation (Section 8.2) enable me to make ethical disciplinary considerations, such as quality of the research, display of competence and the advancement of the field. By introducing many data extracts, I have promoted the transparency of the research and supported the evaluation of the interpretations and analyses. I have also reflected the results of the study by discussing them in relation to the wider theoretical discussions (Chapter 8.1).

Fourthly, I have followed the ethical principles concerning research relationships by respecting the responsibilities towards the academic community and the broader society. This is in line with the guidelines for the responsible conduct of research (TENK, 2013), which require that the researcher complies with the standards set for scientific knowledge in planning and conducting the research as well as in reporting the results. According to the guidelines (TENK, 2013, p. 30), 'when publishing the research results, the results are communicated in an open and responsible fashion that is intrinsic to the dissemination of scientific knowledge.' I have conducted the research by acting responsibly towards others in the field, for example, by following standards of academic writing and proper citation practices (TENK, 2013). My aim is to contribute to the field by presenting new knowledge. From the perspective of the common good and the nature of research as a collective endeavour, one central ethical issue relates to the availability of knowledge and openness of research. I have published all the articles of the sub-studies in international open-access journals that are available to all. These are non-profit journals that do not have publishing fees.

8.3 Implications and Future Directions

Following the structure of this dissertation, I have divided the implications and directions for future research into two levels. In the next section I present and discuss the implications for multiliteracy education and research. These implications are presented based on the aims of this dissertation: theoretical, societal and practical. In the following section I use this perspective to introduce and discuss the implications and directions for further research for CBE and research more broadly.

8.3.1 Multiliteracy Implications

My theoretical aim for the micro-level analysis was to participate and to provide new knowledge in the field of literacy studies, especially concerning multiliteracy. This can help to operationalise the competence perspective of multiliteracy in research and facilitate theoretical discussion and cumulative knowledge construction concerning contextually aware multiliteracy conceptualisations. As the research

field of multiliteracy is broad and diverse, analytical perspectives that are developed can promote conceptual clarity and shared discussion. In this dissertation I have highlighted not only the diversity of multiliteracy definitions made based on the situational settings but also the changing disciplinary perspectives. Multiliteracy can have different meanings, for example, in the context of social studies and mathematics.

Multiliteracy as expressed within the Finnish curricular framework is characterised by its relationship to other literacy conceptualisations. Multiliteracy is not only a specific literacy with a specific definition but is also understood as an umbrella concept consisting of various literacies (Palsa et al., 2019). The diversification of literacy conceptualisation is noted in the field of research. According to Stordy, the evolvement of technologies has transformed the conceptualisation of literacy, that is, what it means to be literate and to experience literacy. This has led to the development and explication of various literacy concepts, such as media literacy, digital literacy and information. It can be increasingly challenging and complex to understand these various conceptualisations of literacy (Stordy, 2015). When considering that these literacy conceptualisations can often overlap, there is a risk within the theoretical discussions that the splintering literacy conceptualisations can divide the discussion even further. Therefore, it is important to actively find the similarities and common aspects that could facilitate the knowledge production between the research fields focusing on a specific literacy concept. Thus, more theoretical and conceptual research is needed. Different levels of contextualisations expressed in this study—including rationale, definition and practice—could provide an analytical framework for further study to analyse the literacy concepts.

My societal aim has been to find ways to support multiliteracy education through the contextual knowledge produced in the dissertation. Even though multiliteracy was a novel concept in Finnish education during the time of the latest curriculum reform, the meaning of the concept has grown based on its role throughout the Finnish curricular framework. During the latest curriculum reform, multiliteracy was introduced not only into the core curriculum for basic education but also into the core curricula for early-childhood education, pre-primary education and general upper-secondary education. However, as explained by Mertala (2018), the definitions between these curricula are not identical but have specific features related to multiliteracy based on the educational levels. Palsa (2020) has addressed the relationship between these multiliteracy conceptualisations through the perspective of curricular and conceptual consistency, which enables multifaceted long-term development starting from early childhood education and extending throughout formal education (Palsa, 2020). From the perspective of comprehensive and systematic curriculum development, the theory presented in this research can support the further research on and understanding of the contextualisation at different education levels. This would enable the consistency in the development

of multiliteracy to be addressed, specifically in the local context, and to design a systematic approach to be designed through the curricular system. The theory could thus be applicable to evaluate and to understand the specialities and common features between the educational levels. In practice, this could especially help in the transition phases between the educational levels.

In practice, this dissertation supports the work of teachers, principals, local education authorities and other professionals involved in the implementation of the national level core curriculum in the local setting by providing an overview of the dimensions—namely method, content and form—of the contextualisation of the transversal competence of multiliteracy. This helps to understand the ways in which multiliteracy is conceptually contextualised and how the contextualisation is structured within the curriculum. Further, by providing a framework that can be reflected when evaluating and exploring the content, perspectives of transversal competence that can be considered when planning the implementation of the national-level curriculum.

The findings of this dissertation, that is, the collected insights and the analysed ways in which the competence of multiliteracy is contextualised in the local curricula across the country, can help to further the contextualisation in municipalities where the contextualisations are negligible or within the municipalities that aim to develop the competence contextualisations even further. The results of the dissertation can support multiliteracy education at three different levels.

Firstly, by concluding on the different perspectives from which multiliteracy was rationalised, the reasons for the competence can be made more understandable. The importance of multiliteracy was argued from the perspectives of: a) personal growth referring, for example, to the identity construction and future prospects, b) communication, highlighting the importance of understanding cultural communication, c) academic skills relating to abilities such as critical thinking and learning skills and d) through the relationship with the surrounding world by emphasising the connection between school and pupils' daily environments and participation. Multiliteracy was also rationalised from various perspectives depending on the disciplines. Based on the analyses in this study, in social studies, on the one hand, multiliteracy was rationalised to support: a) participation by promoting an interest in society and societal issues and active citizenship, b) increasing social cohesion by strengthening tolerance and the ability to dialogue with different kinds of people, c) developing economic knowledge, such as understanding economics and evaluating the environmental effects of economics and d) from the disciplinary perspective by increasing the pupils' interest in the discipline. In mathematics, on the other hand, the importance of multiliteracy was explained mainly from the perspective of disciplinary needs. Multiliteracy was seen to support the learning of mathematics. This can help to explain the value of the multiliteracy from different points of view and make the competence more relevant.

Secondly, the results help in understanding the aspects of the concepts, thus supporting the contextualisation of the concepts. When considering the already existing possibilities and to understand the variance in the ways in which the concept is defined in various settings, it may be easier to evaluate how the concept is perceived in the local setting in question. Explicating the differences and specific characteristics can lead to possibilities for reflection and for further development from differing disciplinary perspectives. The results illustrating the level of definition of multiliteracy can help to evaluate what literacies can be included in multiliteracy (e.g., media literacy, basic reading and writing literacies, visual and pictorial literacy, critical literacy) or what the various symbol systems can refer to (e.g., pictures, numbers, letters, maps, clocks and supportive sign-language signs).

Thirdly, at the level of practice, the results help to explore the different ways in which the development of multiliteracy could be designed, such as the relevant pedagogical approaches (e.g., research-based, phenomena-based), activities that help develop multiliteracy (e.g., presentations, diplomas, group projects, student union activities), necessary resources (e.g., materials meaningful for pupils, competence of teachers) and possible local collaboration partners (e.g., libraries, local media, museums). Even though these results explicate the diversity of the educational practices in relation to the transversal competence of multiliteracy, it is important to acknowledge the role of the educational autonomy of the teachers (Lavonen, 2017), the variety of different teaching methods, contextuality and differing local realities (Hirsh et al., 2020). In their review, Hirsh et al. (2020) identified nearly 30 contextual factors influencing teaching practices. These moderators relate to the roles of pupil, teacher, content and context. Thus, the same educational practice may or may not be suitable in various settings. This highlights the need for a nuanced evaluation and understanding of contextuality.

