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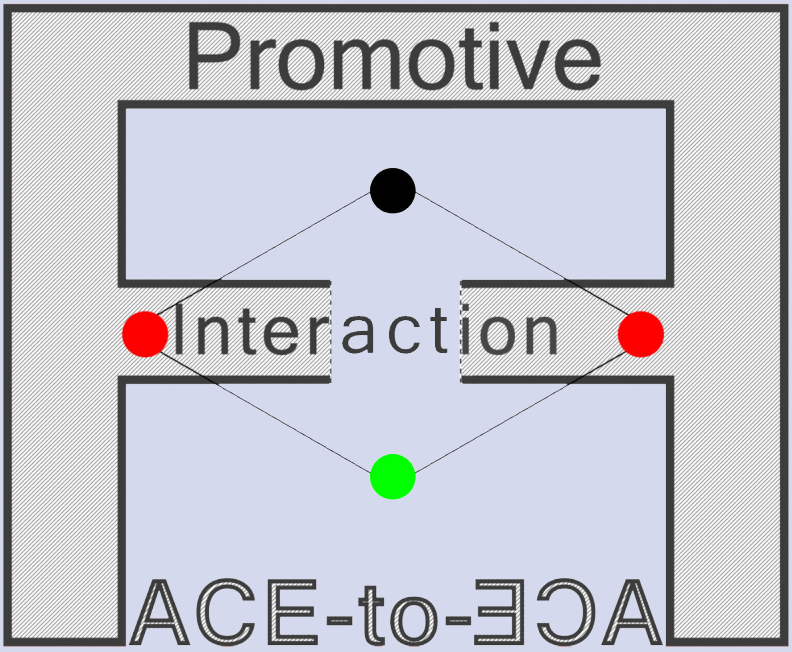

Selma Dzemidzic Kristiansen

Exploring pupils' face-to-face interaction in a co-learning classroom context

The case of Bosnia and Herzegovina

Dissertation for the degree of Ph.D
Pedagogical resources and learning processes in kindergarten and school

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South-Eastern Norway

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Dedication

This project is lovingly dedicated to:

My mom, Rahima, who inspired me with her unwavering personality and human-centred upbringing.

My brother, Senad, who always supported me with his biggest heart and superfine soul.

You are always in my heart and mind!

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Selma Dzemidzic Kristiansen

Hønefoss, October 2023

Abstract

Global education trends indicate that social interaction skills grounded in cooperation are becoming crucial for current quality education. More than ever, empirical research and educational innovation call for a socially inclusive focus on strengthening teachers' and pupils' pedagogical face-to-face encounters in co-learning processes. These processes can help engage in preparing every pupil for twenty-first-century social and work lives. This thesis is a response calling for socio-dynamic relational pedagogies that promote active engagement in education, cooperation and social inclusion, such as cooperative learning. This article-based dissertation aims to understand and explore how pupils' and teachers' experiences with face-to-face promotive interactions can strengthen socially responsive resources for co-learning education. The three peer-reviewed articles have explored the following subresearch questions:

Which face-to-face promotive interaction factors lead to successful cooperative learning in small groups?

How do pupils and teachers perceive face-to-face promotive interaction in cooperative learning group work?

How do Year 4 pupils practice their face-to-face promotive interactions in small cooperative learning groups?

This is an exploratory case study in which qualitative empirical data with auxiliary quantitative data were drawn from two primary schools implementing a cooperative learning approach in Bosnia and Herzegovina. The thesis is grounded in intertwined sociocultural theoretical perspectives on learning and social interdependence theory.

The first article is a literature review of 34 international empirical studies selected through systematic searches of databases and manual searches of academic journals. This review study explores the critical factors of pupils' face-to-face promotive interactions (FtFPI) associated with engagement for successful co-learning. The

results, which are embedded in a face-to-face promotive interaction model, have indicated three groups of factors that underpin pupils' socially responsive engagement: (1) factors that characterise FtFPI (interpersonal behaviour and supportive communication), (2) factors as determinants of FtFPI (experiences and processes; teacher influences) (3), FtFPI mediating status regarding deep learning. The study illuminates the complexity of face-to-face promotive interaction situations, indicating a lack of more profound insights from the pupils' and teachers' experiences and practices, which most of the reviewed quantitative studies could not provide.

The second article documents the supportive and challenging influences of face-to-face promotive interaction factors on the co-learning group process by exploring pupils' and teachers' perspectives. Pupils' questionnaires (N= 192) and one-to-one interviews with 4 teachers and 16 pupils were analysed through descriptive statistics to obtain quantitative data and a 'hybrid' thematic analysis to obtain qualitative data. In merging numerical and interview data, the results have revealed several challenges and conflicting signals regarding (non)insufficient pupils' and teachers' knowledge of socially responsive co-learners' roles. The study also illustrates the teachers' role as facilitators needing adequate and continuous preparation for face-to-face promotive interaction for/through the cooperative learning principles. The study provides insights into interpersonal behaviour and supportive communication, which can be identified as the most challenging aspects that may shape socially responsive behaviours in group work inclusive processes.

The third article analyses how pupils in Year 4 (10–11 years old) used face-to-face promotive interaction resources by focusing on interpersonal behaviours and supportive communication features in mixed abilities co-learning groups. The findings have shown that using explicit or subtle, almost 'hidden', verbal or nonverbal interpersonal tools in recognition and willingness to respond to co-learners' needs may shape personal, interpersonal behaviour and interactional dimensions within group work. The article argues that knowledge about the variety of socially responsive features can become a resource for quality engagement in co-learning processes.

The thesis indicates that deepening knowledge in face-to-face promotive interaction as a socially responsive engagement for co-learning can strengthen socially inclusive resources for quality primary education; the dissertation contributes to the theoretical picture of socially responsive knowledge by exploring various face-to-face promotive interactional resources associated with positive interdependency dimensions. In addition, this thesis contributes empirical knowledge to a valued research-based co-learning pedagogy for intertwined social and academic gains in diverse primary classroom practices. The study adds methodological knowledge to the field, showing how face-to-face promotive interaction can be studied through the subaspects of interpersonal behaviours and supportive communication for socially responsive education. In a crucial sense, this thesis generates the vision of co-agency strengthening grounded in a pedagogy of cooperation as a central topic for discussion in education in Bosnia and Herzegovina. However, focusing on the role of the co-learner for co-agency with human quality and social values regarding solidarity and inclusion requires recognising and turning detected challenges into socially responsive resources for education needs and quality education.

Keywords: 21st century skills, socially responsive education, cooperative learning, face-to-face promotive interaction, engaging resources

Sammendrag

De globale utdanningstrendene indikerer at sosiale interaksjonsferdigheter basert på samarbeid er i ferd med å bli avgjørende for dagens kvalitetsutdanning. Mer enn noen gang krever empirisk forskning og pedagogisk innovasjon et sosialinklusivt fokus på å styrke lærere og elevers pedagogiske ansikt-til-ansikt møter i samlæringsprosesser. Disse prosessene kan bidra til å forberede alle elever på det sosiale og arbeidslivet i det tjueførste århundre. Denne oppgaven er et svar som etterlyser sosiodynamisk relasjonspedagogikk som fremmer aktivt engasjement i utdanning, samarbeid og sosial inkludering, for eksempel cooperative learning. Denne artikkelbaserte avhandlingen tar sikte på å forstå og utforske hvordan elevers og lærernes erfaringer med ansikt-til-ansikt fremmende interaksjoner kan styrke sosialt responsive ressurser for samarbeidslæring. De tre fagfellevurderte artiklene har utforsket følgende delforskningsspørsmål:

1. Hvilke ansikt-til-ansikt fremmende interaksjonsfaktorer fører til vellykket samarbeidslæring i små grupper?
2. Hvordan oppfatter elever og lærere den ansikt-til-ansikt fremmende interaksjonen i samarbeidslæringsgruppearbeid?
3. Hvordan utøver elever på 4. trinn sine ansikt-til-ansikt fremmende interaksjoner i de små samarbeidende læringsgruppene?

Dette er en utforskende casestudie der kvalitative empiriske data sammen med kvantitative hjelpedata ble hentet fra to grunnskoler som implementerte en tilnærming for cooperative learning i Bosnia-Hercegovina. Oppgaven er forankret i sammenvevde sosiokulturelle teoretiske perspektiver på læring og sosial gjensidig avhengighetsteori.

Den første artikkelen er en litteraturgjennomgang av 34 internasjonale empiriske studier valgt ut gjennom systematiske søk i databaser og manuelle søk i akademiske tidsskrifter. Denne gjennomgangsstudien utforsker de kritiske faktorene for elevenes ansikt-til-ansikt fremmende interaksjoner assosiert med engasjement for vellykket samarbeidslæring. Resultatene, som er innebygd i en ansikt-til-ansikt fremmende interaksjonsmodell, har indikert tre grupper av essensielle faktorer som underbygger

elevenes sosialresponsive engasjement: (1) Faktorer som karaktiserer FtFPI(mellommenneskelig atferd og støttende kommunikasjon), (2) faktorer som determinanter for FtFPI (erfaringer og prosesser; lærerens påvirkninger), (3) FtFPI medierende status angående dyp læring. Studien belyser kompleksiteten i ansikt-til-ansikt fremmende interaksjonssituasjoner, noe som indikerer mangel på dypere innsikt fra elevenes og lærernes erfaringer og praksis, noe som de fleste av de tidligere gjennomgåtte kvantitative studiene ikke kunne gi.

Den andre artikkelen dokumenterer den støttende og utfordrende påvirkningen av ansikt-til-ansikt fremmende interaksjonsfaktorer på samlæringsgruppeprosessen ved å utforske elevenes og lærernes perspektiver. Elevenes spørreskjemaer (N= 192) og en-til-en-intervjuer med 4 lærere og 16 elever ble analysert gjennom deskriptiv statistikk for å få kvantitative data og en 'hybrid' tematisk analyse for å få kvalitative data. Ved sammenslåing av numeriske data og intervjudata har resultatene avdekket flere utfordringer og motstridende signaler angående (ikke)utilstrekkelige elevers og læreres kunnskap om de sosialresponsive samarbeidsdeltakernes roller. Studien illustrerer også lærernes rolle som tilretteleggere trenger tilstrekkelig og kontinuerlig forberedelse for ansikt-til-ansikt fremmende interaksjon gjennom prinsippene for cooperative learning. Studien gir innsikt i mellommenneskelig atferd og støttende kommunikasjon som kan identifiseres som en av de mest utfordrende aspektene i å forme sosialresponsiv atferd i inkluderende gruppearbeidsprosesser.

Den tredje artikkelen analyserer hvordan elever på 4. trinn (10–11 år) brukte ansikt-til-ansikt fremmende interaksjonsressurser ved å fokusere på mellommenneskelig atferd og støttende kommunikasjonsfunksjoner i samarbeidslæringsgrupper med blandede evner. Funnene har vist at bruk av eksplisitte eller subtile, nesten 'skjulte', verbale eller ikke-verbale mellommenneskelige verktøy i erkjennelse og vilje til å svare på samarbeidslæringens behov kan forme personlig, mellommenneskelig atferd og interaksjonelle dimensjoner i gruppearbeid. Artikkelen argumenterer for at kunnskap om mangfoldet av sosialresponsive funksjoner kan bli en ressurs for kvalitetsengasjementet i samarbeidslæringsprosesser.

Oppgaven indikerer at utdyping av kunnskap i ansikt-til-ansikt fremmende interaksjon som et sosialresponsivt engasjement for samarbeidslæring kan styrke inkluderende ressurser for kvalitetsbasert grunnskoleopplæring; avhandlingen bidrar til det teoretiske bildet av sosialresponsiv kunnskap ved å utforske ulike ansikt-til-ansikt fremmende interaksjonelle ressurser assosiert med dimensjoner av gjensidig avhengighet. I tillegg bidrar denne oppgaven med empirisk kunnskap til en verdsatt forskningsbasert samarbeidslæringspedagogikk for sammenvevde sosiale og akademiske gevinster i mangfoldige praksiser i primærklassen. Studien tilfører metodologisk kunnskap til feltet, og viser hvordan ansikt til ansikt fremmende interaksjon kan studeres gjennom subaspektene mellommenneskelig atferd og støttende kommunikasjon for sosialresponsiv utdanning. I en avgjørende forstand genererer denne oppgaven visjonen om coagency styrking forankret i samarbeidspedagogikk som et sentralt tema for diskusjonen om utdanning i Bosnia-Hercegovina. Men å fokusere på colearners rolle for samhandling med menneskelig kvalitet og sosiale verdier når det gjelder solidaritet og inkludering, kreves det at man gjenkjenner og omgjør de oppdagede utfordringene til sosialresponsive ressurser for utdanningsbehov og kvalitetsutdanning.

List of papers

Article 1

Dzemidzic Kristiansen, S., Burner, T., & Johnsen, B. (2019). Face-to-face promotive interaction leading to successful cooperative learning: A review study. *Cogent Education, 6(1),* 1674067 https://doi.org/10.1080/2331186X.2019.1674067

Article 2

Dzemidzic Kristiansen, S. (2020). Exploring pupils' and teachers' perspectives on face-to-face promotive interaction in cooperative learning. *International Journal of Primary, Elementary and Early Years Education, Education 3–13, 50(1),* 54-69. https://doi.org/10.1080/03004279.2020.1833060

Article 3

Dzemidzic Kristiansen, S. (2021). Becoming a socially responsive co-learner: Primary school pupils' practices of face-to-face promotive interaction in cooperative learning groups. *Education Sciences, 11(5),* 195. https://doi.org/10.3390/educsci11050195

List of tables

List of figures

Abbreviations

BiH:	Bosnia and Herzegovina
CfS:	Child friendly school
CL:	Cooperative learning
CCC:	Common Core Curriculum
CEI (SbS):	Centre for Educational Initiatives "Step by Step"
ECtHR:	European Court of Human Rights
EQA:	Education Quality Assurance in Bosnia and Herzegovina
EU:	European Union
FtFPI:	Face-to-face promotive interaction
FBiH:	Federation of Bosnia and Herzegovina
GCE:	Global Campaign for Education
IASCE:	International Association for the study of Cooperation in Education
HLA:	Pupil with high-level achievement
LLA:	Pupil with low-level achievement
MLA:	Pupil with mid-level achievement
NAFOL:	Nasjonal forskerskole for lærerutdanning- The Norwegian National Research School
OECD:	Organisation for Economic Co-operation and Development
OSCE:	Organization for Security and Co-operation in Europe

PISA:	Program for International Student Assessment
RS:	Republika Srpska
REF:	Roma Education Fund
UNESCO:	United Nations Educational, Scientific and Cultural Organization
UNHCR:	United Nations High Commissioner for Refugees
UNICEF:	United Nations International Children's Emergency Fund
ZPD:	Zone of proximal development

Table of Contents

PART I: EXTENDED ABSTRACT

1 Introduction

1.1 Background of the study

Cooperative experiences are not a luxury. They are necessary for the healthy development of individuals who can function independently.

—David W. Johnson and Roger T. Johnson, *Cooperative Learning in 21st Century*

Promoting social interactions rooted in pedagogies of cooperation among diverse pupils is crucial to facilitating social inclusion and building an inclusive society (UNESCO, 2021; UNICEF, 2020). In this regard, it is of utmost importance that first-year primary pupils learn promotive interactions, as they rely on face-to-face connections for inclusivity, sociality, and learning together (Cañabate et al., 2021).

This thesis is situated within cooperative learning (CL), an inclusive socio-dynamic pedagogy that promotes pupils' social interactions and active engagement (Gilles et al., 2023; Johnson & Johnson, 1999, 2018). As such, CL has a positive impact on academic achievement (Hattie, 2008; Johnson & Johnson, 2002; Kyndt et al., 2013) and allows pupils to experience positive interpersonal relationships and psychological well-being (Gilles, 2016a; Johnson et al., 1981; Lew et al., 1986; Roseth et al., 2008).

The main topic of this study is face-to-face promotive interaction (FtFPI), which arises from positive interdependence among pupils, equipping them with cooperative skills that support mutual efforts in achieving shared goals (Johnson & Johnson, 1998, 1999). That is, when pupils perceive positive interdependence, they gain opportunities for inclusive, cooperative processes through social interactions (Forslund Frykedal & Hammar Chiriac, 2018). In essence, FtFPI, in conjunction with the other four CL components (positive interdependence, individual accountability, social skills, and group processing), make CL successful (Johnson & Johnson, 1999). Despite the extensive research on these elements that mediate a successful CL process in primary schools (Colomer et al., 2021; Contreras & Chapetón, 2016; Genç, 2016; Jakavonytė-Staškuvien et al., 2021; Karmina et al., 2021), studies have also shown that pupils have insufficient interpersonal skills for managing cooperative interactions

(Gillies, 2016; Le et al., 2017; Liebech-Lien, 2020), particularly socially supportive interactions (Klang et al., 2020; Pang et al., 2018).

Creating opportunity for socially inclusive interactions appears essential for attaining successful CL processes (Forslund-Frykedal & Hammar-Chiriac, 2018; Niemi & Vehkakoski, 2023). This may involve providing the necessary resources and opportunities to strengthen the learning environment and pupils' co-agency, and maximising the social benefits of education (OECD, 2012, 2019a). For this reason, I have chosen to focus on FtFPI within the 'Learning Together' framework (Johnson & Johnson, 1999) as a resource to facilitate mutually responsive engagement as a pathway to promote social inclusion within CL approach in the context of Bosnia and Herzegovina (BiH). Essentially, the 'Learning Together' model raises inquiries about basic demands and needs regarding the quality of primary education in BiH. In this regard, quality issues primarily refer to social and academic integration and inclusive relations among equals in the educational experience and learning outcomes (Krajišnik et al., 2021). A second quality relates to decreasing educational segregation and promoting cross-ethnic interaction through CL experiences and inclusion with each other (Hadžić, 2021; Johnson & Johnson, 1982). Face-to-face social relations appear to be some of the most evident factors that may affect how pupils work and live together (Muñoz-Martínez et al., 2020), particularly in the BiH context.

The purpose of this study was to explore both pupils' and teachers' experiences with FtFPI in primary classrooms by applying a case study of two schools implementing CL within a 'student-centred' methodology [1] in Canton of Sarajevo. Therefore, the research question guiding the thesis is as follows: How can pupils' and teachers' experiences with FtFPI strengthen socially responsive resources for co-learning education? Providing a deeper understanding of FtFPI as a socially responsive

[1] One of the international frameworks to which BiH has turned to improve the quality of the primary education systems in teaching and interactive learning is the Child-Friendly Schools approach (UNICEF, 2010) (see Section 1.2).

engagement is associated with interpersonal and small-group skills (Johnson & Johnson, 2008, 2009), as CL calls for continually reinforcing positive and cooperative behaviours among pupils (Johnson et al., 2013). Specifically, the study provides insight into how pupils and teachers perceive and practice interpersonal pro-social behaviours and supportive communications that may be characterised as functioning aspects that underpin FtFPI for a successful CL process.

Working as a primary school teacher and pedagogue in BiH caught my attention to the complexity of face-to-face social dynamics and learning engagement in schools with higher proportions of disadvantaged pupils (OECD, 2012; UNICEF, 2020). In addition, an increasing number of pupils, regardless of social, family, or ethnic background, entered 'my' schools without sufficient social prerequisites of 'will and skill' to function together successfully. Given this context, the very goal of education is to develop mutually inclusive 'values, attitudes, ways of doing, and ways of being' (Biesta, 2020, p. 102). In such a joint effort to strengthen inclusive classroom environments (OECD, 2012; UNESCO, 2021), cooperative skills and social capability are essential resources (Ferguson-Patrick, 2023; Pardy-Comber et al., 2004).

In my years of teaching, after becoming familiar with the elements of CL, which consequently became resources in inclusive classrooms, I considered FtFPI a deepening of social 'will and skill' for more attentive and responsive pupil engagement. In addition, CL and FtFPI correspond to the working document 'Strategija razvoja obrazovanja I nauke' [Strategy for the development of education and science] (2017) in Canton of Sarajevo, which emphasises the quality of teaching practice and interactive learning regarding social values and inclusion in primary school. In this vein, CL classrooms might provide opportunities to strengthen pupils' FtFPI experiences and cooperative skills to become competent 'co-agents' (OECD, 2019a, p. 13) in attaining social inclusion and quality CL education (see Section 1.2).

While CL is an inclusive 'way of being', its 'way of doing' occurs when in FtFPI, 'individuals promote each other's success by helping, assisting, supporting, encouraging, and praising each other's efforts to achieve' (Johnson & Johnson, 1999,

p. 71). In this vein, pupils become involved in socio-cognitive (not the focus of the present study) and interpersonal dynamics (this study's focus on face-to-face responsive behaviour). Through positive interpersonal behaviours, pupils may experience positive learning, greater acceptance, value, and a willingness to respond to and support others (Gillies, 2003a; Johnson & Johnson, 1990). In other words, pupils' positive interpersonal relations can promote pro-social behaviour, which is important for CL engagement but may necessitate additional resources for reinforcement (Van Ryzin et al., 2020). In the pursuit of relational skills that foster 'engagement and connectedness' (Damon & Phelps, 1989, as cited in Kutnick & Blatchford, 2014, p. 99), FtFPI may contribute pro-social features regarding openness to others and helpful and willing behaviours as basic aspects of successful cooperation (Gillies, 2004). Without helping and willing skills in each other's CL engagement, pupils are not truly cooperative (Deutsch,1949).

For pupils at risk of societal failure (Drakeford, 2012), pro-social behaviours are particularly significant in promoting CL participation (Pardy-Comber et al., 2004; Van Ryzin & Roseth, 2018). Despite this proactive approach of FtFPI in addressing pupils' inducibility (Deutsch, 1949) and fostering inclusivity (Cañabate et al., 2021; Klang, 2020; Otienoh, 2015) within the CL process, relatively less research attention has been explicitly dedicated to FtFPI in CL. This thesis emphasises the importance the FtFPI in educational research, teaching, and practices, considering the challenges of the twenty-first century education (Johnson & Johnson, 2014). Given FtFPI's socially responsive engagement as a resource for pupil's 'will and skill' to become co-agents (OECD, 2019a), the teacher plays a crucial role in making these cooperative skills visible in the classroom (Buchs & Butera, 2015) (see Table 2 in Section 2.3). However, pupils' understanding of FtFPI skills and experiences is vital to understanding CL processes (Gillies, 2003a). Deeping FtFPI skills necessitates pupils to understand and learn how to function cooperatively by exhibiting various interpersonal behaviors and using inclusive language for successful communication and cooperation (Gillies, 2003a, 2003b, 2016; Gillies & Ashman, 1996).

Although there has been a tradition of testing out the interactional aspects of CL group work to learning outcomes across school subjects (see Article 1), providing deeper insights into the aspects of FtFPI from pupils' and teachers' perspectives concurrently has not been comprehensively explored. Focusing on lower primary grade co-learners' experiences and practices, the present thesis more closely examined FtFPI from different angles in three articles (1-3, Part II) and the extended abstract (Part I).

The concept of FtFPI and its significance for socially responsive engagement among pupils are explored within the complex educational and societal contexts that has been affected by post-war consequences (as discussed in Section 1.1.1). Given that the FtFPI of CL has the potential for the promotion of the core values[2] and inclusivity in education (OECD, 2019a), it can progressively mediate not only co-learning education in BiH classrooms but also shape the overall societal paradigm. As such, the youth in BiH can acquire new knowledge and valuable skills (Pasalic-Kreso, 2002), and become socially engaged co-learners who may significantly influence classrooms and real life (Johnson & Johnson, 2014, OECD, 2017; UNESCO, 2021). As different contextual factors may influence the utilisation of CL in practice, the promise of FtFPI does not uniformly assure the realisation of its anticipated targets, as this depends on how the CL is 'imported' into the reality of the particular context (Jollife, 2015; Sharan, 2010). The present study has been motivated by the scarcity of empirical research on CL and interactional experiences in the BiH context (see Section 1.2.1). Simultaneously, as part of postwar educational reforms, 'a child-centred methodology has been introduced to reconstruct traditional classroom practices and stimulate the interactive teaching and learning practices' (Framework Act Relating to Primary and Secondary Education in BiH, 2003). Nevertheless, there are no quality interactive 'child-centred' classrooms without socially engaged co-learning practitioners, while in primary schools in BiH, traditional instruction still dominates (Brankovic et al., 2016).

[2] By engaging in CL activities, pupils get the opportunity to acquire core values and actively contribute to their own and others' well-being, promoting a sense of respect, responsibility, integrity, care, and harmony to thrive (OECD, 2019a).

Teacher-directed instruction is prevalent in schools with more disadvantaged pupils (OECD, 2019b), and CL practice is rare (Guthrie et al., 2022). Since the release of the 'Strategija razvoja obrazovanja i nauke' (2017), which has made recent efforts to establish a direction for schools' inclusive and interactive learning processes, there has been a need to research the quality of these processes, especially the experiences of those involved. The aim of the present thesis was to address this need by exploring both pupils' and teachers' experiences with FtFPI in the CL process in two case schools that used CL, providing the rationale of the current thesis.

However, in approaching the aim of the thesis, understanding the complex BiH education system, which has lacked cooperation and social inclusion (Papić & Fetahagić, 2019), is needed, especially when the human rights of all BiH citizens are not fully respected. The following section points out the problem of educational segregation in BiH schools, which further damages the quality of education that all children must receive based on democratic foundations.

1.1.1 BiH education context

The complex structure of the education system [3]

[3] Prior to the onset of war in 1992, BiH, as part of former Yugoslavia, had a single education system and followed the general pattern of constructing and maintaining the policy of 'brotherhood and unity'. The Dayton Peace Accord and its Annex 4, which serves as the Constitution of BiH and was signed in December 1995, brought to an end a war that began in 1992. However, with the end of the war, besides human losses and the destruction of the country, the largest forced migration of BiH's population changed the structure of a country that once was among the most ethnically diverse areas in the Balkans. Nonetheless, the destruction and division of the country and, most importantly, human suffering because of broken personal relationships within a dysfunctional society and economy still profoundly mark BiH's reality, exhibiting signs of a lack of a civil democratic society. Consequently, three separate educational systems were established by ethnonationalism criteria: the Federation of BiH (FBiH), which consists primarily of the Bosniak and Croat populations, and the Republika Srpska (RS), which mainly consists of the Serb people, and Brcko district, which is of a multiethnic nature. FBiH is a decentralised entity further divided into 10 cantons. On the other hand, the government of RS is separate and centralised. Thus, in the world's most complex public administration, there are 13 ministries responsible for education across BiH (Clark, 2010; Pasalic-Kreso, 2008) (see Figure 1), 180 ministers, 'three languages' and 207 political parties in a country with a population of some 3.3 million.

According to the Framework Law on Primary and Secondary Education in BiH (2003), primary education is a nine-year programme and compulsory and free for all children. The entry age is six years. The model of the framework curriculum for the nine-year primary school in the Federation of BiH (FBiH) and the Republika Srpska (RS) are organised into three-year cycles: preparatory (grades 1–3), classroom instruction (grades 4–6) and subject instruction (grades 7–8). The primary school curriculum[4] includes the following obligatory subjects: 'mother tongue'[5], a foreign language, mathematics, social studies, science, sports, music and art.

[4] It should be noted, that despite three curricula (Bosniak, Croat and Serb) being implemented, the significant difference is in the so-called National Group of Subject (language and literature, history, geography, music, art). The National Group of Subject presents one of the main political obstacles to reforms (Initiative for Monitoring the European Integration of BiH, 2015). For more information, see http://eu-monitoring.ba/site/wp-content/uploads/2015/06/Primary-and-secondary-education-in-Bosnia-and-Herzegovina.pdf

[5] Three languages officially exist in the state of BiH. Previously, it was a common language that was called Serbo-Croatian, taught formally in all BiH schools using both Latin and Cyrillic alphabets, but the common languages are now Bosnian, Croatian and Serbian. Besides the linguistic aspect, the three groups have different views of history (Tolomelli, 2015).

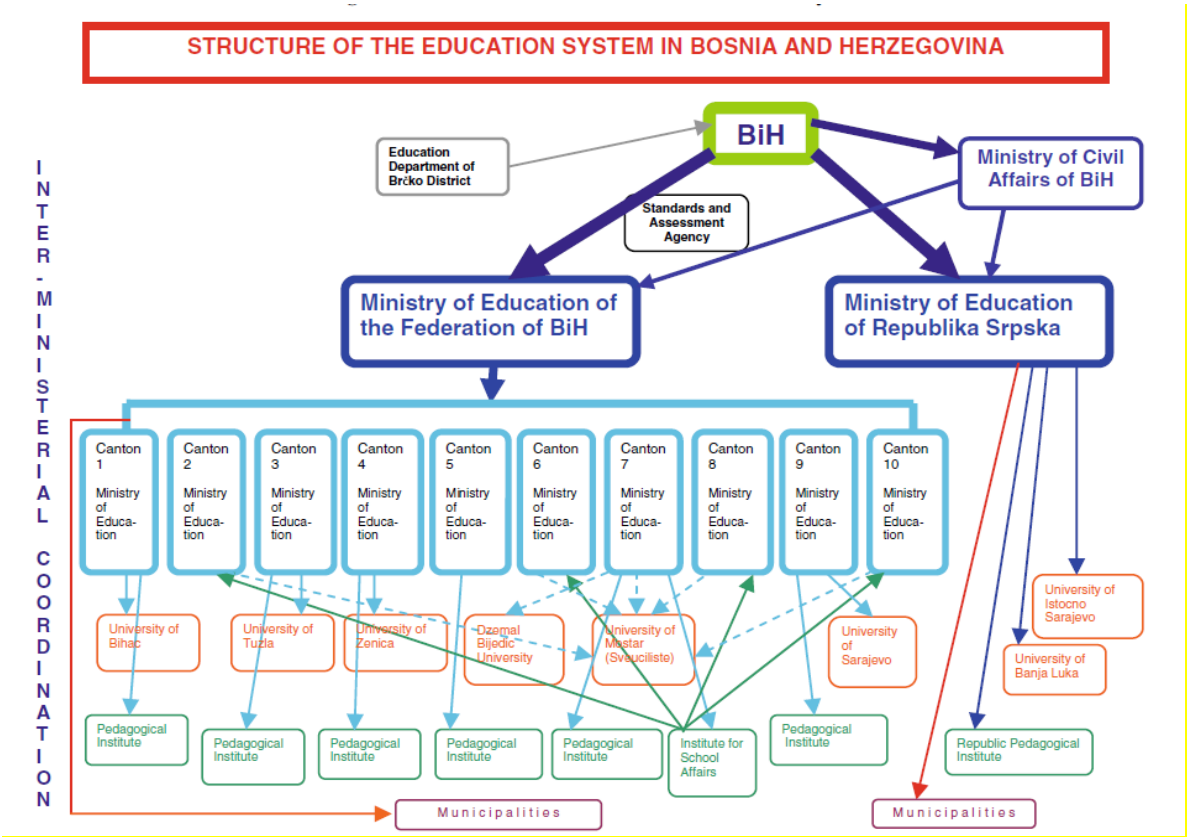

Figure 1. An illustration of the structure of the BiH educational system (Pašalić-Kreso, 2008, p. 361)

Primary school teachers are defined as professionals who are qualified in planning, preparing, organising, realising and evaluating educational work and different educational programmes, in the Concept of Nine-Year Primary Education (Ministry of Education of the FBiH, 2004). Strategic Directions for the Development of Education in BiH, along with the Implementation Plan (Strategic Directions, 2008–2015), have clearly stated that quality and motivated teaching staff are key in implementing education reform. For these reasons, teachers' education, preparation and professional development are crucial processes but are challenging in postwar educational reforms in BiH. Formally, as stated in strategic documents, the education system in BiH is in transition from a traditional to progressive, twenty-first-century educational paradigm (Rangelov-Jusovic, 2014). To achieve this progression, the key

document is the Education Post-War Reform–A Message to the Citizens of BiH (OSCE, 2002) [6], and one of the five pledges has emphasised the following:

> We will provide basic education of good quality at the preschool, primary and general secondary levels and focusing on relevant and contemporary knowledge, skills and attitudes to enable students to face the challenges of the 21st century (p.11)

For this reason, by 2008, over 97% of lower primary school teachers had received basic or advanced child-centred methodology education and diverse training programmes organised by local NGOs, such as 'Step by Step', [7] and international organisations (UNICEF, 2010). However, there is little qualitative evidence from research on teachers' competencies in response to the overwhelming demands and reform goals in BiH education that have affected teaching and learning quality (Krajišnik et al., 2021). Moreover, teachers still have limited opportunities for professional growth, and their voices are rarely heard in decision making, defining reform priorities or regulating their profession (Rangelov-Jusovic, 2014). Hence, how can we be sure that the quality of educational reforms and the programmes developed by educational leaders follow the real needs of pupils and teachers if they are not engaged in the decision-making process? In practice, the quality of education reform, however, continues to be largely ineffective, with curricula lacking a focus on skills and values as desirable learning outcomes while failing to meet the needs of pupils, teachers, and society (Brankovic et al., 201). Furthermore, the fragmented nature of BiH's educational and societal functioning is burdened by political turmoil, whereby the issue of ethnic and national identity has undermined unity in educational

[6] With the signing of the Pledge by the entity ministers in Brussels in November 2002, the reform processes were strongly encouraged.

[7] Child friendly school (CfS) began in BiH in 2002, with a focus on implementing quality, child-centred education and child-friendly environments in all primary education. The main technical partner responsible for guiding CfS implementation was the Centre for Educational Initiatives (CEI) 'Step by Step' (SbS). CEI worked closely with implementation teams in each of the BiH entities in helping develop a shared understanding of child-centred education. Training centres in each of the entities provided professional development to coordinators, school directors, pedagogues, trainers, teachers, special education advisors and parents at the local level (UNICEF, 2010).

policies, common goals and strategies, shared values and positive feelings for one's country and homeland (Greiff, 2020; Hill, 2011; Pašalić-Kreso, 2008; Tanovic, 2017). Therefore, educational reforms are extremely difficult to implement.

The complex societal context

Although the BiH education system has had a strategic commitment to follow the European educational standard for almost three decades, it seems trapped in the gap between established reform goals and respecting human rights within democratic societal and educational progress. The other side of this process shows that the lack of efficient, professional and robust governmental human resources and actions capable of making autonomous economic and social reforms has influenced poverty and social exclusion. In addition, in 2016, 30% of the population in the FBiH and 45% in the RS were living below the absolute poverty line, while families with three or more children were especially vulnerable, with more than two-thirds of them living in severe poverty (UNICEF, 2020). Meanwhile, within the postwar Dayton Constitution (1995), the process of BiH society building is still ongoing, accompanied by forms of ethnonationalism that conflict with democracy, social inclusion and cohesion (Hadžić, 2021). According to the Dayton-patterned social and political (the others) exclusions in BiH, the three major ethnic groups (Bosniaks, Croats and Serbians)[8] are given the right to make decisions, generating political representation issues for the 'Others', thus keeping discrimination against 17 other ethnic groups (Country Reports on Human Rights Practices, 2021)[9]. Specifically, an estimated 400,000 Bosnian minorities (Jews, Roma and others), who comprise 12% of the population (roughly 3.3. mil) cannot run for president or parliament because of their religion or ethnicity. One such

[8] Bosniaks identify as Bosnian Muslims, '*Bošnjaci'* (50.1%), Bosnian Serbs identify as Orthodox, *'Srbi'* (30.8%), and Bosnian Croats identify themselves as Catholics, *'Hrvati'* (15.4%) (Central Intelligence Agency [CIA], 2019). More specifically, those who declared themselves as Bosnians are also '*Others'*, referring to 'hybrid' identities but used widely by people with mixed ethnic backgrounds and by Muslims, Croats, Serbs and others who are not burdened by ethnonationalism (Hadzic, 2021).

[9] For more information, see https://www.state.gov/reports/2021-country-reports-on-human-rights-practices/bosnia-and-herzegovina

example that Human Rights Watch reported in 2021[10] is that even 11 years since the case of the Sejdić-Finci ruling by the European Court of Human Rights (ECtHR), the Bosnian constitution still has not been amended. This is a serious form of discrimination. Hence, overcoming socio-political exclusions present in the current reality, on that strongly affects all spheres of social life in BiH, including education, is imperative, thus eliminating discrimination. Although the level of ethnic heterogeneity in BiH is among the highest in Europe, some urban and rural areas have remained ethnically divided after 1992 (e.g., a case of the town of Mostar), affecting segregated education (Bottlik, 2017). Considering the postwar consequences of this, which unfortunately resulted in nonharmonious coexistence and social exclusion, the ethnocentrically divided towns organised their 'own' education within the FBiH cantons (Tanovic, 2017). Božić (2006) detected three types of educational segregation in BiH: (1) 'two schools under one roof', (2) busing children to monoethnic schools (3) and teaching of so-called 'national subjects'.

Education featured by segregation and inefficiencies

Based on the available comparative assessment (PISA) conducted in 2018[11] and absence of structural changes to the quality of education, it is evident that BiH's education system is not preparing young people to engage efficiently and progressively in a diverse and modern world. Generally, with the priority goal of primary completion with advanced competence, today's schools must engage pupils in learning effectively and more deeply, especially in terms of fostering greater

[10] https://www.hrw.org/world-report/2021/country-chapters/bosnia-and-herzegovina#c3ba32

[11] The PISA study's results showed that the BiH's pupils were three years behind in schooling, while disadvantaged pupils lagged five years compared with the OECD average.

tolerance, promoting European values [12] and strengthening the cohesion of society[13]. This need is especially salient for pupils attending schools located in segregated, disadvantaged neighbourhoods and for those who are living in isolated rural communities (Lawson & Lawson, 2013; OECD, 2012; UNICEF, 2020). Thus, social inclusion is of the utmost importance for disadvantaged and marginalised groups because it allows them to exercise their human rights (Papic & Fetahagic, 2019).

The current reality reflects educational deficiencies that undermine the future for all pupils, particularly for 'other' children, in reaching their education goals. According to the report on Human Rights Practices in 2021, returnee pupils in Vrbanjci, Kotor Varos in RS (those belonging to a Bosniak minority ethnic group returning to their homes after being displaced by the war) continued to face barriers in exercising their language rights. Even though in December 2019 the BiH Supreme Court ruled that Bosniak children were entitled to instruction on national subjects in Bosnian, the implementation failed.

The segregation and social exclusion take their most visible form in the phenomenon of 'two schools under one roof'[14] as a direct threat to BiH's long-term societal and educational stability. Aside from betraying the very essence of education as socialisation, inclusion and support, this extreme phenomenon shows blatant indoctrination that produces antagonism, intolerance and exclusion while preventing

[12] They refer to respect for human dignity and rights, freedom, democracy, and equality, including the rights of persons belonging to minorities. The Council' s recommendation on promoting common values, inclusive education, and the European dimension of teaching EU values in schools requires a shared understanding of their significance for inclusive societies and their promotion through interactive and innovative pedagogical methods such as CL in this study (European Union, 2018).

[13] A Credible Enlargement Perspective for and Enhanced EU Engagement with the Western Balkans, February 2018. https://op.europa.eu/en/publication-detail/-/publication/e3f0797b-28cb-11e8-b5fe-01aa75ed71a1/language-en

[14] The pupils from two ethnic groups, mainly Bosniaks and Croats, attend classes in the same building but are physically separated and taught separate curricula. There are still 56 schools (in 28 locations) within Zenica-Doboj, Canton (4), Central Bosnia, Canton (6), Herzegovina-Neretva, Canton (7) (OSCE, 2018). *Two Schools Under One Roof: The Most Visible Example of Discrimination in Education in BiH* https://www.osce.org/mission-to-bosnia-and-herzegovina/404990

pupils' development into moral and mutually engaged citizens (Hadžić, 2021). Nevertheless, 'hidden segregation' [15] is a more significant concern in practice at the class level and in the teachers' approach to Roma children, as mentioned in the Roma Education Fund (REF) report in 2021[16]. It has been reported that a common practice for most educators is to give more attention to non-Roma children, of whom only 35 % between the ages of 6 and 15 regularly attend school because of persistent poverty and marginalisation in society. Conversely, inclusion and intense cooperation of all relevant factors to give all children in BiH, particularly the most vulnerable, a fair chance, recognition and encouragement for engagement and active learning participation should be a joint mission of every person in BiH (UNICEF, 2020). Metaphorically speaking, caught between educational challenges and national problems, the quality of cooperation in BiH society seems more like the consequences of 'an incurable relational virus' [17]:

> A virus that is a difficult one to cure, not only because of the lack of appropriate pedagogical medicines but also because of the social circumstances that constantly feed and strengthen it. (Pašalić-Kreso, 2008, p. 360)

For this reason, the FtFPI resource within the CL paradigm may become 'pedagogical medicine' for all those relational 'ailments', strengthening future change coagents (see Section 1.2) capable of making a social impact.

1.1.2 Cooperation: Socially engaging mechanisms

As a primary 'ingredient' of the modern and diverse world, cooperation becomes pervasive in individuals and across societies as a mode of 'socially responsive

[15] This mainly refers to the willingness and sustainable responsiveness of the local level authorities for Roma children' s educational start. Even when Roma children start on par or even more advanced compared to their peers, Roma pupils do not keep pace, which is also due to the differentiation in teaching (REF, 2021)

[16] For more information, see https://www.romaeducationfund.org/wpcontent/uploads/2022/01/FINAL_ECD-and-Primary.pdf

[17] According to the author's interpretation in this thesis, this relational virus influences disengaging instead of engaging in cooperation for quality education, influencing the present for changing the future.

engagement'. It is of the utmost importance for the world to be aware of societal challenges and take responsive actions, in which one community's success depends on another's engagement and support (Cañabate et al., 2021; Johnson & Johnson, 2014; OECD, 2019a; UNESCO, 2021).

In the social reality of classroom communities, societal changes lead to educational challenges associated with diverse pupils' social and learning abilities and needs caused by socio-economic heterogeneity and migration[18]. As a result, many pupils are discouraged and distracted from effectively participating in classroom learning or even at the risk of dropping out of school (Johanssen, 2019; OECD, 2012). Previous research has shown that cooperating in earlier years is crucial to fostering positive social, emotional, and academic environments among pupils, which contributes to learning engagement and progress (Carrasco et al., 2017; Ferguson-Patrick, 2018; Veldman et al., 2020a). In this regard, by fostering pupils' cooperation, FtFPI also paves the way for pro-social behaviour, which refers to encouraging and facilitating each other's efforts (Johnson & Johnson, 2002). However, engaging in FtFPI in CL does not necessarily equate to engaging in pro-social behavior, as it depends on the practices within the sphere of socially responsive 'will and skill'. In addition, the ability to cooperate is not taken for granted; rather, it is a systematically developed process of learning together to learn to cooperate (Sharan, 2014). For the BiH context characterised by complex post-war reform in moving from teacher-led to student-centred pedagogies, the lack of 'will and skill' in cooperation hampers real educational progress in BiH (Hill, 2011; Tanovic, 2017). The analysis of the educational reform for

[18] A total of 84 million displaced people worldwide at mid-2021. An estimated 35 million (42%) of the 82.4 million forcibly displaced people are children below 18 years of age (UNHCR; https://www.unhcr.org/refugee-statistics/). More than 5 million people have fled Ukraine since the start of the war on 24 February 2022, with estimates suggesting that half of them are children (https://data2.unhcr.org/en/situations/ukraine)

primary schools based on the Strategic Directions for the Development of Education in BiH (2008–2015) has shown that teaching and learning for twenty-first-century skills (such as critical thinking and problem solving, cooperation and communications, digital literacy and citizenship) indicate the low quality of education (Brankovic et al., 2016). An analysis focused on identifying several fundamental problems and showed pupils' poorer educational outcomes, particularly in those disadvantaged groups of pupils (Papić, & Fetahagić, 2019; OECDb, 2019).

One of the pieces of evidence that becomes particularly clear in the classification for the reasons for discontinued primary schooling in the Canton Sarajevo (the current study's research context) can be seen in the statistical data from 2018/2019, in which 119 pupils dropped out because of poor results in school, socioeconomic or personal reasons (Agency for Statistics of BiH, 2019). Such a negative schooling phenomenon may reflect the challenges of teachers' and pupils' 'will and skill' of face-to-face encounters in socially responsive engagement to individuals 'coming into presence through our relationships with others' (Biesta, 2016, p. 34) and maintaining presence.

Children's participation in preschool education in BiH has been at a low level, indicating that the gross enrolment ratio of children aged from 3 years and older is only 14.9% as opposed to 93.9% in the EU (Çağatay, 2017, p. 2). In other words, early education is vulnerable in BiH, showing that 85% of preschool children in BiH have no access to preschool programmes before elementary school entry, which mostly affects the children of socioeconomically endangered families (Camović & Hodžić, 2017). When it comes to preschool enrolment, minority groups such as Roma children show only 3% enrolment in preschool education (Roma Education Found, 2021).[19] Therefore, the current phenomenon, whereby economically and educationally advantaged families from the majority and influential social groups benefit the most from preschool education, may deepen the exclusion within BiH society, which needs

[19] For more information, see Final report - Roma Education Fund (2021/02) https://www.romaeducationfund.org/wp-content/uploads/2022/01/FINAL_ECD-and-Primary.pdf

promotive actions and cooperation to ensure a more stable future for all children (Milovanović et al., 2014). Thus, it is not surprising that most variations in pupils' social engagement and academic achievements in BiH [20] can be explained by their insufficient preparation at the preschool educational level and socio-disadvantaged family background [21] (Krajišnik et al., 2021). In addition, there is no cooperation between primary and secondary schools to ensure that pupils bring the appropriate skills needed for secondary school (Ibrahimović, 2015). Given that BiH was ranked 62nd out of 79 positions (for 79 countries whose results were processed as part of the PISA 2018 research[22]), it is alarming that the BiH education systems decide the direction for the quality of primary education. It is a paradox that schools with the 'socio-economically weakest' pupils and greatest need for support strategies have the lowest chance of gaining such support (Krajišnik et al., 2021).

Research has indicated that an essential aspect of school quality of life is pupils' engagement in the socio-constructive learning process based on socially responsive colearning (Baroody et al., 2014; Ferguson-Patrick, 2018; Lawson & Lawson, 2013). Establishing the ways of engaging, connecting, and supporting through small colearning relations might give pupils success at school and prepare them for life

[20] Here, 6 % of persons aged 16 and above have no educational degrees, while 31.5% of pupils who complete primary school do not continue to attend secondary school (Papić & Fetahagić, 2019).

[21]The poverty rate among children (31%) is significantly higher than among the general population (23%). Children with disabilities, Roma and other minorities, children living in poor communities, children from single-mother families and children living in families with three and more children are in a worse situation (Krajišnik et al., 2021).

[22] For the first time, BiH participated in the 2018 PISA research focusing on proficiency in reading, mathematics, science and pupils' well-being. BiH did not participate in the assessment of global competence. It covered 6,480 students aged 15 from 213 schools across the country that were selected by random sampling (OECD, 2019b). The difference in points between BiH and the OECD average in reading is 84 points, in mathematics 83, and in natural sciences 91 points, which represents almost three years of schooling. The achievements of pupils from a favourable socio-economic position have better results in all three areas than those with unfavourable situations. What is encouraging is that pupils in BiH generally have a positive attitude towards education. Over 85% of pupils believe that education will provide them with a better future. See https://www.oecd.org/pisa/publications/PISA2018_CN_BIH.pdf. However, BiH did not participate in PISA 2022. The reason for this is political disagreements, i.e. non-signing of the contract by the BiH Presidency, which would approve this testing.

(Battistich & Watson, 2003; Cañabate et al., 2021; Gilles, 2003a). Sharan (2014) pointed out that pupils need to be given opportunities to contribute to CL work based on their individual experiences, knowledge and understanding. Jolliffe (2011) argued for explicitly teaching pupils social small-group skills underpinning promotive interaction. Learning interpersonal and small group skills fosters healthy, quality cooperative behaviours, facilitating engagement among pupils (Gillies, 2003a; Johnson & Johnson, 2008, 2013; Schlender & Wolf, 1998). Besides, raising awareness of the quality of face-to-face interaction among pupils is essential for promoting positive school experiences: academic, interpersonal, and socio emotional.

Considering Dewey's (1916) views on how important it is to understand pupils' experiences, for example, by engaging in colearning processes, the present thesis aims to explore FtFPI experiences relevant to each /all pupil(s) included in the research during their colearning opportunities. For Dewey, listening to and observing experience is crucial because learning would not be available in the 'actual conditions of life' without listening and observing skills (Dewey, 1938, p. 48). Besides, Dewey (1938) pointed out that the school may establish a progressive order to facilitate the comprehension of our social lives because of the complexity of society. For this reason, the present study was conducted in two purposefully selected schools within a complex social reality (see Section 4.3.1) in the Sarajevo Canton of FBiH[23] (see Figure 3). These schools used a child-centred methodology to organise and facilitate the teaching and learning processes, which was led by cooperation and CL pedagogy.

[23] The state of BiH is situated in the heart of South-eastern Europe, in the Balkan Peninsula (see Figure 2). The country comprises 51,209.2 km2 territory (Federal Office of Statistics, BiH, 2020). BiH borders Croatia to the north and west and Serbia and Montenegro to the east.

Figure 2. Location of BiH

Figure 3. The map illustrating the Sarajevo Canton (9) in FBiH

1.2 Relevance

The following quote from UNICEF summarises and elaborates on the provisions in the concept of the Nine-Year Compulsory Education document in BiH (2004)[24] that refers to various UN and UNESCO documents on education.

> In all aspects of the school and its surrounding education community, the rights of the whole child, and all children, to survival, protection, development and participation are at the centre. This means that the focus is on learning which strengthens the capacities of children to act progressively on their own behalf through the acquisition of relevant knowledge, useful skills and appropriate attitudes; and which creates for children, and helps them create for themselves and others, places of safety, security and healthy interaction. (UNICEF, 2000, p. 4)

Chapter 17, Organisation of Teaching and Learning Strategies, of the Nine-Year Compulsory Education document in BiH (2004) explicitly stated that pupils learn in 'group forms of work (tandem/pair, work in small groups) and interaction among children is important' (p. 27), hence describing the views of the authorities on the importance of basing education on participatory, cooperative, active and experience-based methods of learning and teaching (EQA/OKO, 2009)[25]. Further, education

[24] Ministry of Education of the Federation of Bosnia and Herzegovina. Concept of the Nine-year Compulsory Primary Education in Bosnia and Herzegovina. Official Gazette BiH No. 26, 412–426, 2004.
[25] EQA/OKO (Education Quality Assurance in BiH Education). Report on the review of the current

quality has been listed as a priority in all strategic documents but has not yet been defined (Krajišnik et al., 2021). Although these documents align with international models — though not in practice— they lack evidence-based data about the quality of primary education in BiH (Brankovic et al., 2016).

The Common Core Curriculum (CCC)[26] describes pupil's active participation and possessing personal skills as some of the aims to develop quality compulsory education: *learn from each other, provide an understanding of self and others, develop, and nurture basic moral values and relationships.* These principles have led to an increase in the Child-Friendly Schools (CfS) project in BiH to support the implementation of child-friendly classroom environments in all primary schools in BiH from kindergarten to fourth grade (children aged 6–10) (UNICEF, 2010). The CfS project in BiH was designed to address the quality of teaching by changing teaching practices to encourage active learning participation. By introducing colearning pedagogical approaches, the project has initiated a change in the culture of social pedagogy in schools, influencing classroom socialisation and learning. Simultaneously, when the authorities emphasised the importance of pupils' interactive learning for the quality of education, it became essential to explore those social interactions that stimulate small-group engagement and to see how these may be supported by international research within the field (Boekaerts, 2016; Perućica, 2018; Tikly, 2011).

CL pedagogy plays an essential role in pupils' cooperative group environments and is structured according to the five principles of the 'Learning Together' model, which is based on social interdependence theory (Deutsch, 1949; Johnson & Johnson, 2009) (see Section 2.3). One of these principles, FtFPI, is central to the current thesis. The unpacking of FtFPI in the BiH educational context is an attempt to reraise awareness that individuals' responsivity is the most valuable socially inclusive resource. If pupils

Common Core Curriculum and the nine-year primary school curricula in BiH Sarajevo, October 2009.

[26] The Framework Law (2003) stipulated the CCC, approved in 2008, for primary schools in all cantons in the FBiH, the Bosnian Serb-led Republika Srpska and the Brcko District based on the Concept of the Nine-Year Compulsory Education document (2004) (see Section 1.1.1). The CCC's main characteristic is that education should be based on interactive teaching and learning processes.

perceive the personal relevance of their colearning relationships, they may become more persistent and enduring in giving and providing help in colearning groups (Gillies & Ashman, 1998; Webb et al., 2002). Conversely, the learning environment is at risk of disrupting academic learning (Battistich & Watson, 2003; Langer-Osuma, 2016; Webb, 2009). Although the educational authorities in BiH have aimed to ameliorate the quality of child-centred education, research is needed to provide a deeper understanding of the CL approach and how FtFPI may support the desired outcomes in practice. Furthermore, there is little research on colearning in small-group relationships, despite the country's educational emphasis on pupils' interactive learning. This thesis has aimed to contribute to the BiH field of research in CL pedagogy by exploring the available evidence based FtFPI in primary schools.

Internationally, in the most recent decade, the quality of pupils' participation and interaction has received attention because of

> The role of students in the education system is changing from participants in the classroom learning by listening to directions of teachers with emerging autonomy to active participants with both student agency[27] and co-agency[28] in particular with teacher agency, who also shape the classroom environments. (OECD, 2019a, p. 13).

As pointed out in the OECD programme regarding Future of Education and Skills 2030, education for cooperation and social engagement plays a vital role in equipping pupils with the competencies to mobilise the relevant knowledge, skills, attitudes, and values to meet the complex demands of being co-agents of change (OECD, 2019a) and social inclusion (UNICEF, 2020). Simultaneously, there has been increased interest in the process of CL, which is considered the twenty-first-century classroom teaching and learning pedagogy that promotes pupils' cooperative skills to become engaged

[27] Agency refers to having the ability and the will to positively influence one's own life and the world around them (OECD, 2019a). Therefore, the agency is crucial in social engagement and human development (Papić & Fetahagić, 2019).

[28] Pupils' coagency defines pupils' willingness and ability to positively influence their own lives, the world around them and having the capacity to affect change in an interactive, mutually supportive and enriching relationship with their peers (OECD, 2019a, p. 16).

participants who can positively influence their own lives and the world around them (Johnson & Johnson, 2014; OECD, 2012, 2019a). Furthermore, issues of pupils' cooperation have come to be viewed in connection with the notion of co-agency (OECD, 2019a), pursuing a quality education that reduces inequalities (Cañabate et al., 2021) and promotes social inclusion (Klang et al., 2020). In this regard, co-agency can be understood as building cooperative skills on FtFPI in CL that promote pro-social behaviours and peer relations (Carrasco et al., 2017; Van Ryzin & Roseth, 2018, 2019; Van Ryzin et al., 2020). Practically, by promoting cooperation, schools may enhance pupil engagement through pro-social behaviours, creating a more socially responsive environment and reducing maladaptation in primary education (Carrasco et al., 2018).

The present thesis argues that understanding how to strengthen pupils' socially responsive experiences with FtFPI may become vital for their engagement to become co-agents with quality human resources and social values. As a result, this may contribute to the enhancement of quality co-learning processes and social inclusion. Furthermore, to the best of my knowledge, the public debate on pupils' co-agency in BiH classrooms has not been sufficiently initiated or explored. The aim of this thesis was to address this need and contribute to the field of CL in BiH education, specifically for primary lower-grade pupils' co-agency, by exploring FtFPI in CL group work.

The limited cooperation across the fragmented national educational system, which has been burdened with political, social, and economic factors, has slowed down educational progress and pupils' co-agency in BiH compared with many other European countries. Achieving Europe's approach to quality education requires BiH educational reforms not only on paper but also in face-to-face practice and thus within human rights, primarily in equipping pupils as co-agents for their social and work lives.

1.2.1 Motivation

The motives for the current research in the FtFPI of CL are related to societal and research purposes[29] and have been shaped by my personal and academic experiences as a teacher and primary school pedagogue.

As a child, I grew up in ex-Yugoslavia as a Bosnian citizen in the most ethnically mixed republic, which enriched my childhood and personality because of not being burdened by ethnonationalism. In my hometown of Sarajevo, which is characterised as the most open to all forms of diversity and shaped by one of the utmost importance social and cultural values, 'da li si raja ili nisi'[30]; I experienced the tragedy of my country's war. The unforgettable, inhumane conditions and life-threatening environment deeply marked my youth during the period of the besieged Sarajevo (1992–1995). As a student teacher, despite belligerent circumstances exposing myself to sniper fire and grenade attacks, I was engaged and worked collectively in educational activities. This engagement gave meaning to my(our) (co)existence. While I was studying at faculty, but also providing emergency learning to children in the basement of our building, known as the war school[31], I organised children to play and do things in small groups that helped overcome their fear of the bombings. Engaged together, we tried to keep things 'normal'; meanwhile, we were discovering a lot about effective learning becoming a strong small group.

After the war's end, as a newly educated teacher, I started my teaching career in Sarajevo, intertwined with human adversity and diverse experiences because of forced war migration affecting the sociocultural structure of the school where I

[29] This is elaborated on in the articles and is not repeated here.

[30] In my translation from Bosnian, 'Are you raja, or not?' '*Raja*' is the jargon term associated with a particular behavioural and communicative Sarajevo context. 'Raja' is typically referred to peaceful, urban, assertive and constructive social bonds among people. That was the only status determinant making people social and cultural beings without any national or economic background as a difference between people.

[31] For more information, please see Lucic (2021): https://doi-org.ezproxy2.usn.no/10.1080/14681366.2020.1768582

worked. In that time, dealing with postwar consequences, including increased pupils with disadvantaged backgrounds whose lives were affected by trauma, incomplete families and low socioeconomic status, strongly shaped my personality, motivating me to seek alternative ways to facilitate pupils' engagement in learning. By adapting to the school's conditions, I attempted to find methods that worked well for all in that environment. Meanwhile, as a newly educated school pedagogue, I used personal experiences from the classrooms through the concept of cooperation and the CL approach with other school staff as working methods and a school mission. We focused on encouraging the inclusion of the disengaged and, among them, the Roma population of pupils and their parents in the school.

To ensure this support, commitment to CL pedagogy has come from the CfS approach (Global Campaign for Education-GCE, 2002) and child-centred education, here as realised by the Centre for Educational Initiatives (CEI) 'Step by Step' (SbS) in Sarajevo. Simultaneously, together with school staff and several regular primary schools in BiH, I participated in a large project supported by the Norwegian Cooperation Programme with South-East (CPSEE) 2002–2004[32], with a focus on developing inclusive practices and innovations in the school for all. During the time that I worked with teachers who taught and lived under circumstances of postwar disadvantaged context, I accumulated a great deal of experience that could be shared within the series of workshops organised through this project. Cooperation through joint efforts and shared knowledge during group assignments and discussions provided me with crucial first-hand knowledge and motives regarding the qualities of social interaction,

[32] The project's main intention was to try out concrete approaches to upgrading teachers for the classrooms towards inclusion, supporting pupils' socioemotional growth and development of learning in the regular school by cooperating with two Bosnian Universities: Sarajevo and Tuzla. The University of Oslo and the project coordinator, Berit H. Johnsen (one of my PhD supervisors), were primarily responsible for planning and realising the series of workshops.

mediation, teachers, and peers as relational and learning resources in a socially responsive school, which is fundamental to this thesis.

Finally, I chose this topic because social disadvantages were a growing influence in postwar BiH society and life values, thus profoundly affecting the complexity of school function. Furthermore, all pupils' engagement in an effective learning process requires socially responsive classrooms for each child and their needs, regardless of their socioeconomic or ethnic background. For this reason, providing pupils with the values of FtFPI as a human resource within CL sociocultural experiences is what our pupils need to become independent coagents engaged in the present for the future of BiH society. Bearing in mind 'what we are and who we want to become through education' (Biesta, 2016, p. 23), FtFPI relies on individuals' social responsivity as practices-used values that interconnect the personal and common good. For this reason, FtFPI may shape pupils' quality socially responsive processes as learning resources. Understanding 'responsive colearners' through the lens of FtFPI requires more attention because of the needed shift of interactional and educational paradigms in the current BiH. In addition, building colearning 'common experiences' (Dewey, 1938) is a learning foundation for preventing the disengaged.

According to Dewey (1938), 'all genuine education comes about through experience' (p. 8) because it is through the reflection of experiences that new actions and habits develop. During the war and postwar period, my experience in these life situations left me exposed, life-threatened and disadvantaged, but not disengaged. From this perspective, engaging myself in existential and educational activities as 'reconstruction or reorganisation of experience which adds to the meaning of experience' (Dewey, 1916, p. 76) guided me to reorganise my disadvantaged life experiences into those that have the meaning for growth.

As a member of academia who was educated within the official ex-Yugoslavia and BiH systems and raised in a middle-class family, I carry a privilege that I cannot negate in supporting my personal and professional growth. However, I am also a Bosnian officially recognised in the BiH Constitution as 'others' and an educator who mainly

worked professionally with those who are 'difficult others'. Moreover, I am one 'other' as a settler who is 'coming into the presence' in the Scandinavian context. This position grants me a good view into how the advantage and risk of (dis)engaging in practice facilitates or makes the needed ways of being, thinking and doing difficult for social and working life. Understanding this perspective also allows me insights into how life-affirming struggles occur in disadvantaged situations. Being and doing from a socially responsive position and engaged in ways that illuminate recognition and facilitation to prevent disengagement have been what I strive to embody in all aspects of my life, particularly in practice as an educator. Because the present thesis draws on social constructionism (see Section 4.1), which exemplifies collaborative engagements, coconstructing the social experiences among colearners opens up new educational actions and growth opportunities based on learning *from* and *with* others (UNESCO, 2021). Accordingly, FtFPI knowledge embedded in webs of CL experiences can be constructed through collaborative engagement in the social community (Alvesson & Sköldberg, 2017).

Furthermore, it has been argued that CL experiences are crucial to preventing and alleviating many of the social and academic problems related to children (Johnson & Johnson, 2002, 2003; Johnson et al., 1981). In support of this, the present thesis explores the FtFPI experience of CL as a resource for schoolwork and strengthening of pupils' socially responsive ability that gives them the potential to engage, grow and make a social impact change. In addition, a deeper understanding and increased knowledge of FtFPI aspects are the fundamentals for interconnected experiences of positive interdependence, individual accountability, social skills, and group processing (Johnson & Johnson, 1999). Researching young people's experiences can shed light on the subjective reality of their FtFPI experiences, along with how they may contribute significantly to every individual's personal growth particularly those who are disadvantaged.

1.3 Reseach aim and questions

Recognising the significance of the CL capacity needed to meet the demands of twenty-first century education, socially responsive primary schools play a critical role in child development, success, and preparation for their future social and work lives (OECD, 2012, 2019a; UNESCO, 2021). Classrooms have become socially inclusive places where diverse pupils are expected to interact and work daily, becoming the resources for co-agency (OECD, 2019a). More precisely, as pupils learn to cooperate (Cohen, 1994; Sharan, 2014), they become socially responsive co-learners equipped with FtFPI's 'will and skill', which can prevent the 'setback process' and promote their learning engagement. However, to the best of my knowledge, research is limited on how co-learners in primary schools work together in BiH, indicating the complexity of facilitating the FtFPI process that pupils and teachers need daily. A pertinent question is how educators understand FtFPI as a resource for socially responsive engagement in CL classrooms. This thesis is the first to problematise the CL approach in BiH, focusing on FtFPI among co-learners from three perspectives: international empirical research-based perspective, pupils' and teachers' perceptions, and classroom practices.

Thus, the aim of the present study was to deepen the understanding and provide knowledge on FtFPI that is considered socially responsive engagement underpinned by interpersonal and small-group skills (Johnson & Johnson, 2008, 2009). Specifically, the study explored the pro-social aspects of interpersonal behaviours and supportive communication with FtFPI engagement of 'will and skill' resources to become co-agents. The present thesis contributes to the knowledge of CL classroom pedagogy for primary school years by analysing how pupils understand and respond to each other's learning by engaging in FtFPI processes for pupils co-agency (OECD, 2019a) and social inclusion (UNICEF, 2020). Bearing this in mind, the main research question of the present thesis is as follows:

How can pupils' and teachers' experiences with FtFPI strengthen socially responsive resources for co-learning education?

The main research question has been answered by three studies: international empirical-based research to analyse those FtFPI factors supporting colearning group work (Article 1), to explore and analyse pupils' and teachers' views regarding FtFPI's aspects as positive perceived influences and challenges within CL group work (Article 2) and to provide detailed insights into pupils' socially responsive practices through supportive and interfering FtFPI features within the group work context (Article 3).

This led to the following subresearch questions:

1. Which FtFPI factors lead to successful CL in small groups? (Article 1)
2. How do pupils and teachers perceive FtFPI in CL group work? (Article 2)
3. How do Year 4 pupils practice their FtFPI in small CL groups? (Article 3)

A summary of each article is provided in Chapter 5.

1.3.1 Putting the articles together into a whole: The narrative

This article-based thesis generated three articles related to the abovementioned studies, contributing to this overarching text. The two-part model as a structural format presents the synthesis into the narrative as one coherent body of a meta-text (the extended abstract, i.e., part I of the thesis), which is followed by the articles (part II) (Nygaard & Solli, 2020).

Each article addresses a subquestion or theme, hence contributing to an exploration that addresses the overarching question. Furthermore, the themes emerging as crucial in one study were highlighted and deepened in another, which is in line with inductive and deductive reasoning (Alvesson & Sköldberg, 2017) and inspired by the 'Learning Together' framework and research framing. Article 1 is a literature review and provides the study with critical factors referring to pupils' FtFPI resources in engagement for successful CL process and its outcomes. In Articles 2 and 3, the focus is on colearners' experiences and practices with FtFPI in the CL context, which is explored empirically, employing data collection methods (interviews, questionnaires,

and video observations). Triangulating the empirical research findings as constructivist means synthesising them to answer the main research question (Creswell & Creswell, 2017). All the articles discuss the diverse FtFPI aspects and need to embed their deep preparation in a constructivist perspective regarding colearners socially responsive engagement for future actions in practice and research (Cranton, 2015; Crotty, 1998). Therefore, the findings from the three articles are integrated into socially responsive resources by answering the research question, together with previous research and colearning theory. In particular, the present study illustrates a deepened knowledge of FtFPI as a socially responsive engagement of understanding human quality interaction that refers to prosocial behaviours in colearning regarding social values and inclusion. Figure 4 provides an overview of the studies and how each relates to the main research question.

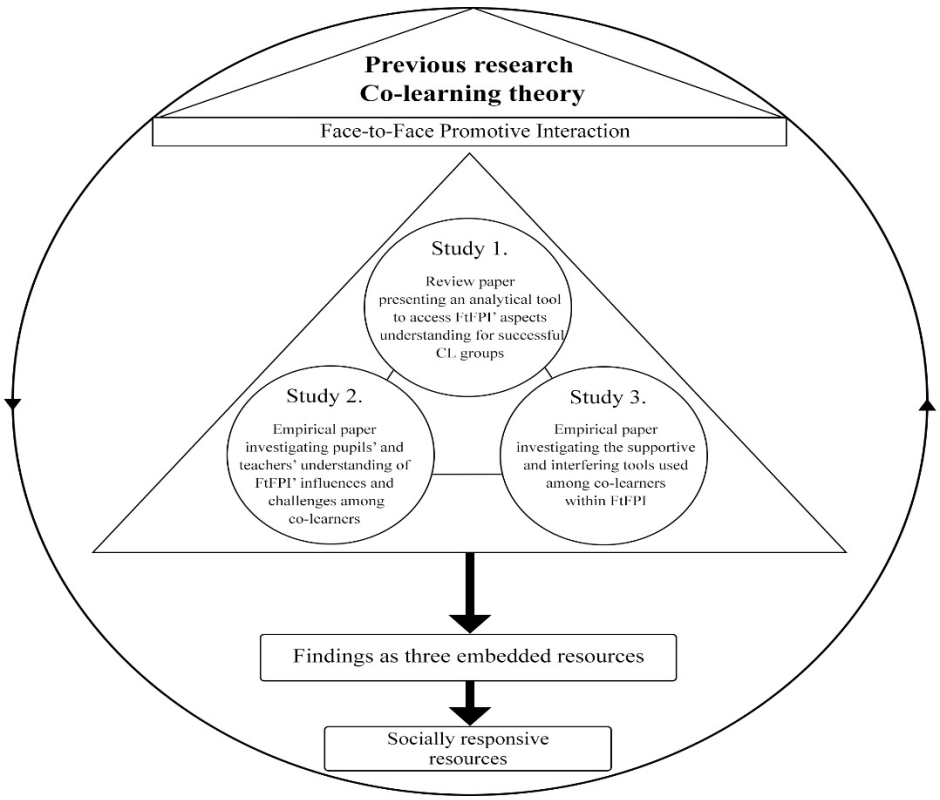

Figure 4. An overview of the research study exploring the FtFPI of CL

1.4 Clarification of the concepts

In the present thesis, several terms are essential contributors to the perception of education quality at the classroom level and are briefly explained below.

(1) Engagement refers to a pupils' s active involvement and participation in school-based activities; concretely, it entails pupils' reactions to and interactions with the people in the learning environment as a way to enhance specific knowledge and skills (Boekaerts, 2016). Notably, connecting active engagement among pupils to a sense of support as an affective dimension within a group work environment (e.g., quality of interactions with peers during group learning) is crucial to sustaining pupils' engagement or increasing their learning engagement (Baines et al., 2008; Blatchford et al., 2003). Affective engagement refers to social, emotional, and psychological attachments towards school (Lawson & Lawson 2013). Thus, the present thesis focuses on pupils' FtFPI, which may capture those actions related to active engagement and maximise the colearning experience, particularly for those at risk of disengagement (Johnson & Johnson, 2018).

(2) According to the Cambridge Dictionary of English, interaction is 'an occasion when two or more people or things communicate with or react to each other'. Further, interaction refers to the social exchange between group members doing things to and with each other and must coordinate their various skills, resources, and motivations to generate a product[33] (Forsyth, 1999). According to Johnson and Johnson (1998), pupil–pupil interaction refers to pupils being perceived as the primary resources for assistance, feedback, reinforcement, and support. Teacher–pupil interaction implies monitors and intervenes in learning groups to teach and induct pupils into ways of cooperation. For the

[33] In the articles (1-3), the term 'willingness' was mostly used interrelated with skills, resources, and motivations. According to the Oxford Dictionary of English, 'Will' as a verb express desire, consent, or willingness, as an adjective implies readiness, eagerness, or being prepared to do something. However, 'willingness' as a noun means a quality or state of being prepared to do something or readiness.

present study, FtFPI refers to having pupils engage and interact by helping, supporting, encouraging, and praising each other's efforts to achieve (Johnson & Johnson, 1999).

(3) Heterogeneous classrooms refer to pupils' diversity, such as gender, personality, academically diverse pupils (Slavin, 1995), and pupil's motivation, attitudes, and diligence, and family circumstances (Ashman & Gillies, 2003), but also ethical/racial, cultural, social skills, religious, and language diversity (Gillies, 2008; Slavin & Cooper, 1999). Previous meta-analysis within-class grouping has shown that group heterogeneity supports low-ability pupils' benefit through colearners' interdependence help facilitate small group learning (Lou et al., 1996). In addition, the variation of heterogeneity in any classroom means a greater demand on teachers' ability of pupil grouping as the primary mechanism schools can use for coping with pupil heterogeneity and engagement in learning processes (Cohen & Lotan, 1995; Gillies & Boyle, 2010; Johnson & Johnson, 1998; Slavin, 1995). For this reason, the present thesis considers pupils' social competence within classroom heterogeneity regarding pupils' social knowledge, skills, and engagement in FtFPI associated with different pupils' academic achievement levels and gender. In a cooperative structure mediated by FtFPI, such differences are positively valued as resources among pupils to help each other accomplish joint goals.

(4) Cooperative learning refers to the effective socio-pedagogical practice used for learning together and teaching twenty-first-century skills built upon prosocial behaviours necessary for preparing pupils to cooperate in the early grades of primary education (Cohen, 1994; Ferguson- Patrick, 2018; Johnson & Johnson, 2014, 2018). Cooperative learning is an approach through which pupils work together in heterogeneous groups to maximise their own and others' learning (Gillies, 2008). A thriving learning environment is founded on 'co-agency,' which entails successful relationships with others to create mutual opportunities for pupil engagement and learning (OECD, 2019a).Thus, CL activities provide an essential vehicle for teachers to structure a classroom

environment for successful group interaction and enhance socialisation among peers and support social outcomes, such as recognizing and group approval for pupils to help each other succeed academically (Battich & Watson, 2003; Slavin, 2015). Therefore, CL principles (a) positive interdependence, (b) individual accountability, (c) social skills, (d) face-to-face promotive interactions, and (e) group processing help teachers to stimulate pupils for sustainable peer cooperation (Cohen, 1994; Johnson & Johnson, 2009) (see Section 2.3.1).

(5) Small groups work framed by the CL principles is understood in this thesis as groups that do not exceed four members, gender-balanced and mixed abilities academically (Gillies, 2003). In these groups, 'pupils are expected to carry out their task without direct supervision of their teacher' (Cohen, 1994, p. 3).

(6) Pupils' cooperation refers to the classroom organisation realised on the social pedagogy principle that enables all pupils of various abilities and backgrounds to socialise, support and learn with and from one another (Baines et al., 2008; OECD, 2012). According to social interdependence theory, pupils' cooperation exists when the accomplishment of each individual's goals is affected positively by the actions of others linked to achieving their own and mutual goals together (Deutsch 1949; Johnson et al., 1989) (see Section 2.3).

(7) Cooperativeness is tendency to cooperate. Readiness and suitability to cooperate is a complex human characteristic that includes a tendency to work in groups, readiness to develop reciprocal relationships, certain confidence in other people, tolerance towards different opinions and attitudes, benevolence, and sympathies for others, control of one's own emotions and egoistic tendencies (Potkonjak & Šimleša, 1989). Cooperativeness and frequently participating in CL situations are positively related to perceptions of support, help and friendship from teachers and peers (Johnson & Johnson, 1984).

(8) Quality education in low-income countries such as BiH is one of the basic needs for human development necessary for national development and

progress of society through 'structured pedagogy' (Tikly, 2011). In this thesis, the 'structured pedagogy' refers to the pedagogy of colearning, the Learning Together model (Johnson & Johnson, 1999). The thesis focuses on the conception of individuals' cooperation and the interactional dimension of being responsive to colearners' needs and communities' needs and the quality of teachers' role in promoting interactions among co-learners (Gillies, 2014; Hennessey & Dionigi, 2013). Thus, improving the quality of teaching and learning in schools across the country may increase social capital and quality education [34] (Hill, 2011). For this reason, teachers are key for the CL organisation and implementation that requires new skills and knowledge to help pupils become successful co-learners (Sharan, 2014).

1.5 Outline of the thesis

The thesis consists of two parts. Part I consists of the extended abstract, which includes six chapters, and Part II contains three studies which are all published in peer-reviewed journals.

The purpose of Part I, the introduction (Chapter 1), is to account for the thesis, present an overview of the background and relevance of the topic, outline the aim of the study, state the research questions and study motives, and present a definition of key terms. Chapter 2 outlines a theoretical framework based on social interdependency and social mediation concepts, accentuating FtFPI as a social medium used in individual/group zone of proximal development (ZPD) employed to address the thesis's objectives. Chapter 3 provides an updated review of the relevant research. The focus is on empirical research that refers to the key FtFPI aspects, the teacher role associated with interpersonal behaviours and communication features. The review section is divided into international and BiH contexts, highlighting some of the challenges that have been documented in the research literature concerning

[34] The OECD defines Social Capital as 'networks together with shared norms, values and understandings that facilitate cooperation within or among groups (OECD, 2001, p 41.).

teachers' role in promoting FtFPI of CL. Chapter 4 defines the epistemological framework used in this exploratory case study and the philosophical foundations, research design, site, participant information, data collection methods and data analysis. The chapter also reflects on research quality and ethical considerations. Chapter 5 summarises the results of the three studies. Chapter 6 discusses the findings for the current study, points to theoretical and methodological contributions, provides the limitations and implications of the study's findings and recommends directions for future research.

Part II consists of the following three articles, which are presented according to the order in which they were published:

Article (1): Dzemidzic Kristiansen, S., Burner, T., & Johnsen, B. (2019). Face-to-face promotive interaction leading to successful cooperative learning: A review study. *Cogent Education, 6(*1), 1674067 https://doi.org/10.1080/2331186X.2019.1674067

Article (2): Dzemidzic Kristiansen, S. (2020). Exploring pupils' and teachers' perspectives on face-to-face promotive interaction in cooperative learning. *International Journal of Primary, Elementary and Early Years Education, Education* 3–13, *50(1),* 54-69. https://doi.org/10.1080/03004279.2020.1833060

Article (3): Dzemidzic Kristiansen, S. (2021). Becoming a socially responsive co-learner: Primary school pupils' practices of face-to-face promotive interaction in cooperative learning groups*. Education Sciences, 11*(5), 195. https://doi.org/10.3390/educsci11050195

2 Theoretical framework

> There is, I think, no point in the philosophy of progressive education which is sounder than its emphasis upon the importance of the participation of the learner in the formation of the purposes which direct his activities in the learning process, just as there is no defect in traditional education greater than its failure to secure the active cooperation of the pupil in construction of the purposes involved in his studying. (Dewey, 1938, p. 43)

Even though nearly 100 years have passed since Dewey stressed the importance of participation and cooperation, which shape the learning process of each learner, such theoretical issues are still central in 21st-century classrooms. Dewey's progressive educational theory (1938) influenced the understanding and interpretations of pupils' FtFPI explored through socially engaging colearning experiences in this thesis to grasp the subjective meaning of FtFPI's social action (Bryman, 2016). Ontological and epistemological views influenced the research processes through contributions from participants' engagement and experience (Dewey, 1938). Ontologically[35], FtFPI is a complex reality worth a closer understanding of the interaction between individuals, rather than a producing causal explanation of this social phenomenon 'out there' and separate from those involved in its social construction (Bryman, 2016). In short, the FtFPI of CL reality is constructed through a person's active experience of it. Epistemologically, a subjective understanding of the FtFPI social phenomenon is collaboratively generated in the relations between participants and their social world (Brinkmann & Kvale, 2015). In this thesis, FtFPI is understood in the way that pupils and teachers have experienced it through cooperation drawn upon mediated interaction and social interdependence. These two components are central in the thesis, grounded within the sociocultural and socio interdependence theoretical framework. Thus, this chapter provides background to understanding how two

[35] The ontological position is concerned with social constructivism/interpretivism that reality is made up of 'multiple, tangible mental constructions, socially and experientially based, local and specific in nature... and dependent for their form and context on the individual persons or groups holding the constructions' (Guba & Lincoln, 1994, pp. 110–111) (see Section 4.1).

intertwined theoretical frameworks: a sociocultural perspective on learning (Doolittle, 1997; Kozulin, 2003; Moll, 2014; Vygotsky, 1978; Wertsch, 1991) and social interdependence theory (Allport, 1954; Cohen, 1994; Deutsch, 1949; Dewey, 1916; Johnson & Johnson, 1999; Lewin, 1948) underpin the objectives posed in this thesis.

First, a brief historical overview outlines the two perspectives that have influenced the contemporary interest of CL and its humanistic goals[36] for shaping pupils' social, emotional, and academic domains (Section 2.1). Second, the section associated with sociocultural theory and mediated activity proceeds further (Section 2.2.1) by explaining how mediation and psychological tools, as two concepts from sociocultural perspectives, influence co-learning interactions. Section 2.2.2 presents the zone of proximal development (ZPD), a key concept in sociocultural perspectives related to FtFPI functioning. Section 2.3 discusses the term 'positive interdependency' concerning supportive relationships. The chapter concludes with essential elements of the Learning Together model (Section 2.4), in which the terms positive interdependency (cooperation) and socially supportive activity are presented concerning the analysis of FtFPI.

2.1 The historical origin of co-learning approaches

The historical roots of colearning can be traced to the developmental psychology perspective, which focuses on individual and social learning processes (Vygotsky, 1978), while sociology emphasises the social context of group work and cooperation (Dewey, 1916; Deutsch, 1949). Both perspectives underpin this study into the FtFPI of CL groups in classrooms.

[36] According to the humanist perspective referring to a pyramid depicting Maslow's (1968) hierarchy of needs, two needs that CL strives to generate are feelings of belonging and esteem. For example, when colearners feel they belong to a group whose members feel positively interdependent, support comes from group mates who encourage and praise each other for putting forth the effort into the joint goal. Accordingly, this may partly contribute towards satisfying pupils' esteem needs. For more social, psychological and academic benefits, see Laal & Ghodsi (2012).

2.1.1 Developmental psychology-Learning and interactions

Understanding how and why pupils learn from social interaction with their peers is crucial for guiding this educational research on FtFPI within CL practice. Two of the most notable developmental psychologists of the 20th century, Jean Piaget (1896–1980) and Lev Vygotsky (1896–1934), underlined the importance of interaction between social, affective, and cognitive aspects in children's development and learning through an active and constructive process. Both Piaget and Vygotsky embodied constructivist and social views of learners' active role in constructing their knowledge, skills, and understanding (Webb & Mastergeorge, 2003). In this regard, the significance of embedding pupils' skills and knowledge acquired in school into their lives as learning resources aligns with Dewey's vision of twenty-first century co-learners who engage and develop in interactive co-learning classrooms. In addition, understanding FtFPI within the CL process involving teachers and pupils, and among pupils, is the foundation for sub-research Questions 2 and 3, which investigate both pupils' and teachers' perspectives and practices.

Although Piaget and Vygotsky both recognized social nature as an essential component of human development (Tudge & Rogoff, 1989), Vygotsky was interested in the mediational features of development. Social features are associated with peer interactions and valued as fundamental to children's cognitive development. Piaget (1932, as cited in Howe, 2010) highlighted the concept of cognitive conflict that results from peer interactions, as they provide symmetrical conditions (cooperation of equals) for an enriched opposition of views needed for cognitive development. In other words, the benefits of cognitive conflicts among pupils when working together stimulate them to take a particular perspective and lead them to higher-quality understandings. Vygotsky characterised learning as social interactions with individuals that are more advanced than the first, incorporating the concept of ZPD in the ongoing development of a person throughout life. The ZPD emphasises a positive result when cooperating with peers through the ZPD: 'what a pupil carries out jointly with another could be incorporated into his or her individual performance' (Vygotsky, 1978, p. 90)

(see Section 2.2.2). In agreement with Tharp and Gallimore (1988), Vygotsky's theory is applicable to all learning, by children and adults, in formal and informal instructional settings and in asymmetrical (e.g. expert-novice such as peer tutoring) and symmetrical (e.g., equal-ability) CL groupings.

Regarding the perspective of interactional dynamics, peer interaction involves the coordination of shared activity towards a goal and can inform the understanding of the impact of the degree of symmetry or asymmetry between interactional partners (Tenenbaum et al., 2020). In this context, two parameters (equality and mutuality) are essential for effective interactional dynamics. Concerning the aspect of equality, there are three types of relationships: peer tutoring, collaboration, and cooperation (Damon & Phelps, 1989). In the cooperative relationships, equality as the degree of symmetry between the participants' roles in a group learning activity must be hierarchically equivalent, while their differentiation should be associated with the task structure. Although the interactive, cooperative structures are symmetrical owing to the communication's focus on distinct sources of information, they are not devoid of certain asymmetry (Pons et al., 2014). For example, the ways that pupils' talk[37] is used in symmetrical groups' talk through a problem-solving task can mutually support individual pupils' progress, which may elicit an automatic and unconscious effect using communicative strategies in learning together (Fernández et al., 2015). That is, pupils may not plan an intentional 'guiding role', as in 'asymmetrical interaction', but in 'symmetrical interaction', they achieve this (as might a peer tutor) to share understandings as they work together.

Although Piaget (1932) and Vygotsky (1978) both focused on the active process of learning, a key difference between their approaches lies in the role of adults and peers in interaction. Piaget's epistemological views about psychological development

[37]Exploratory, disputational, and cumulative talk (which are not the focus of this study) are regarded as social modes of thinking among participants, with the nature of challenges setting them apart. In the exploratory talk, challenges serve to stimulate joint reasoning and encourage students to engage in critical yet constructive dialogue about each other's ideas (see Mercer, 2004; Wegerif et al., 1999).

incentives through learning differ significantly from Vygotsky's views. To 'unpack' FtFPI as a socially responsive way of getting pupils to work and support each other within cooperative processes, Piaget less inspires the present research. Piaget considered attempts to accelerate development through learning from the 'social world', such as interactions with teachers or peers, as constrained by the pre-coded aspects of our growth, which affect the structure of a child's actions (Matusov & Hayes, 2000). Instead, the present study focused on Vygotsky's perspective as 'learning is a necessary and universal aspect of developing culturally organised, but specifically human psychological function' (1978, p. 90). In other words, Vygotsky stated the importance of cultural and social contexts for learning and the presence of, for example, peers as co-learners who may influence mutual development through interaction. However, for this to occur within FtFPI, co-learners must be equipped with sociocultural resources to support each other's learning by, for example, giving direction, instructions, comments, and feedback (Webb & Mastergeorge, 2003). Vygotsky's sociocultural theoretical framework appears fruitful in exploring how FtFPI is understood and used as a resource, mediating progress in the CL process. In addition, the ZPD influenced this research in conjunction with FtFPI and social interdependence, which can explain the success or failure of supportive functioning as social mediation among pupils.