Based on the versatile nature of the analysed multiliteracy conceptualisations made in the local curricula, the teaching practices and the learning of multiliteracy can be even more nuanced phenomena to understand. Further research is needed to understand the role of multiliteracy in everyday educational practices. Multiliteracy as a novel and broadly defined concept highlights the need for a wide and innovative research approach, as well as new methodological considerations. By studying how the competence is contextualised within the educational practice, for example, in different disciplinary settings, more accurate and applicable support can be provided. This notion highlights the further need for theoretical and conceptual research as well, since theoretical concepts provide a basis for sustainable research and practice for educational development.

8.3.2 Implications for Competence-based Education

My theoretical aim was to contribute to the discussion and cumulative knowledge about CBE, especially from the perspective of curricular contextualisation. This was

done by presenting the concepts of conceptual contextualisation and disciplinary contextualisation, and by introducing a theory of the conceptual contextualisation of CBE. As studies have shown, the discussion around research and educational policy around CBE is versatile and multifaceted. For example, there is no consensus about future competences, but rather different stakeholders have presented their frameworks consisting of various competences (Erstad & Voogt, 2018; Voogt & Roblin, 2012). In addition, the definitions of the conceptualisations can vary. Conceptual contextualisation, whether focusing on transversal or disciplinary contextualisation, is a term that can be used to focus the theoretical gaze and to separate the perspectives of the discussion, enabling a more nuanced understanding of the competence-based curriculum. This can also support the explicit conceptualisations of the competences. As explained by Tahirsylaj and Sundberg (2020), in many of the studies and articles concerning CBE the definitions of competences are not explicated or elaborated but rather are left undefined.

The discussion will be different if the competence is addressed transversally across the disciplines or within the scope of a certain discipline. The theory introduced in this dissertation can be applied as an analytical tool to understand the various conceptual dimensions of competences. Firstly, through the evaluation of the expressed rationale of the competences, links and commonalities between the concepts can be made visible. The development of competences can be more efficiently designed if the common basis between the competences is considered. Secondly, by addressing the definitions of the competences it is possible to understand the features that are shared between the competence conceptualisations as well as to find the key characteristics essential for the specific competences. Often the competences presented in different frameworks are not exclusive but are overlapping and interlinked (Voogt & Roblin, 2012). Thirdly, by focusing on the ways in which the competences are designed to be developed, shared practices can be discovered. Closely related competences could be promoted through the same educational activities. This can be supported by competence-based pedagogical planning.

Following the inductive logic of grounded theory, I have constructed the theory based on the data and the analysis of the transversal competence of multiliteracy. To evaluate and support the possibilities of the applicability of the model, more contextual research and development are needed. From this perspective, new research directions could open up to test and to iteratively advance the theory for other competences and in other educational contexts as well.

My societal aim is to support the development of education in terms of curricular contextualisation. From this perspective, the findings support the further development of a national core curriculum and the design of the necessary support provided at the local level. Curricular contextualisation is not a straightforward task, but it can be supported by curriculum design. Firstly, in relation to curriculum design, as suggested in the research by Sullanmaa (2020), it is important to focus

on the consistency and alignment of the curriculum. On the one hand, this can establish a clear foundation for the interpretations and understandings of the curriculum and its implementation (Sullanmaa, 2020). Designing the national level curriculum in a way that leaves room for local interpretations and gives a mandate for contextualisation has been seen by the teachers as an important structural enabler (Rød & Bæck, 2020). On the other hand, the structural constraints can prevent the local curriculum developers from making local adaptations to the central curriculum. For example, if the competence aims defined in the core curriculum are too numerous or comprehensive, the teachers may not have enough time to contextualise them for the local setting (Rød & Bæck, 2020). In the Finnish context, the need for the conceptual aspect has been noted to be one of the challenges influencing the implementation of the curriculum (Venäläinen et al., 2020).

The findings of this dissertation can support the discussion and the achievement of shared understanding of CBE by highlighting the central dimensions of the conceptual contextualisation. This can help in differentiating the discussion of the competences focusing on the whole curriculum through transversal conceptual contextualisation and the disciplinary perspective on the competences through disciplinary contextualisation. It can also focus the discussion based on the dimension of content of contextualisation through the levels of rationale, definition and practice and the dimension of method through explicating the ways in which the competence can be contextualised. This can help in making a decision about which of the aspects of the original definition could be important to emphasise or to specify, to discover aspects that could be added to the definition, and to evaluate if certain parts of the definition could be described differently, in a more relevant manner. Recognising the contextual differences relating to the educational practice (Hirsh et al., 2020) can help to evaluate and support the applicability and relevance of the pedagogical design, also in relation to CBE.

The lack of contextualisation at the local level opens up interesting opportunities for a more nuanced exploration. The research gaze could be focused more on the local setting by studying the annual plans of individual schools to understand how the competences are contextualised at the school level. This could be done within the municipalities in which the contextualisation was done in the local-level curricula and within the municipalities in which the contextualisation was not done. Furthermore, from the perspective of further development of the theory introduced in this dissertation, it could be valuable to continue the development of the model of conceptual contextualisation together with the local professionals participating in the preparation of the local curriculum and the contextualisation process. This could reveal aspects that are essential to emphasise in the practice. As the development of local educational practice and the preparation of the local curricula is a continuous process (e.g., Autti & Bæck, 2019), this could even be done in the municipalities where the contextualisation has already been conducted.

At the level of practice, my aim has been to support the contextualisation of education. It has been noted in previous studies that the changes presented in a competence-based curriculum can remain ceremonial or apparent in the teaching (Gonzalez et al., 2014, pp. 112–113). For example, some of the teachers in Finland experienced the introduction of the novel concept of multiliteracy to the core curriculum as having no effect on their teaching in practice. Only 34% of the classroom teachers participating in the multiliteracy survey (Kulju et al., 2020) agreed with a statement that multiliteracy had changed teaching. It was argued that the contents of the concept were already familiar, and the new concept was just used to express old content, such as a broad conception of text. Implementation of the contents of the national-level curriculum—such as the core curriculum in Finland—in the educational practice can be too much to ask from the individual teachers (Choppin, 2009; Davies, 2006). In addition, from the multi-professional perspective the preparation of the local curriculum can be challenging. Tikkanen et al. (2020) suggest that the teachers and librarians need more knowledge and skills to succeed, both in the making of the curriculum and the implementation phase. Thus, additional support may be needed. The theory introduced in this dissertation provides the opportunity to evaluate the different levels of the concept—the dimension of content—for comprehensive understanding and also to support the actual contextualisation—the dimensions of form and method. At the local level, the developed theory can support the contextualisation of education, especially in municipalities in which the contextualisation was not evident. This can be done from three perspectives. Firstly, it can be done by focusing on the dimension of content in the conceptual contextualisation through the reasoning—the level of rationale, meaning—the level of definition, and development—the level of practice—of the competence. Secondly, it can be done from the perspective of form, by contextualising the transversal competence either covering the whole curriculum or within the disciplinary descriptions covering the scopes of the discipline, grade, objectives or content. Thirdly, it can be done by explicating the different conceptual possibilities for contextualisation, which can be made through emphasis, specification, description and expansion.

Participating in local curriculum work where the contextualisation of the key concepts, such as the definitions of the competences, are mutually discussed can support the understanding and promote shared understanding. This is important particularly in relation to concepts that leave room for interpretation and to concepts that transcend the disciplinary boundaries. It is valuable not only to understand the concept from the perspective of the teachers' own discipline but to understand how the transversal concept is understood from different disciplinary perspectives. From the perspective of educational leadership this broader and multifaceted understanding is especially important for principals who are responsible for the implementation of the curriculum across the disciplines. Without a common understanding of the

shared aim, such as comprehensive competence development, transversality is not achieved or is biased. Implementation of the competences that should be developed across the disciplinary boundaries may face problems, for example, if the differing disciplinary perspectives are not sufficiently taken into account. According to Yates (2016) the implementation of new curriculum frameworks can fail if teachers with different disciplinary identities and expertise have differing views on what matters. Cooperation and shared discussion between the teachers from different disciplinary backgrounds about rationale, definition and educational practices related to the competence can be supported, for example, by applying the theory of the conceptual contextualisation.