2.1.2 Social psychology-social interdependence

Kurt Koffka (1886–1941) made the critical step in social psychology in the early 1900s by theorising on social interdependence as an essential concept known 'in modern CL days'. Social interdependence helps understand how and why pupils cooperate in small groups and about issues relating to what supports and hinders their colearning (Johnson & Johnson, 1999, 2009) (see Section 2.3). Koffka proposed that groups were dynamic wholes in which the interdependence among members could vary. Further research on this topic was conducted by his colleague, social psychologist Kurt Lewin,

in the 1920s. According to Sharan (2010), Lewin's foundations [38] for the group dynamics movements and the interdependence as the essence among group members formed a basis for designing effective and supportive relationships within groups, as outlined in the present thesis.

Building on Lewin's group dynamic relationships, another most significant social psychologist, Morton Deutsch (1949) conceptualised two types of social interdependence- positive and negative- that influence supportive relationships among individuals and groups. Deutsch's social interdependence theory informs sub-research Question 3 and provides the framework for discussing FtFPI's supporting and interfering features of supportive activities among colearners. The presence of positive social interdependence promotes such FtFPI situations in which group members actively coordinate their efforts, ensure that others have opportunities to contribute, provide help when needed and encourage others' actions (Gillies & Ashman, 2003).

In the context of the BiH primary school system, positive social interdependence is questioned, meaning that colearning common goals are problematic and already exist in, for example, the content subject (e.g. different views on history). Pupils are taught in divided 'ethnic entities' despite a shared cultural background or, historically speaking, despite the three groups (Bosnian, Croatian and Serbian) having common roots (Tomelli, 2015). Regarding supporting social functioning between people with different ethnic backgrounds, Allport (1954) suggested how best to help them live and work together more harmoniously. 'Together' connotes the various types of social interaction, such as FtFPI and the necessary conditions for maximising such. Allport's (1954) investigations revealed three necessary conditions for improving social interactions and how this can result in greater harmony and more productive

[38] The interdependence among members created by common goals results in the group being a 'dynamic whole' so that a change in the state of any member or subgroup changes the shape of any other member or subgroup. An intrinsic state of tension within group members motivates movement towards accomplishing the desired common goals (Johnson & Johnson, 2009, p. 3).

relations: 1) equal status for all who interact is compulsory, (2) all must have some common goals to achieve, and (3) there should be official permission [39] for cooperation. Could this formula be used in all of BiH? Naturally, to achieve the main goal (a quality of primary education reforms but based on the respect for democratic principles), these three conditions must indicate their relevance to the progress of current BiH education and society. Therefore, the first step to education desegregation must be recognised in practice (see Section 1.1.1).

With the social psychology developments after the 1970s, research stimulated the investigation of classrooms within cooperating groups to facilitate pupils' learning, development and socialisation (Gillies, 2014; Sharan, 2010). Johnson and Johnson (1999) developed the 'Learning Together' model, identifying five essential elements based on positive and structured interdependence (see Section 2.3.1). The best-known methods in contemporary CL education are group investigation, developed by Sharan and Sharan (1976), and the Jigsaw classroom, developed by Aronson et al. (1978). Further, Slavin et al. (1986) developed various other student-team learning methods, including the Student Teams Achievement Division (STAD). In addition, Kagan's cooperative structures in the 1980s and Cohen's Complex Instruction have been well used in practice (Cohen, 1994; Cohen & Lotan, 1995, 2014). Cohen (1994) identified the problem of status for both productive and equitable small group learning in how pupils rate themselves and others according to characteristics they perceive as valuable contributions to their expectations for their competence and their classmates. Besides, these expectations determine both access to high-quality and equitable interactions among pupils. In sum, these models promote the importance of heterogeneous groupings and the vital interactional elements of positive interdependence. Both emphasised components are relevant for exploring FtFPI within CL group work as the overall aim of the present thesis.

[39] As elaborated on in Section 1.1.2., cooperation is a needed mechanism of socially engaged functioning, but as detected gap in BiH society and the BiH CL research base (see Articles 2 and 3).

In sum, this brief presentation of developmental and social psychology allows us to understand their main influences on the newer field of the colearning approach and, thus, FtFPI. The present thesis has explored FtFPI as a socially responsive engagement for successful cooperation among lower-grade pupils (10–11 years old). This personality development stage provides children with more awareness of others, whereby Webb and Farivar (1994) found they are often aware of what other children do not understand, thus helping them focus on the problems' features. Dealing with the 'Learning Together' model, FtFPI describes a situation in which socially responsive actions among co-learners are expected to occur, such as awareness of and concern for others in facilitating the co-learning process. Thus, through a positive interdependence perspective, the present thesis investigates aspects of FtFPI facilitating socially responsive engagement among co-learners within CL processes.

2.2 Sociocultural theory and mediated activity

Vygotsky's sociocultural theory was chosen as one of the main theoretical foundations that elucidate the importance of social interaction in learning. As per this theoretical perspective, co-learners can gain advantages from engaging in FtFPI endeavours that enable the youth to novel insights and skills (Pasalic-Kreso, 2002). For this reason, FtFPI are explored among co-learners in a small group work context that provides pupils with sociocultural means that can shape general or specific social and academic capacities (Kozulin, 2003).

The five essential characteristics of CL (positive interdependency, face-to-face supportive interaction, individual accountability, interpersonal and small group skills, and assessment of group process) are closely related to the core issues emphasised by Vygotsky (1978), namely, the need for social interactions and the individual's process of change. Vygotsky considered ZPD to be an ongoing change. As young people undergo change growing up in society, learning and improving themselves, their interactions with others may lead to culturally needed changes in their behaviours. The FtFPI of CL is based on activities that support pupils' development and changes to complete tasks within their ZPD while obtaining socially and culturally

relevant behaviours from peers and teachers (Doolittle, 1997; Vygotsky,1978). However, a lack of teachers' ability aimed at supporting the quality of CL processes may seriously impact social interactions between pupils that stimulate learning together (Kaendler et al.,2015; Le et al., 2018; Van Leeuwen & Janssen, 2019).

From the Vygotskian perspective, 'FtFPI is identified as social mediation' (Doolittle, 1997, p.90) that involves the acquisition of knowledge and skill through a pupil's social interaction with others. Sociocultural researchers who worked with socio-pedagogical aspects of learning together draw on Vygotsky's works to understand the link between social interaction, mediation, and learning (Baines et al., 2008; Blatchford et al., 2003; Gillies & Ashman, 1996, 1998; Webb & Mastergeorge, 2003). For this reason, social mediation is needed through responsive activities between peers for a successful co-learning process (Ashman & Gillies, 2003; Gillies & Ashman, 1996). In support of this, a meta-analysis of 148 independent studies emphasising the developmental need for positive face-to-face peer relationships showed that cooperative structures are associated with a positive relationship between achievement and peer relationships (Roseth et al., 2008).

While 'social mediation' refers to how 'something' is learned, e.g. by engaging in FtFPI responsive activities, pupils interact with peers, which results in learning and development within the structure of cooperative activity. However, the quintessential question among the post-Vygotskian corpus is the insufficient interpersonal skills required to manage peer mediating activities when assigning pupils to groups and expecting them to know how to assist (Gillies, 2016a). To Gillies and Ashman (1996, 1998), teaching pupils interpersonal skills plays an essential role in pupils' cooperation and helping each other. As such, exploring FtFPI aspects of interpersonal behaviours and supportive communication underpinned by interpersonal and social skills among pupils (Johnson & Johnson, 1999) are vital for mediation activity between peers, as their deeper understanding may initiate more acquisition of knowledge and skills for supportive co-learners (see Articles 1 and 2). In line with this, subresearch Questions 2 and 3 focus on FtFPI skills and knowledge among mediating peers' activities. To

identify what challenges FtFPI, these studies are informed by mediation and mediating means as the relevant theoretical concepts in researching pupils' and teachers' experiences.

2.2.1 Mediation and mediating means

Mediation refers to 'the need for someone other than learner to translate knowledge about society and culture so that it can be internalised [40] by the learner' (Ashman & Gillies, 2003, p. 199). For this reason, mediational means can be understood as cultural and social tools needed in mediation to facilitate the colearning process through which the social and the individual mutually shape each other (Daniels, 2015; Moll, 2014). According to Kozulin (2003), the Vygotskian corpus of researchers emphasises mediation through another human being and mediation as an organised learning activity. This thesis illuminates FtFPI aspects as a socially responsive means for facilitating peer mediation within co-learning activities. Reflecting the human mediator (Kozulin, 2003) in FtFPI functioning serves to understand how the individual acts upon and is acted upon by sociocultural means. The human mediator role is seen as human actions occurring in individuals' 'humanised' interactions with their world through mediating means (Moll, 2014). In this regard, the notion of 'humanising interaction' may influence how one learns about the social world and socially mediates this world [41]. Thus, for effective supportive interactions to occur, FtFPI offers socially mediating means that may help co-learners socially respond and incorporate a learner into co-learning practices. Thus, FtFPI mediates as an essential predictor of social presence, as Biesta conceptualised 'coming into presence' (Biesta, 2016, p. 33).

From a sociocultural perspective, humans are seen as creatures with a unique capacity for communication whose lives are usually led within groups and societies based on

[40] Vygotsky emphasised the process of internalization by which pupils first experience an idea, behaviour or attitude in a social setting and then internalises this experience so that it becomes a part of the pupils' mental functioning (Doolittle, 1997; Vygotsky, 1978).
[41] Social mediation refers to interactions among human beings, especially interactions in which social groups incorporate an individual into cultural practices (Moll, 2014, p. 31).

shared 'ways with words', ways of social practices, and tools for achieving things (Mercer, 2004). For example, in their group-based activity, co-learners need to use talk as 'ways of words', those social resources, knowledge, interest and competence conveyed by their FtFPI interaction, to achieve a joint task. Thus, talk becomes the principal tool used to make sense of the current task and to maintain the quality of interaction defined by the ground rules (Mercer, 2004). Regarding communicative-mediated ways of action, Wertsch (1991) defined them as those actions that establish interpersonal relations (whether by verbal or by non-verbal language means). According to Vygotsky (1978), these psychological tools have the importance of cultural artefacts that could be used to 'control behaviour from the outside' (p. 40). In contrast to 'control', the CL perspective on the role of talk refers to promoting verbal behaviours and interaction between pupils and engaging them in the co-learning process (Gillies, 2006; Gillies & Boyle, 2008). In this thesis, subresearch Questions 2 and 3 focus on perspectives and practices of supportive communication verbal and non-verbal features used within FtFPI situations in co-learners' actions. One of the central FtFPI aspects of how pupils communicate to work effectively in small groups through mediated communicative behaviours is the role of teachers (Webb, 2009). Researchers within teachers' roles, particularly within FtFPI discourse, highlight the importance of training pupils' and teachers' communicative behaviours to promote pupils' dialogue to communicate and effectively affect pupils' engagement (Gillies, 2003; Gillies, 2016b; Gillies & Hayes, 2011; Webb, 2009). As this thesis seeks to understand supportive communication by using inclusive language (Gillies & Ashman, 1996) among pupils as an FtFPI aspect, subresearch Questions 2 and 3 unpack some of its most positive and challenging features for social mediation, as perceived and practised by pupils and teachers.

2.2.2 Face-to-face promotive interaction and zone of proximal development

According to Vygotsky (1978), pupils' development is based on activities that stimulate their learning within their ZPD. As 'social mediation' and 'enculturation'

(Doolittle, 1997, p. 90), FtFPI not only supports cognitive development through social interaction but also facilitates the exchange of social and cultural experiences, knowledge, and practices among peers. For this reason, FtFPI[42] within a Vygotskyan framework serves as social mediation (Doolittle, 1997; Moll, 2014). Assisting in a socially mediated environment with more capable individual responses may shape joint experiences and further develop ways of structured co-learning (Gnadinger, 2008). In support of this, FtFPI can be considered as enculturation in a social group[43] (Doolittle, 1997) in which one learns supportive ways of participating that are recognised as legitimate by the group. Thus, FtFPI in co-learning is not only about structured internalization of knowledge or skills but also about understanding what kind of socially and culturally individualised knowledge and skills are relevant within the group's ZPD[44] and how to use them as tools for responding cooperatively. In other words, the ZPD is a resource through which enculturation takes place, facilitated by the support of social mediation. When children work together, they should often provide information, prompts, reminders, and encouragement to others' requests for assistance or perceived need for help (Gillies & Ashman, 2003). In this regard, FtFPI is about equipping pupils with the social and behavioural skills to deal with supportive CL situations (Jolliffe, 2011, 2015). However, acquiring supportive skills through an individual's engagement and thus contributions to FtFPI remain challenging (Pai et al., 2015). For this reason, in support of 'what children can do in collaboration today, they will be able to do independently tomorrow' (Vygotsky, 1987, p. 211), the findings obtained through 'unpacking' the FtFPI aspects may equip the co-learning mediating socially responsive skills. The contemporary interpretations of the Vygotskian theory

[42] According to Johnson and Johnson (1999), FtFPI is characterised by pupils providing each other with assistance, exchanging needed resources, and offering feedback.

[43] According to Dewey (1916), social environments, such as small CL groups, have an educational character during the growth and acquisition of culture through which immature members can learn good habits.

[44] Post-Vygotskian researchers Newman, Griffin, and Cole (1989) extended the concept of the ZPD beyond its original asymmetrical focus, emphasizing the significance of symmetrical interactions that afford each pupil the chance to engage in tasks and goals that would pose significant challenges if pursued individually.

use skills of 'scaffolding' and 'guided participation' to learn from assistance and learn specific assistive behaviours (Rogoff, 1990; Webb & Mastergeorge, 2003). Accordingly, ZPD, in conjunction with FtFPI, has informed subresearch Questions 2 and 3. Both discuss pupils' FtFPI as the competence of being responsive, skilled, and willing co-learners and mediators cooperating on goal progress in a group/individual ZPD.

Although Vygotsky did not appear to have a structured set of principles guiding how cooperation should occur, he assumed the social nature of the concept: 'Human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them' (Vygotsky, 1978, p. 88). While cooperation itself is embedded within this social nature, FtFPI may facilitate cooperation into the socially responsive engagement of learners. Learning through social dynamics but primarily positive interpersonal exchanges, if included properly, will encourage pupils to work together to achieve group learning goals (Gillies, 2016a).

2.3 Learning through cooperation: A social interdependence theory

As teachers seek ways to enhance pupils' engagement in their learning, promoting an inclusive learning environment is critical to providing pupils with opportunities to learn together. This aligns with pupil groupings for learning and socialisation (Baines et al., 2008; Blatchford et al., 2003). However, to allow pupils to work together cooperatively, they must learn cooperating skills within the CL group structure. The CL group approach differs from typical 'ordinary' group work, which is characterised by unstructured groups and activities. The following table provides an overview of their distinctions as outlined by Johnson and Johnson (1994, 1999, 2002):

	Cooperative learning group work	"Ordinary" group work
1.	Positive interdependence with structured shared/common goals. If one fails, all fail because success is with group achievement, not with individual achievement.	No positive interdependence; pupils work for individual rewards because they do not have common goals.
2.	Individual accountability: each member is given the responsibility to do and share his/her group's work through different rotating roles, assignments, and targets.	Pupils just work in groups with no roles and assignments to be responsible for. As a result, some participate some do not.
3.	Mixed ability grouping: groups are formed by the teacher based on different ability members in perfect proportion so that high-ability pupils can help low/medium ability pupils and learn from them and their own teaching.	Homogeneous ability grouping: Pupils make groups themselves; therefore, no guarantee for mixed ability. Low-ability pupils cannot get a chance to learn from high-ability pupils.
4.	All pupils share the given learning task (s).	No sharing, no caring. It remains individualistic work
5.	Targeting to enhance each group members learning.	Aiming at accomplishing the assignments only that ar accomplished by one or two pupils in the group
6.	Process-oriented, directing pupils to more and more learning through different organised processes.	Product-oriented, aiming to complete the tasks in one way or another.
7.	Enhancing cooperative skills	Focusing on completion of the task through group discussions, assuming that pupils already have the cooperative skills
8.	Has ready-made structured and experimented strategies to be used.	Has unstructured strategies: pupils work in groups without any pre-decided steps.
9.	Aiming at creating a friendly and cooperative working atmosphere	Aiming at creating a competitive, not possibly friendly atmosphere
10	Pupils support each other and share candidly for the group's success	Pupils may not support each other honestly and hide information.

Table 1: An overview of distinctions between CL and "ordinary" group work (Johnson & Johnson, 1994; 1999; 2002, as cited in Panhwar et al., 2017, p. 299)

In this regard, how the interaction is structured determines how each pupil interacts, which, in turn, determines each individual's outcome (Deutsch, 1949; Johnson & Johnson, 1998, 1999, 2008) as follows (see Figure 5):

> Positive interdependence (cooperation) results in promotive interaction as individuals encourage and each other's efforts to learn. Negative interdependence (competition) typically results in oppositional interactions as individuals discourage and obstruct each other's efforts to achieve. No interdependence results in no interaction (Johnson & Johnson, 1999, p. 187).

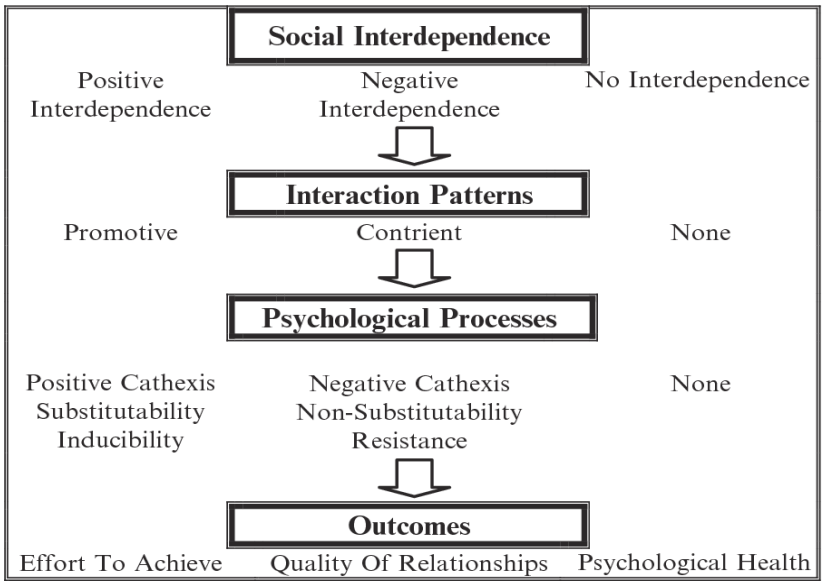

Figure 5. An overview of social interdependence theory (Johnson & Johnson, 2008, p.11)

Keeping in mind that the quality of the group's interactions and the success of groupmates are influenced by the way the interaction is structured (Figure 5), one's (non)response and the quality of FtFPI engagement can significantly impact their own achievement and contribute to the overall strength of group dynamics. In this vein, social interdependence exists when the outcomes of individuals are affected by their own and others' actions (Johnson & Johnson, 1998). In addition, positive interdependent cooperation not only tends to result in more frequent use of higher-level reasoning and more intrinsic motivation but also promotes more positive interpersonal relationships and greater social support (Johnson & Johnson, 1998). For example, for support to happen, the transformation from self-interest to mutual interest must happen, which is one of most critical aspects of social interdependence. To actively engage in promotive interaction, such as providing effective support to one another (Webb et al., 2002), pupils must develop an understanding of how to become socially responsive co-learners capable of responding to the peers by using FtFPI skills.

The psychological processes based on positive interdependence demonstrate how self-interest is expanded to joint interest, and how socially responsive motives may be created in cooperative situations. According to Deutsch (1949), these three psychological processes include: (1) substitutability, for example, the degree to which

the actions of one person substitutes for the actions of another person; (2) cathexis is the investment of positive psychological energy in objects outside of oneself, for example, friends, work; and (3) inducibility is the openness to being influenced and to influence others. Article 3 employs these interactional elements within a CL group context to explore supportive practices among pupils engaging in FtFPI situations. The study analysed how pupils responded to each other's engagement through FtFPI in a co-learning context. The findings obtained from this research show how a relevant theory can influence, for example, the BiH educational response to the challenge of enhancing pupils' engagement for effective learning. Specifically, teaching the necessary interactional skills for effective CL engagement in the primary grades can lay the foundation for success in both school and life (Battistich & Watson, 2003).

Johnson and Johnson (1989, 1999, 2009) conducted extensive research based on the premises of social interdependence and its role in the CL teaching strategy. They consider social interdependence a crucial element for the validity and effectiveness of the implementation of CL in the classroom (Johnson & Johnson, 1989, 1999, 2009). Therefore, promotive, oppositional, and no interaction have different effects on the outcomes, which are subsumed within interrelated categories of effort to achieve, quality of relationships and psychological health[45] (see Figure 6).

[45] Psychological health refers to the ability to develop and maintain cooperative relationships. Social capacities motivational orientations build, maintain and appropriately modify interdependent relationships with others to successfully achieve goals (Johnson & Johnson, 1989). People who do not do so often: (1) become depressed, anxious, frustrated, and lonely; (2) tend to feel afraid, helpless, hopeless, and isolated; and (3) become unproductive and ineffective at coping with adversity (Johnson & Johnson, 2008). In the school setting, developing the skills that can help pupils engage in learning and relational skills is vital to helping them become more sensitive and responsive to their classmates (Baines et al., 2015). Conversely, less social support may lead to different short and long-term pupils' psychological consequences in terms of internalizing, depression, anxiety, and self-esteem as significant obstacles to academic success leading to dropout (Johansson, 2019).

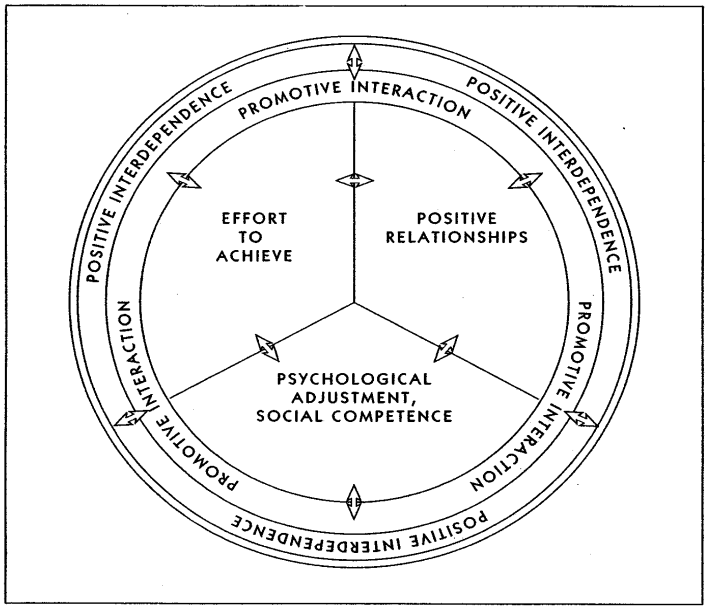

Figure 6. Outcomes of cooperative learning (CL) (Johnson & Johnson, 1989; Cooperation and Competition)

However, the effectiveness of CL outcomes relies on the functioning of groups. One primary reason for the effectiveness of CL is pupil's engagement in learning, which is an essential effort for achieving success in school and life (Boekaerts, 2016; Ferguson-Patrick, 2020). In this regard, for CL to be successful, two core conditions have been pointed out: goal interdependence (e.g. pupils perceive that they can only achieve their goal if others also achieve their own goal) and resource interdependence (e.g. pupils can only achieve their goal if others provide them with the necessary resources) (Johnson et al., 1989). In other words, to cooperate successfully, pupils must also learn to function cooperatively and be willing to cooperate (Gillies, 2004). Therefore, it is crucial to equip pupils with the necessary cooperative skills to facilitate quality interactive work and engagement with each other (Johnson & Johnson, 1990). According to Buchs and Butera (2015), teaching cooperative skills includes the following: (1) helping students understand the importance of learning cooperative skills, (2) defining the skills, (3) facilitating practice, (4) allowing time for group processing, and (5) encouraging continued practice. Johnson and Johnson (1998) identified four levels of cooperative skills for CL group functioning: forming, functioning, formulating, and fermenting skills (as shown in Table 2). The present

study is related to functioning skills associated with interpersonal and small group skills (Johnson & Johnson, 1990, 2009), facilitating helping behaviours and using inclusive language for effective communication and cooperative interactions (Gillies, 2003a, 2003b; Gillies & Ashman, 1996).

Forming skills are targeted towards group organization and norm establishment for appropriate group behaviour.	**Functioning skills** are for managing groups' efforts in task completion and maintenance of effective working relationships amongst group members.
Formulating skills are aimed at developing understanding and reasoning and maximising mastery and retention.	**Fermenting skills** help students to reconceptualise their learning, provide rationale for their conclusions, think divergently, and argue for alternative solutions or decisions.

Table 2: Skills for group functioning (Johnson et al., 1998)

Equally important to building and maintaining cooperative effects is the need to structure five essential elements: positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small group skills, and group processing (Johnson & Johnson, 1999). Research on the outcomes of each of these elements helps identify what teachers need to learn and what support would assist them in sustaining the effective use of CL. Furthermore, reflecting on these elements encourages a critical examination of one's own CL context, which is a crucial step towards improving the educational opportunities for all learners (Baloche & Brody, 2017). By enabling each pupil's opportunity in joint educational activities such as CL, socially responsive skills are necessary for these cooperative encounters, which are underpinned through FtFPI situations. However, Articles 2 and 3 report pupils' insufficient social skills and the practical knowledge about FtFPI that is needed to become responsive co-learners regarding successful inclusive and cooperative behaviours in the classroom context.

2.4 Group context: What makes cooperation work

Some scholars have investigated the various elements that must be present for successful cooperation to take place in heterogenous groups (Deutsch, 1949; Johnson et al., 2013; Lewin, 1948; Slavin, 1995). Studies have shown that the quality of social

interaction influences pupils' engagement through cooperation (Sharan, 2014; Webb, 1982). Social interdependence theorists such as Johnson and Johnson (1989, 1999) asserted that the cooperation and effects of CL are largely dependent on the cohesiveness of the group, whereas motivationalist-oriented researchers such as Slavin (1995, 2015) focused more on the reward or goal structure under which pupils cooperate. Nevertheless, both perspectives are not mutually exclusive, since cooperating for learning together is a complex behaviour. From a motivational theoretical perspective, pupils help their peers because they have an interest in doing so. However, social cohesion theorists emphasise the quality of group interaction based on group preparation activities for CL and group self-evaluation during and after group activities (Battisch et al., 1993; Cohen, 1994). In this vein, Cohen (1994) emphasised that pupils' preparation for skills in the group work process will enhance the chance of experiencing the process of group work itself as highly rewarding. This experience should, in turn, provide successful interpersonal relationships that occur in ways that support their learning.

Consistent with this perspective, Johnson and Johnson's (1999) 'Learning Together' model of CL involves four to five pupils learning in heterogeneous groups. One of the main intentions of this model is to encourage pupils from different academic achievement levels, gender, race, or ethnicity to work together on a common task. Five elements contribute to the success of a cooperative effort, reflecting various stages of progress in successful group interaction (Johnson & Johnson, 1999) (see Table 3). As such, they have been investigated internationally (Gillies, 2016), but, to my knowledge, not in BiH educational context.

Table 3. An overview of the key elements of CL

Key elements	Explanation
Positive interdependence	Teacher set-up of cooperative goal structures to ensure group success when individual goals are met Pupils to develop a sense of 'group' "swim or sink" together
Individual accountability	Each pupil being required to contribute towards achievement of the group goals Having a specific role to fulfil within the task
Face- to- face promotive interaction	Pupils working together/interacting as a group Pupils providing one another with effective help and encouragement
Small group skills	Interpersonal (social) skills training and reflection
Group processing	Pupils analyse and reflect on group functioning as well as task outcomes

The element of FtFPI overlaps with the concept of individual accountability, since they both deal with shared responsivity among group members (Johnson & Johnson, 1999; Van Ryzin et al., 2020). Johnson and Johnson (2009) defined individual accountability as the shared responsibility of conducting one's task to achieve the group's goal. Individual accountability is achieved when individuals perceive the need, participate in their group activities, and share responsibility for the joint outcome (Johnson & Johnson, 1999). Thus, supporting an individual's ability to become a willing, responsive, and responsible co-learner is where the responsive and accountable intersect, precisely what Biesta (2016) states, 'providing opportunities for individuals to come into the world' (p. 28). The FtFPI opportunities of CL may involve pupils as responsive co-learners who 'give and receive help, share their ideas and listen to other pupils' perspectives, and construct new understandings and knowledge' (Gillies 2003a, p. 35). Thus, it becomes clear that this small group socially responsive system may provide ways of connecting individuals rather than separating them (Sharan, 2003), as is not the case in the current BiH whole educational system.

If the relationships of connection in socially supportive ways are not planned and promoted strategically, pupils' learning experiences and outcomes will be ineffective

(Blatchford et al., 2003; Baines et al., 2009). In addition, FtFPI's "will and skill" with key elements of CL must be established for genuine cooperative experiences. The current thesis synthesized findings obtained from Studies 1–3, which analysed the aspects of face-to-face socially responsive resources that pupils provide and need for working together and how they use such resources within FtFPI framings. An integrated understanding of FtFPI by teachers and pupils (see Article 2) provides more opportunities for knowing about co-learning engagement. In the BiH context, thus, we should begin with a mutual understanding of FtFPI in CL as a response to 'what challenges us, or even disturbs, rather than acquiring something one wants to possess' (Biesta, 2016, p. 27). The abovementioned five essential elements influence the process and products of CL, thus providing us with the ability to respond successfully to inclusive opportunities and challenges in CL practice. Furthermore, all of these elements relate in one way or another to a critical component, that is, interaction. In support of a quality interaction, understanding the FtFPI (see Article 1) provides us with 'learning as responding about showing who we are and where we stand' (Biesta, 2016, p. 27) and what to possess. Expanding self-interest to joint interest as a response to equipping us with socially responsive engagement may lead to a successful co-agency (OECD,2019a). For this reason, the FtFPI features (see Article 3) become vital resources for responsive engagement, fostering co-agency for human quality and social values in inclusive education and society.

3 Literature review

To pursue the objectives of the present thesis, this chapter focuses the review around empirical research on co-learning relational aspects and their features necessary to explore pupils' FtFPI within small group work. Articles 1–3 point out several insights discussed in empirical research within the field, particularly regarding engaging pupils in various forms of interaction to encourage each other in performing tasks and achieving the mutual goal. The first article is a literature review that revealed FtFPI factors regarding successful co-learning: interpersonal behaviours, FtFPI experiences and process, communication and support and teachers' role. Furthermore, the present chapter is updated with recent research results from 2018 to date (compared to Article 1, which stops at year 2017).

The understanding of the CL teacher role and co-learners' interactional aspects associated with interpersonal behaviours and communication are central for this review, highlighting some of the needs and challenges that have been documented in the research literature (Buchs et al., 2017; Ghaith, 2018; Gillies, 2014, 2016b; Le et al., 2018; Sharan, 2010, 2014). The review focuses on existing research pointing out that teachers and their diverse roles as facilitators become an important resource for supporting their pupils' interpersonal and communication skills which are needed for pupils' coagency (OECD, 2019a) in preparing them for social life and future work (Johnson & Johnson, 2014; Veldman et al., 2020b). Thus, the review is structured as follows: The literature search strategy (method) and the data analysis part of this review are presented in Section 3.1. The chapter proceeds to international research context (Section 3.2), focusing on the role of teachers in promoting cooperative behaviour and highlights some of the issues raised in this regard. This discussion addresses the existing limitations and needs regarding teachers' diversified skill resources as fundamental support matters for diverse co-learners' interactional needs and will be discussed concerning research questions. The review highlights some critical aspects of interpersonal and communication behaviours that influence the role of co-learners in support needs during FtFPI situations (Section 3.3). This is followed

by a review of relevant studies on CL in BiH is presented (Section 3.4). Lastly, the chapter closes with a summary focused on the thesis' positioning within the existing research, emphasising the overarching research question argued by the thesis.

3.1 Updating the literature for the thesis

This review section is divided into international and BiH contexts, scoping (non)widespread CL classroom practices related to the role of CL teachers in supporting pupils' cooperative behaviours for successful CL processes, thus, the learning engagement of all learners (Baloche & Brody, 2017; Veldman et al., 2020a). The literature review will address needs concerning the role of the teacher in supporting pupils' social relatedness and responsiveness needs during interactional forms of CL (Van Leeuwen et al., 2020). These needs are relevant given that previous research reported an increasing demand for sustained professional development in collaborative ways to enhance proactive and reactive forms of supporting pupils' learning engagement (Jolliffe & Snaith, 2017; Lakkala et al., 2021). In particular, teacher supervision and guidance are needed to regulate CL work inclusively, ensuring positive recognition of every pupil's contribution (Niemi & Vehkakoski, 2023).

3.1.1 Search strategy and results

Updating the literature from the CL research field [46], the data sources of this review comprise empirical research studies associated with the social pedagogical aspects of FtFPI, both with teachers and with pupils. This review is partly integrative, meaning it summarises broad themes in existing research to provide a more comprehensive understanding of a particular phenomenon (Creswell, 2014). The databases were selected to find studies from education and the social sciences. The literature search was conducted in ERIC, SCOPUS, Google Scholar online platform for Taylor and Francis Group content, and Research Gate browser in electronic database MDPI

[46] Systematic searches in public databases were conducted for articles published between 1995 and 2017 (see Article 1) and updated to include up to 2023.

(Multidisciplinary Digital Publishing Institute). A manual search was conducted in relevant journals within CL field and through citation search in each selected journal article, including Educational Studies, Problems of Education in the 21st Century, European Journal of Psychology of Education, and Teachers and Teaching. The Research Gate browser in the electronic database 'Hrcak' was reviewed as well as available journals by domain 'Pedagogy' for the BiH context. 'Face to face interaction', 'peer interaction', 'peer support', 'teacher support', 'peer cooperation', 'teacher cooperation', and 'small groups' were used as terms in CL with four inclusion criteria for selecting studies as follows: (a) empirical peer-reviewed articles, (b) studies that targeted findings of the co-learning process and socio-relational aspects influencing these processes, and (c) studies that identified the process of interaction among co-learners and teachers concerning the ways of support. The related search terms were combined by utilising the term OR as well as the term AND. Research conducted in English was selected, including those in the Bosnian language within the BiH research context.[47]

An initial 154 studies were found using the search strings together. The abstracts were reviewed to rule out those that did not meet the inclusion criteria. This resulted in 34 eligible studies. Of the 34 studies found, 12 were duplicates leaving 22 studies. After a refined reading, 18 eligible articles remained; the other four studies mentioned the presence of a teacher but did not specify teacher guidance on interpersonal or relational aspects, or they did not conclude the role of the teacher during pupils' promotive interaction. The author then conducted a manual search, for example, by examining reference lists and finding 17 articles that were included in the review. In total, 35 articles were chosen as relevant to the review.

[47] Papers published in English, Bosnian, Croatian, Serbian were reviewed which include BiH educational context. The literature search recognises that CL research is in an expansion in the Balkan context. However, to the best of my knowledge, there is a lack of research within the primary school level in the BiH context.

After iterative reading and getting an overview of selected studies, the author structured the studies' results into a feature map (Hart, 2001) that organised results for the discussion in terms of FtFPI aspects associated with interpersonal behaviours and communication, but through the role of the teacher within FtFPI of CL classroom context. The results of the selected studies were organised into the following themes: (a) the teacher's role in promotive interaction: International research (Section 3.2), (b) research on interpersonal and communication resources (Section 3.3) and (c) research on CL in BiH context (Section 3.4).

In the following section, the discussion refers to the teacher's role in promotive interaction from an international perspective. Interpersonal and communication pedagogical aspects are presented, with a particular focus on the teachers' CL practices. This is followed by a discussion of the research gaps in CL, specifically in the BiH context. Final comments on the reviewed studies are provided with a focus on the current thesis positioned within the literature.

3.2 The teacher's role in promotive interaction: International research

'The teacher assumes a relevant role in that he or she is a promoter of activities that encourages participation and offers affective quality [48] in interactions and social relationships within educational context' (Varela et al., 2020, p. 18). This practice is associated with teachers' core responsibility and ability to promote the development of the high quality of pupils' supportive interaction, on which the effectiveness of co-

[48] Affective quality is the ability to cause a change in core affect known as mood, emotion, feelings (Russell, 2003), linking teacher support to pupil engagement and achievement (Klem & Connell, 2004). According to Baines et al. (2009), socio-emotional qualities are crucial to provide teachers having a set of strategic practices to encourage a positive ethos to improve the quality of group work by encouraging others to participate or giving positive feedback.

learning depends (Webb, 1982, 2009), while social competencies of interpersonal and communication skills are essential interactional tools (Stan, 2016).

Based on international research, this section mainly focused on the implementation of CL in terms of the teacher's new skills, such as taking on the role of facilitator for supporting pupils' co-learning process derived from FtFPI towards achieving co-learning goals (Ferguson-Patrick, 2018; Jolliffe, 2015; Kaendler et al., 2015; Sharan, 2014). Given that CL has been shown to enhance pupils' engagement, pro-social behaviours and academic achievement in prior research (Kyndt et al., 2014; Roseth et al., 2008), Van Ryzin et al., (2020) argued that CL should be a central component of teacher training and professional development in supporting teachers' mediation skills. Developing a relational pedagogical skill to foster positive social, emotional, and academic development and life success for all children is the main reason for promoting relational competence in pre- and in-service teachers (Aspelin, 2019; Reeves & Le Mare, 2017).

Some studies have, however, summarised the paradox between the pedagogical value of CL and the teachers' problems of putting it into practice reality, regardless of the geographical or cultural context (Hennessey & Dionigi, 2013; Sharan, 2010). One of the reasons for problematic practice is the lack of sustained professional development for teachers (Jollife & Snaith, 2017). Training teachers and sustained support to overcome this gap are in the conceptual bases of CL and developing the new transformational (non-transmitting) role of teachers in practice (Duran et al., 2017). Notably, teachers need knowledge of CL features and how these features function in changing the position of the teacher from the expert lecturer to those who act as facilitator support and accompany the process to develop pupils' co-learning experience (Volkova et al., 2020). In other words, teachers themselves become co-learners in their classrooms, engaged in the role of facilitator and modelling socially responsive practices for their pupils.

In the discourse of the teacher's role in CL implementation, the attention is pointed to the forming and functioning skills (see Section 2.3, p. 50) that promote pupils'social

competance and pro-social behaviours in the classroom when designing CL group work (Carrasco et al., 2018; Klang et al., 2020; Niemi & Vehkakoski, 2023; Pang et al., 2018). Promoting social competence in the early years is crucial to pupils' ability to cope with promotive interactions in co-learning both with peers and with their teachers (Stan, 2016; Veldman et al., 2020a). However, Le et al. (2018) found that the intense focus of teachers on the cognitive aspects of CL aiming to achieve academic learning may neglect the importance of social interaction during CL work. Previous research supports this view, pointing out that pupils are rarely trained in social interactions for successful group work (Galton & Hargreaves, 2009; Kutnick et al., 2008). Besides, Veldman et al.'s (2020a) and Ferguson- Patrick's (2018) studies document the importance of teachers' role in supporting cooperative behaviours among the young age group of pupils. In that way, paying more attention to the cooperative process teachers may properly structure CL to help those pupils who need support (Jakavonytė-Staškuvienė, 2021).

Letina and Vasilj (2021) argued that teachers who encourage pupils and provide them with appropriate support during the learning process give them more autonomous behaviour opportunities than teachers who focus on performance and testing outcomes. Teachers should organise the learning process and support pupils in learning from each other, showing their transformative role in CL (Duran et al., 2017). Encouraging prosocial behaviour by being a good role model, teachers demonstrate their ability to manage their own social and emotional competencies, seen as critical to establishing an engaging classroom environment (Main, 2018). Furthermore, Rautanen et al. (2020) explored the dynamics of fourth graders' perceived social support contributing to their study learning engagement. The authors documented that teachers' socio-emotional support enhanced the pupils' peer support for schoolwork and further enhanced study engagement, constructing a socially supportive learning environment. The findings also show that the teachers' work experience, social competence, and working conditions, such as social support from colleagues and general workload, might impact the social support that teachers provide to their pupils.

3.2.1 CL knowledge and facilitating skills-fundamentally matters of support

Previous research reveals teachers' limited knowledge of CL, a lack of conceptual understanding of five principles to work cooperation effectively, and a lack of support in teacher education and other school supports (Hennessey & Dionigi, 2013; Karmina et al., 2018). Consequently, the levels of CL implementation differ significantly between teachers (Jakavonytė-Staškuvienė,2021; Jolliffe & Snaith, 2017).

Veldman et al. (2020b) argued that high-performing CL teachers differ from low-performing CL teachers in how they explicitly teach pupils the required cooperative behaviours and noticeably in modelling these behaviours. In this regard, low-performing CL teachers struggle more with pupils' positive behaviour to provide an active role in supporting and guiding pupils to make CL effective. By contrast, high-performing CL teachers experience more positive changes in pupils' social and academic outcomes. All these issues relate to a range of issues that Gillies and Boyle (2011) highlighted when teachers implement CL group work, particularly the types of social behaviours expected from the pupils (i.e. standards of performance and the specific interpersonal and small-group skills required).[49] Aspelin (2019) described such relational competence as teachers' skills for social and affective engagement of pupils in social interaction, emotional communication, dialogue, personal connection.

Many researchers have investigated how teachers' modelling and facilitating skills promote pupils' dialogic interaction and their co-regulation processes, depending on how they are socially and affectively engaged in joint cognitive activity (Gillies, 2020; Lehraus & Marcoux, 2018; Zhang, 2021). With regard to the social dimensions of colearning, in particular, social engagement focuses on how interactive and supportive a colearner is during a language-related discussion. The findings of Zhang's

[49]This is in line with what Kaendler et al. (2015) described as how a teacher can foster pupil interaction in CL settings in three different phases (pre-, inter-, and post-active phase).

study (2021) illustrated that social engagement plays a role in generating, maintaining, or impeding pupils' cognitive attention to the language used to develop a collaborative writing activity. For this reason, teachers' monitoring skills of pupils' social and affective engagement during writing activities are crucial in intervening appropriately and supporting pupils in overcoming socio-emotional struggles. Similarly, Lehraus and Marcoux's study (2018) on cooperative writing during second graders' peer interactions (age 7–8 years) calls for teachers' careful observation to scaffold colearners' ability to co-regulate peer learning.

Furthermore, teacher socio-relational competencies in guidance for CL group work include modelling, praising the successful interactive process, and applying social engagement among pupils (Letina & Vasilj, 2021). Earlier research highlighted the importance of teacher's facilitation during promotive interaction in group work to affect the quality of interactions and communication among colearners (Gillies, 2016a; Gillies, 2016b; Gillies & Boyle, 2005). Thus, teachers need to teach their pupils to become supportive co-learners by instructing and modelling them the required interpersonal and group skills so that they need guidance and support (Veldman et al., 2020a). In that regard, teachers have an essential role in engaging pupils to become open and responsive to diversity in the classroom (Buchs & Maradan, 2021; Civitillo et al., 2019; Klang et al., 2020; Main, 2018). Ensuring pupils' social engagement in the CL and connecting with others in proactive ways requires teachers to support pupils in those collaborative ways (Lakkala et al., 2021). Specifically, the teacher's instruction to all pupils is vital to creating an inclusive learning environment with equal rights to participate and contribute (Niemi & Vehkakoski, 2023.).

3.2.2 Diversified CL teachers' skill resources for classroom diversity

The CL teachers need diversified prosocial behaviours to facilitate pupils' prosocial engagement in diverse classrooms (Carrasco et al.,2018; Main, 2018; Sharan, 2014). In addition, the degree of homogeneity and heterogeneity in schools determines the degree to which pupils' and teachers' classroom diverse interactions develop and the socialisation of pupils with diversity (Gabaldón-Estevan, 2020). In this regard, some

groups work together more successfully than others, although these differences could depend on how pupils' basic socio-psychological needs are supported during CL work (Van Leeuwen et al., 2020). CL is perceived as a resource of heterogeneity for learning and socialisation, not as a problem. CL teachers have the opportunity to foster equity, engagement and supportive relationships among all pupils regarding heterogeneous social, educational and family backgrounds (Buchs & Maradan, 2021; Ferguson-Patrick, 2020; Oortwijn et al., 2008). However, teachers need a vast array of knowledge and skills that support pupils being open to others and diversity, which implies recognition, positive acceptance, and equality (Buchs & Maradan, 2021). For these inclusive processes to occur, the teacher's choice of support must be specified to the group. For example, what the teacher says and does may influence pupils' interaction and responsive processes within the group work (Van Leeuwen & Janssen, 2019). Balancing authority and avoiding traditional authoritative roles are other examples of promoting interaction as part of inclusive processes (Forslund-Frykedal & Hammar-Chiriac, 2018). The great importance also plays to repeatedly modelling good interaction skills (Veldman et al., 2020b).

In line with the multiply ability treatment of pupil's status issues for promoting equity in diverse classrooms (Cohen & Lotan, 2014), Buchs and Maradan (2021) offered teachers multiple-skill activities. They enable all pupils to use their resources in the heritage language and to value their cultural referents within CL classroom activities. According to Ferguson-Patrick (2020), such culturally responsive CL activities develop engaging relationships with a commitment to social responsibility and concern for those exposed to the elements of social, economic, and educational disadvantages. The results from studies by Cañabate et al. (2021) show that pupils' social commitment, experience and positive interdependence based on a set of promotive interaction competencies[50] produced with CL dimensions can enhance a sustainable

[50] For the list of 42 pedagogical principles for pupils' co-development, with a receptive, promotive, interaction-based and reflective interaction, both between peers and between pupils and teachers, please see (Cañabate et al., 2021, p. 12)

climate for supportive peer interaction. Focusing on FtFPI principles, the findings also show that the teacher's ability to co-create open and inclusive communication between peers to regulate relational feedback allows co-learners to promote a sustainable cooperation process that operates under the tenet of 'leave-no-one-behind' (Cañabate et al., 2021). When teachers model these ways of communicating, pupils, in turn, learn how to share with each other's support (Quebec-Fuentes, 2013; Veldman et al., 2020a) and to engage with others' ideas to advance learning (Gillies, 2016b). To support this practice, teachers should monitor the respect and attention the pupils pay each other in their communication to promote socio-behavioural skills as one of the central aspects influencing the quality of learning and pupils' interactions (Gedamu & Shewangizaw, 2020; Le et al., 2018).

However, empirical research has shown teachers' insufficient monitoring of pupils' contributions in CL groups, lacking ways to encourage every pupil's participation to move the group's work (Kaendler et al., 2015; Liebech-Lien, 2020; Webb et al., 2021). This finding concurs with those of Le et al. (2018) and Gedamu and Shewangizaw (2020), who pointed out that those teachers (a) used an informal assessment of monitoring by going around and observing pupils' interactions on the tasks, (b) paid little or no attention to the assessment of group process and individual contributions to the group work, and (c) had less involvement of pupils in the group assessment. Furthermore, Sutherland et al., (2019) found that group processing is often neglected because of a lack of time, and Liebech-Lien's study (2020) pointed out that pupils discussed their cooperation only superficially. By contrast, supporting teachers to incorporate and maintain continuity of group processing enables diverse pupils to gain the benefits of reflecting together for learning together to satisfy their need for self-worth and belonging (Ferguson-Patrick, 2020; Liebech-Lien, 2020).Thus, these research findings indicate that both pupils' engagement and success in co-learning have to be tackled on the practicability of the FtFPI through teachers' preparation and teachers' co-learning for pupils' learning (Jolliffe, 2015; Liebech-Lien, 2020). However, research indicates teachers need skills to facilitate an effective group-processing

session and support pupils' diverse psychological needs during naturally occurring forms of CL (Sutherland et al., 2019; Van Leeuwen et al., 2020).

In support of diversified CL teachers' skill resources, collaborative teachers and school culture are vital, although teachers' collaboration and support may be limited, making sustained CL teachers' professional development difficult (Buchs et al., 2017; Lakkala et al., 2021; Rautanen et al., 2020).

3.2.3 Teachers' preparation and professional development issues

Empirical research in CL educational settings has shown that, more than ever, interpersonal skills for fostering need-supportive interactions between group members for academic success and class diversity require sustained and collaborative support through teachers' active professional development (Buchs & Maradan, 2021; Ghaith, 2018; Karmina et al., 2021; Lakkala et al., 2021; Van Leeuwen et al., 2020; Liebech-Lien, 2020; Jolliffe & Snaith, 2017). Based on the results of study differences between high- and low-performing primary school teachers in their implementation of CL, Veldman et al. (2020b) concluded that these teachers differed in how they experienced the effects of CL on pupils' outcomes, both cognitively and behavioural. The teachers also differed in how they prepared pupils for the required cooperative behaviours, leading to different experiences of teachers and, thus, in modelling these behaviours. In other words, teachers with limited knowledge of CL found pupils' behaviour especially difficult to support; however, teachers who had a detailed understanding of it can use different ways to guide their pupils' cooperative behaviour (Hennessey & Dionigi, 2013).

In a descriptive study about teachers' experience concerning CL implementation, Abramczyk and Jurkowski (2020) reported that teachers found CL as effective for providing pupils with individualised support for their learning processes. The teachers in the study were interested in using CL in class more often and in receiving practical types of support. Despite this interest, the findings indicate that teachers found it challenging to allocate time and make an effort to prepare lessons with CL and to

prepare pupils for cooperation. Buchs et al. (2017) found similar results in their teachers' reports. Thus, Abramczyk and Jurkowski (2020) suggested that getting teachers together in teams to plan lessons and receive feedback from their colleagues focusing on pupils' behaviours and learning may support the positive effects of CL. However, their findings showed that teachers did not favour being observed or receiving feedback from colleagues.

Supporting teachers to work in teams has become increasingly essential to allow teachers to work together as a professional development that supports teaching changes and enhances pupils' CL (Baloche & Brody, 2017; Liebech-Lien, 2020). In an empirical study, Liebech-Lien (2021) explored the value of teacher team collaboration in learning support and engagement in a community of practice with CL, as the team plans, explores, and experiments with CL together, becoming a pedagogical resource for each other. Abramczyk and Jurkowski (2020) considered that teacher education programmes need to understand the challenges of CL and develop approaches that address teachers' practical knowledge towards CL. This aligns with what Cohen et al. (2004) emphasised as going beyond learning about CL to learning through CL in the 'coordination between what the interns see and do at the university and what they see and do in actual classrooms' (p.10). Although CL teachers may promote an inclusive educational environment and school transformation (Muñoz-Martínez et al., 2020), teacher educators avoid using CL (Chakyarkandiyil & Prakasha, 2023).

Providing opportunities for student teachers to study and experience CL themselves may help them build a positive sense of self-efficacy as a teacher in using CL and in leading and engaging others (Jolliffe & Snaith, 2017). Thus, allowing student teachers to observe and practise CL from the first placement in a school, in contrast to those who lack the opportunity to experience it in schools, may have an impact on further development of their CL understanding and skills. Research has indicated that continuity and sustainability in student teachers' and schoolteachers' training, monitoring and ongoing support lead to effective CL, notably facilitating pupils' engagement to take ownership in their co-learning and equipping them socio-

relationally (Colomer et al., 2021; Hennessey & Dionigi, 2013; Karmina et al., 2021). Keramati and Gillies' (2022) experimental study showed that teaching CL improves the quality of co-learning and life skills in both the personal and social dimensions of student teachers, facilitating them in how to apply CL in their classroom. Besides, first-year teacher students believe that CL group work provides developing cooperation, listening skills, preparation for their profession, mutual support, social connection and efficiency (Bächtold et al., 2023).

Considering engaging others who have experienced societal challenges, the CL social capacity allows teachers and their students to facilitate the complexity of relationships between individuals and make sustainable cooperative behaviour a habitual practice (Colomer et al., 2021). However, Colomer et al. (2021) emphasised that simply reinforcing the appropriate behaviour of students during CL in the classroom environment is not enough. Accordingly, the practice of CL for sustaining development at the institutional level must be placed within the culture of the organisational perspectives. Thus, the authors called for future consideration to include organisational culture framework of the implementation of CL elements to foster cooperative relations with other stakeholders in the pursuit of quality in education.

In this view, sustainable preparation should be associated with competencies and abilities that will allow preservice teachers to promote relational aspects, with a critical and reflective sense of the cultural, social, economic, and environmental implications (Cañabate et al., 2021). Experiencing CL among university students predisposes them to using it in their future classrooms, perceiving themselves as more self-efficient and with more skills for achieving success by considering the characteristics of context, their pupils, the classroom, and the support (Bächtold et al., 2023; Duran et al., 2017). For instance, Leite, Go, and Havu-Nuutinen (2020) used in their study of the exploratory framework 'Teachers learn by interacting' to support teachers' learning to build positive relationships with pupils. They found the following concrete strategies for a deep pedagogical understanding of the individual in the co-learning process: (1) peer mentoring for challenging situations, (2) role-playing verbal

and non-verbal responses to pupils' behaviour, and (3) personal history telling. The study reported that these skills are relevant for sustaining affective and effective pupil learning and engaging teacher learning on their pupils' individualised developmental paths.

Ultimately, providing schoolteachers with close mentoring and follow-up within continuous professional development on CL will lead to high-quality CL practice (Karmina et al., 2021). In addition, for this to occur, teachers themselves need to become cooperative colleagues in a learning community, particularly with those who develop supportive networks, trust, and relationships (Jolliffe, 2015). Furthermore, facilitators' enthusiasm, expertise and mutual support are vital interpersonal resources in teachers' professional development (Buchs et al., 2017; Jolliffe, 2015).

3.3 Research on interpersonal and communication resources

This section discusses two FtFPI factors of CL associated with interpersonal behaviour and supportive communication (see Article 1) that might influence the role of the teacher in pupils' FtFPI situations. Subresearch Questions 2 (regarding perspectives on FtFPI in CL) and 3 (regarding supportive/interfering features of FtFPI in practice) address interpersonal and communication factors that reveal what (non)support pupils' active engagement during peer group interaction. Furthermore, supporting pupils' basic socio-psychological needs associated with these two FtFPI aspects may differ, influencing differences among groups of pupils who work together more or less successfully (Van Leeuwen et al., 2020). By reviewing relevant studies, some challenges and differences will be pointed out and findings that can support the mediating role of the teachers during FtFPI among pupils will be highlighted. In what follows, studies in the two sub-sections tie in with the sociocultural resources in social mediation associated with pupils' co-learning process and the mediating role of teachers (Kozulin, 2003; Moll, 2014).

3.3.1 Interpersonal socio-relational dimensions

The previous research literature generally points to the social-relational aspects that affect co-learning supportive relationships, such as friendship, likeability (Johnson & Johnson, 2003; Slavin & Cooper, 1999) and popularity (Oortwijn et al., 2008). As pupils' basic psychological needs, the sense of trust and satisfaction may enhance the need for relatedness between pupils influencing supportive relations (Van Leeuwen et al., 2020). In pursuing social values-related behaviours to help and cooperate, Carrasco et al.'s (2018) intervention study has shown that working in CL groups effectively promotes both interpersonal and intrapersonal competence in lower primary pupils. These pupils exhibited a significant increase in prosocial and adaptive behaviours while simultaneously reducing maladaptation, as reported by teachers and parents.

However, differences between high- and low-performing CL primary school teachers in teaching pupils the needed interpersonal behaviours influence their pupils' cooperation (Veldman et al., 2020b). Thus, interpersonal competence as a scaffolding mechanism in cooperative situations that affect pupils' and teachers' abilities to provide relevant interpersonal support at a micro-level should be explored further (Rautanen et al., 2020). Han and Son (2020) found a significant relationship between co-learning and interpersonal competence in terms of personality characteristics[51] and participation in CL activities. This study reported that pupils became more assertive, active, and expressive after the CL sessions, leading to the pupils' higher satisfaction with the class. Interestingly, Van Leeuwen et al. (2020) found that teacher presence was not associated with either the satisfaction of students' needs nor with performance in comparing cooperative groups guided by a teacher to groups that had

[51]According to Goldberg (1990), individuals' personality has been organized into five basic dimensions (extraversion (i.e. sociable, active), neuroticism (i.e. anxious, pessimistic), openness to experience (i.e. imaginative, curious), agreeableness (i.e. empathic, compassionate), and conscientiousness (i.e. organized, hard-working). Understanding these individuals' personalities might be connected to three psychological processes (Deutsch, 1949) inherent in cooperation and essential for FtFPI practices created by positive interdependence (see Section 2.3).

no teacher's presence. The results were in contrast to Van Leeuwen and Janssens's (2019) study, which suggests that the presence of a teacher during CL would enhance pupils' need for satisfaction, thereby stimulating pupils' performance. However, Van Leeuwen et al. (2020) offered the reasons for their surprising findings. Groups without a teacher become resources for each other's psychological needs for autonomy, competence, and relatedness. Considering that the degree of support offered in both groups was similar, the authors explained that having one or more group members take on a teacher-like role is one of the reasons why teacher presence did not affect pupils' experienced need for satisfaction.

Furthermore, Webb et al. (2021) explored how pupils interacted with each other to CL solve problems when their teacher was not driving the interaction. Their study highlighted the importance of teachers monitoring group work and whether the teacher manages to look beyond surface features to attend to the substance of pupils' participation, for example, whether pupils ask each other questions or make suggestions and create openings for others to participate in CL work. In addition, enhancing pupils' interpersonal relations through experiential skill-building in learning groups can contribute to a more profound understanding of each other's cognitive and emotional states, as argued by Van Ryzin and Roseth (2019). They suggested that pupils' empathy can be enhanced, not through applying a specific curriculum but rather through a series of positive group-based learning experiences, combined with an explicit focus on developing CL group skills.

Exposing pupils to diverse group-based CL practices focusing on indicators of democracy, in two case schools from England and Sweden, Ferguson-Patrick (2020) showed that tolerance, respect and concern for one another are essential aspects of building supportive relatedness. Such supportive relationships allow pupils to enjoy engaging in co-learning experiences based on proactive social skills. These findings show how a teacher shapes pupils' experience in developing democracy in action, further influencing them to become good decision-makers about learning, leading to their high self-esteem. Moreover, in a causal-comparative study, Modaber and Far

(2017) showed that pupils' self-esteem was enhanced by the teachers who used cooperative interaction. The findings also showed that the trained and untrained groups of pupils through CL differed significantly in academic achievement. In another empirical study of constructing cooperative interactions during dyadic mathematical problem solving around authority, Langer-Osuna (2016) showed that pupils develop multiple authority relationships that impact their co-learning process. Their findings emphasise that a relationship of power among peers can derail participation and support in group work[52]. Yet, when the teachers support their pupils in learning to share authority, Langer-Osuna's (2020) study of fourth-grade pupils in a mathematics classroom found that they shared social and intellectual authority with one another. However, these interactional aspects were closely related to communicating, particularly in dialogic modelling and with each other's engagement (Gillies, 2016b, 2020; Quebec-Fuentes, 2013).

3.3.2 Supportive communication

There is an overlap between this section and the previous given that the many research results associated with CL classroom practices, interpersonal behaviour, and communication focus on pupils' work during FtFPI situations. However, the main focus of this section is on communications skills in use as a central feature associated with the teacher's role in facilitating pupil interaction through cooperative verbal and nonverbal behaviours (Baines et al., 2003, 2008; Gillies, 2003a, 2004, 2006, 2008; Webb, 2009). In particular, CL communication skills are associated with inducibility by bringing about more supportive peer relations, defined as openness to influence and being influenced by others (Deutsch, 1949), which is the focal point of subresearch Question 3.

[52] Pupils with the highest academic and social status levels have the highest levels of engagement in CL work, whereby controlling group sessions, and those who are least engaged tend to have lower academic and social status behaving passively (Cohen & Lotan,1995; Mulryan, 1992, 1994).

According to Buchs and Maradan (2021), a four-stage programme[53] that includes high socio-linguistic diversity is proposed as a resource for teachers to influence pupils' engagement, sense of belonging to the class and feeling of relatedness. Providing a supportive psychosocial intervention that meets the needs of all pupils by integrating all pupils' heritage languages in cooperative activities in one 4th grade class, the teacher's multiple skill activities attributed competence to low-status pupils while avoiding categorising them. However, the study highlighted that teachers' communication skills in listening and observing pupils working together are critical to supporting and directing small groups and individual pupils.

In another CL socio-pedagogical intervention study, Contreras León and Chapetón Castro (2016) focused on CL principles during English classes, allowing balanced relationships among pupils. Considering dialogue, cooperation, and reflection, the findings showed that it is possible to foster communicative skills to encourage personal growth and social awareness among pupils using language as a social practice. Astuti and Barratt (2021) further argued that CL's peer interaction in heterogeneous groups provides English learners with opportunities for FtFPI support to attain communicative and individual accountability competence, which later helps them to perform better in their English ability. Viewing English learning and fostering communicative competencies as not only relational but also socially processual is, according to Contreras León and Chapetón Castro (2016), central for changes within pupils' social disadvantage reality. The author suggested that by incorporating EFL syllabus contents with the pupils' realities, teachers may help them understand and reflect upon those realities and become active agents who can contribute to the transformations of their social contexts.

[53] The authors emphasised the following four cooperative activities that teachers engaged in: (1) activities devoted to openness to others, (2) activities devoted to linguistic diversity, (3) activities devoted to cultural diversity, and (4) activities relying on heritage languages and personal family stories.

However, knowing about culturally diverse pupils' reality might help teachers learn how to respond to diversity and difference and foster civic and social engagement to develop social and personal competences to enhance a democratic school culture. For these reasons in the north of England and Swedish primary school, Ferguson Patrick (2020) demonstrated the importance of linking the dialogic teaching democratic culture of communication with social and academic outcomes. Furthermore, a CL teacher creates opportunities for democratic dialogue while building a climate of trust, a willingness to listen, and a willingness to express thoughts among a diverse group of pupils, which are critical components in inclusive social behaviours. This point is increasingly important due to the many societal issues we face every day that need global and local responses to equity, inclusion, and racial justice.

To respond to classroom differences and reduce inequalities, Cañabate et al. (2021) investigated the CL dimensions to produce a set of principles that support more viable CL schoolteachers' practice cooperation for equity and inclusivity issues in pre-school and primary education classrooms. A total of 376 pre-service teachers and 43 qualified teachers were asked to analyse the CL instruction they gave to 1658 pre-school and primary students with an immigrant background (ranging from 30% to 100%) over two consecutive years in Spain. The findings show that schoolteachers' practice must promote realistic situations for the pupils' development of the challenges with a responsive, dialogue-based and reflective interaction that can effectively internalise pro-social values. In particular, the authors pointed out that pro-social communication during the reflective group process can identify one's own and one's peers' perspectives despite differences. This process, as the findings indicate, influences the ability to take supportive action in cooperative groups, seen as sustainable competencies. The authors highlighted the importance of sharing pre-service teachers' experiences with social challenges through dialogues, which influences future teachers' interpersonal and communication skills.

Nevertheless, the formation of communicative skills is emphasised as a critical issue regarding initial teacher education and their positioning as future teachers (Volkova

et al., 2020). Volkova et al., (2020) argued that studying and implementing CL into the educational process of 292 student teachers involved in an experimental study in Ukraina influenced their communicative competence as an indicator of the professional activity quality that promoted personal and professional development. More specifically, the findings show that CL enhances socialisation and the formation of communicative skills. Further, linguistic, interactive, moral, and ethical skills influenced the development of the student teachers' emotional and value attitude towards future professional activity. In addition, the traditional university forms of the lecture were significantly enriched by the use of CL methods (Volkova et al., 2020).

With an understanding of pre-service teachers' and schoolteachers' challenges and needs in shifting away from traditional teaching forms to student-centred pedagogies, the contexts might significantly influence the implementation of CL (Ghaith, 2018; Karmina et al., 2021). Furthermore, previous research indicates that pupils are often in educational situations that do not facilitate cooperation with peers and are influenced by teacher-related and context-specific factors that impact CL as a challenging practice (Ghaith, 2018; Hennessey & Dionigi, 2013; Jollife, 2015; Liebech-Lien, 2020). For this reason, the next section will circumscribe CL research within the BiH context, a complex educational context, but which stresses the necessity of shifting away from traditional teaching forms to student-centred pedagogies (see Section 1.4).

3.4 Research on CL in BiH context

In the BiH context of primary school teaching and learning still dominating traditional instruction (Brankovic et al., 2016; Dizdarevic, 2012; Šejtanić & Ilić, 2016; Šejtanić, & Džafić, 2017), CL practice is not as commonplace as in countries with a rich research body such as the United States, United Kingdom, and Australia. Despite the modest amount of research in BiH associated with teachers' perspectives on a student-centred methodology, the following research findings show that teachers face diverse challenges regarding their transformative role of teaching and learning.

Skomorac-Pezer and Rustempašić' s (2020) study examining the attitudes of 100 primary school teachers from Sarajevo Canton indicates teachers' familiarity with the benefits of student-centred methods such as problem-based learning. However, the findings found that working conditions, support, and expertise to achieve quality are missing. Thus, the authors underline the need for diverse resources in pupils' quality engagement and quality teaching. In support of this, the results of Simić and Krstić's (2017) qualitative study on school factors related to dropout show that the quality of teaching, engagement in learning and development, and pupils-teacher relationships have the most significant influence on pupils' carry out (see Section 1.1.2).

Although these studies did not come from the CL approach, their results show the importance of communication and interaction between pupils and teachers as crucial factors in quality teaching, engagement, and learning (Šejtanić, & Džafić, 2017) and teacher's style of pupils' encouragement in the process of learning (Perućica, 2018)[54]. Since the latter focuses on the teacher's role and influences, the study emphasised the need for teachers to encourage and provide all pupils to achieve success through developing an experience of effort and success that leads to progress. These issues are reflected in subresearch Questions 2 and 3, which examine how teachers and pupils experienced encouragement, support, and praise through co-learning efforts associated with the FtFPI of CL using qualitative and quantitative methods.

BiH has a small field of research on CL. The studies, mainly based on survey methods, show that teachers and pupils prefer co-learning activities in the classroom to the traditional classes, believing that CL leads to better learning results and pupils' knowledge lasts longer (Burgic et al., 2017; Dzaferagic-Franca & Tomic, 2012; Terzic, 2012). Similar results were also found when Resic et al. (2016) used surveys to check pupils' reactions to CL in mathematics work in three elementary schools with 127

[54] According to Hertz-Lazarowitz and Shachar (1990), teachers' verbal behaviours during group learning are vital for teachers to become more supportive and personal with concrete encouraging and facilitating words, pertinent and targeted feedback, and praise.

pupils in 4 sixth grade classes. The findings revealed that more than half of the respondents (61.40%) indicated that working together helped them better understand tasks. The findings indicate that most respondents sought for an explanation of part of the problem. In particular, 48% of the respondents requested help from a peer in the group, 4.70% did not, and 27.60% mainly sought help from other groups. Despite research and evidence about the need for support among groupmates, the study neither provides insights into ways of cooperation, particularly helping with issues, nor clarifies the teacher's role in guiding this CL work.

To the best of my knowledge, there are no qualitative studies focusing on the pupils' FtFPI engagement or relational resources associated with interpersonal behaviour and communication in a small CL group context in BiH primary school classrooms. Only one master's thesis has been entirely dedicated to CL primary school classrooms in 4th and 8th grade in BiH (N = 44 pupils). Dzemidzic (2007) investigated the pupils' personal experiences with eight aspects of CL that emphasise the role of social interaction and mediation in perceiving themselves as members of cooperative groups and their interactions with others during cooperation. A qualitative study (with a minor quantitative component) revealed that the CL approach enables a considerably efficient teaching and learning process for pupils with different levels of mastery based on the support and mediation of classmates. The study has showed that pupils understood that CL is essential for all pupils with different learning backgrounds, specifically benefiting from social-emotional interactions mediating their learning and communication. However, the findings indicated that teachers lack sufficient knowledge of CL organisational skills. For further research, the study suggested a method of observation that explores understanding several aspects indicated as dislikes, such as non-communicative skills and self-oriented pupils. Despite the recognition that the limiting factors teachers face with CL implementation are the time for preparation, organisation, and schoolwork conditions (Burgic et al., 2017), existing data indicate that teachers get insufficient professional development and support (Rangelov-Jusovic, 2014; Resic et al., 2016). These are some of the

possible reasons for the indicated low representation of co-learning in BiH primary schools and teachers' initial failures.

In the context of teacher education, university teaching is marked by cooperative, interactive instruction, positioning students and teachers as a partnership within the current reform of high education and considering the Bologna Declaration (Čirić, 2016). Using the descriptive-analytical method on 22 extracted published articles and two master's theses, Čirić (2016) concluded that the advancement of pedagogical and didactic-methodological competencies of university lecturers is imperative in reaching a high-quality education. In support of this fact, research results obtained from 225 students negatively evaluated the quality of the planning and organisation of university teaching and the quality of communication and interaction between students and teachers (Nurikic, 2014).

Overall, this evidence seems relevant to more attention to CL aspects, particularly FtFPI aspects in both teachers' initial and in-service education, which might support teachers' facilitating role and the quality of CL teachers. Furthermore, unaddressed hypothetical questions concern what should happen in BiH classrooms if primary pupils get more opportunities to learn about FtFPI-related situations within CL and if their teachers are provided with continuous professional development on the CL. Put another way, CL processes within schools may give rise to social engagement within FtFPI in which interpersonal and communication resources are manifest, notably, the socially responsive classroom co-agency (OECD,2019a). Nonetheless, more opportunities for CL implementation and support for teachers are needed. As the modest amount of research on BiH indicates, it is currently low. This thesis contributes to a deeper understanding of these FtFPI processes of CL towards quality education and social inclusion in BiH primary schools.

3.5 Brief summary

In line with the overarching research question of how pupils' and teachers' experiences with FtFPI can provide socially responsive resources for co-learning

education, the review in this chapter supports the findings of Article 1 that understanding of intertwined factors of FtFPI is needed for socially inclusive classrooms. In this vein, the reviewed international research emphasises experiential skill building through the varying socio-related ways to strengthen FtFPI engagement in inclusive processes as the resources for the co-learning education. In this regard, the review provides a solid foundation of interpersonal and communication resources for pupils' FtFPI engagement, such as socially responsive needs concerning trust and recognition, positive acceptance, satisfaction, equality (Buchs & Maradan, 2021; Van Leeuwen et al., 2020), sharing and balancing social and intellectual authority (Forslund Frykedal & Hammar Chiriac, 2018; Langer-Osuna, 2016). Furthermore, engaging resources include sustainability, commitment to social awareness, personal growth (Cañabate et al., 2021; Contreras León & Chapetón Castro, 2016; Modaber & Far, 2017), a democratic dialogue (Ferguson-Patrick, 2020), and group processing on prosocial behaviour (Gedamu & Shewangizaw, 2020; Le et al., 2018). Developing these competencies is related to teachers' capacity to facilitate, model, and monitor pupils in taking ownership of quality FtFPI in co-learning. However, the review chapter indicates a gap in teacher professional development and support for sustained CL implementation, particularly as a critical issue regarding initial teacher education and their positioning as future teachers (Chakyarkandiyil & Prakasha, 2023; Colomer et al., 2021; Liebech-Lien, 2020; Karmina et al., 2021; Jolliffe & Snaith, 2017; Volkova et al., 2020). Research has shown how important context is because it provides opportunities for developing and supporting the new transformation role of teachers in CL practice for inclusive environments (Duran et al., 2017; Muñoz-Martínez et al., 2020). Given the lack of research on CL in BiH, the present thesis contributes to CL research and practice in the BiH context to support quality transformational processes in primary education student-centred orientated teaching and learning strategies regarding social inclusion.

4 Methodology and methods

Based on the social-constructivist paradigm, the present study employed an exploratory case study design to gain knowledge about pupils' and teachers' experiences with FtFPI engagement in a co-learning classroom setting. This aim was tackled through three studies: one review study (Article 1) and two empirical studies (Articles 2 and 3) conducted through three project phases. The empirical data drew from two primary schools implementing a CL approach in Sarajevo, BiH, during the school year 2018/2019. This chapter describes the overall process of conducting the study. First, this chapter addresses the philosophical assumptions and methodological positioning of the study. Next, the case study (Yin, 2014), sample, methods, data collection process and data analysis are outlined. The chapter ends by discussing issues of validity, reliability, and ethical considerations.

4.1 Philosophical assumptions and methodological positioning

As different assumptions are made by researchers about the nature of the social world and the nature of knowledge, these assumptions influence the type of research they carry out. The ontological and epistemological assumption framing this thesis is social constructivism combined with an interpretive framework (Creswell & Creswell, 2017). In social constructivism, individuals seek an understanding of the world they live in by examining the subjective meanings of in-depth their lived experiences directed toward objects or things (Denzin & Lincoln, 2018). Thus, the present thesis aims to deepen the understanding of the FtFPI and capture its complexity within CL work experience by gathering multiple views from pupils and teachers in the exploratory case study (Yin, 2009, 2014).

According to Crotty (1998), social constructivism asserts that different people construct different meanings, even when experiencing the same event. Thus, three assumptions of social constructivism, according to Crotty, are essential to the present study: (1) human beings construct meaning as they engage with the world they are

interpreting, (2) human beings engage with their world and make sense of it based on their historical, cultural and social perspectives, and (3) the fundamental generation of meaning is always social, arising in and out of interactions with a human community. In this way, social-constructivist researchers recognise that their own experiences shape their interpretations as they 'position themselves' in the research (Creswell & Creswell, 2017).

Given the ontological assumption that social reality is a human creation, and that knowledge is constructed rather than discovered, the researcher's role as gatherer and interpreter are central in the present study (Stake, 1995). Stake (2010) perceived humans as the 'main instruments in research' when it comes to gaining meaning and interpretations of social events that the actors themselves have experienced. In the present thesis, interpretive lenses give meaning to co-learners' socially responsive resources based on pupils' and teachers' individual and shared experiences with FtFPI, which might have implications for quality co-learning reality (Studies 2 and 3) (Denzin & Lincoln, 2018). According to Bryman (2016), when the aim is to gain a deeper insight into and knowledge about social phenomena such as the FtFPI of CL, the qualitative approach is relevant for answering the main research question. Nonetheless, recognising the need for a comprehensive understanding of the complex phenomenon of FtFPI in CL in the present thesis, the qualitative approach employed one quantitative method as an auxiliary to the qualitative paradigm (Johnson et al., 2007). In other words, concurrently utilising questionnaire and interview data in Study 2 and interpreting qualitative video data in Study 3 provided a fuller picture and deeper understanding of the FtFPI aspects derived from Study 1 (Creswell, 2014) (see Figure 7). Nevertheless, the study being enriched with a small component of a quantitative method is what Hammarberg et al., (2016) suggested for corroboration and contradiction to provide more meaningful answers to the research question.

4.2 A case study

The BiH context is a unique but complex reality. For this reason, a case study can be a valuable tool to help understand the complex dynamic and unfolding FtFPI

phenomenon of human relationships and other factors in a temporally, geographically, and institutionally bounded space (Cohen et al., 2018). A case study helps conduct an analysis and develops an in-depth understanding of a phenomenon within a real-world context, which is its strength compared with other methods (Yin, 2014). In this regard, the case study method is well suited when attempting to provide an understanding of the meaning that socially responsive engagement among co-learners gives to the FtFPI phenomenon (Silverman, 2010; Strauss & Corbin, 1990).

'A case is a specific, complex, functioning thing'; thus, it is vital to establish the boundaries of a case (Stake 1995, p. 2). As indicated above, the case for was co-learners, and here, the experiences and practices of pupils and their teachers with the FtFPI from two primary schools in Canton Sarajevo in FBiH state were the focus. To this end, purposefully homogeneous sampling was applied to select the schools that possessed the CL approach characteristics (Creswell, 2014) (Section 4.3.1).

Stake (2010) stressed that cases are bounded by time and activity and researchers collect detailed information using a variety of data collection procedures over a sustained period of time. According to Yin (2014), establishing boundaries facilitates the development of the conceptual and methodological framework of a case study. Given the emphasis on multiple sources of data as a key characteristic of a case study (Stake, 2010; Yin, 2014), an exploratory case study applies various research methods to obtain a sufficiently detailed description that can be transferred to similar situations (Stake, 2010). By including qualitative with auxiliary quantitative data, this case study helps understand both the process and outcome of an FtFPI phenomenon through a complete analysis of the case under investigation (Mills et al., 2010). Semistructured interviews, questionnaires and video observations were employed to explore FtFPI as a socially responsive phenomenon under investigation to obtain detailed findings. One of the primary purposes of the exploratory case study was to help identify implications and situations for the other research process, for example, as a foundation for future action research (Cranton, 2015; Crotty, 1998), as indicated in the Introduction section.

Contrary to experiments that usually control the context in allowing for deductive findings, case studies refer to 'multiple sources of evidence, with data needing to converge in a triangulating fashion' and allow for confirmatory (deductive) and exploratory (inductive) findings (Yin, 2009, p. 18). For the current study, triangulation was used, combining more than one method during the data collection phase to strengthen the present case study results and increase their confidence (Stake, 2010). Nevertheless, instead of triangulating data in a single study, the present thesis has triangulated data in the studies by following a case study investigation of an in-depth understanding of the FtFPI phenomenon, as illustrated in Figure 7. Through triangulation, uncovering consistencies across three article resources has provided evidence from multiple perspectives about the veracity of the FtFPI of the CL evidence presented. In this way, researchers can build robust understandings of the case under investigation to extract meaning from the findings and determine recommendations for practice and future research (Mills et al., 2010). In addition, an exploratory case study allows for a more profound knowledge of the different elements, such as the context, the participants, and the explored findings.

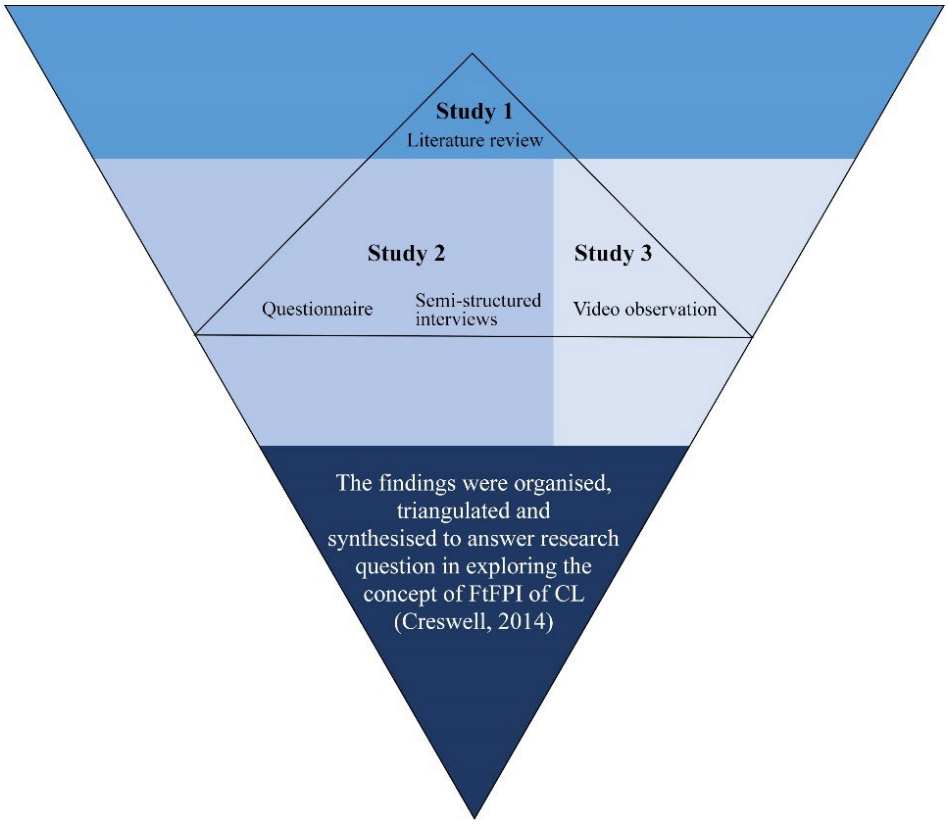

Figure 7. An overview of the three studies' synthesising and triangulating approaches used in the project

In the following section, two features of this qualitative research that employed minor statistical measures to analyse FtFPI aspects descriptively (see Section 4.4.) are illustrated to show their link to the need for multiple ways of viewing the phenomenon of FtFPI. The first feature is related to the nature of the qualitative research questions answering 'what' and 'how' (Yin, 2009), combined with the survey question 'to what extent' towards assisting practice or making improvements in understanding of FtFPI in CL (Stake, 2010). In this vein, the present thesis has examined two groups of FtFPI's factors for successful CL group work (see Article 1) applied to a study of the perceived influence reported by pupils and challenges (see Article 2) and supportive and interfering features (see Article 3) of FtFPI in a CL group context.

Second, the key emphasis of qualitative research is on the 'voice' and 'subjectivity' of human experiences (Silverman, 2010). By contrast, based on the literature review (see Section 3.4), previous studies conducted in BiH on CL applied mainly a survey method

to examine teachers' or pupils' attitudes about CL implementation (Burgić et al., 2017; Džaferagić-Franca & Tomić, 2012; Rešić et al., 2016). Thus, the present thesis has given pupils and their teachers a voice of their FtFPI experiences that becomes 'an academic construct' of qualitative research from naturalistic co-learning settings (Johnsen, 2005, p. 174) to achieve their full potential within socially responsive schools. Therefore, bringing the FtFPI 'qualitative features' to the surface to approach the overarching research aim, an exploratory case study of two primary schools implementing CL pedagogy allowed for data gathering in their real-life context.

4.3 Research site and sample

Selecting the research site and participants involves identifying those who can provide the most relevant, comprehensive, and rich information regarding their relationship with the research questions (Stake, 2010). The site for the present study was two primary public schools located in urban suburbs with an ethnically and socioeconomically diverse population in Canton Sarajevo, FBiH. At the time of the study (2018–2020), nine municipalities of Canton Sarajevo enrolled 37,374 pupils in grades 1 to 5 across 60 elementary public buildings (Agency for Statistics of BiH, 2019). The two participating schools in this research were located in the municipality with the largest population and the most primary schools in BiH. Although the largest, this municipality has the lowest preschool education facilities[55]. Concerning this preschool capacity, the implementation of the mandatory program for children in the year before starting school was limited. Two hours per week does not seem sufficient to provide the optimal opportunity to meet the needs of children regarding the social, cultural, and pedagogical activities needed for primary school socialisation. Moreover, providing insights into the socio-demographic data of pupils shows that 26 % of children in the 14 schools of this municipality were from families in a state of social

[55] There are 13 kindergartens in this municipality, eight of which are public and four private (Action Plan for the Children Municipality, 2018-2020). https://www.novigradsarajevo.ba/uploads/files/shares/Akcioni%20plan%20za%20djecu%202018-2020/Akcioni%20plan%20za%20djecu%202018-2020.pdf

need (Action Plan for the Children Municipality 2018–2020, p. 37). In this regard, two sample schools used a CL approach to facilitate pupils' socialisation and learning, especially those with low preschool education and those from disadvantaged families.

4.3.1 Sampling procedure and criteria

Purposeful sampling was adopted for the study, seeking individuals, groups, and settings where the study process is most likely to occur (Denzin & Lincoln, 2018). In other words, the key argument behind purposeful sampling is to intentionally select individuals and sites that have the necessary information and meet the set criteria to understand the central phenomenon (Creswell, 2014). This research project was inspired and based on a conceptual model of CL, using the five elements of 'Learning Together' (Johnson & Johnson, 1999). Thus, it identified schools and teachers who met the criteria: teachers and schools trained by the Centre for Educational Initiative 'Step by step' Sarajevo and UNICEF (2010) in child-centred methodology, including the CL conceptual approach. These institutions had mandated training teachers for the 'Child-friendly school' project implementing CL methods (see Section 1.1.1). A follow-up investigation was conducted to locate where the teachers were implementing CL practice, especially in schools located in the selected municipality. Some significant characteristics of interest that prompted the choice of the two schools (i.e. schools A and B) were that at least four fourth- and fifth-grade[56] teachers who had completed basic or advanced CL training.

(1) These schools participated in earlier educational local and international projects towards developing a model of cooperation on three levels (Strategic Direction for the Development of Education in BiH, 2008–2015)

- Cooperation of the school with the local community, and wider society
- Cooperation activities among teaching staff, other staff, and parents in the school

[56]Building a quality classroom co-learning group work takes time, patience and cooperation. For this reason, Pupils in Year 4 and Year 5 belonging to classroom instruction (grades 4–6) could be considered 'experienced pupils' in knowing about CL and FtFPI in use processes.

- Cooperating teaching and learning activities among pupils in the classroom

(2) These schools participated in 'Quality Teachers Matter', a two-year project aimed at promoting change in the educational system in BiH and empowering teachers to influence the development and positioning of teaching profession (Quality Teachers Matter CEI SbS)

(3) These schools explicitly highlighted the modernizing teaching practice by a colearning model while providing a caring and stimulating environment where all children will reach their full potential (Annual school curriculum, including annual school report and school website for School Year 2017/2018).

School A had 371 students distributed in 18 classes, including 26 teaching staff members. The school is one of the oldest schools in Canton Sarajevo and has been operating since 1954. In post-war educational reform, the school quality of the work through new teaching approaches, special support programmes, and peer support is recognised as a high level of sensitivity when promoting a supportive learning environment and socio-inclusive practices. The school is located in an environment with low-income families [57] and a significant Roma population community. The school is a pioneer of inclusive education in the post-war period for a minority group of pupils, such as Roma pupils included in the regular primary education system. Insights into teachers' professional pedagogical development map showed that the teaching staff participated in various seminars and educational programmes to develop quality teaching and CL practices in education for all. Therefore, this school was of particular interest to investigate the FtFPI concept among 9–11-year-old pupils as co-learners.

School B is similar to School A and is located in an area with a high population density in Canton Sarajevo, where socio-demographic modifications and an influx of new residents occurred due to forced migration and post-war socio-economic migrations.

[57] Children from socially and economically deprived communities, from which most Romani pupils in BiH come from, experience barriers in their lives that make successful development and expressing their full developmental potential significantly difficult.