Even though this dissertation contributes to the theoretical discussion about CBE and to the development and contextualisation of the curriculum, there are a few limitations to the scope that are important to consider. These limitations also offer new directions for future research. First of all, I have focused on the contextualisation of the transversal competence of multiliteracy particularly from a conceptual point view by focusing on the definitions made at the various levels, such as in international, national and local contexts. Even though this helps with understanding the intended outcomes of the curriculum, the focus limits the actual educational practice. As studies have shown, there can be a mismatch between the official curriculum document and teaching in practice (e.g., Beinert et al., 2020). Thus, the study of the actual competence-based educational practice, that is, teaching and learning in various situations, could open up new opportunities to understand the contextualisation in practice and the relationship between planned, implemented and actualised competence-based curricula. Considering that the general concept of multiliteracy was not contextualised in 72% of the analysed local curricula, it would be beneficial to study the conceptualisation process in practice. Analysis of preparation documents, mapping of the ways in which the contextualisation process has been conducted and/or interviewing participating stakeholders, such as teachers, principals and local education authorities could open new perspectives to further understand the topic at hand (Tronsmo & Nerland, 2018). Secondly, the international aspect of a competence-based curriculum is important to take into account. This dissertation is focused on the Finnish educational system, providing an excellent opportunity to study curricular contextualisation in a curricular framework emphasising both centralised and decentralised perspectives (Creese et al., 2016; Lavonen, 2017). The results could be valuable to reflect on in the context of different education steering approaches to support the applicability of the findings.

I have focused on the curricular contextualisation of CBE from a conceptual point of view. However, the underlying theme of the research is the relevance of education in the 21st century. On the one hand, I have studied the competence-based curriculum, aiming to provide the needed applicable skills, knowledge and abilities for pupils to master complex situations in a constantly changing world

where trends such as globalisation and technological development are influencing the societies, cultures, communities and everyday lives of individuals. This is seen to promote the content-based relevance of education. On the other hand, the aim of curricular contextualisation is to make the education itself relevant for the diverse local settings. The research provides new knowledge about the relevance of education from both perspectives.

Education is highly contextual endeavour. It always takes place in a certain time, environment and surroundings with the participation of particular involved people. Even though, it does not happen at the levels of abstraction, visions and ideas, the concepts help us to connect with each other and to build bridges for communication, to focus and to construct shared understanding. Through this dissertation I have contributed to the shared and growing scholarly endeavour to shed light to further explore literacy, curricular contextualisation and competence-based education in a constantly changing world. This can help to empower, focus and offer perspectives to understand and to discuss the essentials, possibilities and realities of education in the world we are living in.

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Article III

Palsa, L. & Mertala, M. (2020). Disciplinary contextualisation of transversal competence in Finnish local curricula: The case of multiliteracy, mathematics, and social studies. *Education inquiry*.

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Abstract

Competence-based education is a widely implemented educational approach, but more research is needed into the relationship between transversal competences and individual disciplines. In this article, we present the results of a study focusing on how the transversal competence of multiliteracy is contextually defined in Finnish local curricula in the disciplines of mathematics and social studies. The article offers new insights into the discussion between content- and competence-based educations by introducing the concept of disciplinary contextualisation. Based on the qualitatively analysed data, four different types of disciplinary contextualisation are presented and further discussed. The study also engages with the discussion in the field of multiliteracy by offering insights into the ways in which multiliteracy is rationalised, defined, and developed in the analysed disciplines. Multiliteracy contextualisations share features, but also differences, between the disciplines, illustrating the importance of taking into account the disciplinary perspective when discussing the development of competences in basic education.

Keywords

Competence-based education; curriculum; curricular contextualisation; mathematics; multiliteracy; social studies

Introduction

Competence-based education is widely promoted around the world in various educational contexts, including higher education, secondary and primary education, and vocational education (Eurydice, 2012; Pepper, 2011; Tchiboza, 2011). Competence-based education is steered by competence-based curricula, one concrete example of which is the Finnish national core curriculum for basic education (NCC) (FNBoE, 2014). The NCC contains seven areas of transversal competence inspired by various competence-based frameworks promoted by various international actors, including the Organization for Economic Co-Operation and Development and the European Union (Uljens & Rajakaltio, 2017).

As the choice of the word ‘inspired’ suggests, no existing framework has been applied as such. Indeed, despite the commonness of competence-based approaches, there is variance in how the competences are understood, defined, and implemented in practice (Burnette, 2016; Le Deist & Winterton, 2005; van Griethuijsen et al., 2019). Despite the headlines announcing the “extinction” of school subjects (e.g., Garner, 2015; Murray, 2017), a competence-based curriculum does not mean a total abandonment of subject-based curricula (Sofou & Tsafos, 2010). For instance, in the NCC, the transversal competences are to be taught and studied within all the disciplines¹ included in the curricula. Curricula can be seen as ‘dynamic force fields’ (Luoto & Lappalainen, 2006, p. 14) in which traditions and reforms are in constant movement. Transversal competences are often studied to develop certain educational practices, such as evaluation, methods, learning environments and learning resources (e.g., Atenas et al., 2015; Gómez-Gasquet et al., 2018; Piispanen & Meriläinen, 2019). Overall, more comprehensive and empirically grounded knowledge is needed to further understand the contextuality of competence-based education, especially in relation to disciplines and support for its implementation.

To understand how certain concepts—in this case, educational competences—are implemented in local educational policy in a way that considers the specific local setting, Palsa and Mertala (2019) introduced the concept of ‘conceptual contextualisation,’ which refers to ‘how a certain concept is defined in a way that considers the specific local educational setting’ (p. 115). In this paper, conceptual contextualisation is applied to study how the transversal competence of multiliteracy—a broad and complex concept introduced in the Finnish educational system in the latest curricular reform—is contextualised within different disciplines with versatile theoretical backgrounds, specifically mathematics (natural sciences) and social studies (social sciences) in Finnish local curricula. The concept of multiliteracies is originally developed to describe an approach in literacy pedagogy that takes into account the diversity of communication methods and cultural and linguistic variance (The New London Group, 1996) and it is widely used across research fields (Kulju et al., 2018; Palsa & Ruokamo, 2015). Within the disciplines of social studies and mathematics, multiliteracy studies often focus on micro-level classroom practices (e.g., Joutsenlahti & Kulju, 2017; Lucey et al., 2013; Takeuchi, 2015). To understand the contextualisation of multiliteracy from a broader perspective, we focus on the local curricula across Finland. The local curricula provide favourable opportunity to understand contextualisation since Finnish teachers and local education

¹ Disciplines in grades 7 to 9 in the NCC: biology, chemistry, crafts, ethics, foreign languages, geography, guidance counselling, health education, history, home economics, mathematics, mother tongue and literature, music, physical education, physics, religion, second national language, social studies, and visual arts.

providers have high levels of autonomy and the local curriculum is not just a tool to implement the national core curriculum but is also a pedagogical tool for the development of education (Lavonen, 2017; Mølstad, 2015). The following research questions have guided the research process:

1) How are disciplinary contextualisations of the transversal competence of multiliteracy structured in Finnish local curricula?

2) How is transversal competence of multiliteracy contextualised in the disciplines of mathematics and social studies in Finnish local curricula for lower secondary education?

The article is constructed as follows. Next, we provide theoretical and contextual background information about competence-based education, multiliteracy and language-awareness, especially in the Finnish curricular framework. In the methodological part of the article, the scope of the article and the research setting are described, as well as the methods used for searching the data and the analysis. The findings of the results are presented based on the research questions. The article is concluded by discussing the results, limitations and the future implications of the research.

Background

Competence-based education and the Finnish curricular framework

The origins of competence-based education can be traced to the United States and Canada in the 1960s and 1970s. It thereafter received interest in other parts of the world, including Europe, where the approach emerged in the 1980s (Tchibozo, 2011). According to Tchibozo (2011), one of the features of competence-based education is its purpose in providing learners with the ability to mobilise resources to master complex situations. Despite this common central characteristic, there has been confusion about the definition of the term, and competence-based education has been understood and conceptualised in different ways in different parts of the world (Le Deist & Winterton, 2005; Tchibozo, 2011). This notion highlights the importance of contextual understanding in the ways in which competence-based education is implemented in different education systems.

Education systems vary, such as in the levels of centralisation or decentralisation of their curricular frameworks (UNESCO, 2005). This should be taken into account when considering the implementation of competence-based education. In some decentralised educational policies, the importance of local contexts is taken more into account, whereas in some centralised educational systems, the national curriculum has a more standardised view of curriculum implementation.

According to Ball (2012), some educational policies recognise that the national level curriculum should be adapted at the local level. Combining the perspectives of centralised and decentralised educational steering, the Finnish curricular framework offers a suitable opportunity to study the ways in which central concepts are contextualised. As discussed elsewhere (Palsa & Mertala, 2019), the Finnish curriculum framework consists of three levels. As a national level regulation, the NCC (issued by the National Agency for Education) creates the basis for the organisation of education and for the preparation of local curricula and the annual plans for individual schools. The aims of the national level regulation are to support and steer the provision of education and to promote equal implementation of education (FNBoE, 2014, p. 9). On the other hand, local curricula prepared by education providers offer the option of taking into account the special characteristics of the local context. ‘It plays a key role in setting out and implementing both national targets and goals and tasks considered important locally’ (FNBoE, 2014, p. 9). The way in which the concepts presented in the national level core curriculum are defined in the local setting is referred to as conceptual contextualisation (Palsa & Mertala, 2019) and is part of the larger phenomena of curricular contextualisation (see, for example, Fernandes et al., 2013).

One interesting aspect of competence-based education is the relationship between transversal competence and individual disciplines. In the NCC, transversal competence refers to an ‘entity consisting of knowledge, skills, values, attitudes, and will’ (FNBoE, 2014, p. 20). The core curriculum includes seven areas of transversal competence: 1) thinking and learning to learn; 2) cultural competence, interaction, and self-expression; 3) taking care of oneself and managing daily life; 4) multiliteracy; 5) ICT competence; 6) working life competence and entrepreneurship; and 7) participation, involvement, and building a sustainable future. Transversality refers here to the nature of the competences in the sense that they should be developed in all different disciplines. Even though the definitions of the competences are shared across the disciplines, they leave room for the question of how the competences are understood and applied in different disciplines, taking into account subject-specific features and characteristics. For every discipline, the NCC in Finland specifies various educational areas, such as the tasks, objectives, and content areas, as well as the learning environments, working methods, guidance, differentiation, support, and assessment. However, the seven specified transversal competence areas are only numbered as abbreviations (T1, T2, ...T7) and are linked to specific disciplinary objectives without more specific descriptions. These are issued subject to local decisions by education providers. According to NCC (FNBoE, 2014, pp. 102, 158, 285), the education provider should make decisions about and describe the objectives of transversal

competences at different grade levels (in grades 1 to 2, 3 to 6, and 7 to 9), their local emphases, and the ways in which the development of pupils' transversal competences are supported.

Even though competence-based education is a widely used approach within European educational systems, a more strategic approach is needed to support further implementation (Eurydice, 2012). Specifically, in Finland, the multifacetedness of the concepts is one of the central points highlighted as part of the evaluation of the implementation of the current Finnish core curriculum for basic education. According to the development recommendations suggested by the assessment group of the Finnish Education Evaluation Centre (Venäläinen et al. 2020, p. 13), educational providers and schools need more support and guidance for the implementation of the curriculum. In their evaluation, the group suggested that the National Agency for Education (the agency responsible for curriculum development in Finland) should clarify the concepts used in the curriculum to ensure the necessary support. This study, focusing on the conceptual and disciplinary contextualisation of a specific transversal competence, can thus help to provide evidence-based support to understand the aspects of the concepts that could be clarified or supported.

Multiliteracy and language awareness in the Finnish curricular framework

The concepts of multiliteracy and multiliteracies are discussed in various fields of research, with varying meanings (Palsa & Ruokamo, 2015). The origin of these concepts is in the New London Group's (1996) article *A pedagogy of multiliteracies – Designing social futures*, in which multiliteracies are defined as a pedagogical approach that is required to meet the needs of the ever-diversifying textual and cultural landscapes of contemporary societies. In the original definition, both the 'multi-' and 'literacies' concepts should be read as plural, as 'multi-' refers to multimodality and multiculturalism and 'literacies' refer to text-related and sociocultural literacies (New London Group, 1996). The Finnish interpretation, however, is slightly different: while cultural diversity is mentioned briefly (FNBoE, 2014), the emphasis is on understanding multiliteracy as a text-related competency, and the definition is close to how media literacy is defined in the international research literature (Palsa & Ruokamo, 2015). More precisely, the NCC (FNBoE, 2014) approaches multiliteracy through three different perspectives (Palsa & Mertala, 2019). First, it provides a rationale for why a concept/competence, such as a multiliteracy, is needed (i.e., the 'why' of multiliteracy), by stating that multiliteracy provides students with a means of critical thinking and learning and helps them to interpret the world around them. Second, the NCC defines what is meant by multiliteracy (i.e., the 'what' of multiliteracy), defining it as the skills to interpret, produce, and evaluate different kinds of texts in different contexts and situations through the use of various tools. Texts, in turn, are defined

as information presented through various symbol systems (linguistic, visual, auditory, numerical or kinaesthetic or a combination of these), and multiliteracy is conceptualised as an umbrella concept for subsets of literacies. Third, the NCC provides guidance for multiliteracy practices (i.e., the ‘how’ of multiliteracy), stating that developing multiliteracy requires a rich text environment and a pedagogy that utilises it (FNBoE, 2014; Palsa & Mertala, 2019).

Multiliteracy offers a favourable opportunity to study the relationship between competences and individual disciplines. Competences can be categorized as disciplinary (including competences specific to a discipline) and transversal (common across the disciplines) in their nature (Hernández-de-Menéndez & Morales-Menendez, 2016). However, multiliteracy combines both of these perspectives. In the Finnish core curriculum, as a transversal competence multiliteracy has its specifically defined contents that are promoted across the disciplines, it also covers the idea of discipline-specific textual practices, which can be understood through the lenses of language awareness or disciplinary literacies.

Language awareness refers to the idea that teachers need to be aware that every discipline has its own ways of using language and text to represent and construct reality (Harmanen, 2013). In addition, disciplinary literacy captures discipline-specific ways of knowing, cultures and the tools of knowledge production and critique (Moje, 2015). Therefore, as argued by Luukka (2013), each teacher

has a responsibility to guide [students] towards the language and textual practices of their discipline. Thus, every teacher needs to think about how the goals related to the accumulation of multiliteracy are reflected in everyday teaching. Studying the textual practices of biology, history, visual arts and mathematics is the most natural link to the study of the contents of each discipline. (n.p.)

Luukka’s (2013) notion about the textual practices of the different disciplines suggests that the same texts and symbols are approached differently in different disciplines. Take numbers, for example. To draw on Green’s (1988) 3D model of literacy, mathematics education traditionally operates on the operational dimension of number-related literacies²: in its most basic form, the operational dimension here is about the ability to identify number symbols and to understand their connection to numerals and amounts. More precisely, the number nine (9) equates to nine apples and the numeral ‘nine’. That said, besides numbers, the mathematically symbolic language (Joutsenlahti & Kulju, 2017) contains various non-alphabetical symbols (e.g., +; -; /; *; =). Additionally, in algebra the variables are marked

² This concept is used here as an umbrella term for the various concepts, such as numeracy, mathematical literacy, and quantitative literacy, that are used to describe being literate with numbers.

with alphabets, which requires contextual literacy as to what the alphabet stands for. Furthermore, from the viewpoint of social studies, numbers are not straightforward information about the physical world, but rather representations of societal phenomena. Whether information about societal issues is presented in absolute numbers or percentages plays a notable role in shaping one's interpretation of the issue (Bell et al., 2020, pp. 9–12). For example, in 2015, The Center Party received 56.9% of the votes from the town of Savukoski in the Finnish parliament elections. While the percentage is rather notable, in actual numbers it equates to 418 votes, which is roughly 0.014% of all recorded votes. Understanding the tensions between numbers and social reality is one key competence in agentic citizenship—an explicit objective mentioned within social studies in the NCC (FNBoE, 2014, p. 419)—and a cautious stance towards numbers is aligned with what Green (1988) refers to as a critical dimension of literacy.