School B had 780 pupils distributed in 23 classes and 44 teaching staff members. Compared to School A, School B was a relatively newly opened school, operating since 2006. In recent years, the very phenomenon of 'cooperating sustain support' has been highlighted from the school's opened perspective for the increasing need to improve the quality of work to provide 'new services' related to inclusive education and to educationally neglected children (Development strategy municipalities 2014–2020)[58].Although located on the 'periphery' of the municipality, school B imposed itself as a school with an inclusive and CL approach that leads ongoing to changing the traditional organisation of the teaching process into a more engaged, child centred. It is worthy of note that the school's commitment to quality of education for all had resulted in the nomination of one teacher for the Annual Award for Teachers organised by CEI SbS as a part of the network of Global teacher prizes for BiH.

Both Schools, A and B, provided participants in the research project: 4 teachers and 192 pupils in Years 4 and 5. In addition, two teachers and 16 pupils[59] within Year 4 were further selected for the video observation as the next stage of the investigation, respecting participants' willingness and consent engagement. Two teachers led their classrooms from Year 1 as one of the main criteria for selecting classrooms in exploring the FtFPI of CL. All participants were the basis for Articles 2 and 3. For more detailed information about participants, see Studies 2 and 3.

Selection of two teachers and their classes

Teachers and pupils in the lower grades of primary schools were the focal points for this study within the process of ongoing educational reform but with a focus on the quality of co-learning classroom practice. The reason is that the nine-year curriculum

[58] Strategija razvoja Općine 2014-2020. https://www.novigradsarajevo.ba/strategija-razvoja-opcine-novi-grad-sarajevo-2014-2020/

[59] The sample of 16 pupils represents only a small portion of the target population, which is due to the purposeful sampling used when a diverse small group sample was necessary due to the researcher's topic of interest, FtFPI. In other words, a few participants were video recorded for in-depth investigation of FtFPI functioning within small heterogeneous groups.

emphasises the significance of pupils' active learning and the importance of social interaction groups and shared classroom interaction (see Section 1.2). Since classroom instruction (grades 1–4) is a foundation for establishing a co-learning approach towards subject instruction and further schooling, the focus is on Year 4, which is considered the 'transition classroom'. For selecting teachers and classes, intensity sampling was used as a variance of purposive sampling that refers to a case that is not typical but not at the extreme while giving rich examples of the phenomenon of interest (Patton, 2002). In other words, the selected teachers and their pupils could provide rich information about the co-learning group classroom context, focusing on engaging FtFPI among pupils' diverse academic and social backgrounds. In particular, for the one-to-one interviews with low-level achievement pupils, the researcher encouraged teachers to nominate some pupils who 'would not be usually chosen' or those who were 'easily discouraged'.

Furthermore, for video recording, a sample of two female teachers in Year 4 was selected due to their willingness to participate. They led the same class from Year 1 and their pupils were engaged in CL activities two to three times a week across various school subjects. Both teachers received training in child-centred pedagogies and studied CL in workshops provided by the independent Centre for Educational Initiative (CEI) SbS and the Quality Teachers Matter project (2016). In this study, the teachers had no additional preparation aligning them with CL principles: positive interdependence, individual accountability, FtFPI, social skills and group processing (Johnson & Johnson, 1999). T1 and T2 (see Articles 2 and 3) had 24 and 13 years of teaching experience, respectively. T1, as a high-performing CL teacher (Veldman et al., 2020b), had experience presenting her CL classroom practices at many seminars, workshops and regional conferences and acted as a facilitator for other teachers.

4.4 Data collection methods, instruments, and procedures

By following the participants through the entire project and collecting data on naturally occurring interactions (Silverman, 2010), FtFPI empirical data was collected from Studies 2 and 3. Questionnaires and interviews were conducted concurrently by

providing an integrated quantitative and qualitative account of how pupils and their teachers perceived FtFPI in the co-learning group context (Study 2). To provide a detailed account of how a small group of co-learners and their teachers' contributions interacted in FtFPI situations, video recording was used as a fruitful strategy for collecting rich data on pupils' and teachers' engagement in a classrooms CL group context (Blikstad-Balas, 2017; Heath et al., 2010). The same 16 pupils in Year 4 interviewed previously were engaged in the video-data collection process in Study 3 to capture pupils' practices of FtFPI in co-working groups of Year 4 (see Table 4).

Table 4. An overview of the data collection process

Study 1		
Study 2		Study 3
Questionnaire	Semi-structured interviews	Video observation
Pupils 8 classes (Years 4 and 5) (Schools A and B) N = 192	8 pupils selected from 2 classes (Year 4) N= 16 pupils School A – 2 teachers School B – 2 teachers N = 4 teachers	2 small groups selected from 2 classes (Year 4) N = 16 pupils (4 small CL groups) School A – 1 teacher School B – 1 teacher N = 2 teachers

The data collection process followed the case study protocol of creating a case study database to maintain a chain of evidence (also referred to as an 'audit trail') that should explain how any conclusions have been drawn (Yin, 2009, 2014). Multiple sources of information were used because no single source can be trusted to provide comprehensive information (Patton, 2002). A more detailed, a data collection plan was formulated (see Figure 8). In this regard, a data collection plan was vital for showing the research process at the different phases that the study had to take. Nevertheless, before the data collection phase occurred, the researcher developed a pupils' questionnaire and semi-structured pupils' and teachers' interview guides

based on the reviewed literature (Study 1) regarding conceptual factors of FtFPI leading to successful CL group work.

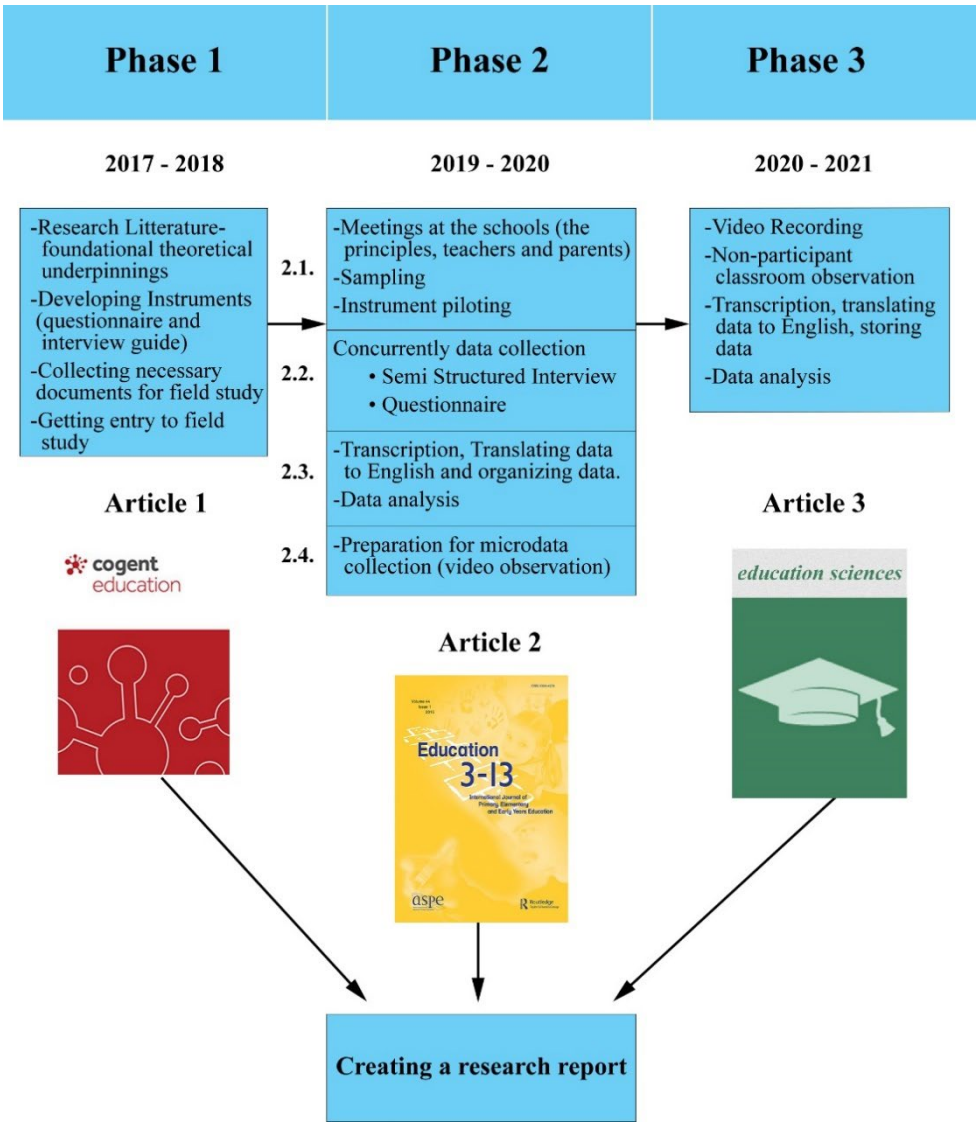

Figure 8. An illustration of the research process at different phases

This section further outlines the methods and procedures that were followed to ensure successful data collection.

4.4.1 Accessing the Site

To access the schools, letters of clearance and permission were sought from the relevant authorities. Permission to carry out the study was sought from the Norwegian

Social Science Data Service (NSD)[60] and the Ministry of Education in FBiH[61]. As a national resource centre servicing the Norwegian research community, NSD was informed about the research project that took into account such issues as the achievement of informed consent, the confidentiality of the participants, the research methods, and the procedures guaranteeing the safekeeping of the collected data. Nevertheless, since the context of the study was in BiH, the formal approval had to be signed up personally by the Minister of Education of Canton Sarajevo to access the research sites, two primary schools A and B. Moreover, permission to research both schools was requested and obtained from the school (principal and class teachers).[62] The pupils were orally contacted to seek permission. Since the pupils were 9–11 years old, the parents of pupils participating in the study had to sign the consent form.[63] The process of seeking permission from the relevant authorities was in line with the ethical requirements for the research. The presence in the schools in the pre-empirical phase of the project, the project explanation, and the trust rapport built significantly contributed to successful professional interaction during the data collection phase. For example, this contributes to being authentic and prepared as a researcher and more transparency, thus allowing for more flexibility and making participants comfortable in a face-to-face setting (see Section 4.4.3)

4.4.2 Pupil questionnaires

The purpose of the questionnaire was to obtain accurate quantitative data concerning the perceived influences of FtFPI engagement on CL group work from pupils (N = 192) of ages between 9 and 11 years (M = 1.51; SD = 0.50)) in all eight classes in years 4 and 5 (see Article 2). A close-ended questionnaire was developed on the basis of a literature review of three groups of FtFPI factors that lead to successful CL (see 5.1 Article 1) to meet this objective. The questionnaire (see Appendix 6) consisted of three

[60] See appendix (1)
[61] See appendix (2)
[62] See appendix (3) and (4)
[63] See appendix (5)

main parts: (1) background information (gender, class, level of achievement, and attending the class from year 1 or other year), (2) a set of items related to pupils' perceived nuanced influences of FtFPI engagement on their CL group work (Q1-Q10-Likert scale), and (3) a set of items related to pupils' perceptions of their FtFPI practices (Q1a-Q9a), and a corresponding set of items (Q1b-Q9b) about their FtFPI beliefs of what makes them work well in the CL group work (binary sets of responses).

In this study, the complexity of CL group work through social support, either in promoting another pupil's success (academic and social support) or providing support on a more personal level (personal social support) (Bertucci et al., 2010), is related to participants' FtFPI socially responsive engagement. Previous research has mainly focused on either the communicative skills or helping behaviours associated with interpersonal and small group skills as mediating conditions between cooperation and achievement (Johnson & Johnson, 2013; Webb & Farivar, 1994), but not explicitly on FtFPI (see Article 1). Thus, given the definition of FtFPI (Johnson & Johnson, 1999), the researcher chose to formulate items based on intentionally integrated FtFPI's first (what is FtFPI) and second (what contributes to FtFPI) groups of factors (see 5.1.) within a five-point Likert scale to capture more nuanced perceptions of social support inspired by the vast literature of the CL group work context. Although, for example, Q 1 and Q 2 appear similar, they were designed to capture distinct perspectives. Q 1 focuses on the frequency of exposure to the CL group work process, while Q2 specifically addresses the perceived influence of CL group work on pupil's learning improvement. Similarly, Q3, Q8, and Q9, were formulated to address slightly different aspects of social support, recognising its importance in general perspective (Q3) and a more nuanced peer support's perceived influences through encouragement (Q8) and praise (Q9) on CL group work dynamics. Likewise, both Q4 and Q6 revolve around actively supporting peers' engagement in group work, but subtle differences highlight different aspects of supportive behaviours. While Q4 highlights the value of recognising individuals for their contributions to the group's success by offering help, Q6 emphasises the importance of active listening as a vital aspect of a successful helping process in a group work dynamic.

The Cronbach alpha coefficient was used to check the reliability of the scale, and should be at least 0.7 for the scale to be considered reliable (De Vaus, 2002). The study acknowledges that items with high similarities could potentially lead to higher Cronbach alpha values, as the Cronbach alpha coefficient is designed to measure the internal consistency or similarity between items within a scale. The Cronbach alpha value of the questionnaire used in the present study was 0.79, indicating high reliability overall and suggesting that the scale items were closely related as a group (pupils' FtFPI).

The researcher also recognises the importance of gaining insight into the presence or absence of peer social support through FtFPI by exploring almost the same items as those presented in Table A1 through binary choice (yes/no questions) in Table A2. The aim was to address the potential for social desirability bias associated with the Likert scale, in which participants may attempt to present themselves in a more socially favourable light and avoid extreme response categories (Rivera-Garrido et al., 2022). By asking questions such as, Q1a and Q1b concerning peer helping (see Table A2 in Article 2), the researcher aimed to ascertain whether the participants' FtFPI practices and beliefs correspond with their overall willingness to engage in CL group work, providing a more straightforward response. The simplicity of the format reduces the cognitive load on pupils, making it easier to assess their FtFPI willingness and engagement to cooperate successfully, corresponding with Deutsch (1949), who argued that without helping and willing skills, pupils do not truly cooperate. Applying both a Likert scale (Table A1) and a binary choice format (Table A2) for related questionnaire items accommodated diverse response styles, considering pupils' age and previous experiences with questionnaires while enhancing the robustness of our data collection and ensuring consistency in participants' responses (Rivera-Garrido et al., 2022). Given that the dichotomous data did not allow for statistical treatments, such as factor analysis, it presents limitations in the present study and remains to be addressed in future studies (see Section 6.5).

The pilot study was conducted in two schools in Year 4 and Year 5 in two different municipalities (N = 59). The aim was to evaluate the effectiveness and validity of the instrument and the procedures to follow while conducting the main study. Since pupils experienced this questioning being carried out on paper for the first time, the researcher ensured that the young pupils understood the questions by giving them all instructions orally. A researcher explained the rating system and the meaning of each response item on the blackboard. The enquiry was performed during a school class (approximately 40 minutes). After the piloting procedures and discussion with teachers and researcher's advisors, the following corrections were made:

- Within background information, an item about the level of achievement was replaced with a pupil's number in the class book as a code to get insight into their grades. The reason was that almost all pupils answered that they were at a high level of achievement. In discussions with pupils about how they felt about this item, some indicated that it might influence their feelings and hurt the slow-learning pupils.
- The item in the Likert scale about the time opportunities to work in groups was reformulated from 'To what extent would you say that you learn with your peers in group work?' to 'To what extent you would say you often learn in group work?', making the item more precise to understand.
- An item about respect was removed because, for too many pupils, respect means the same as paying attention
- Regarding the teacher's role in pupils' support among peers, the piloted items about 'your teacher helps you to understand to give good support' caused some confusion. The item was reformulated to be more precise: 'your teacher teaches you how to give good support'.
- In the binary section, the item 'I get opportunities to learn about how to support my peers' was reformulated to 'My teacher teaches me how to support my peers', since 'opportunities' more precisely means teachers provide these opportunities.

4.4.3 One-to-one interviews

Interviews are guided conversations that are usually one of the most important sources of case study evidence (Yin, 2014). Brinkmann and Kvale (2015) examined the research interview as a particular form of conversational practice in which the purpose is to produce knowledge. Hence, interviews are perceived as 'knowledge production' while the data are being produced during the conversation between the interviewer and the interviewees. Teachers and pupils were interviewed using a semi-structured interview guide[64] during October 2018. One purpose of the interview was to capture the participant's perception of the FtFPI issues supporting co-learning group work engagement. Thus, in-depth individual interviews helped capture reflections on what pupils and teachers considered the challenge of FtFPI, why they perceived such as challenges, how they derived the perceptions of the challenges, and what improvement they could have expected. The questions probed teachers' and pupils' epistemic experiences and perspectives about their FtFPI aspects of CL. For this reason, the interviews focused on, among other topics, interpersonal behaviours, communication and support, improving knowledge and learning about FtFPI. When necessary, the researcher used follow-up questions to encourage participants to elaborate on or clarify a response (Denzin & Lincoln, 2018). Questions were formulated by drawing on the topics that cover the items given in the pupils' questionnaire, on the theory of 'Learning Together' of CL and also based on the researcher's own experience. The interviewer's classroom experience and pre-understanding of CL practices made it easier to ask relevant follow-up questions. This was found useful for fully understanding what the participants had to say, catching nuances in the 'language expressions' and grasping meaning. Thus, having experiences similar to those of the participants was seen as positive. However, the researcher was aware that too close a relationship could prevent her from having an outsider's perspective. With this in mind, the researcher's role was safeguarded by

[64] See Appendix (7) and (8)

the projects' grounding in theory that helped with what was focused on from what was not needed to focus on in the interview.

The eight pupils per school were selected by their teachers according to their level of achievement based on their grades (2 high, 4 medium, 2 low; N = 16) and gender balance (2 boys and 2 girls). The pupils and teachers were interviewed one at a time to help them talk freely. Individual interviews with the teachers were conducted after or before class hours in a separate room, most often in quiet locations such as 'room for meetings' or in another classroom that was most often used for the pupils' interviews. Pupils were interviewed during class time. Permission was sought for audio recording and note-taking of crucial points. Each recording was assigned a code number rather than the teachers' or pupils' names for anonymity and confidence building. The researcher reviewed each transcript while listening to the audiotapes to ensure transcript accuracy. In addition, the transcripts were sent to the teachers for further review to ensure 'member checking' (Creswell, 2014, p. 283). The researcher organised 'digital interviews' with teachers to secure validity at the end of the collected data. The teachers read the transcription of interviews and were asked to clarify or add if something was unclear as a means of cross-checking. Although interview transcriptions were not sent to the pupils (which was one of the limitations of this study), their accuracy was ensured during the Bosnian–English translation phase served by a collaborative partner as an 'audit trail' (Creswell & Creswell, 2017). In total, the researcher transcribed 446 minutes of interviews, which resulted in 94 pages of transcription (see Table 10 in Section 5).

4.4.4 Observations: Video and classroom observations

According to Blaxter et al., (2010), observation is 'watching, recording and analysing events of interest' (p. 199), which the researcher uses it to interpret the actions of participants in a specific social context (Coe et al., 2021; Creswell, 2014). The direct, non-participant observation was conducted in naturally occurring interaction, allowing pupils' and teachers' FtFPI to be observed during the data collection process. The observation was used as the best way to capture what happens among colearners

because FtFPI as a type of social interaction happens between participants' engagement 'here and now' (Bakeman & Quera, 2011). Moreover, the observation helped capture details of what takes place in the classroom and small groups that complemented teachers' and pupils' responses after interviews and questionnaires. Whereas self-report instruments may be biased, the strength of observation is the discovery of discrepancies between what participants say, often claim to do or believe should happen and what does happen (Coe et al., 2021). Yin (2014) argued that observation covers events in real life, covers the context of events and is insightful into interpersonal behaviour and motives.

Classroom observations were conducted at the beginning of the study and during the video recording of CL group work in Year 4 in two classes during lessons, with the researcher as the non-participant observer (Creswell, 2014). Prior observation aimed to understand how pupils' grouping was organised for co-learning in these classrooms. By prior observation, the researcher explored teachers' and pupils' functioning in using CL in their classrooms, group compositions, group interaction and CL tasks assigned to groups across the three main school subjects (Bosnian language, mathematics, natural science) (see Article 3). Moreover, the researcher became familiar with the classroom context, which further supported the researcher's preparation for video recording, for example, where the best to position cameras for each focal group. During video recordings, the researcher, after starting the video camera, usually took observational notes at the back of the classrooms. These notes enabled the researcher to record what happened in interactions created by the teacher and the pupils outside the group context. Such observational evidence (e.g., 'What did the pupil do when s/he left the group?') provided additional information about the FtFPI issue (see Table 5). As with interviews, having multiple investigators help to increase the reliability of the resulting evidence (Yin, 2014). The researcher communicated with the teacher after class hours regarding pupils' and teachers' actions 'off-camera' relevant for the study.

Table 5. An extract of observational notes of the 'off-camera' context

Date, session code, and school subject	When did the pupil leave the group? What was the antecedent of leaving?	What did the pupils do when they left their groups	Main aspect and sub-aspect of FtFPI The researcher's reflection
26.04.2019 SB-G2-Ses.2 (School B - Group 2 - Session 2) Science	(12:35) min LLA girl gets up and leaves the group without saying anything. The pupil did not actively participate; only observed the group activity.	The LLA girl went to the teacher. She was waiting for the teacher's response while the teacher was occupied with another group. After a short conversation, the teacher and pupil approach the group at 13:04–13:07 min.	Supportive communication Paying attention There was an interactional gap between the LLA girl and her groupmates due to a lack of attention.

As with audio recordings, video recording is considered more reliable than real-time observation and note-taking as it allows for repeated examination of the data (Blikstad-Balas, 2017). Video recordings were conducted in April 2019 for two weeks, every working day, in both School A and School B. Thus, 16 pupils divided into four groups, interviewed previously, were the foci of video observations during the same group. Video recording took place during the 'working' part in the group (after pupils had been assigned a learning task) (see Article 3). Creswell (2014) underlines that observations must be conducted over a period of time to obtain reliable data. In the present study, 15–20 minutes per session, including three sessions per day (approximately 50 minutes of video observation per day) within the same group, provided reliable data. The study had a total of 11hours and 37 minutes of recorded material, while the length of the videotaped sessions depended on the assignment assigned to students as group work. It varied between 15 minutes and 30 minutes.

The advantage of video data is that the information enables the study of a phenomenon as it happens, as 'microscopes' that significantly increase the interactional details for analysis (Derry et al., 2010). Focused on the social functioning

of FtFPI within small-group work, video recordings have been provided on how pupils act and respond to each other and how supportive communication occurs among groupmates. In contrast to the data generated by questionnaires and interviews, video data enabled the researcher to study what the pupils do related to responsive actions created through FtFPI situations when participating within small group contexts. In this regard, video data provide rich details of participants' activities and features when researchers are interested in studying interactive processes, focusing on diverse behaviour features during group activities (Bakeman & Quera, 2011). Two cameras were positioned on a tripod to capture pupil–pupil interactions focusing on their supportive and interfering features (both verbal and nonverbal) related to FtFPI behaviours, including the teacher's behaviour when approaching the group. Two cameras were angled on the pupils' group and facing each other (see Article 3, Figure 2, p. 5). Since there was only one researcher present, the researcher usually started the camera at approximately the same time when the teacher gave the sign to begin the group work and let the camera record the whole group session. Later, in the data analysis, the FtFPI situations were located within each session, selected, and used for the detailed analysis (see Article 3).

While placing two cameras in classrooms to study naturally occurring FtFPI group situations, it is important to note that the presence of cameras can 'destroy this naturalness', a phenomenon such as the camera effect or reactivity (Blikstad-Balas, 2017). In the present study, '(non)natural' reactions were captured during video data analysis when pupils occasionally looked at the camera or commented on its presence to a groupmate. Subsequently, visible changes occurred in pupils' behaviour that seemed to be driven by self-consciousness or peer 'pressure'. According to Maxwell (2013), reactivity issues appear in all qualitative studies, and researchers must understand and use them productively, as this influence cannot be removed. Nevertheless, in reporting reactivity cases, a common finding in video studies is that the effect fades out quickly, indicating, for example, that participants quickly get used to being observed and resort to typical behaviour (Blikstad-Balas, 2017). Nevertheless, when reactivity effects occur, they do not appear to distort video-based results for an

observer who knows about the teacher, pupils, and patterns of their instruction regarding teaching practices (Praetorius et al., 2017). Furthermore, Praetorius et al. (2017) indicated on the gap in why reactivity occurs or not. Lahn and Klette (2022) pointed to preventing and mitigating reactivity, for example, by familiarising the class with the observer and the camera. For this reason, in the present study, pupils became used to the two cameras in the classrooms after a couple of sessions, and they no longer seemed to be aware of them during their group work sessions. Moreover, before actual video recordings, pupils could ask questions, 'play' and become familiar with the equipment because it was the first time they had cameras recording them in their classrooms.

Preparing for video data gathering occurred before carrying out the video recordings. The researcher took part in a short preparation on how to use video in classroom research and developed her observational abilities and technical aspects of video recording (Heath et al., 2010). An observational methodology course at the university level provided her with insights into video-designed research and a technical solution for video data gathering. Moreover, one-day training conducted by the senior engineer provided the researcher with a professional and technical understanding of video recordings in classroom research, such as video capture, storage, and analysis methods (Garcez et al., 2011). Regarding small group video recording, it was crucial to choose and ensure appropriate recording equipment, decide how to record, and set up the cameras to capture relevant data, transfer, code video material daily, and store the data appropriately. The video preparation for the fieldwork helped the researcher in three critical issues related to the high quality of data gathering: (1) knowing technical and environmental challenges that might occur in the classroom, (2) supporting the researcher's practical skills in video recording, and (3) becoming familiar with the researcher's role during video recording. Therefore, the successfully realised fieldwork supported by the human resources network afforded the novice researcher across institutional cooperation and selfless knowledge and experience by expert researchers from the University of Oslo.

4.5 Data analysis

The significance of any research is not found in the questions being researched but rather in the findings (Patton, 2002). First, the Statistical Package for Social Sciences (SPSS) was employed to analyse the pupils' questionnaires as auxiliary data. The interview and video transcripts were analysed through thematic analysis, 'examining, categorizing, tabulating or otherwise recombining evidence to draw empirically based conclusions' (Yin, 2009, p. 126). Because qualitative data analysis is a process of making meaning, it is a creative process, not a mechanical one (Denzin & Lincoln, 2018). According to Stake (2010), analysis is 'the taking things apart' (p. 133), which, in this case, gives meaning to first impressions and final compilations. In other words, it is an analysis that tells the story of pupils' and teachers' experiences with FtFPI, which may become socially responsive resources operating in society. Thus, thematic analysis (TA) was found to be suitable because of its many advantages. According to Braun and Clarke (2013), TA's theoretical independence allows for flexibility within a range of research questions, types of data and data sets and can produce data-driven or theory-driven analyses. Alternating between induction and deduction can be called abductive analysis (Alvesson & Sköldberg, 2017). Thus, the analytical strategy can be expressed as deductive (theoretical)–inductive (empirical)–abductive (post-theoretical) (Åsvoll, 2014), entailing the current research project as an interaction between theoretically and empirically grounded knowledge (see Articles 2 and 3).

4.5.1 Pupils' questionnaires

Descriptive statistics refers to 'information that helps a researcher describe responses to each question in a database as well as determine overall trends and the distribution of the data' (Creswell, 2014, p. 3). For this reason, the statistical analysis was conducted using the statistical software package IBM SPSS Statistics 26 (IBM Corp, 2019) for Windows.

First, descriptive analyses were performed to investigate the pupils' perceptions of FtFPI aspects regarding their perceived influences on co-learning group work in the

classroom. This included calculating the means and standard deviations for the total sample. A frequency analysis was conducted for all the questionnaire items, which produced output with frequencies and percentages disaggregated by demographic characteristics, such as gender and year patterns (years 4 and 5) in the responses. Next, cross-tabulation analyses were used to reveal any interesting relationships between the pupils' responses and their gender or grade (see Article 2).

While this statistical analysis method provides a basic understanding of the data distribution, it has limitations for a thesis, as it does not capture the features of FtFPI as a multidimensional concept and the relationships among variables for a smaller set of factors. The researcher recognised that more advanced analyses could provide better understanding of how pupils' perceptions are organised, potentially yielding different insights and nuances in understanding FtFPI factors. As mentioned in the Section 1.3.1, the researcher views this analysis as a foundation for future research regarding FtFPI within the CL field as a reason for deliberately opting for more advanced quantitative analyses. This methodological reflection includes considerations for factor and multilevel analyses (Cohen et al., 2018), which are avenues for future research to delve deeper into the complexities of FtFPI as a socially responsive engagement and test its variables that influence successful small CL group work process.

4.5.2 Analysis of interviews

The analysis of pupils' and teachers' interviews took a series of stages where thematic analysis was applied combined with a constant comparative method of analysis. Creswell (2014, p. 261) illustrates the six steps in analysing and interpreting qualitative data: (1) preparing and organising the data, (2) an initial exploration of the data through the process of coding it, (3) using the codes to develop descriptions and themes, (4) representing the findings through narratives and visuals, (5) interpreting the meaning of the results by reflecting personally on the impact of the findings and on the relevant literature and (6) to validating the accuracy of the findings.

The analysis was viewed as ongoing and iterative in the process of interview transcript reading, in which thematic analysis was applied (Braun & Clarke, 2013)[65] combined with constant comparative (see Article 2). The 'hybrid' approach to qualitative analysis begins with a deductively produced code (with a predetermined theoretical framework) and modifies it through an inductive data reading. In other words, transcripts were read, re-read, and analysed through a 'hybrid' approach of inductive and deductive thematic analysis (Fereday & Muir-Cochrane, 2006). The data were selected, organised, analysed and manually colour-coded into themes (Bryman, 2016). The transcription provided insight into what pupils and teachers said about FtFPI in CL, whereas understanding the data to identify codes and themes was performed during the analysis. Thus, themes as similar codes aggregated together for the main idea in the database (Creswell, 2014) express something significant about the data relevant to the research questions.

The coding process started with the three research themes that have codes pre-created based on a literature review on FtFPI aspects (see Article 1) as (1) features of interpersonal behaviours demonstrated in small CL groups (coded as IB), (2) aspects important for pupils' processes and experiences with FtFPI (coded as E&P), and (3) factors of communication and support that facilitating or hampering pupils' FtFPI capacity (coded as C&S; see Table 6).

[65] A thematic analysis in this study did not use the main interview questions as the themes. Instead, the inductive and deductive approaches were applied in analysis interpreting and making sense of data through pre-identified themes generated in Article 1 and themes emerging from the pupils' and teachers' responses in Article 2.

Table 6. Themes before the concept map of modified FtFPI (see Article 2, p. 5)

Theme: Interpersonal behaviour	*Theme:* Pupils' experiences and process with FtFPI	*Theme*: Communication and support
Codes Meaning of support Giving help/support Receiving help/support Understanding help/support	**Codes** Pupils' personal abilities Learning characteristics Participating in the FtFPI process Working relationships	**Codes** Paying attention Encouraging, facilitating, and praising Providing feedback

The fourth central theme, *deeper knowledge and learning* about FtFPI, emerged from open coding. The reason is due to the specific educational context in BiH; thus, this theme is devoted to letting pupils' and teachers' data speak for themselves regarding their needs within the FtFPI co-learning context in BiH rather than having predetermined codes. Furthermore, data were broken down into parts, closely examined, and compared for similarities and differences (Strauss & Corbin, 1990). For this reason, a constant comparative method of analysis with the data enabled the researcher to build knowledge. It was essential to make explicit the understandings and procedures taken (Strauss & Corbin, 1990).[66] The analytical approach is inspired by grounded theory, initially developed by sociologists Glacer and Strauss (1967), and further, more practically developed by Strauss and Corbin (1990, 1998). To be precise, only some of the components in the grounded theory approach have been used, including open coding, phenomena, categories, and subcategories:

Open coding: The analytical process through which concepts are identified and their dimensions are discovered in data

[66] The example of the coded interview data is available at the following link https://usn.figshare.com/articles/dataset/Data_set_for_Exploring_pupils_and_teachers_perspectives_on_face-to-face_promotive_interaction_/13034387?file=24932120

Phenomena: Central ideas in the data represented as concepts

Categories: Concepts that stand for phenomena

Subcategories: Concepts that pertain to a category, giving it further clarification and specification

(Strauss & Corbin, 1998, p. 101).

To demonstrate the open coding process, one example is given below. The extract is taken from an interview with a teacher, SA-T1 (see Table 7. below). The coding was conducted because different phenomena occurred in the transcripts. The selected sections are highlighted, and the generated sub-categories are written in bold

Table 7. Coding- Example from one of the interviews

Teacher I think it is most difficult for pupils who can finish a task in five minutes and then have to wait, be patient, understand, and help their classmates, explain something to him or her and then, in the end, to present together, not individually, their individual parts they have prepared and somehow be a team in which no one stands out.
Interviewer You have just responded a lot to my next question about your experiences in these four years of implementing the group form of work. Is there anything you would like to add, and I have not asked you?
Teacher There is maybe something – that this team form of work, everything that is done in classes during the day, has shown me how much I erred previously, how much damage I probably inflicted on some pupils by failing to realise what the essence of a particular child is. There was merely my need to satisfy that cognitive side I wanted to evaluate and assess. This was somehow the only focus of my interest. Teams have shown me what the power of what a peer can convey to another peer. How much easier it is for a peer to adopt everything a peer shows to him or her than when the teacher says it. **The generated sub-category was her "Needed knowledge about FtFPI-preparation"**
Interviewer Why have you opted for this form of work?
Teacher I have somehow noticed I was unable to pay due attention to each child, that I have been unable to control myself in a situation when the teaching material is too demanding and when the foreseen time for covering it forces me to finish something, to ignore at that point some child's needs he or she tells me about and requiring me to stop, all out of my efforts to complete the teaching unit. Since the time these teams were formed, that is, since the first grade, we have learned…Well, definitely, that they themselves intensely draw my attention if I have neglected a child, because they are those experts in their respective small groups.
The generated sub-category was here "teacher's influence"

This process was repeated throughout the material. For example, under the sub-category 'Needed knowledge about FtFPI-preparation', samples were selected from both pupils' and teachers' statements on this sub-category, that is, what the

researcher interpreted as statements belonging to the category in question. Constant comparison as an inductive (from specific to broad) data analysis was used to maintain a close connection between data and conceptualisation (Creswell, 2014). Following the inductive reading of the data, the coding process and analysis resulted in four main common categories associated with pupils' and teachers' perceptions of aspects of FtFPI in the small CL group. Subsequently, a concept map was developed (Creswell, 2014) (see Article 2, p. 5) to represent the interview' findings.

The process of coding was practical and easy for the progress using a manual coding system analysing a small database that allows the researcher to keep track of files and locate text passages (Creswell, 2014).

4.5.3 Analysis of video recordings

To ease the analysis of FtFPI situations video-recorded in small group work among pupils in Year 4, the data preparation for thematic analysis contains two essential tasks: transcribing and coding (Heath et al., 2010). Before transcribing pupils' FtFPI activities for further analysis, video data was copied and stored on an external hard drive. All the videotaped material was coded according to the school subject, school, and group and stored properly after producing it (Garcez et al., 2011). The transcripts of the observations facilitated the selection of segments related to the research question about supportive features and interfering factors that pupils encounter in FtFPI situations. All transcripts were translated from Bosnian to English. Moreover, the transcripts (selected FtFPI fragments) were discussed with a collaborative partner in the research process mentioned earlier, who is fluent in both languages, and a reviewer, who checked concurrence between the video excerpts and the transcripts. In addition, it is important to acknowledge that capturing the pupils' high-quality audio recordings in group FtFPI situations essential for video transcriptions has proven challenging. Despite the decision to place dictaphones in the groups as additional equipment to enhance the understanding of individual statements/group communication, some issues with the clarity of the audio recordings arose, influencing their selectivity in video material processing (Beeli-Zimmermann et al., 2020). These

issues included background noise, cross-talk, and challenges in distinguishing individual voices or contributions within the group. Given the importance of sound in FtFPI group situations, this study suggests the use of specialised microphones in future studies and the possibility of 'wiring' the entire group for continued high-quality sound.

Before starting the microanalysis, the coding process began with pre-defined sub-categories (see Article 3, p. 16) (Hearth et al., 2010). The data of FtFPI behaviour consisted of mediated actions in periodic 'snapshots' of verbal or nonverbal interaction 'rather than continuous records of interaction' (Webb, 1982, p. 439). For example, 'Did the HLA[67] pupil react when the LLA pupil asked for help?' or 'How did the pupil with HLA respond in a specific way concerning encouragement, praise, helping? What next?' etc. It helped to obtain a picture of the pupils' interpersonal behaviour that happens at the moment within a small CL group. During the analysis, consideration was made to how interpersonal behaviour and supportive communication, detected as the most challenging aspects of FtFPI through interview analysis (see Article 2), were applied to support or interfere with pupils' co-learning group work. A detailed description was made (for more details of the data analysis, see Article 3, p. 5–6). The analysis involved mediated actions and engagement among co-learners such as HLA-pupil, two MLA pupils, LLA- pupil, and between the teacher and group learners when the teacher approached the group or was invited as an external mediator (see Figure 9).

[67] Pupil HLA (with high-level achievement)
Pupil MLA (with mid-level achievement)
Pupil LLA (with low-level achievement)

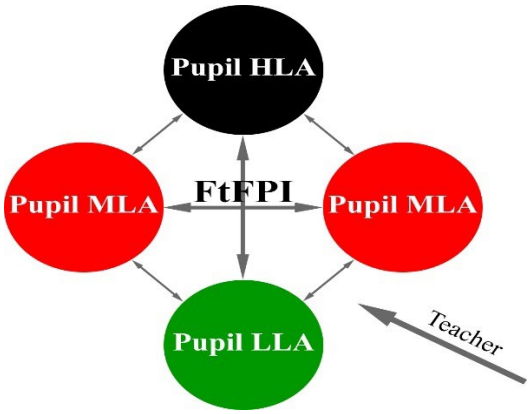

Figure 9. An illustration of the FtFPI among co-learners in small groups

The segments from the video observations are presented as excerpts of what took place under FtFPI in small CL groups and with/without the teacher's contribution. The choice of 10 extracts (sampling of video fragments) from the whole recorded data had a start and an end point based on the criteria and a purpose (Jewitt, 2012). These excerpts were selected on the basis of theoretical criteria related to interpersonal behaviours and supportive communication, which helped to focus on parts of the videos representing the FtFPI engagement of the participants within the CL group (see Appendix B in Article 3)[68]. The selection of specific segments, some lasting only 1 minute, was aimed at paying attention to intricate details within specific moments, addressing complex FtFPI on a micro level related to socially responsive practices and inclusive behaviour in a specific context (Blikstad-Balas, 2017). While short video extracts render a detailed record for examining these practices, for example, through which FtFPI participants illustrate socially responsive activities by using talk, facial expressions, gaze, gestures, and inclusive actions, it is essential to exercise caution in discussing and drawing conclusions from them. This caution refers to the importance of ensuring that the video extracts are linked to relevant theories and themes and that the video data are understood in context (Jewitt, 2012).

[68] The video excerpts and research data are available at the following link: https://figshare.com/s/f560ec67133266bb99d0,

Looking for pupils' and teachers' socially responsive activities across FtFPI situations in this study, the analysis was conceived as an iterative process in which the researcher was required to carefully reread the transcripts while viewing the videos to select 'key video clips' and add multimodal features from the data for the microanalysis (Bezemer & Mavers, 2011). Therefore, a unit of analysis was the video excerpts (N = 10) that based the pupils' and teachers' activities on supporting FtFPI, identifiable based on the theoretical framework. The focus was on the interpersonal behaviours and supportive communication of the FtFPI as socially responsive engagement applied by the pupils and the teachers (see Article 3). Analysing excerpts from the video observations helped identify how these two aspects were used to shape the pupils' actions and responses in the FtFPI process. More precisely, the microanalysis of FtFPI was how features such as verbal and non-verbal non(supportive) language and actions were used in small co-learning groups. To demonstrate the coding process, one example is given below. The video extract is taken from a video transcription of SA-G1-sess 2 [69] within the school subject Science (see Table 8 below). After an iterative process of coding (paying attention-PA, encouragement-E and praising-P) under the supportive communication category, the researcher produced a detailed description of pupils' behaviours and specific marking details coloured in blue. This coding included the researcher's reflective notes written in bold. Adding the multimodal features (through a bottom-up process) supported the microanalysis and justified the data interpretation, which was first discussed with a collaborative partner who served in the member-checking process.

[69] School A - Group 1 - Session 2 (each video session related to pupils' group assignments is coded according to school subject, school and group).

Table 8. Coding- Example from one of the video extracts

16.04.2019 (Duration of Session 2) (14:16 min)
There are different twigs of fruit trees on the desk, namely apple and pear in bloom (blossom)...
Topic: Getting acquainted with plants in the environment; fruit trees—apple and pear: recognition based on their appearance and leaves. Research task: To analyse leaves (their structure, appearance, similarities, and differences; to draw conclusions.
The selected transcription segment was coded as (non)supportive communication, a pre-defined FtFPI category (see Article 3).
(Duration of the selected excerpt was between 02:40–03:23)
Teacher: "You've got five minutes." HLA (girl) (frowns and looks at MLAg): "Hurry up!" MLA (girl): "Heeere, give it over here." (She takes the paper from HLA (girl) and puts it in front of herself again) (02:43) **(PA, but it is the opposite, not supportive).** HLA (girl) angrily: "And why are you sharpening your pencil now?" HLA (girl) reads the questions: "Descriptions of the branches of the obtained apple and pear... branch…" HLA (girl) addresses MLA (girl): "We'll never finish this." (03:10). (**Instead of E, it is (dis)E**) MLA (girl) repeats: "The pear branch..." HLA (girl): (...) "the pear branch..." (slowly dictates to MLA-girl) and at one point leans over the sheet of paper on which pupil of MLA (girl) writes and puts the palm of her hand on her forehead, looking at pupils MLA (boy**), (PA without commenting. HLA-girl reflects dissatisfaction through facial expression looking at MLA boy)** HLA (girl): "The pear branch..." HLA (girl): "Look how ugly you are writing... Oooh, my God!" (with a disapproving expression on her face and showing with her hand on her sheet of paper and putting the palm of her hand on her forehead again) (03:16) **(disE, negative comments)** MLA (boy) adds: "Look how letter K turned out to be small." (03:20) (**disE, negative comments**) MLA (girl) angrily pushes the paper away from her and in front of HLA (girl): "Okay. You write." HLA (girl) returns the sheet of paper with a smile: "I don't want to. You do it." (**Reciprocal disE**) MLA (girl) returns the paper even angrier: "I don't want to. You do the writing."
The generated sub-category was discouragement.

This process has been repeated through the video data material to understand the pupils' actions around their (non)supportive communications and interpersonal behaviours during FtFPI situations within CL group work.

Ultimately, connecting these video findings at the group level to the individual experiences reported by pupils may enable a more personalised understanding of their socially responsive dynamics to gain a comprehensive view of FtFPI engagement. While the combination of video extracts with participant interviews has been employed to investigate the teacher's engagement in supporting pupils' FtFPI (Dzemidzic Kristiansen, 2022), the linkage between individual pupils' behaviours in video findings and their reported perceptions of FtFPI engagement through

questionnaires was not examined, which represents a limitation of the study (see Section 6.5) but a potential topic for future studies.

4.6 Ethical considerations

Ethical issues concern confidentiality, voluntary participation, and anonymity of the informants within each step of conducting the research (Creswell, 2014). Ethics are sets of regulations for good professional practice that advise and steer researchers to complete their work (Israel & Hay, 2006). Thus, the role of values, morals, and principles becomes a topic of concern about how to treat the people we research with and on activities we should or should not engage in with them. Therefore, participants were given the option to participate and or withdraw from the study at any time without prejudice (APA, 2017). As mentioned in Section 4.4.1, two formal approvals to conduct research were obtained from (1) the Norwegian Social Science Data Services (NSD) [70], and (2) the Ministry of Education in BiH. Nevertheless, informed consent is a crucial issue in research with human beings, which means that participants enter the research project voluntarily, and understand the nature of the study, and the obligations involved (Israel & Hay, 2006), and acknowledge that their rights are protected (Creswell, 2014). Thus, a key part of the pre-field work period was to inform the participants about the research project and to collect informed consent. First, meetings with principals of both schools A and B were organised to present the research project, aim, and main procedures of the study. The principals were informed about the confidentiality of the school, teachers, and pupils' identities. At this meeting, the school principals approved and signed the consent letter. Then, the classroom's teachers and parents of the pupils involved in the study were contacted for their letter of consent. Since all pupils were under 18 years of age, it was necessary to collect such consent from their parents. The consent form described the project in general: that the pupils would be both interviewed and video-recorded, that

[70] See http://www.nsd.uib.no/nsd/english/index.html for more information about NSD.

participation was strictly voluntary, that the pupils and the school would be kept anonymous, and that the pupils could withdraw from the project at any time. The informed consent form was translated from English into Bosnian, explaining the study's aim and methods and the researchers' presence in the classroom and school. As the most important, the participants were made aware that the research would not reveal their identities and that the collected video recordings would not be used outside the research project.

In research with pupils, the relationship can become an unequal power relationship between pupils and the researcher, such as age, status, competency, and experience (Creswell, 2014). Giving the participant power over decision-making may reduce this power issue (Cohen et al., 2018). Therefore, the pupils were informed orally by the researcher that they could withdraw from the study at any time without explaining the reasons. In this regard, it was essential to establish a good relationship with the participants, avoid adult biases and create a comfortable conversation with pupils and the technical devices that surrounded them in video recordings. The researcher let them try some of these devices, such as dictaphones and handy video recorders. The researcher spent time answering pupils' questions before the video recordings in the classroom. This relational approach helped reciprocal adaptation to each other, leading to a safe environment and transparent activities supported by the teacher. Due to the nature of the qualitative research, participants' FtFPI views and actions are being studied; the researcher has strived to treat the teachers and pupils with respect when meeting them face-to-face to build trust. Emphasis was also placed on providing trust in confidentiality, including de-identifying the data and not passing on information that could identify the individuals. In other words, all the data were anonymised during the transcriptions, analysis, and presentation.

At the beginning of visiting the classrooms, the researcher introduced herself to the class as a visitor, a 'guest' who had the intention to stay at school periodically. She explained her research purposes, interested in seeing and learning how their working day was organised and how they worked together in small groups. The researcher also

explained to the pupils that she would talk with some of them and videotape some working groups to help her remember and learn what she had seen in their work. Consent forms were sent to the parents of the pupils two days before the class teachers organised the parental meetings. Considering that getting ethical approval for video in classroom research is often challenging, cooperating with teachers was beneficial. The class teachers explained the entire research plan, and all parents had the opportunity to contact the researcher with any questions (Garcez et al., 2011). Notably, the teachers' cooperation with the parents and knowing them from Year 1 was acknowledged as the trust relationships that this teacher built in the last four years. Only two parents contacted the researcher for more detailed information about the video recordings. The parents were informed that audio and video recordings would be deleted when the project had been completed, following the NSD requirements. However, one parent did not give a consent letter, and the pupil was not selected as a study participant. Concerning giving 'something back' to the teachers and the pupils (and indirectly to the pupils' parents), both classes were invited to a final cakes and drinks 'meeting' at the end of the data collection process. In these 'reflective meetings', the researcher summarised the main FtFPI activities, and the pupils were encouraged to discuss issues that concerned them about their co-learning in small groups. The teachers in both classes received the book about colearning methods. The researcher planned, together with the teachers and the principals, to conduct two workshops per school for teachers and parents regarding FtFPI engagement *in* and *with* their community as socially responsive contributions to quality education.

4.7 Research quality

Validity and reliability in qualitative research do not carry the same connotations as in quantitative research (Creswell, 2014). According to Creswell, the terms that refer to validity and reliability related to the quality of research in qualitative research are credibility and trustworthiness. Similarly, Denzin and Lincoln (2018) asserted that internal and external validity within the interpretive paradigm should be replaced by

terms such as trustworthiness. Concerning present research entails the researcher taking an active role in collecting and interpreting pupils' and teachers' meaning making. To become credible, interpretative researchers must be trustworthy. Thus, to increase the trustworthiness of this study's findings, the researcher employed certain strategies.

The researcher triangulated the data to be more confident that the evidence was good (Stake, 2010). She used multiple sources of data to confirm emerging findings (Merriam, 2002; Stake, 2010; Yin, 2009), and interviews were audio-recorded, while observation was video- recorded to aid in accuracy while analysing. In this regard, using multiple methods to collect and analyse data allowed the researcher to understand the FtFPI from different perspectives. She performed member checking (Creswell, 2014), for example, by sending teachers a copy of their interview transcripts and asking them to verify the accuracy of the content. In collaboration with an external auditor, the transcripts were reviewed (Merriam, 2002). In addition, the researcher presented a detailed account of the methods, procedures, and decision points in carrying out the study and provided an audit trail (Creswell, 2014; Merriam, 2002) (see Table 9).

Table 9: Audit trail

April 2017- Reviewed a list of potential schools to identify a suitable site for case study research.
May–September 2017- Made methodological determinations through the start-up seminar and began preparations for literature base and review study
August 2017- Established face-to-face communication with the selected schools to enquire about their interest in participating in the study.
June 2018- Received letter from NSD-Norway with permission to proceed and conduct research.
October 2018-Received letter from the Ministry for Education, Science and Youth in BiH to proceed and conduct research.
April-June 2018– Peer review to ensure the development of the data collection instruments; interview guide and questionnaire created from literature base.
October 2018– Explained the informed consent form and process to participants conducted face-to-face interviews and for later video recordings.
October 2018 –Conducted the pilot study questionnaire.
October 2018– Conducted interviews with 16 pupils and 4 teachers, confirming their willingness to participate in the study concurrently with the questionnaire data collection.
December 2018– Started transcription and analysis process of pupils' and teachers' interviews.
December-February 2018/2019 –Analysing the questionnaires
March -April 2019– Conducted follow-up communications with teachers providing them with the opportunity to review transcripts.
May-June 2019– Data analysis through transcript review.

May-August 2019– Data translation from Bosnian to English and the opportunity to review transcripts and audio recordings
October 2019 –Mid-way seminar and external and internal peer-reviewed discussions; the methodological determinations
September-November 2019– Requested peer and colleague review as findings and themes emerged participated in the conference (IASCE Conference)
April 2020– Conducting video recordings
May-September 2020–Transcriptions and analysis process of video recordings
October- 2020– Requested peer and colleague reviews as findings and themes emerged; participated in the conference (NAFOL)
July-August 2020– Requested peer review as selections of video fragments emerged
August-October 2020– Data translations from Bosnian to English and the opportunity to review the transcripts and video excerpts for further micro-analysis
June 2021– Requested peer and colleague reviews as findings and themes emerged; participated in the conference (IASCE Conference).
June 2022- Final seminar; peer-reviewed discussion and feedback on the article-based dissertation

4.7.1 Reliability

Reliability refers to the degree of consistency and the trustworthiness of the research findings, interpretations, and claims. In addition, it deals with replicability, for examples, to what extent a finding is 'reproducible at other times and by other researchers' (Brinkmann & Kvale, 2015, p. 281). In other words, reliability is regarded as what the researcher documents as data and what actually occurs in the natural setting being researched. The researcher established a research protocol to enhance the reliability of each of the questions to be addressed and what procedures would be followed for data collection, analysis, and record-keeping (Mills et al., 2010). An evidentiary base is kept separate from the interpretations.

Issues of reliability during interviewing, video recording, transcribing and analysis (Brinkmann & Kvale, 2015) have generated transparency on how the data have been collected and analysed and the theoretical pre-defined categories that guide the hybrid approach of deductive- inductive reasoning in analysis. This abductive process has led to ensuring the quality of the study. Since the researcher took a qualitative approach to analysis, video data gave her some advantages regarding reliability. By relying on video data, the researcher displayed parts of the collected data through excerpts and made analytical procedures visible for potential readers to scrutinise both the theoretical and methodological stances and the researcher's interpretation

of data based on these stances. Concerning the transcriptions, the researcher followed systematic and consistent methods when transcribing and describing the context for the excerpt in detail in the articles. This makes it possible for other researchers to understand the context of the selected excerpts. As mentioned in 'audit trail' and Sections 4.4.4, the data collection spans strengthen the reliability of the study. Thus, the data material can offer both breadth and depth in the discussion. Ultimately, the present study, situated in two authentic classrooms, may have replicable factors for similar studies of small FtFPI group work situations using the same data sources and analytical procedures.

4.7.2 Validity

In social science, validity pertains to the degree to which a method investigates what it is intended to investigate (Brinkmann & Kvale, 2015). Qualitative validity implies that the researcher checks for the accuracy of the findings by utilising certain measures to ensure the legitimacy of the findings and by determining whether they are accurate from the standpoint of the researcher participant or the readers of the study (Creswell, 2014). To ensure the validity of the data, Maxwell (1992) suggested five categories of understanding validity: descriptive validity, interpretive validity, theoretical validity, generalisability, and evaluative validity.

Descriptive validity refers to factual accuracy and accuracy in reporting descriptive information (behaviours, settings, time, place, ect.) (Johnson & Christensen, 2014), as the researcher did previously in the study context. Thus, the interviews with fourth-grade pupils and their teachers were audio-recorded to ensure descriptive accuracy. The researcher took observational notes during the video recording to record activities that were not capturable in video format. In addition, verbatim interviews and video transcripts were written down and checked for accuracy several times.

As the primary instrument for data collection and analysis in case study research is the researcher herself (Stake, 2010), the researcher must consider her own biases, limitations and views-throughout data collection, analysis, interpretation, and

reporting phases (Johnson & Christensen 2014). According to Maxwell (2013), bias and reactivity are two threats that include the researcher's subjectivity and perspective. Both may lead to invalid conclusions in the study if not approached with the understanding that their values may influence the direction of the study. Thus, the researcher used respondent validation (Maxwell, 2013) to rule out possible validity threats and often checked if she understood the statements correctly to prevent the possibility of misinterpreting the meaning behind pupils' and teachers' words. For this reason, the researcher tried to avoid leading questions and encouraging pupils and teachers to honestly express their experiences in co-learning and FtFPI situations. Furthermore, since the accounts of meaning come from the conceptual framework of people whose meaning is being enquired about, 'interpretative validity is grounded in pupils' and teachers' language, thus, relies on their concepts and words' (Maxwell, 1992, p. 289). There is no access to data that would generally address threats to validity; the concepts are developed according to the participant's reality but are always constructed by a researcher' s understanding of the reality in question (Maxwell, 1992). For this reason, the pupils' and teachers' authentic statements and actions were used when discussing findings to allow the reader to understand what led to the researcher's conclusions.

Furthermore, for the present study, in the interest of full disclosure and guarding against unethical or unintentional influences on the researcher's interpretation and conclusions of how pupils and teachers deal with FtFPI experiences, the following discussion outlines the researcher's personal positioning related to this study in terms *of reflexivity*. Reflexivity entails self-awareness in a process of introspection of the role of subjectivity in the research process (Palaganas et al., 2017). Thus, the researcher reflects on her own biases, values and experiences while acknowledging her impact on the research process, the production of knowledge (epistemology) and the process of knowledge production (methodology) (Creswell, 2014). Per the author's experience and understanding of the research topic, I have spent the past 20 years engaging with a student-centred methodology through a CL-based approach and cooperation as a value. Thus, my values and experiences with the FtFPI of CL as a research topic do not

exist independently of the research process; instead, they 'must be seen as a dialogue – challenging perspectives and assumptions both about the social world and of the researcher him/herself' (Palaganas et al., 2017, p. 427). In other words, I became attentive to interpretations that my experiences and bias could shape throughout the research process. I have spent time reflecting on and discussing the values and understandings attached to the FtFPI considered as a socially responsive engagement of the CL paradigm of the present study with colleagues (NAFOL) in my PhD journey and participating in IASCE conferences in the field of CL (see audit trail).

Discussing the challenges pupils and teachers face with the FtFPI of CL, in turn, bolstered my understanding of what may bias my methodological approach (see Article 2). In particular, I have been immersed in the importance of understanding from those who have direct experiences of FtFPI needs to those who can render action in response to these needs. In addition, my essential learning is to acknowledge that research has both strengths and limitations for social impact and development. Besides, very often during the data collection, I felt I could do nothing more than give 'something back' as the impact that I could give on my part as a researcher in the field of CL practice (see 6.4.). Nevertheless, I also pointed out that the study would be distributed as 'a methodology tool' to influence quality in educational practice if utilised accordingly by policymakers. Because reflexivity means interpreting one's own interpretations (Haynes, 2012), the academic and the personal/social aspects of interpretation are intertwined in this project. Despite the academic aims of the present research, I enlightened the personal aim of trying to understand how I came to be an academic and social being with socially responsive sensibilities. Yes, it is crucial to acknowledge that my motivation reflects my ontological position (see Section 1.2.1) underpinning the current research; thus, it might shape how I interpret findings and produce socially responsive FtFPI knowledge. Nevertheless, because it is impossible to eliminate biases related to my background and experiences, they can be reduced by reflecting on them, discussing them, and following ethical steps.

Theoretical validity goes further than mere description and interpretation of the phenomenon of the study; it explicitly addresses theoretical constructions that researchers bring with themselves or develop during the study (Maxwell, 1992). The social interdependency theoretical model on which the researcher based this study represented the conceptual framework. Validity was increased by building an interview guide based on the theory of Learning Together. Video analysis was based on Deutch's (1949) theoretical interactional dimensions of social interdependence. Two theoretical concepts relating to FtFPI served as the coding process. The theory is significant for the framework as it was used to build an instrument for the study; for example, the interview guide was constructed regarding learning together aspects and the subjective experience of people using these aspects participating in the 'Learning Together' model (Johnson & Johnson, 1999).

Broadly speaking, **generalisability** refers to the extent to which one can extend the account of a particular situation or population to other persons, times, or settings other than those directly studied (Maxwell, 2013). Nevertheless, in case studies like this one, the study of the pupils and teachers practicing the co-learning approach was not intended to be generalised and represent a larger population, as CL is not a common practice in BiH. Thus, the purposeful sample size in the present study was small. The purpose of the sample was to develop a deeper understanding of the FtFPI of the small CL group work the researcher intended to study. Furthermore, according to Yin (2009), 'analytic generalisation' (p. 39) may enable the use of the empirical results in a similar context. Therefore, analytical generalisation can be obtained first if the researcher provides detailed contextual descriptions of the research process. The second way is whether analytical generalisation implies that the findings and conclusions are based on theoretical assumptions that guide the study, empirical analysis findings and related studies (Polit & Beck, 2010). In addition, the researcher provided a detailed description of the research project's process and the analytical procedures. The theoretical framework that guides the empirical analysis and how this guides the research were explicitly described (see Articles 2 and 3).

Ultimately, evaluative validity differs greatly from the abovementioned types of validity. It includes the evaluative rather than descriptive, interpretative, and explanatory framework (Maxwell, 1992, p. 295). Nonetheless, evaluative validity is not central to the present research because I did not intend to evaluate the phenomenon under study.

5 Summary of the articles

This chapter provides a summary of each of the three studies. The overall findings answered the overarching research question:

How can pupils' and teachers' experiences with FtFPI strengthen socially responsive resources for colearning education?

An overview of the three interrelated subresearch questions posed in the three scientific articles to answer the main research question is given in Table 10.

Table 10. An overview of the articles

	Article 1	**Article 2**	**Article 3**
Research Question(s)	Which FtFPI factors lead to successful CL in small groups?	How do pupils and teachers perceive FtFPI in CL group work? (a) To what extent are the aspects of FtFPI most likely to influence pupils' CL group work? (b)What are the challenges in applying pupils' FtFPI in small CL groups from the pupils' and teachers' perspectives?	How do pupils practice their FtFPI in small CL groups? (a) Which features of FtFPI do pupils use for peer support in small CL groups? (b)Which interfering factors do pupils encounter during FtFPI in small CL groups?
Methods	(a) Data based search (ERIC, SCOPUS, ISI Web of Science) (b) Manual and citation searches	(a) Pupil questionnaire (b) Semi-structured one-to-one pupil interviews (N= 16) (b1) Semi structured one-to-one teacher interviews (N= 4)	Video observation (four groups) Classroom observations (researcher's non-participatory observation)
Materials	34 relevant articles out of hits [71]	(a) N= 192 (Year 4 and Year 5) (b) Transcripts (54 pages in Bosnian and 57 pages translated into English language) (b1) Transcripts (40 pages in Bosnian and 43 pages in English) 446 minutes of audio-recorded material	Recorded material: 11 h and 27 min Video-transcripts contain: 287 pages in Bosnian and 264 pages translated into English languages Observational notes (4 pages)

[71]See appendix 9 for the overview of the literature search

Findings	-FtFPI influences social and academic gains in CL groups -FtFPI is the complex interactional process and required preparation -FtFPI factors have the potential to enhance CL process (1) Interpersonal behaviour (2) Active experiences with FtFPI process (3) Supportive communication (4) Teacher's influence -Pupils gain responsiveness and willingness through engaging within the FtFPI. -Having experience in FtFPI, pupils' firm working relationships and openness to others -Giving feedback to each other supports pupils' communication and support -The teacher's role is crucial for pupils' FtFPI - Most quantitative, experimental studies lack the pupils' perspectives providing deeper insights into the FtFPI process.	-Pupils believe CL work and FtFPI aspects help in progressing their learning. -A contradiction between pupils' beliefs and experiences in having sufficient knowledge to respond to peers in the co-learning process. -Approximately one-third of the pupils did not experience any attention, encouragement, or peers' praise in CL group work. -Interpersonal behaviours and supportive communication are perceived as the most challenging FtFPI' aspects - The importance of using FtFPI but have insufficient knowledge of coping with its challenges in practice. - The study showed the need for practicing FtFPI, better preparation, and more monitoring of FtFPI - The study shows a lack of positive interdependence influencing pupils' responsiveness and supportiveness in CL - Teachers' commitment to CL practice, but the need for ongoing support in implementing CL and preparing pupils for FtFPI is vital for quality practice.	-Pupils' verbal and non-verbal features are used to respond within FtFPI. - Pupils do not always show a willingness to respond during FtFPI. -The 'helping credits' as external resources limits pupils' support - Pupils use the universal supportive communication to encourage and praise peers' efforts or success in learning, but sometimes it fails to positively influence CL progress. - The study showed insufficient skills to maintain social support in task-related help. - Teachers intervene on pupils' requests within the FtFPI support. - Teachers did not give specific feedback on pupils' cooperation nor provide pupils to reflect on their interpersonal behaviours or supportive communication activities. - Pupils need a variation of FtFPI features for becoming socially responsive co-learners.

5.1 Article 1

Dzemidzic Kristiansen, S., Burner, T., & Johnsen, B. H. (2019). Face-to-face promotive interaction leading to successful cooperative learning: A review study. *Cogent Education,6*(1)*,* 1674067.

The primary aim of this study was to review empirical findings within CL group work by focusing on FtFPI to investigate, first, the factors that provide insight into the characteristics of FtFPI and, second, those factors in promoting FtFPI, which account

for successful CL (Johnson & Johnson, 2008). Knowing that the quality of group interaction mediates the effects on pupils' achievement (Battistich et al., 1993), the results that deal with CL effects mediated by FtFPI were obtained as the third factor of successful CL. The inductive analysis (Creswell & Creswell, 2017) revealed five interconnected categories within three groups of factors associated with successful CL, which are integrated into the cyclic FtFPI model.

The first factors regarding '*Interpersonal behaviour*' and '*Pupils' communication and support*' refer to the components of FtFPI among pupils. '*Interpersonal behaviour*' shows the variety of pupils' interpersonal skills and groupmates' willingness during FtFPI situations that contribute to a successful CL process (Gillies & Ashman, 1998). Furthermore, findings on *'Pupils' communication and support'* demonstrated how communication skills such as paying attention, encouraging, and praising among groupmates relate to pupils' support during FtFPI processes. The analysis illustrates the importance of pupils' feedback and modelling that make the FtFPI efficient for successful CL (Gnadinger, 2008). The second group of factors that promote FtFPI among pupils for successful CL relies on findings regarding *'Pupils experiences and FtFPI process'* and *'Teachers' influence on students' FtFPI'.* The results referring to *'Pupils' experiences and the FtFPI process'* show that the pupils' less exposure to FtFPI experiences resulted in challenges in developing and maintaining stable CL processes. In turn, a lack of understanding of FtFPI skills and experience may influence the entire CL process (Gillies, 2003a). The empirical findings associated with '*Teachers' influence on students' FtFPI'* demonstrated teachers' critical role in promoting FtFPI among pupils and creating conditions for positive FtFPI (Gillies, 2014; Kaendler et al., 2015). The teachers' influential role was found in the findings as either a strengthening or challenging aspect in promoting FtFPI, depending on how CL was utilised and valued across the research context (Jollife, 2015; Sharan, 2010). Finally, the third group of factors considers findings that deal with the CL outcomes mediated by FtFPI, which is '*FtFPI leading to deep learning*'. Although the results indicate the mediating impact of pupils' FtFPI on group achievement and deeper learning about cooperation (Tan et al., 2007), deep learning was not investigated further in empirical studies 2 and 3. This is

considered a limitation of the thesis, but an opportunity for future research to investigate deep learning within the context of FtFPI and CL.

In summary, Article 1 reveals that successful CL group work among pupils is intertwined with three groups of factors related to FtFPI. Understanding what constitutes FtFPI and its promotional aspects is crucial to establishing and encouraging FtFPI. However, the review indicated a lack of deeper insight into the FtFPI process from the pupils' perspectives and practices, which most quantitative studies could not provide. For this reason, Article 2 utilised the first and second groups of factors of FtFPI to investigate their perceived influences on CL group work, as reported by pupils. In addition, Article 2 explored pupils' and teachers' understanding of the challenges they experienced with the FtFPI process for successful CL. Furthermore, understanding pupils' practice through supportive and interfering actions within the FtFPI process might become a valuable resource for CL group work, as investigated in Article 3.

5.2 Article 2

Dzemidzic Kristiansen, S. (2020). Exploring pupils' and teachers' perspectives on face-to-face promotive interaction in cooperative learning. *International Journal of Primary, Elementary and Early Years Education, 3–13*, 1–16.

Article 2 elaborates on FtFPI factors raised in the first article by exploring pupils' and teachers' experiences. The core issue in Article 2 concerns the pupils' perceptions and challenges of FtFPI factors for successful CL group work by forging a solid and supportive bond among colearners and their teachers. The study's quantitative part shows the extent to which different FtFPI aspects (exposure to group work, peer help, paying attention, encouragement, praise among groupmates and teacher's role) had perceived influenced on colearning group work, as reported by pupils (N= 192). With these numbers as a point of departure, the analysis draws attention to the perceived influence of teachers' engagement on FtFPI in CL group work, as stated by pupils. However, a discrepancy was detected between the pupils' reports on the Likert scale,

showing that almost all pupils were taught about FtFPI, and pupils' responses on yes/no items indicated insufficient knowledge of FtFPI factors during joint work. Overall, Study 2 highlights that pupils believe that a mixture of encouragement, attention and praise positively influences their CL group work to a very high degree. Nevertheless, the study found that a significant number of pupils did not experience any encouragement, praising or peer attention, which may negatively influence groupmates' responsiveness to CL progress. The qualitative analysis of pupils' and teachers' interviews found challenging 'social mediation' (Vygotsky, 1978; Moll, 2014), referring to interpersonal behaviours and supportive communication. By examining boys' and girls' perspectives of using FtFPI factors, the study argues that boys require more knowledge for their engagement as co-supporters during FtFPI than girls. Further findings in qualitative data analysis accentuate the challenges related to pupils' equal participation in a joint task through FtFPI due to detected deficiencies of positive interdependence among co-learners. The analysis of the teachers' perceptions on FtFPI of CL revealed insufficient cooperation amongst themselves and 'others' to expand their continuity of CL practice in their classrooms. Moreover, Article 2 showed that ongoing support for teachers' needs to improve FtFPI in their emerging co-learning classrooms remains a challenge. Nonetheless, these challenges may serve pupils and teachers in equipping knowledge of FtFPI aspects, especially concerning promoting interpersonal behaviour and supportive communication for improving co-learning practices.

To summarise, Article 2 reveals several challenges and conflicting signals regarding insufficient knowledge related to supportive co-learners, the teachers' role as facilitator and inadequate preparation for FtFPI in the CL classroom. The study provides insights into interpersonal behaviour and supportive communication as the most challenging aspects of FtFPI, which may shape pupils' supportive engagement in the CL groups. The study points to the need for a microanalysis of supportive and interfering ways in which reciprocal engagement may contribute to the socially responsive features of FtFPI of Grade 4 pupils (Article 3).

5.3 Article 3

Dzemidzic Kristiansen, S. (2021). Becoming a socially responsive co-learner: Primary school pupils' practices of face-to-face promotive interaction in cooperative learning groups. *Education Sciences, 11*(5), *195*.

Article 3 summarises how pupils in Year 4 used FtFPI in the heterogeneous CL groups regarding interpersonal behaviours and supportive communication actions. As an extension of Article 2, for co-learners' socially responsive resources, the third article illustrates the nature of supportive features and interfering factors that pupils encounter during FtFPI. In contrast to the first two articles, this article examined how co-learners use the 'mediational means' (Kozulin, 2003; Wertsch, 1991) to become (non)responsive peers who move their CL group beyond their current ZPD towards a higher level, to joint achievement. Previous studies into the functioning dimensions of FtFPI refer to pupils' pro-social verbal and non-verbal behaviours, socio-emotional experiences, personal perceptions of their peers and personality traits such as self-monitoring (Cohen, 1994; Gillies, 2006; Topping et al., 2017). However, Article 3 examined FtFPI features through three interactional dimensions of positive interdependence (Deutsch, 1949). In particular, the focus was on interpersonal behaviour and supportive communication. The analysis revealed whether, when, and how pupils responded, showing substitutability, cathexis, and inducibility dimensions. Further, findings showed that the co-learners use explicit or subtle, almost 'hidden', verbal or non-verbal interpersonal tools in recognition and willingness to address or respond to peers' needs. Nonetheless, most did not show a willingness to proceed further in the FtFPI situation. Beyond using the universal supportive communication tools such as 'applauding', 'bravo' or 'come on', co-learners demonstrated insufficient skill variety in how to encourage and praise peers' efforts or success. Nevertheless, an exception in Excerpt 5 shows how responsiveness on the part of a co-learner might bring a broader spectrum of socially responsive resources through an understanding of personal, interpersonal behaviour and interactional dimensions in CL group progress. Conversely, the analysis regarding interfering moments during FtFPI

revealed insufficient knowledge of giving task-related support and interaction-related help, less self-awareness about the active socially responsive role and a lack of personal attention or too intrusive attention invested in peer engagement. On the other hand, the study indicated that these co-learners' deficiencies led to pupils' dependency on the teachers' intervention to regulate their CL relationships. In this regard, Article 3 concludes with the argument that the necessity to promote a variety of interpersonal behaviours and supportive communication features may add to the knowledge of how to become a socially responsive co-learner who may contribute to the quality CL process and mutual progress by engaging in FtFPI situations.

In summary, Article 3 demonstrated that co-learning through engaging FtFPI in heterogeneous groups challenges the socially responsive group work capacity. In particular, interpersonal behaviours intertwined with supportive communication call for socio-relational competencies and interactionally prepared pupils to become responsive to CL group process and mutually progress.

6 Discussion

The overall research question was as follows: *How can pupils' and teachers' experiences with FtFPI strengthen socially responsive resources for colearning education?* This question was answered by the subquestions/aims in Articles 1–3; the findings are discussed below. Thus, the discussion chapter is structured according to the themes that emerged from the findings: (1) *Understanding the FtFPI' s socially responsive role,* (2) *Turning FtFPI challenges into resources for education needs* and (3) *Needed FtFPI knowledge for socially responsive CL education.*

Reimagining overcoming the 'relational virus' as postwar consequences with struggles to ensure the right to quality education for every child, the findings in Articles 1–3 provide knowledge that may contribute to social inclusion *from* and *with* education (UNESCO, 2021). Thus, the present study highlights the necessity of quality human resources and social values for a responsive BiH society suspended in transition with educational, socioeconomic, and human rights anchoring needs (Greiff, 2020; Krajišnik et al., 2021; Pašalić-Kreso, 2008). In terms of school settings, the present study has provided a deeper understanding of socially responsive face-to-face engagement for strengthening a co-learning environment regarding solidarity and inclusion (OECD, 2012, 2019a; UNICEF, 2020). Specifically, the current thesis has a primary focus on FtFPI being investigated as an essential element of the 'Learning Together' model through a positive interdependence perspective (Deutsch, 1949; Johnson & Johnson, 1999) and a sociocultural tool in human mediation within the group's ZPD (Konzulin, 2003; Vygotsky, 1978). In this respect, the leading FtFPI social resources are the 'ways of doing and being'(Biesta, 2020) among individuals who connect, engage with, and respond to each other to become co-agents of quality education (OECD, 2019a).

Internationally, previous research has shown that the pedagogy of cooperation appears with the challenges often encountered in the relational and inclusive group processes to engage all learners by mutually promotive behaviours (Forslund Frykedal & Hammar Chiriac, 2018; Klang et al., 2020; Veldman et al., 2020a). More specifically,

in the present BiH context, co-learning pedagogy challenges the existing ways of schooling and education. Although the BiH education strives for more student-centred learning, the ongoing reform system needs to deal even more with how to strengthen teachers' and pupils' co-agency to become cocreators for inclusive and equal educational opportunities. Knowing the practice of co-agency (OECD, 2019a) requires new socially responsive engagement among co-learners as exemplars of quality education ventures in BiH. Thus, the present thesis raised questions about the need for greater attention to the FtFPI as a common good vital for co-agency experiences (OECD, 2019a; UNESCO, 2021). In this regard, the FtFPI explores the potential of co-learner responsiveness engaged *in* and *with* group co-learning experiences (Articles 1–3). However, the empirical investigation (Articles 2–3) has shown that being FtFPI colearners was a challenging experience and practice that needs continuous strengthening through prosocial behaviours and supportive communication regarding social values and inclusive practices. Strengthening co-learners' FtFPI in a CL process refers to the three themes discussed below.

6.1 Understanding the FtFPI's socially responsive role

The FtFPI is fundamental for successful CL interaction (Johnson & Johnson, 1999), but FtFPI relational aspects are also essential in responsive, engaging environments for social and academic gains (Gillies & Ashman, 2003; Sharan, 2010; Veldman et al., 2020a). The FtFPI factors (presented in Article 1) serve as an educational resource that can strengthen the understanding of what socially responsive process co-learners should be familiar with. The interrelated factors have the potential to promote understanding of co-learners' responsive engagement, as illustrated in Articles 2 and 3. Nevertheless, the present thesis shows that positive interdependence as an anchor for sustained engagement within CL environments (Sharan, 2010) remains challenging among purposefully selected BiH co-learners (Articles 2–3). Consequently, when groups and individuals (non)engage in the FtFPI needs of others when they (non)recognise them, the following question arises: What kind of young people are our learners becoming as humans *in* and *with* their learning community? Are they

becoming attentive, responsive, and engaged co-learners for inclusive ventures? Becoming socially responsive individuals occurs when strengthening the quality of cooperation by following Deutsch's (1962) theoretical line of 'positive resource interdependence'. For this reason, Article 2 has emphasised linking colearners in understanding reciprocal engagement in support giving and seeking through their FtFPI role. Moreover, the same findings indicate common views and interests *in* and *with* FtFPI engagement. Even so, critical here is understanding FtFPI's role, which is driven by positive interdependence perspectives, to expand the notion of self-interest through human quality and social values towards the common good interest (Cohen, 1994; Deutsch, 1949). In support of this, Article 3 has demonstrated how FtFPI's supportive and interfering features might influence self /common interest among co-learners to act socially responsive or not as their contribution *in* and *with* the co-learning environment. Nevertheless, these findings call for understanding who is a socially responsive co-learner 'interactionally dimensioned' (Deutsch, 1949) to become a coagent (OECD, 2019a). Similarly, how can each learner best understand these dimensions of FtFPI engagement?

The findings (Article 3) have shown that FtFPI verbal and nonverbal interactional dimensions might function as social resources if 'face-to-face actors' are skilled and willing to use them in the co-learning process. In understanding the 'hidden' interpersonal processes, genuine recognition and willingness practices are the most significant socially responsive interactional dimensions to drive FtFPI further towards engaging those disengaged or at risk of exclusion. Therefore, teachers as co-learners must get support to create opportunities for understanding and monitoring the FtFPI process as it is happening to identify pupils' resources and challenges in such practices (Topping et al., 2017). Reflecting on themselves as cocreators of a responsive environment by viewing classrooms within the larger society, teachers and pupils may strengthen FtFPI reflective phases by challenge recognition and challenge-response (Dzemidzic Kristiansen, 2022). However, a FtFPI reflection opportunity among co-learners is lacking, as findings indicated through FtFPI practices (Article 3) needed 'reflective common experiences' to co-creating new actions and new habits

developing (Dewey, 1938). The central assertion of the current thesis is that if BiH education seeks quality education through quality student-centred strategies such as CL, then the FtFPI role might be comprehended as a 'co-agency' of new learning processes (OECD, 2019a). In other words, strengthening co-learners to understand how to become co-agents *in* and *with* the FtFPI role may provide promotive environments that engage all to respond to the needs of every child (Deutsch, 1949; UNESCO, 2021). In this regard, to overcome the challenges of the FtFPI role and promote the CL process, it is necessary to understand the variety of FtFPI pro-social interpersonal and communication resources elaborated on in the current thesis (see Chapter 3). This approach will enable pupils to act with a new dimension of their personalities and broaden social horizons (Pasalic-Kreso, 2002) to co-agency ventures.

6.2 Turning FtFPI challenges into resources for education needs

In considering the findings in the studies together, one main result emerges: challenges experienced as 'setbacks' by co-learners may be associated with interpersonal behaviours and supportive communication within FtFPI (Article 2–3). The data analysis illustrates deficiencies in the sufficient CL knowledge, appropriate preparation, and organisation of FtFPI aspects that undermine the quality of socially responsive engagement, as demonstrated in Article 3. Article 2 indicates that the teachers' follow-up in CL implementation is constantly being challenged without a 'collaborative profession' that evolves with colleagues, schools, and stakeholders for education needs. Conversely, aligned with the review in Chapter 3, establishing professional learning communities, including a responsive school network (Jolliffe, 2015), might turn current challenges into FtFPI professional resources. In other words, CL educators need to be recognised as reflexive practitioners from the ground up and the top-down structures as contributors who are engaged in social and academic knowledge cocreation for responsive education needs. Because teachers play a critical role in responsive environments as the coagents of pupils' learning (OECD,2019a), supporting their FtFPI engagement is vital for education needs and also for the needs

of teachers who present the quality of an educational system (Rangelov-Jusovic, 2014). The individual FtFPI abilities of teachers need to be strengthened by cooperation and continued support through teachers' CL groups in professional communities for quality education (Liebech-Lien, 2021). However, Article 2 shows that teacher co-agency can be a challenge. The findings in Articles 2 and 3 recognise the conflicting signals of the FtFPI roles of teachers as facilitators in pupils' FtFPI engagement. The 'insufficient 'resource interdependence' (Deutsch, 1962) challenges both teachers' and pupils' FtFPI mediating roles (Moll, 2014) within primary interpersonal behaviours and supportive communication for diverse co-learning needs. Thus, the detailed FtFPI analysis (Articles 1–3) required rethinking current FtFPI challenges as a turning process for socially responsive resources.

More precisely, in the BiH educational context, deepening knowledge about FtFPI and other elements of CL grounded in the pedagogy of cooperation is necessary, as outlined in Articles 2 and 3, to drive coagency (OECD,2019a) with human quality and social values. In doing this, to strengthen education in quality of inclusive processes in BiH, becoming socially responsive co-learners accentuates the necessity of deeper learning about FtFPI aspects intertwined with school subject knowledge (Articles 1–3). To particularly address prejudice and bias by teaching a democratic culture of CL behaviour and communication (Ferguson-Patrick, 2020), FtFPI knowledge based on individual/group reflective experience is human rights and inclusive needs for ways of doing and ways of being together (Biesta, 2020).

6.3 Needed FtFPI knowledge for socially responsive education

As mentioned above, the results in Articles 1–3 have shown that FtFPI knowledge, although challenging, is a key part of socially responsive engagement with others. Similarly, previous studies have shown the challenges associated with social competencies to engage others in becoming and working as a group (Galton & Hargevaes, 2009; Pang et al., 2018; Rešić et al., 2016). When recognising such

challenges, group knowledge[72] is needed on the FtFPI aspects, along with the notion of social interdependency (Deutsch, 1949). Concerning knowing group knowledge, in the present study, the most surprising result is the empirical findings, which mainly show those problems with FtFPI and positive interdependence that serve as the anchors for CL environments (Sharan, 2010). The surprise arises because the purposefully selected CL environments should be the study's strengths, having co-learners who already used CL pedagogy. Nonetheless, the findings have indicated insufficient FtFPI functional knowledge and continuity in engaging across FtFPI's practices between co-learners. On the other hand, some positive examples (see Excerpts 5 and 6 in Article 3) may serve as a model for socially responsive knowledge and a part of the FtFPI of CL preparation, as outlined in the implications for schools (see Section 6.4.2). In doing this, CL environments that prepare and enable FtFPI practices are crucial in strengthening a genuine understanding of socially responsive education. Besides, recognising and responding to the classroom needs and differences through FtFPI practices are crucial for social inclusion (UNICEF, 2020).

A detailed study of how FtFPI is practised provides a micro-analysis of how supportive and interfering features illustrate how co-learners can become socially (non)responsive actors (Article 3) that are previously explored in co-learners' perceptions (Article 2). By drawing on the dimensions of social interdependence theory (Deutsch, 1949), the present study has provided knowledge on how each individual can learn FtFPI by experiencing the supportive and interfering actions of FtFPI and how to socially demonstrate responsive practices. Similarly, researchers in the CL field have pointed out the need for more detailed interactional knowledge for reinforcing positive and cooperative behavior among pupils (Johnson et al., 2013; Klang et al., 2020; Le et al., 2018; Main, 2018; Veldman et al., 2020a).The findings across Studies 1–3 show a need for a deeper understanding of FtFPI's more nuanced aspects, as framed by an ethics of care and attention that recognises the needs and

[72] Group knowledge refers to learning to work in groups (Baines et al., 2008; Gillies & Boyle, 2010).

opportunities of each and all. Thus, strengthening FtFPI's diversified skills might become a resource for facilitating different ways of socially responsive engagement for co-agency in a diverse CL environment (Ferguson-Patrick, 2018; Gillies & Haynes, 2011; OECD, 2019a; Sharan, 2010).

Considering the findings reported in Articles 2 and 3, it becomes evident that the utmost importance lies in the social and academic 'risk' actors whose engagement *with* and *in* FtFPI must become a part of a responsive CL environment. As a result of the (non)engaging learning process by the CL paradigm, the FtFPI role may (not)help to understand 'what we are and who we want to become through education' (Biesta, 2016, p. 23) in the BiH society. By contrast, becoming socially responsive and FtFPI knowledgeable co-learners may create conditions for mutually inclusive interactions (Forslund-Frykedal & Hammar-Chiriac, 2018) that are essential for strengthening quality CL education as a common good. In other words, the current thesis points to FtFPI knowledge, strengthening and disseminating an understanding of FtFPI's role grounded in pedagogies of cooperation for socially responsive education. Returning to this point, the final section (6.4) suggests implications for the thesis and further research on this topic.

6.4 Contributions and implications

First, the theoretical and methodological contributions of the present thesis will be discussed, followed by a discussion of the main implications for schools, teacher education, policy makers and research.

6.4.1 Theoretical and methodological contributions

According to Dewey (1916) and other proponents of progressive pedagogy, schools must provide a community life by cooperation, where there is knowledge giving and seeking in the building up of a shared experience developed only in a genuinely social engagement. Experiences with FtFPI have been explored in light of a socially responsive engagement that has the potential to strengthen prosocial behaviours (Van Ryzin et al., 2020), becoming a coagent for authentic and promotive classroom

ventures (OECD,2019a; Sharan, 2014; Van Ryzin et al., 2020). Nonetheless, it has been argued that identifying when pupils avoid rather than engage with another group member shows their deficiencies in building a co-learning face-to-face environment (Le et al., 2018; Pang et al., 2018). Hence, more studies (Articles 1–3) on unpacking the factors of FtFPI and how they are interpreted and used in group settings are needed from the co-learners' shared experiences. To the best of my knowledge, no studies have comprehensively and explicitly investigated the FtFPI as one of five vital elements of the 'Learning Together' approach (Johnson & Johnson, 1999) as coagent of social inclusion. However, pupils' helping behavioural interaction indicated such an approach in previous research (Gillies, 2003a, 2006; Gillies & Ashman, 1995, 1998; Webb et al., 2002).

Each of the three articles contributes a segment to the theoretical picture of socially responsive knowledge by analysing FtFPI in a small CL group classroom context. Theoretically, the present thesis has clarified the FtFPI of CL and analyses more of the in-depth and intertwined aspects of interpersonal behaviours and supportive communication. Article 1 contributes to the field by providing a theoretical review study that systematises existing empirical research on the three groups of FtFPI factors. As a result, an FtFPI model has a theoretical contribution that may be used to learn about FtFPI as a cyclic and dynamic social process from Grade 1 of primary education. Article 2 addresses those FtFPI aspects as sociocultural mediating resources contributing to socially responsive interactional knowledge. Nevertheless, the deeper insights and micro-analysis of the FtFPI aspects, particularly interpersonal behaviour and supportive communication, are not, to the best of my knowledge, researched in the BiH CL context. In this respect, Article 3 elaborates on the FtFPI's features in engaging socially responsive resources as contributions to co-learning processes.