Materials and methods

Choice of subjects and grades

To understand the ways in which multiliteracy is contextualised in different disciplines, we focus on two subjects with differing disciplinary backgrounds—mathematics (natural sciences) and social studies (social sciences)—as they were thought to offer more versatile perspectives on the disciplinary contextualisation than drawing from one disciplinary tradition only. For example, according to the NCC (FNBoE, 2014, p. 418), one of the main tasks of social studies is to support pupils' growth into active, responsible, and enterprising citizens and to guide them to act in a pluralistic society that understands diversity and respects human rights and equality in accordance with the values and principles of democracy. The task of mathematics, in turn, is to support the development of the pupils' logical, precise, and creative mathematical thinking (FNBoE, 2014, p. 374). Additionally, we reasoned that a comparison between two academic disciplines would provide a stage for more nuanced analysis than a comparison between academic discipline and arts and crafts.

The contents of the different disciplines are described in a systematic manner in the Finnish NCC, as outlined in Table 1. For both disciplines, the objectives are explicitly related to specific key content areas (seven in mathematics, four in social studies) and transversal competences (common across the disciplines). Discipline-specific objectives and the key content areas are described in the NCC, but the transversal competences are not explicitly described.

Table 1. Structure of the disciplinary descriptions in the Finnish core curriculum for basic education

Task of the subject	
Objectives of instruction	
Mathematics: 20 objectives are presented under the following three themes: 1) significance, value, and attitudes; 2) working skills; and 3) conceptual objectives and objectives specific to the field of knowledge.	Social studies: Nine objectives are presented under the following three themes: 1) significance, values, and attitudes; 2) adopting knowledge and skills needed in society and societal understanding; and 3) using and applying societal knowledge.
Key content areas (abbreviation C) related to the objectives of the discipline	
Mathematics: C1 Thinking skills and methods C2 Numbers and operations C3 Algebra C4 Functions C5 Geometry C6 Data, processing, statistics, and probability Objectives related to the learning environments and working methods Guidance, differentiation, and support Assessment of the pupils' learning	Social studies: C1 Daily life and personal life management C2 Democratic society C3 Active citizenship and involvement C4 Economic activity

In addition, it was decided to concentrate on lower secondary school (grades 7 to 9). This age range was chosen because—in contrast to grades one to six—multiliteracy is defined in grades seven to nine as being deepened by expanding the range of different texts in all the different subjects (FNBoE, 2014). The participation of the pupils in their own surroundings, the media, and society is emphasised. Various specific literacies are highlighted as part of multiliteracy development for the specific grades, including analytical, critical, cultural, ethical, environmental, media, and visual literacies, and the grade-specific emphasis of the transversal competence of multiliteracy is presented in Appendix 1. On these bases, it was reasoned that the curricular texts would be richer and more detailed in grades seven to nine than in lower grades. Additionally, since research on multiliteracies has mainly concentrated on education practices, with the emphasis on observations and ethnographic methods (e.g. Kulju et al., 2018; Palsa & Ruokamo, 2015), putting the focus on curriculum level – especially in the disciplinary contexts of social studies and mathematics – would broaden the contextual palette of the research.

Search for the data

In the first phase, the local curricula were searched using online search engines and the curriculum web-portal (e-Perusteet) hosted by the National Agency for Education. In Finland, there are a total of 311 municipalities (Statistics Finland, 2020); from these municipalities, the local Finnish curriculum³ was found in 276 (covering 88.7% of the municipalities). Of these, 208 were prepared individually in the municipalities, while, in 68 municipalities, regional curricula were created through cooperation (creating 12 regional curricula). Thus, in this study, 220 distinct local (including regional) curricula were scrutinised.

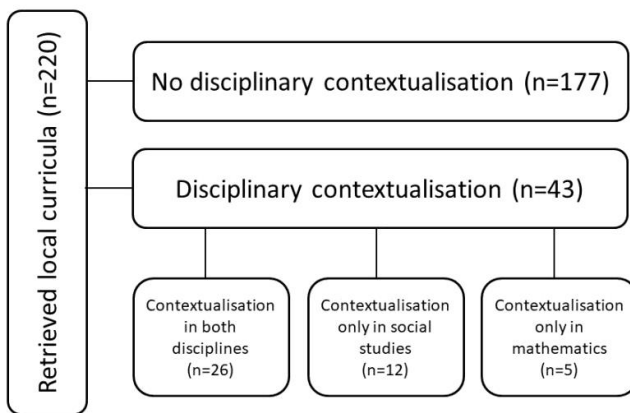


Figure 1. Disciplinary contextualisations in the Finnish local curricula

First, the chapters describing the disciplines of mathematics and social studies were reviewed from the local curricula, as illustrated in Figure 1. From this phase, disciplinary contextualisation was identified in 43 local curricula (19.5% of the analysed curricula). As mentioned above, transversal competence areas in the disciplinary settings are only numbered as abbreviations (T1, T2, ...T7) in the NCC without more specific descriptions. Thus, every description of the multiliteracy in the analysed curricula (illustrating the disciplinary contextualisation) was included in the further analysis. These local curricula were coded with consecutive numbers from 1 to 43. In 26 local curricula (11.8% of the analysed curricula), disciplinary contextualisation was found for both disciplines, while in 17

³ In Finland, local curricula are adopted separately for education in different languages, such as Finnish, Swedish, and Sámi (FNBoE, 2014, p. 17). In many municipalities in which a Finnish curriculum was not found, a Swedish curriculum would have been available. In 2019, there were 16 official Swedish-language municipalities in Finland and 15 bi-language municipalities in which a major language was Swedish (Statistics Finland, 2020a). From reasons of validity, this study focuses only on the Finnish curricula to avoid any translational confusion.

local curricula, contextualisation was present for only one. Thus, the data further analysed in this study consists of 69 individual multiliteracy contextualisations (38 in social studies and 31 in mathematics).

Analysis

Two different analytical perspectives were used. To answer the first research question concerning the ways in which the contextualisations of the transversal competence were made, the data was analysed using inductive analysis (Thomas, 2006). This perspective was chosen based on the nature of the data. Even though contextualisation of the transversal competences in the Finnish local curricula are encouraged in the NCC, the process is not explicitly guided; instead, the creators of local curricula have relatively broad freedom to organise and decide how the contextualisation is performed (see, for example, Tikkanen et al., 2019; Venäläinen et al., 2020). To conduct the analysis, the textual data consisting of individual contextualisations was organised in a data matrix based on the curricula and the separate disciplines. The data was read through several times to find commonalities in relation to the structures of the curriculum in order to form common types, compare the data extracts to the found types, and form a final framework consisting of categories of types of contextualisation.

To answer the second research question, the data was analysed using deductive content analysis (Kyngäs & Kaakinen, 2020). First, individual contextualisation texts were addressed from three theory-guided perspectives (rationale, definition, and practice; Palsa & Mertala, 2019). The data focusing on the rationale of the transversal competence (Why?), the definition of the transversal competence (What?), and the ways in which the transversal competence is planned to be developed in the context of the specific subject (How?) were extracted from their specific columns in the data matrix. The data was then further addressed by combining all the data focusing on specific levels of contextualisation (rationale, definition, and practice) in individual discipline-specific data sheets (n=6) to enable more nuanced analysis. These collections of data were then read again thoroughly, and the data was thematically grouped based on the reciprocal similarities and differences.

Findings

The findings of the present study are presented in two main sections. The first answers the research question ‘How are disciplinary contextualisations of the transversal competence of multiliteracy structured in the Finnish local curricula?’ The second, in turn, answers the question ‘How is

transversal competence of multiliteracy contextualised in the disciplines of mathematics and social studies in the Finnish local curricula for lower secondary education?’

How are disciplinary contextualisations of the transversal competence of multiliteracy structured in the Finnish local curricula?

Table 2. Types of disciplinary contextualisation

Type of disciplinary contextualisation	Frequency (% of all contextualisations)	Description
<i>General disciplinary contextualisation</i>	72,5% (n=50)	General disciplinary contextualisation describes how transversal competence is taken into account in the scope of the whole discipline
<i>Objective-specific disciplinary contextualisation</i>	18,8% (n=13)	Objective-specific disciplinary contextualisation describes how the transversal competence relates to the specific disciplinary objectives
<i>Grade-based contextualisation</i>	8,7% (n=6)	Grade-based disciplinary contextualisation describes how transversal competence is taken into account in different grades within the specific disciplines
<i>Content-based contextualisation</i>	7,2% (n=5)	Content-based disciplinary contextualisation describes how the transversal competence is related to the specifically defined disciplinary contents

Four different types of partially overlapping⁴ disciplinary contextualisation were found (Table 2). Next, each type is illustrated with data extracts from both of the analysed disciplines.

The *general disciplinary contextualisation* (72.5%, n=50) illustrates how the transversal competence is broadly taken into account across the scope of the whole discipline. The following data extracts illustrate how the contextualisations cover the scope of whole disciplines and highlight their central features to the transversal competence. Good multiliteracy is required in the discipline of social studies (Curriculum 18), whereas the ability to perceive and question the world is highlighted in mathematics (Curriculum 17).

⁴In five analysed disciplinary descriptions (7.2%), the contextualisation was made by combining two different types of contextualisation, illustrating that the categories are not mutually exclusive. For example, the contextualisation could be done specifically for every grade level and for every specific disciplinary objective in a given grade (for example, Curriculum 29). By combining different types of contextualisation, the accuracy of the contextualisation can be increased. In this study, the data combining different types of contextualisation was quantitatively classified in all the used categories, resulting in the cumulative percentage exceeding 100% (107.2%).

Social studies:

Social studies lives in the media. Multiliteracy is a central part of civics, because the topic of social studies is addressed constantly in the media. Communication tools and media have a great social meaning and are scrutinised critically. Versatile media contents and texts are utilised in the studies. Pupils use, produce, and interpret different texts by themselves and in groups. An essential part of social studies is guiding pupils to develop good study skills; for example, essay answers are an important skill in social studies. Discipline requires good multiliteracy. Multiliteracy is developed, for example, with diverse resources and materials. (Curriculum 18)⁵

Mathematics:

Multiliteracy means the skills to acquire, combine, edit, produce, present, and evaluate in different forms, in different environments and situations, and with the help of different equipment. In mathematics, pupils' multiliteracy is developed towards the mastering of mathematical language and ways of presentation. Pictures and texts are interpreted and produced, for example, with the help of numeric symbol systems, geometrical forms, and digitally. Pupils are instructed to use, for example, different units of measure and quality conversions or to create and interpret tables in explaining different phenomena. In multiliteracy, the ability to perceive and question the world around is a central feature: is the information provided true, possible, unlikely, or not true? (Curriculum 17)

In *objective-specific disciplinary contextualisation* (18.8%, n=13) the contextualisation was done with respect to the outlined objectives of the discipline in question. The following data extracts illustrate how transversal competence is contextualised in relation to specific disciplinary objectives (objective 6 in social studies, objective 16 in mathematics).⁶

Social studies:

Objective 6:

- To support the pupil in understanding that different values, perspectives, and motives are related to the social information produced by different actors.
- Multiliteracy and the critical analysis of media require versatile use of information and communication technology. The conceptual nature of the discipline is taken into account in the working methods, for example by highlighting the description of pictures, graphs, and statistics. (Curriculum 3)

Mathematics:

Objective 16

Multiliteracy: The construction of visually presented information towards more abstract geometrical ideas is supported. (Curriculum 22)

⁵ Data extracts were translated to English from Finnish by Author 1.

⁶ In NCC, the objective number 6 in social studies is "to guide the pupil to examine societal activity as well as different communities and minority groups diversely and with an open mind", whereas the objective number 16 in mathematics is "to support the pupil to understand geometric concepts and connections between them".

Grade-based contextualisations (8.7%, n=6) illustrates how transversal competence is taken into account separately in different grades within a specific discipline. The following data extract focusing on social studies illustrates the overlapping of two types of disciplinary contextualisations. Multiliteracy is contextualised not only based on the disciplinary objects (objective 1) but also within the specific grade level (grade 8). The latter data extract concerning mathematics provides an example of how multiliteracy is contextualised in several grade levels (grades 7 to 9).

Social studies:

Grade 8. Objective 1. Multiliteracy: As diverse educational materials and as versatile working methods as possible are used so that interest in society and social issues is maintained. For example, internet, magazines, films, television, and social media are utilised. Critical evaluation of the information provided by the previously mentioned media is practised. (Curriculum 29)

Mathematics:

Grade 7. Multiliteracy: To support the pupil in becoming competent in exact mathematical expression, verbally and in writing.

Grade 8. Multiliteracy: To guide the pupil in detecting and understanding the relationships between the things learned and to support the pupils in solving mathematical tasks that require logical and creative thinking and developing the skills needed in these tasks.

Grade 9. Multiliteracy: to guide the pupil in developing information management and analysis skills and to guide the critical consideration of information. (Curriculum 23)

Last, the *content-based contextualisations* (7.2%, n=5) draw connecting lines between multiliteracy and the core content areas of the specific discipline. The first data extract illustrate how certain aspects of multiliteracy are emphasised in social studies. Next, the latter extract also illustrates the overlapping of different types of contextualisation, as multiliteracy was contextualised within it in relation to both a specific grade and specific content areas.

Social studies:

C[ontent area]1: T4 Criticality towards advertisements, rights and duties of citizens, understanding the diagrams of statistics.

C[ontent area]2: T4 Running errands with the judicial system, recognition of efforts of political influence.

C[ontent area]3: T4 Media literacy: consideration of electoral results and support of political parties.

C[ontent area]4: T4 Criticality and the interpretation of references. (Curriculum 25)

Mathematics:

9th grade: Multiliteracy (T[ransversal competence]4): Content areas: C1: Special features; C3: 2nd degree equation pairs, equation pairs, 1st degree inequalities; C4: parabolas, functions; C5: trigonometry, circle, space geometry; C6:-. (Curriculum 16)

How is the transversal competence of multiliteracy contextualised in the disciplines of mathematics and social studies in the Finnish local curricula for lower secondary education?

Disciplinary contextualisation at the level of rationale

Rationale-level contextualisation refers to the way in which the need for multiliteracy is expressed in curricula (Palsa & Mertala, 2019). In social studies, rationale-level contextualisation appeared in 7.9% (n=3) of the curricula. Here, multiliteracy was reasoned from a participatory perspective in such a way that it supports the pupils' perceptions of themselves as part of the global world in order to understand and participate in the surrounding society; promote interest in society and societal issues; promote active citizenship of the pupils; and support them in having their voices heard. Multiliteracy was also reasoned from a social cohesion perspective to promote tolerance and the ability to dialogue with different kinds of people and to understand different communities and minorities. From an economic perspective, multiliteracy was reasoned to help with the understanding of economics, to support personal finances, and to evaluate the environmental effects of economics. From a disciplinary perspective, multiliteracy was seen as a requirement for social studies and to promote interest in the discipline. The following data extract illustrates the participatory perspective of multiliteracy:

This helps the pupil to understand open dialogue and the principles of societal decision-making, which are the basis of democracy. The pupil learns how to influence the surrounding environment and how decisions made far away can have an impact on common well-being and one's personal life. The pupil is encouraged to influence the environment in a versatile manner and to find suitable types of text among diverse genres for self-expression and societal participation. (Curriculum 16)

In mathematics, rationale-level contextualisation was found in 6.5% (n=2) of the curricula. Here, the need for multiliteracy was reasoned mainly from a disciplinary perspective, by highlighting that multiliteracy supports not only the development of general learning skills, but also the learning of mathematics. In the following data extract, multiliteracy illustrates the disciplinary reasoning of the transversal competence of multiliteracy:

Multiliteracy in mathematics is both content and a tool. The aim of mathematics is to develop pupils' multiliteracy. Multiliteracy promotes the learning of mathematics.

The aim is that pupils

- familiarise themselves with multiliteracy;
- know the mathematically relevant areas from the broad field of multiliteracy, such as the numeric, symbolic, and pictorial areas;
- learn to produce, interpret, and evaluate text and be critical towards it;
- maintain a mathematical interest in phenomena;

- pursue clear mathematical expression; and
- be responsible for their own studying and the results thereof. (Curriculum 19)

Disciplinary contextualisation at the level of definition

At the level of definition, disciplinary contextualisation illustrates how transversal competence is understood in the context of a specific discipline. In social studies, the disciplinary contextualisation focused on the definition in 84.2% (n=32) of curricula, whereas in mathematics, the figure was 83.9% (n=26). Disciplinary contextualisation concerning definitions was made in both disciplines using common elements, but they also had distinct features.