The present thesis has aimed at constructing empirically driven knowledge by drawing on the sociocultural perspectives on learning and social interdependence theoretical framework (see Sections 2.2 and 2.3) in an inquiry into pupils' FtFPI experiences and

practices in co-learning. The sociocultural perspective points to how human mediation is shaped using FtFPI sociocultural tools. In the case of the present study, this has been extended to the interactional dimensions of positive interdependence. As indicated by the empirical findings, FtFPI without the interactional dimensions of substitutability, cathexis, and inducibility (Deutsch, 1949) among co-learners remains underused as a human resource in the mediating co-learning process. More specifically, Article 3 adds methodological knowledge to the CL field, showing how FtFPI can be studied through the subaspects of interpersonal behaviours and supportive communication and how its supportive and interfering features are used when working within FtFPI situations.

Building upon a social pedagogy of classroom group work (Baines et al., 2008), the thesis's contribution is synthetising the categories for a deeper understanding of the FtFPI engagement to study socially responsive relationships drawing on social interdependence perspectives (Johnson & Johnson, 2009). The methodological contribution of the multiple data collection methods allowed the researcher to study FtFPI from three angles: theoretical, experiential, practical, complementing and contradicting each other. In this way, the multiple methods have illustrated deficiencies and gaps in co-learners' perceptions and practices, showing their true FtFPI 'socially responsive face'. Synthesising the results of three studies and triangulating between the data in these studies may enhance the knowledge- of FtFPI engagement for socially responsive co-agency in CL primary education.

6.4.2 Implications for schools and teacher education

The current thesis draws out the implications for classroom practice in teaching integrated academic and social learning by strengthening FtFPI skills and wills for co-learners who are becoming coagents in the CL school, both teachers and pupils. Furthermore, it is not enough to teach about social values; socially responsive teaching and learning forms should be applied in practice. The pupils' role in socially responsive co-learning is central in the present study within the pupil–pupil FtFPI engagement, which has a double responsive function for each pupil's learning; helping

the seekers and helping the givers (Webb et al., 2002). Article 1 shows that FtFPI factors contribute to pupils' successful co-learning and, thus, more responsiveness among co-learners in task-related help. However, Article 2 indicates that colearners have insufficient cooperative skills for FtFPI engagement and CL use, which seems consistent with previous research that found a lack of pupils' CL skills and teachers challenges for implementing CL (Buch et al., 2017; Le et al. 2018), while continuous CL preparation is lacking. As demonstrated in Article 3, a deeper understanding and practicing of FtFPI may strengthen pupils' socially responsive ability as necessary cooperative skills and, thus, active engagement in CL ventures. In this case, acquiring knowledge through CL and 'doing socially responsive engagement' (Dewey, 1916) can become the primary resource to strengthen the co-learners with a human quality and social values for quality education. Focusing on 'doing socially responsive engagement' might gear competence development for pupils' co-agency (OECD, 2019a). However, the central role of such implications for pupils rests with the teachers.

Teachers are expected to approximate and promote positive interdependent co-learners to have less dependency on teacher's interventions across FtFPI situations (Van Leeuwen et al., 2020). In support of this, FtFPI contribute to the teacher's transformative socio-pedagogical role, as evidenced by Article 3. However, when the teacher's contributions to the FtFPI of CL, particularly in the BiH classroom, is questioned, several suggestions can be raised to convert the teacher-led to a pupil-led part. First, emphasis is placed on how the teacher imparts FtFPI functional knowledge to pupils without practical knowledge included in the preparation of FtFPI, as Articles 2 and 3 accentuate. Article 3 suggests that teachers' functional knowledge is necessary for FtFPI interpersonal behaviour and supportive communication to modify teacher centrality into modelling, monitoring, and reflecting, which has also been found in other studies (Gillies, 2006; Sharan, 2014). The present study emphasises the need for ongoing, follow-up group reflection and organised teachers' CL professional networks between schools (Hennessey & Dionigi, 2013; Jolliffe, 2015). Doing this may minimise the challenges illustrated in Article 2, including the lack of

support for teachers through 'the collaborative profession'. The findings based on teachers' experiences and perspectives suggest a need to apply the FtFPI aspects identified in Article 1 to in-service practice and teacher education.

Although positive examples show the prosocial FtFPI engagement that consolidates the pupils' FtFPI role, other less promotive ones (Article 3) require reconsidering the teacher's knowledge in incorporating the five principles of CL (Johnson et al., 2013; Van Ryzin et al., 2020). Strengthening teachers' facilitation skills through a specific set of FtFPI capabilities across Studies (1–3) may support in-service and preservice teachers in using them, which are likely to improve the quality of pupils' FtFPI functioning (Dzemidzic Kristiansen, 2022). In particular, updating and deepening knowledge of FtFPI's role should be a practical part of in-service and preservice teachers' professional development across school subjects in group work for subject content learning in primary schools. The necessity rests in supporting teachers' profession to learn about and through FtFPI while implementing CL strategy. In this case, teachers may create a shared experience as co-learners, modelling and self-reflecting on their role of teacher agency (OECD, 2019a) within-group processing while preparing for or strengthening the teaching profession.

Ultimately, the teacher's role in planning, modelling, monitoring, facilitating and group processing of FtFPI have been illustrated as challenges in Articles 2 and 3 and require implementing Kaendler et al.'s (2015) phases of pupils' interaction into CL practice. The three essential phases—planning for FtFPI as preactivities, influencing FtFPI as interactivities and reflecting on FtFPI as postactivities—should be part of CL preparation and ongoing training in teacher education and in-service programmes for teachers (Dzemidzic Kristiansen, 2022; Letina & Vasilj, 2021).

6.4.3 Implications for policy

One important implication of the present thesis is the need to examine the legislative requirements and discuss the revision of the concept of the Nine-Year Compulsory Education document in BiH (Ministry of Education of the FBiH, 2004). This specifies

which forms of group work and interaction among children are the ultimate action by the child-centred interactive approach to quality education (see Section 1.2). Corresponding with the working document 'Strategija razvoja obrazovanja i nauke' [Strategy for the development of education and science] (2017) in Canton of Sarajevo, this study shows how CL might be a suitable pedagogy model to work in in-depth quality teaching practice and FtFPI interactive engagement regarding core values and inclusion in primary school. As Dewey (1916) noted, the curriculum must be related to the needs of the existing school community. This thesis implies revising the primary school curriculum by incorporating socially responsive knowledge of FtFPI to support pupils into becoming co-agents of the school community and the education that it provides. Given that the findings of Articles 2 and 3 indicate insufficient positive interdependence among co-learners, there is a need for CL knowledge and FtFPI engagement to support both pupils and teachers in applying them within the BiH context. Moreover, socially responsive knowledge might promote educating pupils to become coagents of social issue recognition and problem solving in their community (OECD, 2019a). Next, FtFPI's skills across school subject disciplines and other CL skills might strengthen twenty-first century skills such as critical thinking, deep learning, and democratic citizenship (Brankovic et al., 2016), which are inefficient in BiH education and thus a limitation of BiH society (see Section 1.1.2).

6.5 Limitations and future research

As demonstrated above, several new research issues have been revealed after identifying the limitations and working with the three studies' findings (Articles 1–3) that have been synthesised in the present thesis. The findings in Article 1 have shown the need to understand the three intertwined groups of factors regarding the complex FtFPI engagement of pupils and teachers for successful CL in classroom settings. However, the current research is limited and needs further elaboration on how to put the FtFPI engagement into practice outside of classroom life, for example, in practical 'outdoor realities' across school subjects. Furthermore, in Article 2, the analytic generalisation because of the small sample in the case study indicates that empirical

results may be used in a similar context but did not yield data that may be generalised (Yin, 2009). In Article 2, the study limitations pertain to the methodological aspect that influenced the understanding of perceived influences of FtFPI engagement in small CL group work to provide greater clarity to the questionnaire items' structure. The application of factorial analysis could offer a multivariate statistical approach for identifying underlying FtFPI factors and patterns within the questionnaire data reported by pupils. Its utilisation has potential contributions: (a) it can reduce the complexity of a large number of variables, condensing them into a more manageable set of factors, and (b) it can assist in establishing relationships between measured variables and latent dimensions, thereby contributing to the refinement of the FtFPI theory, depending on the exploratory or confirmatory purposes in future studies (Williams et al., 2010). In addition, given the hierarchical structure of the data, with pupils (level 1) nested within classrooms (level 2), and classrooms nested within schools (level 3), multilevel analyses (Cohen et al., 2018) can be applied to study variations in pupils' perceived influences of FtFPI engagement and the role of teachers with regard to need support during FtFPI at both the classroom and school levels (Cohen et al., 2018). In this vein, future studies could provide knowledge of the association between pupils' perceived influences of FtFPI and small CL group work in a primary school context. Investigating how small CL group classroom interaction and FtFPI are associated, on the basis of pupils' self-reports could have a focus on interpersonal behaviours and supportive communications when including gender and grade level as covariates and, for example, pupils' disadvantage status as a control variable.

Because the data obtained during the interviews (Article 2) primarily depended on the interviewees and their willingness to share, the information was limited to their perspectives and lived experiences. Patton (2002) stated that perceptual data are in the eye of the beholder. However, the present study's triangulation of data helped verify the results and support the accuracy of the themes mined from the interview transcripts. In so doing, teacher and pupil experience with FtFPI has revealed several challenges that can be seen as opportunities for intervention studies to enhance

practices under the changes for socially responsive CL quality and continuity. Furthermore, if such a school approach to coconstructing a socially responsive education is to be established and sustained over time, the principals', school pedagogical services', and parents' perspectives through a formal investigation of FtFPI aspects would be a valuable contribution. Therefore, the lack of these perspectives has created limitations for the present study.

The present thesis suggests conducting a critical case study (Yin, 2009) and applying a mixed methods approach to examine FtFPI practices alongside the essential elements of CL to respond to diverse pupils' social needs, as demonstrated in Article 3. In that regard, linking the questionnaire and video data of the pupils who were videotaped in activities during small CL group work could provide a closer examination of the behaviours pupils reported and displayed during FtFPI, helping to identify specific socially responsive behaviours that needed personalised support (Van Leeuwen et al., 2020). As such, the present study suggests a deeper focus on individual or multiple cases to explore FtFPI engagement for 'at-risk ones' within CL groups. For possible future research, questionnaire, interview, and video data at the interpretation and reporting levels can be integrated through either data transformation or joint displays (Creswell & Plano Clark, 2018). For instance, qualitative video data can be quantified through coding, where the frequencies of specific behaviours are counted. These quantified data can then be integrated with questionnaires and interview data. When integrating data through joint displays such as organising related data in a figure, table, or graph, the aim can be to draw out new insights beyond the information gained from the separate quantitative and qualitative results. When conducting data integration, three possible outcomes regarding the coherence of the findings may arise: confirmation, expansion, and discordance of the FtFPI by addressing, for example, interpersonal behaviour and supportive communication aspects (Creswell & Plano Clark, 2018).

In general, a larger sample size and examination of the variation in FtFPI aspects, which are more statistically generalisable to primary schools, should be included in

future research. Although this research was conducted in Canton of Sarajevo, one of the ten Cantons, and only included two schools, CL is recognised in the other Cantons of the FBiH and the RS as part of the 'Step by Step' network. Therefore, including these schools in future studies could contribute to CL research in the broader cross- ethnical heterogeneous context of BiH. Thus, the present study is limited in this regard owing to its relatively homogeneous sample when accounting for ethnic heterogeneity, which restricts the external validity (generalisability) of the results. However, given the visible examples of social exclusion, discrimination and segregation in BiH (see Section 1.1.1), further research is necessary to pay special attention to developing democracy in the actions grounded in CL pedagogy (Ferguson-Patrick, 2020) across both BiH entities.

6.6 Final remarks

The current thesis has aimed to explore how the pupils' and teachers' experiences with the FtFPI engagement of CL can strengthen socially responsive resources for quality education. By collaborating with participants to understand their FtFPI experiences, the present study's point of departure was the researcher's socially responsive FtFPI positioning (Palaganas et al., 2017) in facing challenges and engaging in a co-learning education. The theoretical framework (Johnson & Johnson, 1999) and methodological choices (Creswell & Creswell, 2017) made it possible to explore the FtFPI of CL as the current thesis' contributions to socially inclusive education. Throughout this research work, I have realised not only the importance of individual/group FtFPI role *from* and *with* the environment as 'ways of doing and ways of being' (Biesta, 2020), but also the importance of individual/group deeply reflective praxis' own role. The present thesis is a contribution on my part. Continuously recognision, and a willingness to engage in FtFPI while being attentive to the reflection on our CL understanding and practices cannot be realised without interaction with 'others'. This study is an evidence-based process and product that may strengthen our personal and group reflections in promoting our CL practice, profession and social values regarding educational processes of inclusion.

In a complex BiH context, social reality constantly reminds us as educators to be not only socially responsive, but also to be reflective and relational, about learning and the relationships with and between pupils, teachers, knowledge, and 'others'. In a crucial sense, the data collected from the present case study generated a vision of relational understanding of the co-agency approach (OECD, 2019a) grounded in the pedagogy of cooperation as a central topic for discussion in BiH education. There is no better place to start with individual agents/group co-agency associated with socially responsive and reflective practice than in a classroom reality as an educational arena within a public societal space. However, focusing on the role of FtFPI engagement in the co-agency of change as a relational process requires recognising and engaging all actors. Ultimately, the thesis calls for a more in-depth rethinking of the quality of human and social values by which we engage, relate, and socially respond face-to-face to the demands of quality schools as co-agents of social inclusion in twenty-first century education.

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Appendices

Appendix 1: Permission from the Norwegian Social Science Data Services (NSD) to undertake the study

Appendix 2: Permission from the Ministry for Education, Science and Youth to undertake the study in two schools

Appendix 3: Informed consent for principals (English and Bosnian translations)

Appendix 4: Informed consent for teachers (English and Bosnian translations)

Appendix 5: Informed consent for pupils' parents (English and Bosnian translations)

Appendix 6: Questionnaire for pupils (for English translation, see the attached Article 2)

Appendix 7: Interview guides for teacher interviews

Appendix 8: Interview guide for pupil interviews- Learning together within a small group

Appendix 9: Overview of the reviewed literature.

Appendix 10: Co-author declaration

Appendix 1

Selma Dzemidzic Kristiansen

3679 NOTODDEN

Vår dato: 27.06.2018 Vår ref: 60754 / 3 / AMS Deres dato: Deres ref:

Vurdering fra NSD Personvernombudet for forskning § 31

Personvernombudet for forskning viser til meldeskjema mottatt 11.05.2018 for prosjektet:

60754	*Cooperative learning in the primary school*
Behandlingsansvarlig	*Universitetet i Sørøst-Norge, ved institusjonens øverste leder*
Daglig ansvarlig	*Selma Dzemidzic Kristiansen*

Vurdering

Etter gjennomgang av opplysningene i meldeskjemaet og øvrig dokumentasjon finner vi at prosjektet er meldepliktig og at personopplysningene som blir samlet inn i dette prosjektet er regulert av personopplysningsloven § 31. På den neste siden er vår vurdering av prosjektopplegget slik det er meldt til oss. Du kan nå gå i gang med å behandle personopplysninger.

Vilkår for vår anbefaling

Vår anbefaling forutsetter at du gjennomfører prosjektet i tråd med:

- opplysningene gitt i meldeskjemaet og øvrig dokumentasjon
- vår prosjektvurdering, se side 2
- eventuell korrespondanse med oss

Vi forutsetter at du ikke innhenter sensitive personopplysninger.

Meld fra hvis du gjør vesentlige endringer i prosjektet

Dersom prosjektet endrer seg, kan det være nødvendig å sende inn endringsmelding. På våre nettsider finner du svar på hvilke endringer du må melde, samt endringsskjema.

Opplysninger om prosjektet blir lagt ut på våre nettsider og i Meldingsarkivet

Vi har lagt ut opplysninger om prosjektet på nettsidene våre. Alle våre institusjoner har også tilgang til egne prosjekter i Meldingsarkivet.

Vi tar kontakt om status for behandling av personopplysninger ved prosjektslutt

Ved prosjektslutt 31.01.2021 vil vi ta kontakt for å avklare status for behandlingen av personopplysninger.

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

NSD – Norsk senter for forskningsdata AS Harald Hårfagres gate 29 Tel: +47-55 58 21 17 nsd@nsd.no Org.nr. 985 321 884
NSD – Norwegian Centre for Research Data NO-5007 Bergen, NORWAY Faks: +47-55 58 96 50 www.nsd.no

Se våre nettsider eller ta kontakt dersom du har spørsmål. Vi ønsker lykke til med prosjektet!

Marianne Høgetveit Myhren

Anne-Mette Somby

Kontaktperson: Anne-Mette Somby tlf: 55 58 24 10 / anne-mette.somby@nsd.no

Vedlegg: Prosjektvurdering

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 60754

The sample (parents and students) will receive written and oral information about the project, and give their consent to participate. The letter of information is well formulated.

Please note that when children actively participate in research, participation is always voluntary, even though parents have given their consent. Children should be given information adapted to their age, and it must be made sure that they understand that their participation is voluntary and that they can withdraw at any time.

The Data Protection Official presupposes that the researcher follows internal routines of Universitetet i Sørøst-Norge regarding data security. If personal data is to be stored on portable storage devices, the information should be adequately encrypted.

Estimated end date of the project is 31.01.2021 according to the consent form. All collected data will be made anonymous by this date.
Making the data anonymous entails processing it in such a way that no individuals can be recognised. This is done by:
- deleting all direct personal data (such as names/lists of reference numbers)
- deleting/rewriting indirectly identifiable data (i.e. an identifying combination of background variables, such as residence/work place, age and gender)
- deleting digital audio and video files

Appendix 2

Permission from the Ministry for Education, Science and Youth to undertake the study in two schools.

Bosna i Hercegovina
Federacija Bosne i Hercegovine
KANTON SARAJEVO
Ministarstvo za obrazovanje, nauku i mlade

Bosnia and Herzegovina
Federation of Bosnia and Herzegovina
CANTON SARAJEVO
Ministry for Education, Science and Youth

Broj: 11-14-38-14270/17
Sarajevo, 14.04.2017. godine

Selma Džemidžić-Kristiansen
Trg solidarnosti 35/V
71000 Sarajevo
E-mail: dzemidzic_3@hotmail.com
selma.dzemidzic.kristiansen@unso.no

PREDMET: Saglasnosti za provođenje dijela studije istraživanja u JU OŠ [redacted] u Sarajevu u okviru izrade doktorske teze, dostavlja se

u vezi sa molbom koju ste dostavili Ministarstvu za obrazovanje, nauku i mlade Kantona Sarajevo, a koja se odnosi na izdavanje saglasnosti za provođenje dijela studije istraživanja u JU OŠ [redacted] Sarajevu u okviru izrade doktorske teze na temu „*Kooperativno učenje i njegovi uticaji na razvoj jezičkih formi brige i podrške u komunikaciji među učenicima za potrebe razredne različitosti (sociološke, kulturalne i jezičke)*" na Fakultetu za humanizam, sport i naučno obrazovanje, Drammen, Norveška, obavještavamo Vas da smo saglasni sa realizacijom istog.

Mišljenja smo da će navedeno istraživanje doprinijeti saznanjima iz oblasti kooperativnog učenja u školama, njegovom uticaju na razvijanje jezičkih oblika brige i podrške među učenicima za potrebe razredne različitosti, kao i unapriđenju načina i primjene metoda rada u razredu kako bi se zadovoljile potrebe različitosti svakog učenika u procesima učenja.

Molimo da se istraživanje realizira u skladu sa dogovorima koja ćete ostvariti sa upravom škole, a na način da se redovan odgojno-obrazovni proces odvija nesmetano, te da korišteni intrumentarij kao i rezultate istraživanja dostavite Ministarstvu za obrazovanje, nauku i mlade Kantona Sarajevo.

Želimo Vam uspjeh u provođenju istraživanja.

S poštovanjem,

MINISTAR
Prof. dr. Elvir Kazazović

Dostaviti:
- Naslovu,
- a/a.

web: http://www.mon.ks.gov.ba
e-mail: mon@mon.ks.gov.ba;
Tel: + 387 (0) 33 562-128,Fax: + 387 (0) 33 562-218
Sarajevo, Reisa Džemaludina Čauševića 1

Bosna i Hercegovina
Federacija Bosne i Hercegovine
KANTON SARAJEVO
Ministarstvo za obrazovanje, nauku i mlade

Босна и Херцеговина
Федерација Босне и Херцеговине
КАНТОН САРАЈЕВО
Министарство за образовање, науку и младе

Bosnia and Herzegovina
Federation of Bosnia and Herzegovina
CANTON SARAJEVO
Ministry for Education, Science and Youth

Broj: 11/04-38-14270-1/18
Sarajevo, 8.10.2018.godine

Selma Džemidžić-Kristiansen
Trg solidarnosti 35/V
71000 Sarajevo

PREDMET: Saglasnost za provođenje dijela studije istraživanja u JU OŠ [redacted] okviru izrade doktorske teze, dostavlja se

obratili ste se Ministarstvu za obrazovanje, nauku i mlade Kantona Sarajevo molbom koja se odnosi na izdavanje saglasnosti za provođenje dijela studije istraživanja u JU [redacted] u Sarajevu, u okviru izrade doktorske teze na temu *" Kooperativno učenje i njegovi uticaji na razvoj jezičkih formi brige i podrške u komunikaciji među učenicima za potrebe razredne različitosti (sociološke, kulturalne i jezičk)"*na Fakultetu za humanizam, sport i naučno obrazovanje, Drammen, Norveška. Ovim putem Vas obavještavamo Vas da smo **saglasni** sa realizacijom istog.

Mišljenja smo da će navedeno istraživanje doprinijeti saznanjima iz oblasti kooperativnog učenja u školama, njegovom uticaju na razvijanje jezičkih oblika, brige i podrške među učenicima za potrebe različitosti svakog učenika u procesima učenja.

Molimo da se istaržívanje realizira u skladu sa dogovorima koje ćete ostvariti sa upravom škole, a na način da se redovan odgojno-obrazovni proces odvija nesmetano, te da korišteni instrumentarij kao i rezultate istraživanja dostavite Ministarstvu za obrazovanje, nauku i mlade Kantona Sarajevo.

Želimo Vam uspjeh u provođenju istraživanja.

S poštovanjem,

MINISTAR
Prof.dr.Elvir Kazazović

Dostaviti:
1.naslovu
2.a/a

web: http://mon.ks.gov.ba
e-mail: mon@mon.ks.gov.ba;
Tel: + 387 (0) 33 562-128,
Fax: + 387 (0) 33 562-218
Sarajevo, Reisa Džemaludina Čauševića 1

Appendix 3

Informed consent for principals (English and Bosnian translations)

Selma Dzemidzic Kristiansen
University of South-Eastern Norway
Faculty of Humanities, Sport and Educational Sciences
Drammen

XX primary school / principal Sarajevo, _____,

2018

Informative consent regarding data collection process for PhD work *"Cooperative learning in primary school: pupils' promotive interactions in small groups- its understanding and practices"*

During our first meeting, you were asked to take part in this research study. It was a very pleasant conversation. I am thankful that you decide to participate in this study and it is important that you are informed in written form why the research is being conducted and what it will involve. By reading the following information, if there is anything unclear or if you need more information before you sign the consent, please let me know.

The purpose of this study is to highlight how pupils' promotive interactions can support their process of learning in small cooperative learning groups. This research aims to contribute to understanding, practising and improving of cooperative learning approach in the primary school classrooms with focus on pupils' promotive interactions within group work across school subjects. The target groups in this research are pupils and teachers.

I plan to use different methods for data collection, such as paper-based questionnaires, interviews and observation. I plan to start to get to know the school and classroom contexts at the start of school year, October 2018, by being present and have a contact with teachers and pupils. The frequency of contact with the informants will peak around school year 2018/2019. It may also be necessary to spend more time at school a period after this. In this case, the school and the teachers will get appropriate information in advance.

The study has been reported to the Norwegian Centre for Research Data in Norway and to the Ministry of Education of Bosnia and Herzegovina in Sarajevo. All information that appears will be treated confidentially and will be anonymized. No individuals can be recognized in the final reports, and data will be anonymized by the end of the project 31.01.2021. My interpretations of the data will be delivered to the teacher for review and comments. XX (teachers) who will participate in this research will also get an informative letter and parents of students that will participate as informants in this study. Participation is voluntary and informants can withdraw from the project at any time without giving reasons. My supervisors, Berit H. Johnsen from the University of Oslo and Tony Burner from the University of South-Eastern Norway have read and approved the above information letter. I believe this work will ensure inspired cooperation with opportunities for learning and development.

Yours sincerely,

Selma Dzemidzic Kristiansen

I have received the oral and written information about the study and I give my permission to start up this work.

Date: Principal's signature:

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Selma Džemidžić Kristiansen
Univerzitet Jugoistok Norveške
Fakultet za humanizam, sport i naučno obrazovanje
Drammen

JU OŠ/ Direktor XX Sarajevo,

oktobar, 2018

Informativna saglasnost za proces prikupljanja podataka za izradu doktorskog studija *"Kooperativno učenje u osnovnoj školi: licem u lice promotivne interakcije učenika u grupnom radu-njihovo razumijevanje i praktikovanje* «

Poštovana,

Tokom našeg prvog sastanka bili ste pozvani za učešće u ovaj istraživački projekat. Zahvaljujem Vam na prijatnom razgovoru i Vašoj odluci da učestvujete u ovoj studiji. Stoga, važno je da budete i ovim pismenim putem informisani zašto se istraživanje vrši i šta će uključivati. U daljem informativnom tekstu, ukoliko postoji bilo šta nejasno ili potrebujete više informacija o studiji istraživanja prije Vaše pismene saglasnosti, molim Vas da me upoznate s istim .

Svrha ove studije je da istakne način na koji promotivne interakcije učenika mogu podržati njihov proces učenja u kooperativnom grupnom radu. Ovo istraživanje ima za cilj da doprinese boljem razumjevanju, prakticiranju i poboljšanju pristupa saradnje učenika u učionicama osnovnih škola sa fokusom na interakciju učenika u grupnom radu kroz različite školske predmete. Ciljne grupe u ovom istraživanju su učenici i nastavnici razredne nastave.

Ja sam planirala da koristim različite metode za prikupljanje istraživačkih podataka kao što su upitnici, intervjui i observacija. Planirala sam da započnem rad upoznavanjem konteksta škole i razreda početkom šk.2018/2019 god. a, tačnije u mjesecu oktobru svojim prisustvom i ostvarivanjem kontakta sa nastavnicima razredne nastave četvrtih i petih razreda kao i učenika ovih razreda. Učestalost kontakta sa ispitanicima (učenicima i učiteljima) će se realizirati u školskoj godini

2018/2019. Možda će biti potrebno i više vremena provesti u školi u periodu nakon toga. U ovom slučaju škola i nastavnici razredne nastave će dobiti odgovarajuće informacije na vrijeme.

Sa procesom realizacije istraživacke studije je upoznat Norveški Centar za istraživačke studije u Norveškoj i Ministarstvo za obrazovanje,nauku i mlade Kantona Sarajevo, Bosna i Hercegovina. Od navedenih institucija je dobivena saglasnost za realizaciju istraživanja. Sve prikupljene informacije tokom procesa istraživanja će se tretirati povjerljivo i biti će anonimne. Nijedna osoba, učesnik studije, neće moći biti prepoznata u završnim izveštajima, a svi podaci će biti anonimni do kraja projekta 31.01.2021. i biti ce isključivo korištene za naučni rad. Moje interpretacije podataka će biti dostavljene nastavniku za pregled i komentare. Nastavnik/ca razredne nastave koja/i će učestvovati u ovom istraživanju dobiće također informativno pismo saglasnosti kao i roditelji učenika koji će učestvovati kao ispitanici u ovom istraživanju. Učešće je dobrovoljno, a učesnici se mogu povući iz procesa istraživanja u bilo koje vrijeme bez navođenja razloga za isto. Moji supervizori, Berit H. Johnsen sa Univerziteta u Oslu i Tony Burner sa Univerziteta Jugoistočne Norveške, pročitali su i odobrili gore navedeno informativno pismo. Vjerujem da će ovaj rad osigurati inspirisanu saradnju sa prilikama za učenje i razvoj.

S poštovanjem,

Selma Džemidžić Kristiansen

Dobila sam usmene i pismene informacije o studiji i dajem dozvolu za početak istraživačkog rada

Datum: Potpis direktorice:

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Appendix 4

Informed consent for teachers (English and Bosnian translations)

Selma Dzemidzic Kristiansen
University of South-Eastern Norway
Faculty of Humanities, Sport and Educational Sciences
Drammen

XX primary school / **XX** teacher Sarajevo,

_____, 2018

Informative consent regarding data collection process for PhD work "Cooperative learning in primary school: pupils' face-to-face promotive interaction in small groups- their understanding and practice"

I am thankful that you showed your interest for this research work and that you decided to participate in this study. Even that we talked about the research earlier it is important that you are being informed in written form why the research is being conducted and what it will involve. By reading the following information, if there is anything unclear or if you need more information before you sign a consent, please let me know.

The purpose of this study is to highlight how pupils' face-to-face promotive interactions can support their process of learning in small cooperative learning groups. This research aims to contribute to more understanding, practising and improving of cooperative learning approach in the primary school classrooms with focus on pupils' interactions within group work across school subjects. The target groups in this research are pupils and teachers.

I plan to use different methods for data collection, such as paper-based questionnaires, interviews and observation. I plan to start to get to know the school and class contexts at the start of the school year, October 2018, by being present and have contact with teachers and pupils.The frequency of contact with you and your pupils in the classroom will peak around school year 2018/2019. It may also be necessary to spend more time at the school during a period after this. In this case, the school and you will get appropriate information in advance.

The study has been reported to the Norwegian Centre for Research Data in Norway and to the Ministry of Education of Bosnia and Herzegovina in Sarajevo. All information that appears will be treated confidentially and will be anonymized. No individuals can be recognized in the final reports, and data will be anonymized by the end of the project 31.01.2021. My interpretations of the data will be delivered to you for review and comments. In addition, it is important for me that the parents of your students who participates as informants in this study will give me a letter of consent. Participation is voluntary and informants can withdraw from the project at any time without giving reasons. My supervisors, Berit H. Johnsen from the University of Oslo and Tony Burner from the University of South-Eastern Norway have read and approved the above information letter. I believe this work will ensure inspired cooperation with opportunities for learning and development.

Yours sincerely,

Selma Dzemidzic Kristiansen

I have received the oral and written information about the study and I give my permission to start up this work

Date: Teacher's signature:

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Selma Džemidžić Kristiansen
Univerzitet Jugoistok Norveške
Fakultet za humanizam, sport i naučno obrazovanje
Drammen

JU OŠ **XX** / Učiteljica **XX** Sarajevo, oktobar, 2018

Informativna saglasnost za proces prikupljanja podataka za izradu doktorskog studija
"Kooperativno učenje u osnovnoj školi: licem- u- lice promotivne interakcije učenika u grupnom radu-njihovo razumijevanje i praktikovanje «

Poštovana,

Zahvaljujem Vam na interesu za ovaj istraživački rad, za Vašu odluku da učestvujete u ovoj studiji i na veoma prijatnom razgovoru na našem prvom susretu. Iako smo ranije razgovarali važno je da budete i ovim pismenim putem informisani zašto se istraživanje vrši i šta će uključivati. U daljem informativnom tekstu, ukoliko postoji bilo šta nejasno ili potrebujete više informacija o studiji istraživanja prije Vaše pismene saglasnosti, molim Vas da me upoznate s istim .

Svrha ove studije je da istakne način na koji promotivne interakcije učenika mogu podržati njihov proces učenja u grupnom radu. Ovo istraživanje ima za cilj da doprinese boljem razumjevanju, prakticiranju i poboljšanju pristupa saradnje učenika u učionicama osnovnih škola sa fokusom na interakciju učenika u grupnom radu kroz različite školske predmete. Ciljne grupe u ovom istraživanju su učenici i nastavnici razredne nastave.

Ja sam planirala da koristim različite metode za prikupljanje istraživačkih podataka kao što su upitnici, intervjui i observacija. Planirala sam da započnem rad upoznavanjem konteksta škole i razreda početkom šk.2018/2019 god. a, tačnije u mjesecu oktobru svojim prisustvom i ostvarivanjem kontakta sa nastavnicima razredne nastave četvrtih i petih razreda kao i učenika ovih razreda. Učestalost kontakta sa Vama i Vasim učenicima će se realizirati u školskoj godini 2018/2019. Možda će biti potrebno i više vremena provesti u školi u periodu nakon toga. U ovom slučaju škola i Vi ćete dobiti odgovarajuće informacije na vrijeme.

Sa procesom realizacije istraživačke studije je upoznat Norveški Centar za istraživačke studije u Norveškoj i Ministarstvo za obrazovanje,nauku i mlade Kantona Sarajevo, Bosna i Hercegovina. Od navedenih institucija je dobivena saglasnost za realizaciju istraživanja,kao i dozvola Vaše direktorice škole. Sve prikupljene informacije tokom procesa istraživanja će se tretirati povjerljivo i biti će anonimne. Nijedna osoba, učesnik studije, neće moći biti prepoznata u završnim izveštajima, a svi podaci će biti anonimni do kraja projekta 31. 01. 2021. i biti ce isključivo korištene za naučni rad. Moje interpretacije podataka će Vam biti dostavljene za pregled i komentare. Veoma je vazno da roditelji Vasih učenika koji će učestvovati u istrazivanju dobiju pismo saglasnosti o istom. Učešće je dobrovoljno, a učesnici se mogu povući iz procesa istraživanja u bilo koje vrijeme bez navođenja razloga za isto. Moji supervizori, Berit H. Johnsen sa Univerziteta u Oslu i Tony Burner sa Univerziteta Jugoistočne Norveške, pročitali su i odobrili gore navedeno informativno pismo. Vjerujem da će ovaj rad osigurati inspirisanu saradnju sa prilikama za učenje i razvoj.

S poštovanjem,

Selma Džemidžić Kristiansen

Dobila sam usmene i pismene informacije o studiji i saglasna sam za početak istraživačkog rada

Datum: Potpis učiteljice:

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Appendix 5

Informed consent for pupils' parents (English and Bosnian translations)

Selma Dzemidzic Kristiansen
University of South-Eastern Norway
Faculty of Humanities, Sport and Educational Sciences
Drammen

Research project: Cooperative learning in primary school

My name is Selma Dzemidzic Kristiansen and I work as a PhD student in Drammen, Norway, Faculty of Humanities, Sport and Educational Sciences. The aim of this research study is to contribute to understanding, practising and improving of cooperative learning approach in the primary school classrooms with focus on pupils' interactions within group work.

I plan to use different methods for data collection, such as observation, paper-based questionnaires and interviews. I plan to start to get to know the school and classroom contexts at the start of school year, October 2018, by being present and mapping the pupil's perceptions for cooperative learning interactions within small groups. You will get more detailed information about the process before we start.

The study has been reported to the Norwegian Centre for Research Data in Norway and to the Ministry of Education of Bosnia and Herzegovina in Sarajevo. All information that appears will be treated confidentially and will be anonymized. No individuals can be recognized in the final reports, and data will be anonymized by the end of the project 31.01.2021. My interpretations of the data will be delivered to the teacher for review and comments. XX (teacher) has shown interest to participate in this research work. The principal has also given permission for the work. Participation is voluntary and informants can withdraw from the project at any time without giving reasons.

By signing this information letter, you confirm that I can interview your son / daughter for this study. I will conduct two interviews, lasting about half an hour each, during this school year. I will also observe and video record pupils while they are working in groups.

Yours sincerely,

Selma Dzemidzic Kristiansen

I have received the written information about the study and give my permission that my son/ daughter can be interviewed, observed and that the data can be used in doctoral work.

Date: Parents' signature

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Appendix 6

Questionnaire for pupils (for English translation, see the attached Article 2)

Upitnik za učenike o grupnom obliku rada

Draga učenice/če

Ovim upitnikom želim saznati tvoje mišljenje o tome kako ti i tvoji vršnjaci učite zajedno u grupnom radu. Tvoj odgovor će doprinijeti da učenici bolje razumiju rad u grupi i poboljšaju učenja u grupnom radu u osnovnoj školi.
Molim te da odgovoriš na pitanja što iskrenije na način da odabereš broj od 1 do 5, gdje je 1 najmanja, a 5 najviša tvoja ocjena. Tvoje učešće je dobrovoljno i anonimno i stoga, molim te, NE PIŠI svoje ime. U slučaju da imaš neko pitanje ili nejasnoće dok ispunjavaš ovaj upitnik, slobodno pitaj.

Pol: Muški:_____ Ženski:_____ **Razred:** 4. ___ 5. _____ **Broj u dnevniku**: _____					
Odgovori na pitanje tako što ćeš staviti X na jedan od brojeva od 1 do 5 .					
1 . Na skali od 1 do 5 U kojoj mjeri bi mogla/mogao reći da…	1 Vrlo malo	2 Malo	3 U nekojmjeri	4 Mnogo	5 Veoma mnogo
učis zajedno sa vršnjacima u grupnom radu?					
rad u grupi pomaže mi da učim bolje?					
podrška vršnjaka u grupi pomaže mi da učim					
kad pomažem všnjacima dok radimo u grupi tada bolje učimo?					
1.5. kad tražim.pomoć od vršnjaka dok radimo u grupi tada bolje učimo?					
1.6. kad pažljivo slušam vršnjake dok radimo u grupi tada bolje učimo?					

1.7. kad obraćam pažnju šta vršnjaci rade dok radimo u grupi tada bolje učimo?					
1.8. kad me vršnjaci ohrabruju u radu pomaže mi da učim bolje u grupi?					
1.9. kad me vršnjaci pohvale u radu pomaže mi da učim bolje u grupi?					
1.10. učiteljica nas podučava kako pružiti dobru podršku vršnjacima za rad u grupi?					

2. Na sljedeće izjave odgovori samo sa DA ili samo sa NE. **Molim te obilježi svoj odgovor sa X!**	**DA**	**NE**
2.1. Pomažem vršnjacima u grupnom radu		
2.2. Moji vršnjaci meni pomažu u grupnom radu		
2.3. Moji vršnjaci obraćaju pažnju na mene dok radimo zajedno u grupi		
2.4. Moji vršnjaci me slušaju pažljivo dok radimo zajedno u grupi		
2.5. Moji vršnjaci me ohrabruju dok radimo zajedno u grupi		
2.6. Moji vršnjaci me pohvale dok radimo zajedno u grupi		
2.7. Imam dovoljno znanja o tome kako pomoći mojim vršnjacima dok radimo zajedno u grupi		

2.8. Znam kako da ohrabrim moje vršnjake dok radimo zajedno u grupi		
2.9. Učiteljica nas podučava o tome kako pružiti dobru podršku vršnjacima za rad u grupi		

3. Na sljedeće izjave odgovori samo sa DA ili samo sa NE. **Molim te obilježi svoj odgovor sa X!**	**DA**	**NE**
3.1. Bolje učim u grupi kad pomažem mojim vršnjacima		
3.2. Bolje učim u grupi kad mi moji vršnjaci pomažu		
3.3. Bolje učim u grupi kad moji vršnjaci obraćaju pažnju na mene		
3.4. Bolje učim u grupi kad me moji vršnjaci sluašju pažljivo		
3.5. Bolje učim u grupi kad me vršnjaci ohrabruju dok radimo u grupi		
3.6. Bolje učim u grupi kad me vrršnjaci pohvale		
3.7. Bolje učim u grupi kad znam kako pomoći vrršnjacima dok radimo u grupi		
3.8. Bolje učim u grupi kad znam kako ohrabriti druge dok radimo zajedno		
3.9. Bolje učim u grupi kad nas učiteljica podučava kako pružiti podršku za rad u grupi		

Appendix 7

Interview guides for teacher interviews

Initial teacher interview in terms of background information

1. How many years have you been teaching?
2. What is your formal education?
3. How long have you been teaching at this school?
4. How long have you been implementing the cooperative learning approach?
5. How would you describe the cooperative learning training that you received?
6. Why do you use cooperative learning in your classroom?
7. When and how often do you use cooperative learning?
8. Which aspects of students functioning in cooperative learning (CL) group work do you consider as the most challenging for your students?

Can you tell me a little bit about how you experience …
1 … your implementation of cooperative learning group work in your classroom?
1.1 …practice of group work between your students, particularly in their support to each other while they are learning together?
2 … of applying CL group work across core school subjects, such as *mathematics*, Bosnian language and science?
2.1 … are there any differences in your experiences of applying CL regarding these school subjects?
2.2 ...are there any differences in your experiences regarding pupils' cooperation in the terms of supporting each other?
3. What do you think about pupils' helping behaviour during their learning session in the CL group?
3.1. … how would you describe the ways your pupils give help to their peers while they are in the CL group work?
3.2. … how would you describe the ways your pupils receive help from their peers while they are in CL group work ?
4. How do your pupils encourage each other to participate and contribute to their group work while they are learning together in a small CL group?
5. How would you describe paying attention among your pupils while they are learning together?
6. How would you say pupils' quality of interaction promotes learning in small CL groups across school subjects?
7. What do you think is your contribution to improve pupils' quality of interaction while they are learning together?
7.1. What do you think that your pupils need to do to improve their supportive interaction while they are learning together?
8. What do you experience as the most difficult part of your contribution and /or influence on quality pupils' interaction while they are working together in the group?
8.1. What do you think is the most challenging for your pupils while they are interacting with each other during their CL group work?
9. What do you think how your pupils understand supportive interaction during their CL group work?
9.1. How can your pupils become better in terms to support each other during their CL group work?

Thank you!

Protokol za intervju sa učiteljima razredne nastave

Inicijalni intervju za potrebe okvirnih informacija

1. *Koliko godina radite u prosvjeti?*
2. *Koje je Vaše formalno obrazovanje??*
3. *Koliko godina radite u ovoj školi?*
4. *Kada i koliko često primjenjujete kooperativno učenje?*
5. *U kojim nastavnim predmetima primjenjujete kooperativno učenje?*
6. *Koju edukaciju odnosno obuku imate iz područja kooperativnog učenja?*
7. *Zašto koristite kooperativno učenje u Vašem razredu?*
8. *Koje aspekte učeničkog rada u ovom obliku učenja smatrate najtežim za Vaše učenike? … a koje za Vas?*

1. Kakva su Vaša iskustva o primjeni kooperativnog učenja u Vašem razredu?

1.1. … posebno u pogledu međusobne podrške učenika u grupi dok rade zajedno?

2. Kakva su Vaša iskustva u primjeni kooperativnog oblika rada u školskim predmetima kao što su bosanski jezik, matematika i poznavanje prirode/društva?

2.1. Postoji li neka razlika kroz Vaše iskustvo u primjeni grupnog oblika rada kroz ove predmete?

2.2. Postoji li neka razlika kroz ove predmete u suradnji među učenicima u pogledu učeničke podrške jedni drugima?

3. Kakva su Vaša zapažanja o učeničkom ponašanju u smislu pomaganja jedni drugima dok rade zajedno?

3.1. Možete li mi opisati načine u kojima Vaši učenici pružaju pomoć jedni drugima dok uče zajedno u grupi?

3.2. Možete li mi opisati načine u kojima Vaši učenici primaju pomoć od svojih vršnjaka dok uče zajedno u grupi?

4. Kako Vaši učenici ohrabruju jedni druge da učestvuju i doprinose radu svoje grupe dok uče zajedno u grupi?

5. Kako biste Vi opisali načine u kojima Vaši učenici obraćaju pažnju i poštuju jedni druge dok rade zajedno u grupi?

6. Šta Vi mislite o tome da kvalitet interakcije među učenicima poboljsava učenje u grupi?