The definition of *multiliteracy as information management skills* was included in both disciplines. Information management skills refer here to the ability to acquire, mix, edit, produce, present, share, interpret, and evaluate information. The ability to interpret and produce graphical presentations and to read pictures, statistics, and diagrams were also aspects of multiliteracy shared by both disciplines.

Social studies:

Skills to produce, interpret, and communicate information are practised. (Curriculum 32)

Mathematics:

O[bjective] 4. Multiliteracy. O[bjective]4 T[ransversal competence]4. Accurate verbal and written forms of expression are practised in information production. (Curriculum 22)

Additionally, the feature of *multiliteracy as an umbrella concept* was highlighted in both disciplines. This means that multiliteracy included various different literacies; for both social studies and mathematics, these literacies were defined as media literacy, analytical literacy, picture literacy, and numerical literacy.

Social studies:

O[bjective]2 Multiliteracy T[ransversal competence]4

- Information production and presentation.
- Picture literacy is strengthened in the media.
- Environmental literacy is strengthened. (Curriculum 35)

Mathematics:

Grade 8. O[bjective]3 T[ransversal competence]4. Numerical literacy is utilised in a versatile manner. (Curriculum 29)

When it comes to the differences, the distinct elements of multiliteracy in social studies included critical agency in relation to media self-expression and participation and specific knowledge related

to multiliteracy. In terms of *critical agency in relation to media*, multiliteracy was defined as ensuring that ‘the pupil knows how to take a critical attitude to media’ (Curriculum 24) and to use and utilise media in responsible manner. The critical stance was described as including the abilities to critically evaluate the role and meaning of media; have inner and outer source criticism; critically interpret information and information sources, such as internet, newspaper, film, television, and social media; and differentiate fact from opinion. Media criticism in relation to multiliteracy was also defined as the ability to read, understand, and critically evaluate societal meanings in a versatile manner from different modes of text (written, auditory, visual, numeric, and video) and to differentiate different types of text. As put in Curriculum 11, ‘Different text types are gone through, for example by comparing news and official bulletins.’ The media use of related definitions included, for example, the use of different communication tools and the ability to protect privacy.

From the perspective of *self-expression and participation*, multiliteracy was defined in social studies as the ability to express views and oneself by versatile means of communication and participation: ‘In addition to self-expression and information management, the pupils are encouraged to make an impact and to participate’ (Curriculum 14). At a more concrete level, self-expression and participation referred to the ability to produce different outputs, to know how to form and argue a justified opinion, and to take into account different perspectives. From a participatory perspective, multiliteracy was defined as consisting of media skills related to participation and knowing how to use multiliteracy to influence and participate in one’s own environment, in media, and in society.

The topics defined as being included in the *knowledge related to multiliteracy* in social studies were information about society in general, economics, consumption, and private housekeeping. Multiliteracy was also related to understanding the effects of politics on common well-being and one’s personal life, the societal meaning of media and communication, operating with the justice system, and the open dialogue and principles of social decision-making, ‘which are the basis of democracy’ (Curriculum 16).

In mathematics, the first specific feature of the disciplinary contextualisation was *criticism*. In contrast to social studies, in which the criticality was related specifically to the media, in mathematics, the criticality was explained in a more general manner as critical thinking and the ability to understand and question the surrounding world. This idea is well illustrated in the following extract: ‘the contents of mathematics are considered to be phenomena that are explained, interpreted, produced, and evaluated in a versatile manner and critically’ (Curriculum 27).

Multiliteracy in mathematics was also specifically defined in relation to the notion of *mathematical language*. As stated in Curriculum 19, ‘from the broad field of multiliteracy, [the pupil] knows especially the numeric, symbolistic, and pictorial areas that are essential to mathematics.’ Beyond the ideas in the extract above, mathematical language also includes the verbal, auditory, and kinaesthetic symbol systems. Mathematical multiliteracy was defined as the ability to read, make, prepare, and interpret different graphical presentations, pictures, graphs, statistics, tables, and diagrams and to express oneself mathematically. Another aspect mentioned relates to the abilities to translate common language into mathematics and vice versa, to use mathematical language to solve mathematical problems, and to analytically and critically scrutinise mathematical solutions. The analytical, logical, and creative thinking required to solve mathematical problems was also defined as part of multiliteracy in mathematics.

Disciplinary contextualisation at the level of practice

The level of practice—the ‘how’ of multiliteracy (Palsa & Mertala, 2019)—was evident in 78.9% (n=30) of the disciplinary contextualisations in social studies. In mathematics, the figure was 74.2% (n=23). For both disciplines, multiliteracy was defined as being developed in various ways. In this study, these ways are divided into three different categories: 1) educational content, 2) teaching equipment and texts, and 3) educational methods and practices.

At the level of content, only issues related to consumption (such as consumer protection and the ethics of consumption) and economy (such as economic concepts, basic principles, and the local economy) were shared topics across both disciplines. In social studies, multiliteracy could be developed by focusing on the ways in which social questions, such as human rights, minorities, politics, laws, and ethics, are addressed in the media (both traditional and social). For example, Curriculum 11 states that ‘it is to be followed how human rights are presented in the media and how different justice cases and laws are discussed.’ Other issues mentioned in the analysed data include the role of media (the ‘watchdog of power,’ areas for political discussion, ways to make an impact); the meaning of freedom of speech; the evaluation of trustworthiness; criticality; equality; the principles of a constitutional state; the principles of local decision-making; the rights and duties of citizens; global, European, and local ways of making an impact; the roles of employees and entrepreneurs (for individuals and in society); occupations and professions; and the backgrounds to stereotypes and preconceptions. In mathematics, specifically mathematical content (such as numbers, measurement units, equations, and functions) and mental calculation were mentioned as content related to multiliteracy.

The second aspect of the level of practice in disciplinary contextualisation is related to teaching equipment and texts. This category can be divided into two separate, but interlinked, subcategories: i) (media) equipment and ii) (media) texts. For both disciplines, books—printed and digital—were mentioned as media that can be used as a way to develop multiliteracy. Text-wise educational videos, pictures, tables, simulations, diagrams, drawings, and plans were mentioned within both disciplines. Disciplinary differences related to equipment and materials followed roughly the logic of the level of content; for instance, media was named as key content in social studies, and the suggested materials included various forms of traditional media (e.g., newspapers, magazines, and television) and digital media (e.g., information and communication technology, computer games, websites, blogs, and social media). Popular culture was also mentioned for use in developing multiliteracy in social studies. Texts in social studies included videos concerning the local environment and culture, graphs, statistics, opinion polls ‘texts that can be used in different situations and settings’ (Curriculum 32), ‘diverse media content and different texts’ (Curriculum 18), research, and knowledge produced by different actors (public authorities, commercial stakeholders, communities, private persons). In mathematics, specific texts included charts, models, visual tasks, interactive tools, symbols and numeric symbol systems, geometrical forms, digital ways of expression, different measurement units, and quality transformations.

The third aspect at the level of practice in disciplinary contextualisation is educational methods and practices. Shared practices for both disciplines included cooperation (for example, working in pairs or in groups) and the production of different materials and information. In social studies, the methods and practices included various general educational methods (such as project work, discussions, essays, presentations, and using and interpreting different texts) as well as more discipline-specific methods. In one curriculum, it was explained that, in teaching social studies, many opportunities should be offered to pupils to learn how ‘to use multiliteracy to participate in their own surroundings, media, and society’ (Curriculum 32). Multiliteracy in social studies was described as being developed by studying different human, social, and economic issues and social events and phenomena (such as the means and basics that secure sustainable development, consumption habits, and the state of people) from different perspectives (individuals, communities, and society) and at different levels (local, national, and international).

In mathematics, it was planned that multiliteracy would be developed by practising problem-solving and by offering special support for verbal assignments, producing mathematical text, and understanding measurement units. Other educational methods and practices mentioned in the data included the production and interpretation of graphical presentations, presenting visual information

as geometric ideas, making observations, utilising visual interpretation methods, using mathematical thinking, and ‘scrutinising mathematical content as phenomena that can be explained, interpreted, produced, and evaluated critically and in a versatile manner’ (Curriculum 27). The mentioned methods relating mathematics to out-of-school contexts included comparisons of product prices, following the use of money, solving problems from everyday life, and assignments related to working life. Cooperation between disciplines was also mentioned within the mathematics curriculum.

Discussion and conclusions

In this study, 220 Finnish local curricula for basic education were analysed in order to understand how the transversal competence of multiliteracy is contextualised within different disciplines, specifically mathematics and social studies. It was found that only 19.5% of the local curricula were contextualised in any manner. This is consistent with Palsa and Mertala’s (2019) finding that the general definition of multiliteracy was contextualised in only 28% of Finnish local curricula. While the data fails to provide an explanation for the lack of contextualisation, it most likely reflects the uncertainty surrounding the concept: multiliteracy is a novel concept in the Finnish educational context that is defined in an inconsistent manner in different core curricula and by different Finnish scholars (Mertala, 2018; Palsa, 2020), and it is weakly conceptualised by Finnish teachers (Hankala et al., 2018; Ojaranta, 2019). Another explanation can be related to the resources available for the development of local curricula. As education providers have a high level of autonomy, they also have different resources. In smaller rural municipalities this can mean that individual teachers can have a bigger role in contextualisation (see, for example, Autti & Bæck, 2019) compared with larger municipalities in which the same work can be divided. The lack of sufficient resources can lead to partial contextualisation of the local curriculum while neglecting certain parts, for example the newly introduced contents, such as transversal competences.

In the contextualised curricula, both similarities and differences existed regarding the ways in which multiliteracy was contextualised within social studies and mathematics. Both disciplines defined multiliteracy as an information management skill and approached it as an umbrella concept to include various (sub-)literacies. The main differences between the disciplines were that, in social studies, students’ agency and societal participation were emphasised, whereas the mathematics curricula highlighted abstract critical thinking and mastering the discipline-related language. These differences can be interpreted as a reflection of the differences in the objectives and key content of the disciplines. For instance, in social studies, active citizenship is named as a general objective, whereas thinking

skills are emphasised in mathematics (FNBoE, 2014). Mathematical language also contains distinguishing symbols and syntax and, thus, the highly discipline-based contextualisation is understandable.

Disciplinary contextualisation can provide a conceptual tool to clarify the relationship between competences and individual disciplines. Such tools, we argue, are needed to tackle the often inflated and biased assumptions about the effects of a competence-based curriculum (see Garner, 2015; Murray, 2017). As a transversal competence, multiliteracy has a special feature combining the specifically defined educational outcomes common to the disciplines and the textual practices specific to each discipline. In multiliteracy, this is especially important from the perspectives of language awareness and disciplinary literacies. For example, Takeuchi has noted that metalanguage interactions can be limited in mathematics classrooms (Takeuchi, 2015). From the perspective of supporting language-aware teaching practices and the promotion of disciplinary literacies, disciplinary contextualisations can support explicating the different literacy practices essential to the disciplines, thus providing the opportunity for teachers to reflect and build a shared understanding between the disciplines.

From the perspective of language-awareness, the findings suggest broadening the possibilities of language within the discipline of mathematics. In the data, mathematical language—referring, for example, to the numeric, symbolistic and pictorial areas essential to the discipline—was emphasised in the disciplinary contextualisations of multiliteracy. However, empirical studies indicate that the use of language and textual practices can be more diverse in mathematics classrooms (Joutsenlahti & Kulju, 2017; e.g., Takeuchi, 2015). In their study Joutsenlahti and Kulju went beyond actual mathematical language by highlighting the importance of different ways of expressing thinking. In addition to mathematically symbolic language, meaning-making in mathematics presentations can be through natural and pictorial languages (Joutsenlahti & Kulju, 2017). This notion can support more nuanced understandings and curriculum development in relation to language awareness.

One more finding worth discussing further is the notable number of references to media in social studies. Two different, but not mutually exclusive, explanations can be offered. First, it reflects the way in which the Finnish perspective on multiliteracy is almost identical with how media literacy is defined in the international research literature (Palsa & Ruokamo, 2015). Second, the emphasis on (digital) media in social studies illustrates how mediatisation and digitalisation are among the defining phenomena of our contemporary world (Couldry & Hepp, 2017; Hepp, 2020) and are thus crucial in terms of agentic citizenship and societal participation. Mediatisation is something to which it would

be beneficial to pay attention in mathematics education as well; as noted by Bell et al. (2020), ‘statistics are everywhere in the news media. And yet they are widely misunderstood, poorly reported and often downright false’ (p. 1).

Limitations and implications for future research and curriculum development

While this study has provided novel and useful knowledge, it is not without its limitations. It is important to acknowledge that research on curricular texts cannot reveal the implemented, actualised contents of teaching, nor what has been learned. In the Finnish context, teachers have high levels of autonomy, and, while the national core curriculum provides general objectives, teachers can choose their own teaching methods and materials quite freely (Paronen & Lappi, 2018), and these materials—especially textbooks—often steer teachers’ decisions more than curricular alignments (Heinonen, 2005). Thus, it could be useful to study how the concept of multiliteracy is contextualised in the textbooks of different disciplines. Secondly, as the Finnish curricular framework is a rather unique combination of centralised and de-centralised approaches (Creese et al., 2016, pp. 8–9), findings made in this study cannot be straightforwardly generalised to contexts that use different curricular frameworks. Thirdly, this study focused especially on the transversal competence of multiliteracy within the disciplinary settings of mathematics and social sciences. A more versatile perspective could be achieved by expanding the focus to other disciplines, such as music, handcrafts or visual arts.

Research-wise, the lack of contextualisation at the level of local curricula naturally steers the gaze towards school-level curricula, which could be studied, for example, by selecting and comparing schools from both pools: those with and those without local-level contextualisation. Furthermore, it would be important to study the processes that have led to such varying results in local-level curricular contextualisation.

Lastly, according to the results of the evaluation by the Finnish Education Evaluation Centre (Venäläinen et al., 2020) of the implementation of the Finnish curriculum, sufficient discussion must be conducted at the municipal level on the key concepts of the curricula. Thus, in terms of curriculum development, this study supports the future implementation of competence-based education by offering a set of key points to guide how transversal competences can be contextualised at the discipline level. At the national level these findings can support the development of the future core curriculum and help in designing the needed support further. On a local level this research can support

the implementation of competence-based education, especially in municipalities in which the contextualisation was not evident. This can be done from two perspectives: a) a disciplinary and content perspective, by focusing on the reasoning (the level of rationale), meaning (the level of definition), and development (the level of practice) of the competence, and b) a structural perspective, by contextualising the transversal competence in the disciplinary descriptions at the levels of the discipline, grade, objectives, or content.

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Appendix 1

Multiliteracy (T4)

The pupils are guided to deepen their multiliteracy by expanding the range of texts in the teaching and learning of all subjects. In this context, texts means information expressed by systems of verbal, visual, auditive, numeric, and kinaesthetic symbols and their combinations. The emphasis is on practising the pupils' analytical, critical, and cultural literacy. The pupils practise using all of their sensory faculties and utilising different ways of knowing diversely in their learning. Producing, interpreting, and communicating information are practised in ways characteristic of different subjects and in cooperation between subjects. The pupils are also encouraged to use their multiliteracy when participating and being involved in their own surroundings, the media, and the society. School work offers plenty of opportunities for practising these skills in a cooperative setting.

The emphasis in multiliteracy development increasingly shifts to context and situation-specific texts. The pupils' multiliteracy is advanced by introducing them to narrative, descriptive, instructive, argumentative and reflective text genres. Cultural, ethical, and environmental literacy are supported in teaching and learning. Texts related to working life are also analysed and interpreted. The pupils develop their consumer and financial skills by familiarising themselves with texts that treat the topics in a versatile manner and by learning about the contexts in which they are used. Numeracy is advanced for example when assessing the reliability of opinion poll results or the cost-effectiveness of a commercial offer. The pupils are guided in developing their visual literacy by using different modes of image interpretation and presentation. Media literacy is developed by being involved in and working with various media. The pupils are encouraged to express their views using different means of communication and involvement.