7. Šta Vi mislite da je Vaš doprinos u cilju unaprijeđenja kvaliteta interakcije među Vašim učenicma dok uče zajedno u grupnom radu ?

7.1. Po Vašem mišljenju sta Vaši učenici trebaju da rade u cilju unaprijeđenja kvaliteta njihove interakcije dok uče zajedno u grupnom radu?

8. Šta ste Vi iskusili kao najteže u Vašem doprinosu i uticaju na razvoj učenickih interakcija za zajednicko učenje u grupnom radu?

8.1 Šta mislite da je najteže za Vaše učenike u međusobnoj interakciji dok uče zajedno u grupi?

9. Šta mislite kako Vaši učenici razumiju međusobnu podršku dok uče zajedno u grupi?

9.1. Kako Vaši učenici mogu postati bolji u međusobnoj interakciji u smislu podrške jedni drugima?

Hvala Vam

Appendix 8

Interview guide – Learning together within a small group

Introduction
Thank you for having a conversation and for your contribution!
No wrong answers

1. What does support among peers while working in a group mean to you?
1.1. How does support help you in your group work to your peers?
1.2. What is most important to you in this support when learning together in the group?
1.3. Why do you provide support to others in the group when learning?

2. What does it mean to you when you help others while learning together in the group?
2.1. How do you help? What do you do when helping someone in the group?
2.2. How do your peers know you need help?
2.3. How do you know your peers need help?

3. How do you pay attention to one another while learning together?

4. How do you encourage your classmates when working together in a group?
4.1. Why is it important to encourage your classmates while working together in the group?

5. How do you commend your classmates that they have done something well?
5.1. Why is commendation important?

6. What does it mean to listen to each other carefully when working together in the group?
6.1. Why is it important to listen carefully to each other?
6.2. How do you know that your classmates are listening to you carefully?

7. What is most difficult for you when working in a group?

8. How can your classmates and you be better when working in a group?

9. How can your teacher help you improve when working together in the group?

Thank you for the interview!

Protokol za intervju sa učenikom/icom- Učenje zajedno u grupi

Uvod:
Zahvaljujem na razgovoru sa tobom i tvom doprinosu!
Nema pogrešnih odgovora!

1. Šta znači za tebe podrška među vršnjacima dok radite zajedno u grupi?
1.1. Kako ti podrška među vršnjacima pomaže u radu?
1.2. Šta ti je najvažnije u podršci među vršnjacima dok učite zajedno u grupi?
1.3. Zašto treba pružiti podršku (treba pomoci)?

2. Šta znači za tebe kad pomažeš tvojim vršnjacima u grupi dok radite zajedno?
2.1. Na koji način to radiš kada pomažeš drugima u tvojoj grupi?
2.2. Kako tvoji vršnjaci znaju da ti trebaš pomoć?
2.3. Kako ti znaš da tvoji vršnjaci trebaju tvoju pomoć?

3. Kako pokazuješ vršnjacima da obraćaš pažnju na njih dok radite zajedno u grupi?

4. Na koji način ti ohrabruješ tvoje vršnjake kada radite zajedno u grupi?
4.1. Zašto je važno ohrabriti tvoje vršnjake kada radite zajedno u grupi?

5. Na koji način pohvaljuješ tvoje vršnjake kad urade nešto dobro?
5.1. Zašto je pohvala važna?

6. Šta znači za tebe da slušate pažljivo jedni druge dok radite zajedno u grupi?
6.1. Zašto je važno da slušate pažljivo jedni druge?
6.2. Kako ti znaš da te tvoji vršnjaci slušaju pažljivo?

7. Šta je najteže za tebe kada radite zajedno u grupi?

8. Kako ti i tvoji vršnjaci možete biti bolji dok radite zajedno u grupi?

9. Kako tvoja učiteljica vam može pomoći da bude bolji kada radite zajedno u grupi?

Hvala!

Appendix 9

The overview of the literature search (9a)

Search type	Keywords	Total hits	Range	Search undertaken	Selection criteria	Relevant hits	Relevant new hits after second reading
Database: ERIC	("cooperative learning") AND ("interaction" OR "peer mediation" OR "peer relationship") NOT (higher education)	708	All types of documents, peer reviewed , primary and secondary education,1990-2017	September/October 2017	Title and/or abstract is about pupils cooperation/interaction in CL groups context	21	11
Database: ERIC	("cooperative learning") AND ("Peer teaching" OR "peer influence" OR "peer mediation" OR "peer relationship"	36	All types of documents , peer reviewed, all levels of education	August/September 2017	Title and/or abstract is about pupils interaction/cooperation in CL groups context	4	3
Database: ERIC	("cooperative learning" OR "collaborative learning") AND ("Face to face interaction" OR "peer interaction" OR "support" OR "peer behaviour") AND ("small group" OR" small groups") NOT ("higher education")	79	All types of documents, Peer reviewed, primary and secondary education, 1990-2017	November 2017	Title and/or abstract is about pupils interaction/cooperation in CL groups context	3	2
Database: SCOPUS	("cooperative learning" OR "collaborative learning") AND ("Face to face interaction" OR "peer interaction" OR "support" OR" peer behaviour") AND ("small group" OR "small groups") NOT ("higher education")	176	All types of documents, Peer reviewed, primary and secondary education, 1990-2017	November 2017	Title and/or abstract is about pupils interaction/cooperation in CL groups context	3	2
Database: ISI Web of Science	Combinations as above	29	Same as above	December 2017	Title and/or abstract is about pupils interaction/cooperation in CL groups context	4	4
Manuel search and Citation search		10	Relevant international peer reviewed journals	May /June 2017 and November/December 2017	Title and/or abstract is about pupils interaction/cooperation in CL groups context	15 8	7 5
Total search		1038				58	34

Chronological Overview of the Reviewed Literature (9b)

Author/date	Title	Type	Level
Gillies & Ashman (1995)	Promoting Cooperative and Helping Behaviours in Student Work Groups through Training in Small Group Processes	E	P
Ross (1995)	Effects of feedback on student behaviour in cooperative learning groups in a 7 math class	E	P
Gillies & Ashman (1998)	Behaviour and Interactions of Children in Cooperative Groups in Lower and Middle Elementary Grades	E	P
Webb et al. (2002)	Productive Helping in Cooperative Groups	E	P
Gillies (2003)	Structuring cooperative group work in classrooms	T/E	P
Gillies (2003)	The Behaviours, Interactions, and Perceptions of Junior High School Students During Small-Group Learning	E	S
Gillies (2002)	The long-term effects of cooperative learning on children's behaviour and interactions	E	P
Webb & Mastergeorge (2003)	Promoting effective helping behaviour in peer-directed groups	E	S
Chiu, (2004)	Adapting Teacher Interventions to Student Needs During Cooperative Learning: How to improve Student Problem Solving and Time On-Task	E	S
Stamovlasis et al. (2006)	A study of group interaction process in learning lower secondary physics	E	P
Gillies(2006)	Teachers' and students' verbal behaviours during cooperative and small-group learning	E	S
Tan et al. (2007)	Group Investigation Effects on Achievement, Motivation and Perceptions of students in Singapore	E	S
Kutnick et al. (2008)	Improving the effects of group working in classrooms with young- school age children :Facilitating attainment, interaction and classroom activity	E	P
Oortwijin et al. (2008)	The impact of a cooperative learning experience on pupils' popularity, non-cooperativeness, and interethnic bias in multi-ethnic elementary schools	E	P
Gnadinger (2008)	Peer-mediated instruction: assisted performance in the primary classroom	E	P
Sharan (2010)	Cooperative learning for Academic and social Gains: valued pedagogy, problematic practice	T	-
Magnesio, & Davis (2010)	A novice teacher Foster Social Competance with Cooperative learning	E	P
Dzaferovic-Franca & Tomic (2012)	Cooperative learning in the teaching process in lower elementary school grades	E	P
Quebec Fuentes (2013)	Small-Group Discourse: Establishing a Communication-Rich Classroom	E	S
Jolliffe (2014)	Bridging the gap: teachers cooperating together to implement cooperative learning	E/T	P/S
Mary (2014)	Fostering positive peer relations in the primary classroom through circle time and co-operative games	E	P

Golub & Buchs (2014)	Preparing pupils to cooperate during cooperative controversy in grade 6: a way to increase positive interactions and learning	E	P
Millis (2014)	Using Cooperative Structures to Promote Deep Learning	T	-
Gillies (2014)	Cooperative Learning: Developments in Research	T	-
Lehraus (2015)	How to integrate cooperative skills training into learning tasks: an illustration with young pupils' writing	E	P
Otienoh (2015)	Implementation of Pair Work and Group Work for Creation of Interaction Opportunities for Learners in Large Classes: The Viability of the Two Strategies	E	P
Kaendler at et. (2015)	Teacher Competencies for the Implementation of Collaborative Learning in the Classroom: a Framework and Research Review	T	-
Alquist (2015)	The Storyline approach: promoting learning through cooperation in the second language classroom	E	P
Genç (2016)	An evaluation of the cooperative learning process by sixth-grade students	E	P
Yoruk (2016)	Students' Ideas on Cooperative Learning Method	E	H
Gillies (2016)	Dialogic interaction in the cooperative learning	E	P
Asha & Hawi (2016)	The Impact of Cooperative Learning on Developing the Sixth Grade Students Decision-Making Skill and Academic Achievement	E	P
Hayek et al. (2017)	Grades degrade group coordination: deteriorated interactions and performance in a cooperative motor task	E	P
Lafont et al. (2017)	How to structure group work? Conditions of efficacy and methodological considerations in physical education	E	P/S
Total 34 articles			

E-empirical; **T**-theoretical; **P**- primary (1-7 grades); **S** - secondary (grades 8-13), **H**-higher education

Appendix 2b: From 34 Reviewed Studies, Five Aspects Came up in Following:

Developed aspect from reviewed studies	Number of studies this aspect came forward
Issue of behaviour	8
Students' experiences and the FtFPI process	5
Students' communication and support	5
FtFPI towards deep learning	9
Teachers' influence on students' FtFPI	7

Appendix 10

University of South-Eastern Norway

Co-author declaration

This form must be signed by the PhD candidate, the principal supervisor (where he/she is a co-author), and the other two most central authors. The corresponding author must be among them.

PhD candidate	Selma Dzemidzic Kristiansen
Principal supervisor	Berit Helene Johnsen, Tony Burner
Authors	Selma Dzemidzic Kristiansen, Tony Burner & Berit Helene Johnsen
Title	Face-to-face promotive interaction leading to successful cooperative learning: A review study
Journal	Cogent Education

The PhD candidate's contribution to the article
1. Formulation/identification of the scientific problem In doing a review study, the PhD research fellow identified a research problem by reading existing empirical research, theory, and debates on the topic within cooperative learning classroom pedagogy. Based on the professional discussions with both co-authors, the PhD candidate determined the research question during the research work.
2. Planning of the experiments and methodology design, including selection of methods and method development Considering the "layering" technique, the PhD research fellow wrote an entire first draft and sent it to co-authors for revision and critical comments. Thus, developing the review article was based on cooperation leading to successful discussion and feedback.However, one of the co-autor's previous review studies inspired the methodological structuring and organising of the present article.
3. Involvement in the experimental work The PhD candidate has been responsible for carrying out the review study, the literature search, collecting data and developing aspects from reviewed studies.
4. Presentation, interpretation and discussion in a journal article format of obtained data The approach to analysis was new for the PhD candidate. However, coding the selected literature and creating the conceptual schema were developed through the cooperation with co-authors since one of the co-autors' previous review analysis method has been a starting point for the PhD research fellow's approach to the analysis of data and discussion. The co-authors read and followed up the writing and discussed comments from peer-reviewing in the process towards publication.

Date	**Signature**
21.12.2022	Berit H. Johnsen
22.12.2022	
22.12.2022	Selma Dzemidzic Kristiansen

PART II: THE ARTICLES

Article 1

Dzemidzic Kristiansen, S., Burner, T., & Johnsen, B. (2019). Face-to-face promotive interaction leading to successful cooperative learning: A review study. *Cogent Education, 6(1),* 1674067 https://doi.org/10.1080/2331186X.2019.1674067

Dzemidzic Kristiansen et al., *Cogent Education* (2019), 6: 1674067
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cogent education

STUDENT LEARNING, CHILDHOOD & VOICES | REVIEW ARTICLE

Face-to-face promotive interaction leading to successful cooperative learning: A review study

Selma Dzemidzic Kristiansen[1]*, Tony Burner[1] and Berit Helene Johnsen[2]

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*Corresponding author: Selma Dzemidzic Kristiansen, Pedagogy, University of South Eastern Norway, Drammen 3045, Norway
E-mail: selma.dzemidzic.kristiansen@usn.no

Reviewing editor:
Gregory Yates, Faculty of Education, University of South Australia, Australia

Additional information is available at the end of the article

Abstract: The article presents a review of 34 studies conducted from 1995 to 2017 focusing on face-to-face promotive interaction (FtFPI) factors that may lead to successful cooperative learning (CL) in small groups, as guided by the following research question: "Which FtFPI factors lead to successful CL in small groups?" A manual and citation database search were used to find relevant studies. The findings indicate that students' interpersonal behavior, their experiences and active participation in the CL process, communication and support to each other, and teachers' influence on promoting students' interaction leading to successful CL in small groups. Moreover, these factors may lead to students' deep learning. However, the review suggests that systematic preparations must be made by both teachers and students if the CL is to be successful. Thus, more empirical research is needed to understand the complexity of students' FtFPI and to investigate the development of FtFPI based on students' and teachers' experiences in small CL groups.

Subjects: Educational Research; Primary/Elementary Education; Secondary Education; Childhood; Classroom Practice

Selma Dzemidzic Kristiansen

ABOUT THE AUTHORS

Selma Dzemidzic Kristiansen is a PhD candidate at the University of South-Eastern Norway. Her International Master in Special Needs Education at the University of Oslo focused on cooperative learning which she used to support teachers' preparation for inclusive education.

Tony Burner is a professor at the Faculty of Humanities, Sports and Educational Science, Department of Languages and Literature Studies, University of South-Eastern Norway. His main research interests are English education, classroom assessment, multilingualism, diversity and teacher professional development.

Berit Helene Johnsen is an associate professor at the Faculty of Educational Science, Department of Special Needs Education, University of Oslo. Her research interests are mainly within the field of (a) the history of ideas at the intersection of education, special needs education and inclusive education - with focus on special needs educational and inclusive didactic and curriculum practice; (b) international comparative classroom research; (c) psychosocial topics including care- and relational pedagogy.

PUBLIC INTEREST STATEMENT

The article presents a review of research on key factors of students' face-to-face interaction that can lead to successful cooperative learning. Studies conducted from 1993 to 2017 are reviewed in search of factors that prove to be successful in promoting cooperative learning in schools. Thirty-four peer-reviewed articles were analysed where 13 studies were conducted in Europe, seven in Australia, five in Asia, five in the USA, two in Canada, one in Africa and one was a summary from different countries. The findings show that certain aspects of face-to-face student interactions lead to successful cooperative learning: students' interpersonal behaviour, their experiences and involvement in cooperative processes, students' communication and support, and teachers' influence on promoting students' interaction that may lead to deep learning. One main conclusion of this review is that teachers and students need to prepare for and to be educated in developing, supporting, and maintaining face-to-face interaction for successful cooperative learning.

Keywords: Cooperative learning; face-to-face promotive interaction; small group contexts; peer relationships

1. Introduction

The ability to cooperate effectively is a necessity if one is to succeed in a small cooperative learning (CL) group[1] across different subject areas (Gillies, 2003a).Whereas social interaction plays a major role in how children learn (Cohen, 1994), the quality of interaction in student groups is a strong predictor of learning gains (Cohen & Lotan, 1995). Thus, promotive interaction between co-learners is important for students' learning from each other in such a way that individuals encourage and facilitate the efforts of others to complete tasks so they can reach the group's goals (Johnson & Johnson, 1999). The common practices of the CL model do not merely include cooperation, but additional elements, such as positive interdependence, individual accountability, face-to-face promotive interaction (FtFPI), social skills, and group processing (Johnson & Johnson, 2002). All these elements could together influence the students' learning outcome and social gains. However, even with this potential, the factors promoting cooperative interaction in terms of students' FtFPI as a way of achieving successful CL remain unclear.

In the present review, we focus on students' FtFPI defined by Johnson and Johnson (1999) as a type of social interaction that promotes participation and contribution in group work among students while they are supporting, encouraging and praising each other's efforts to carry out their joint task. Based on the complex relationships between cooperating students, the review describes research findings by focusing on small CL groups and investigating which FtFPI factors may lead to successful students' learning during their joint activity.

For this aim, we use the following research question in this article:

Which FtFPI factors lead to successful CL in small groups? Furthermore, in this review the discussion is framed according to small CL groups, existing gaps are identified and findings from various studies are synthesized in order to point out the FtFPI factors that lead to successful CL in various educational situations and contexts.

It is widely accepted that simply placing students in groups does not guarantee rich cooperation (Johnson & Johnson, 1999). Baines, Blatchford, and Webster (2015) state that students sit in groups, but rarely work as a group. Students need to experience positive interdependency with their peers, to be aware of individual accountability through a group learning process, to encourage their peers face-to-face to interact in a group setting, and to be reflective about their group dynamics during CL. Moreover, several conditions, such as group composition, group size, and learning tasks support students' interaction and learning benefits within small CL groups (Cohen, 1994; Gillies, 2003a).

Whilst the teachers in a CL group setting play a crucial role in fostering students' interaction so that it is beneficial for learning (Cohen, 1994), teachers need to be prepared for CL if they are to apply it successfully in their classrooms (Sharan, 2010). Bearing this in mind, the teacher's role will be discussed in the last section presenting the findings, where the teacher is seen as an important actor who has influence on students' FtFPI within CL group (Gillies & Boyle, 2010; Sharan, 2010).

The next section will describe the methods used to search for and analyze relevant articles, and the rationale for the inclusion and exclusion of studies. The section after "methods" will present the findings according to five categories.

2. Methods

2.1. Rationale

The aim of the review is to investigate and discuss ways FtFPI may lead to successful CL in small groups. The search was restricted to empirical studies including quantitative, qualitative, and mixed method analyses.

The starting point for the literature search was set at 1993 after Battistich, Solomon, and Delucchi (1993) discovered that the effects and outcomes of CL depended on the quality of the group interaction and not on its frequency.

The literature search was conducted from May to December 2017, using ERIC, SCOPUS, and the ISI Web of Science databases, in addition to manual and citation searches. A manual search was conducted in relevant international peer-reviewed journals relating to the use of CL and students' interactions in small CL groups according to the below-mentioned criteria. The following journals were selected by means of thread searches of reference lists or through citation in already selected articles: *Journal of Education and Practice, Educational Psychology, Teachers and Teaching, Childhood Education*, and *Research in Education*. The searches were confined to the period from 1993 to 2017 using the search strings "cooperative learning" OR "collaborative learning" AND, "peer interaction", OR "face-to-face interaction", "peer relationships", "peer mediation" AND "small groups" NOT "higher education". We obtained 1038 hits for all of the search strings together. Delimiting the search to title, abstract and keywords in the databases was our deliberate search strategy to lower the number of publications and to make the information search more precise (Savolainen, 2016). Then, we selected a set of 58 articles for thorough reading. After reading all 58 articles, a final set of 34 articles were chosen as relevant for the review.

2.2. Inclusion and exclusion criteria for selection of publications

We narrowed the number of publications down by specifying the selection criteria. One main inclusion criterion was that the publications should be peer-reviewed articles in which students were selected as the main informants, or were main informants together with teachers, in primary and secondary schools. The studies had to address small CL groups, including the process of interaction when aiming for social or academic gains. Only empirical articles about CL were included. Furthermore, the articles about collaborative learning (COL)[2] were included if their research findings pointed out the significance of students' interaction processes. Publications such as policy documents, books, reports, and so on were excluded. We also excluded articles that dealt with tertiary education, engineering and teachers' professional development in CL and CL out of classroom settings.

This resulted in 34 peer-reviewed articles of which 12 were discovered through citation search, i.e. through searching in the list of references in the articles found through the database search.

2.3. Analysis

After the initial coding and iterative readings of the 34 publications, the authors organized selected articles for writing the literature review (Boote & Beile, 2005) with the aim of answering the research question. All in all, 13 of these articles employed quantitative methods, 12 employed qualitative methods and nine were mixed-method studies. Of the 34, 13 were conducted in Europe, seven in Australia, five in Asia, five in the USA, two in Canada, one in Africa and one was a review of several empirical studies from all around the world.

A structured and compressed format was used to extract information from the mapped articles, where feature maps (Hart, 2001) where used according to their purpose, research questions, methodology, sample, variables/key concepts, and results/main findings. This gave the researchers an overview of the articles. This structured format was used to extract findings from the reviewed articles so they could be categorized and discussed in terms of FtFPI interaction that may lead to

successful CL in small groups. The analytical process was related to categories and subcategories so that similar data have similar conceptual labels (Strauss & Corbin, 1990). Then, the findings were summarized and analyzed under headings corresponding to their main categories: (1) interpersonal behavioral factors, (2) students' experiences and the FtFPI process (3) students' communication and support (4) FtFPI leading to deep learning, and (5) teachers' influence on students' FtFPI.

3. Findings

To answer the research question on FtFPI factors that may lead to successful small CL groups, we developed five categories outlined in the following subsections. Appendix 1–5 refer to each category, summarizing the studies and the key findings that the authors reviewed.

3.1. Interpersonal behavioral factors

The first category, the interpersonal behavioral factors (see Appendix 1), refers to the features of helping behavior as a sense of other group members' needs. Gillies and Ashman (1995) found that students who were trained in cooperating with others were more helpful to each other than their peers were in the untrained groups. Furthermore, Gillies (2002) reported that the students who were trained in helpful skills, even two years previously, were more cooperative and supportive to each other than their untrained peers.

Similarly, Gillies and Ashman (1998) showed that students in structured groups provided more elaborate help and an understanding of the needs of others, demonstrated more willingness to work together, to listen to each other (Gillies, 2003b), and share resources in the structured group (Gillies, 2003a) than their peers in the unstructured groups did.

Webb, Farivar, and Mastergeorge (2002) pointed out that the responsibility of students to ask for help and provide relevant help produced effective helping behavior. The authors described four conditions that affect students' interaction as potential help seekers and help givers: establish positive norms for group work, structure tasks in ways that support learning, model desired behavior, and monitor group work. Gillies (2006) found that teachers' facilitative verbal behavior provided social models for students who then gave more explanations and detailed responses to other students' requests for help. However, Magnesio and Davis (2010) argued that students were often not aware of their interpersonal behavior during group interaction and they struggled to complete a group task successfully due to their lack of self-awareness. Similarly, Yoruk (2016) reported that students' awareness of their learning environment, together with self-efficacy and self-confidence, affected students' cooperative behavior.

3.2. Students' experiences and the FtFPI process

Having reviewed the category of interpersonal behavioral factors, we now turn to the topic of students' experiences and the FtFPI process (see Appendix 2), which may be interrelated in a small CL group context.

Otienoh (2015) found that students' involvement with mixed abilities status in the group interaction created their inclusive experiences in a cooperative process. However, there was less CL interaction due to unclear procedural instructions and teacher monitoring because this was the first time students and teachers were working in this type of learning process. Genç (2016) focused on the importance of students' experience in and understanding of how to work cooperatively with others. He pointed out that students' achievements in science content rely on the basic principles of CL. However, this researcher found that students' FtFPI might face a problem when it comes to adopting a positive attitude towards the group.

Oortwijn, Boekaerts, Vedder, and Fortuin (2008) demonstrated that even with minimal prior knowledge about the CL model, and where neither the teachers nor the students had prior CL experience, structured cooperative groups can reduce inter-ethnic bias in multi-ethnic teams.

Similarly, Mary (2014) found that cooperative activities provided a context for getting closer to each other, becoming familiar with shy children or children who were new to the class. Such activities increased empathy and understanding among students, helping some to overcome relationships of conflict, which they previously had had negative experience of.

Mueller and Fleming (2001) pointed out four key findings in shaping the students' involvement and their experiences of the CL process. First, relationships between boys and girls may have a pivotal role in terms of their language competency and social leadership. Second, students found ways to cooperate even if they lacked the time to organize themselves while they were working together. Third, students' self-evaluations were valuable to the teacher for assessment purposes. Finally, the study noted that the teacher played an important role in establishing CL conditions and sustaining the process.

3.3. Students' communication and support

Having discussed the role of students' experiences and FtFPI process in small CL groups, this section focuses on students' communication and support (see Appendix 3).

Golub and Buchs (2014) reported that students who were prepared for cooperation in a cooperative controversy displayed more support, actively listened, clearly asked more questions, and paid more attention to others than the pairs who were given simple instructions. Gnadinger (2008) claimed that students provided support for one another by questioning, providing feedback, and instructing. In particular, this study pointed out that feedback often helped a student to make substantial gains to understand the group task in CL.

Quebec-Fuentes (2013) identified ten issues with students' supportive communication grouped into three categories: promoting group communication, improving the quality of communication, and altering the sociocultural norms of classroom learning. However, persistent practice was necessary if the teacher was to develop a cooperative-discourse culture. Similarly, Ross (1995) found that the effect supporting the students to employ feedback procedures was attributed to three factors: (1) the feedback strengthened helpfulness norms, (2) it increased the students' skills in asking for and giving help, and (3) their feelings of self-efficacy could be enhanced. Webb and Mastergeorge (2003) noted that help givers had to provide detailed explanations of the material and to support the help receiver to apply the received help by monitoring the peer understanding. Accordingly, the teachers had responsibilities to encourage and facilitate the active roles of both. However, Kershner, Warwick, Mercer, and Kleine Staarman (2014) pointed out that it was crucial to manage group work learning if cooperative rules were to be developed from the students' ideas in each classroom.

3.4. FtFPI leading to deep learning

Having covered the first three categories we now turn to the fourth category: face-to-face promotive interactions leading to deep learning[3] (see Appendix 4). Kutnick, Ota, and Berdondini (2008) reported that students in the classes that used the relational approach[4] could lead to deep learning. However, the researchers concluded that the development of effective group work was dependent on key principles of relational development, the long-term commitment of teachers, and the ability of teachers and students to turn their classes into CL environments.

Tan, Sharan, and Lee (2007) reported that GIM (Group Investigation Method) provided better social relationships, fostered friendships, and learned more about cooperation. However, GIM did not have a great effect on students' achievement and motivation because the students had insufficient time to adjust to it.

Stamovlasis, Dimos, and Tsaparlis (2006) pointed to the importance of students' preparation for the interaction process and teachers' contribution in managing group work as important factor for enhancing the group's effectiveness. Similarly, Asha and Al Hawi (2016) found the necessity to prepare students in the decision-making process due to its impact on their mathematics achievements.

Lehraus (2015) found that young students could display high levels of on-task work, paired support and enhancement of students' involvement in constructive dialogues during CL writing tasks. Similarly, Ahlquist (2015) used the storyline approach in CL for an ESL class, and showed that students promote learning in English within a narrative framework while students forged a strong and supportive bond within a well-functioning cooperative group.

Lafont, Rivière, Darnis, and Legrain (2017) explored two key areas for effective students' interaction within CL: the role of tutor training, and individual characteristics of participants in terms of dyads. The researchers highlighted the role of interaction between peers in knowledge acquisition and motor skills learning. The findings showed that the effects of training for functional interactions and the conditions for matching tutor/tutored dyads were important prerequisites for successful CL in physical education.

3.5. Teachers' influence on students' FtFPI

The fifth and final category is the teachers' influence on students' face-to-face promotive interactions for successful CL (see Appendix 5). This section describes the teacher's role and influence as one of many pivotal factors for successful CL settings.

Chiu (2004) reported that the teachers' evaluation and adaption of TIs to students' needs allowed the students to use their own ideas in solving problems. They then asked for less help from the teachers. Gillies (2016) pointed out that when teachers not only listened to their students attentively, but at same time challenged and facilitated their understanding, their students were more engaged in their ideas and reasoning. Furthermore, to support students' CL group work, Kaendler, Wiedmann, Rummel, and Spada (2015) showed three implementation phases of CL. The first was the pre-active phase of CL that included the teachers' competencies in planning student interaction. Second was the interactive phase, which referred to how the teachers monitored, supported, and consolidated the students' interaction. Finally, the post-active phase referred to the teachers' self-reflection and reflection on the implementation of CL.

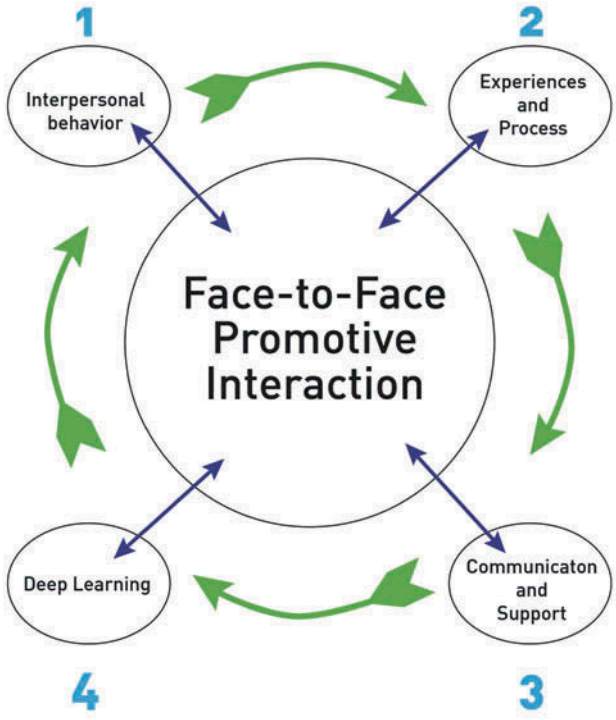
Jolliffe (2011) reported on the importance of having a dedicated school staff and common support across schools for successful CL. However, this researcher concluded that the level of teachers' support, such as coaching and mentoring skills, was a prerequisite for successful implementation of CL. Similarly, Dzaferagić-Franca and Tomić (2012) found out that the teachers need more support from professionals for better implementation of CL, even though 93% of the students were very responsive to the CL strategy in the lower primary school grades. Furthermore, Buchs, Filippou, Pulfrey, and Volpé (2017) found that teachers did not feel that CL was very easy to implement; more than 40% of the respondents only used it occasionally and only 33% used it regularly or often. However, the most challenging parts for them were embedding CL in the curriculum and finding the necessary time for CL and for assessing the students when using CL. Ultimately, Hayek, Toma, Guidotti, Oberlé, and Butera (2017) pointed out that environmental factors such as grades may influence the quality of the students' interaction with respect to successful CL.

4. Discussion

The aim of the present review has been to answer the following question: What FtFPI factors lead to successful CL in small groups? Examining the findings from studies of small CL group contexts, we organized them into the five interrelated categories that will also be used as the unit of analysis. The first four categories of engagement in small CL groups may be seen as interactive and cyclical (see Figure 1) as they may have reciprocal impact on each other. The fifth category, teachers' influence on students' FtFPI, has external influence[5] on this cyclic process and as such, it is not visible in this process.

Starting with the first category, interpersonal behavior, in nine of the studies (see Appendix 1) helping behaviors were emphasized as the core element in students' cooperative interactions in the CL groups. Three studies reveal important characteristics of helping behaviors, such as

Figure 1. Key factors of students' FtFPI in a small CL group context.



responsiveness to others, giving more task-related help (Gillies & Ashman, 1995), promotion of each other's understanding in task-related help (Gillies & Ashman, 1998), willingness to seek help, and students' persistence in asking for help (Webb et al., 2002). One study shows that students' helping behaviors may provide more elaborate help that is both solicited and unsolicited if students are more involved within open-discovery-based tasks (Gillies, 2003a). However, while students' interpersonal behavior is an initial factor in FtFPI for successful co-learning (Johnson & Johnson, 1999), Magnesio and Davis (2010) claim that the student's self-awareness is a pivotal factor for having a successful CL experience.

In the second category, five studies (see Appendix 2) acknowledge the importance of students' exposure to CL experiences and the CL process (see Figure 1). These two factors are interconnected in terms of students' awareness of their active participation and familiarity with how to cooperate with each other during the FtFPI process (Genç, 2016; Oortwijn et al., 2008; Otienoh, 2015). Otherwise, those students who might have less experience in CL group work often find it challenging to develop stable and working relationships with their peers (Genç, 2016; Tan et al., 2007). Mueller and Fleming (2001) state that students need time to develop an understanding of how to work together. Bearing this in mind, students have different experiences of interacting cooperatively to increase acceptance, and of becoming aware of the effect they have on others (Mary, 2014). Earlier studies have found that students' positive experiences of FtFPI require the instructional process that is used for small CL groups (Lou et al., 1996).

In the third category, several of the reviewed studies focus on how communication is used to manage students' support and success in CL (see Appendix 3). Golub and Buchs (2014) state that students' preparations for their cooperation lead to more constructive interactions. The power of feedback increases peer monitoring (Ross, 1995) and improves the communicative process between the students as they depend on each other's support (Quebec-Fuentes, 2013). Moreover, questioning, providing feedback, and modeling are found to be the most common forms of support that make students' CL in FtFPI successful (Gnadinger, 2008). This is in line with what Black and Wiliam (1998)

say about the frequent use of feedback during students' FtFPI, where they point out that it helps students to understand what they need to do to complete a task.

The fourth category (see Appendix 4) includes five effect studies of CL group work, which emphasize the impact of students' FtFPI interactions on their individual and group achievements. Two qualitative studies (Ahlquist, 2015) in English and (Lehraus, 2015) in composition provide deep understandings of meaningful contexts for CL. While FtFPI may support problem solving, the findings from one study show that not all students are able to move towards higher achievement levels (Tan et al., 2007). The outcome of deep learning can be more than just achievement scores on tests, but might also include cooperative skills and cooperative aspects necessary for interacting in FtFPI. For instance, Tan et al. (2007) find that students achieve deeper understanding of the topic, promote better relations, and have deeper learning about cooperation, even if the achievement levels are no better in CL groups in comparison to other teaching methods. However, one major impediment to students' academic achievement is that the teachers and students were not sufficiently prepared and accustomed to the implementation of CL in regard to group investigation method (Tan et al., 2007). Kutnick et al. (2008) and Stamovlasis et al. (2006) recognize the need to prepare students to increase their contribution to the procedural nature of the assigned tasks so they can attain a higher degree of learning.

Finally, the fifth category, teachers' influence on successful CL in FtFPI will only be achieved when teachers create good conditions, foster, and monitor the interaction between students in small CL groups (Kaendler et al., 2015). All seven studies (see Appendix 5) have underlined the necessity of preparing teachers for cooperation: supporting, monitoring, and assessing students' FtFPI can improve the successful CL. However, it has also been found that those teachers who believe that students construct their learning in social interactions use CL more often (Buchs et al., 2017), and they support the promotion of FtFPI among the students (Baines et al., 2015).

4.1. Limitations and future research

This research review suggests that students who have been instructed in positive interpersonal behaviors, in the rules governing cooperation, and in the relational approach to CL are able to learn successfully within classrooms geared towards collaborative and academic learning goals. The review also demonstrates that assessment of CL from the students' perspective can be a good way of improving the CL (Mary, 2014; Oortwijn et al., 2008; Otienoh, 2015). For this reason, experimental tests, questionnaires, and observation methods were commonly used in the reviewed research for data collection. However, in these cases the students' voices could not provide deeper insights into the FtFPI process in a small CL group context when it comes to the individual students' perspective. More research is needed in order to explore the students' experiences and mechanisms, such as using FtFPI and scaffolding tools in cooperative situations when working on cooperative tasks (Zamani, 2016).

The studies reviewed suggest that the teacher role is challenged when implementing CL. Hence, much of the research suggests that the best support for long-term success in CL implementation is in teacher education, where teachers learn through experiencing CL and through post-training phase support (Jolliffe, 2011, 2015; Kaendler et al., 2015). Accordingly, the teacher factor is in line with earlier research where Battistich et al. (1993) found that the effects of CL depend on the quality of the group interaction and teacher's influence. Since this review included multiple international studies, the five elements developed by Johnson and Johnson (1999) were used as a standard for all the included studies. In many of the reviewed studies, the researchers did not explicitly use the term of FtFPI, but students' promotive interaction indicated it. When the research is only on CL in classroom settings, the research is limited when it comes to understanding the influence of out-of-classroom CL factors, such as study visits or project work in natural educational settings.

Since the five presented categories (see Figure 1) of FtFPI have the potential to increase the students' success in CL, this review recommends them as key factors that affect successful CL. Thus,

this review is a step further towards bridging the gap between the beneficial promise of CL and its implementation in terms of students' FtFPI (Jolliffe, 2011, 2015; Kaendler et al., 2015; Sharan, 2010).

5. Conclusion

Due to the complex relationships between cooperating students, the present review aims to identify factors of students' FtFPI that may lead to successful CL in small groups in accordance with the research question: "Which FtFPI factors lead to successful CL in small groups?" Reviewing 34 peer-reviewed articles, the findings illustrate such key factors as students' interpersonal behavior, experiences, communication and support, and teachers' influence, all of which underpin the FtFPI process and in turn can lead to deep learning. The review suggests that both teachers and students must prepare well in order to achieve successful CL implementation with respect to the complex issue of FtFPI in CL. They also need to be prepare if FtFPI within peer relations is to be maintained, systematic development, support, and a strong effort are required (Shachar & Sharan, 1995). More empirical research is needed to understand the complexity of students' FtFPI and to investigate the development of FtFPI based on students' and teachers' experiences in small CL groups.

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Author details

Selma Dzemidzic Kristiansen[1]
E-mail: selma.dzemidzic.kristiansen@usn.no
ORCID ID: http://orcid.org/0000-0002-6480-8012
Tony Burner[1]
ORCID ID: http://orcid.org/0000-0001-7444-7778
Berit Helene Johnsen[2]
E-mail: tony.burner@usn.no
[1] Pedagogy, University of South-Eastern Norway, Drammen 3045, Norway.
[2] Special Needs Education, University of Oslo, Sem Sælands vei 7 Blindern, Oslo 0371, Norway.

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Notes

1. According to Cohen (1994), small CL groups encompass between two to four students in which they are participating and contributing to carry out their joint task without direct supervision of their teacher.
2. CL refers to more intentionally designed group activities and structured interaction, such as interdependence of group members and FtFPI whereas COL is less structured in terms of students' interdependence and FtFPI while they are working together towards their group goals (Johnson & Johnson, 2002; Slavin, 2015).
3. For the purpose of the present review, deep learning refers to both an individual and social process that may enhance learning and problem solving in small CL groups (Millis, 2014) if students' group interactions are based on helping each other, seeking new ideas, and thinking together (Millis, 2014; Stamovlasis et al., 2006).
4. The relational approach developed for this study addressed such communicative skills as listening, explaining, and sharing ideas, having close relationships involving trust and support (Gillies, 2003a).
5. The teacher is seen as a factor that takes part in students' learning activities outside of small CL group work by monitoring, supporting, and consolidating students' interactions, and finally reflecting on them (Kaendler et al., 2015).
6. Publication Across Subjects in Education.
7. Pedagogical resources and learning processes in kindergarten and school.
8. In French: Interactions Sociale et Acquisition.

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Appendices

Appendix 1. Summary of studies of interpersonal behavioral factors

Author/Year	Purpose of the study	Methodology	Main findings
Gillies and Ashman (1995)	To compare the effects on behavioral interactions and achievements of CL in groups of students trained and untrained in cooperation	Quantitative study. 192 grade 6 students in eight schools were video-observed, Australia	The students in the trained groups engaged in more cooperative behavior and less non-cooperative behavior, provided more explanations to assist others, and achieved higher learning outcomes than their peers in the untrained groups
Gillies and Ashman (1998)	To determine the effect of cooperative group work on children's helping behaviors, interactions and learning outcomes in structured and unstructured groups	Quantitative study. Questionnaire and group observation with 360 grade 1 and 3 students in eleven schools, Australia	The children in the structured groups exhibited more cooperative behaviors and less non-cooperative behaviors than their peers in the unstructured groups
Gillies (2003a)	To synthetize the effects of 5 studies of small group learning on students' behaviors, interactions, and learning	Quantitative studies. Videotape of and questionnaire given to age-peers ranging from grades 1 to 8, Australia	The students in the structured groups (i.e. task was interdependence and the students had been trained to cooperate) had more time to work together, they exhibited more cooperative behavior and less non-cooperative behavior
Gillies (2003b)	To investigate and compare behaviors, interactions, and perceptions of students in structured and unstructured CL groups	Quantitative study. Videotape of and questionnaire given to 220 students in six junior high schools, Australia	The students in structured CL groups were more involved with each other, felt committed to the group, and developed a sense of group cohesion. They provided more help to each other
Webb et al. (2002)	To explore the nature of helping behavior within peer-directed small groups that may be most effective for students who have difficulties with the material	Quantitative study. Training, testing, and assessing students' group-work skills with six classes in grade 7, USA	Conditions for effective assistance in small groups are based on raising students' awareness of their responsibilities for other students (help givers and help seekers) and teachers' responsibilities in designing instruction and practice activities that enable the participants to practice these responsibilities
Magnesio and Davis (2010)	To examine how a structural approach to CL influences the social skills of 4^{th} graders and what influence student reflections have on social interactions	Action research-pre and post- students' preparation using sociograms, students' reflection, and tally charts with grade 4 classes, USA	Improvement on both individual behavior and more student interactions
Yoruk, 2016	To investigate students' ideas on the cooperative learning method (CLM) and its effect on cognitive and affective attributes	Quantitative study. Survey with 20 students, Turkey	CLM increased the students' social behavior, self-confidence and awareness of the learning environment

(*Continued*)

Author/Year	Purpose of the study	Methodology	Main findings
Gillies (2006)	To determine teachers' and students' helpful and supportive interaction	Comparative study. Observation and audiotape with 26 teachers and 303 students in grades 8–10 from 4 high schools, Australia	Teachers who used more facilitative learning behaviors influenced the students' modeling in many of their group interactions (engaging in more positive helping behaviors with their peers)
Gillies (2002)	To investigate the long-term effects of training in small-group and interpersonal behaviors	Quantitative study. Video observation of 92 third grade students from nine schools, Australia	Students who had been trained to cooperate and help each other were able to demonstrate these behaviors during small group work two years after their initial training

Appendix 2. Summary of studies within students' experiences and the FtFPI process

Author/Year	Purpose of the study	Methodology	Main findings
Otienoh (2015)	To implement group work and pair work to improve teaching and learning in large classes by creating interaction opportunities for learners	Mixed-methods study. Interviews and observations of four social-studies teachers and groups of six students from each of the teachers' classes, Kenya	The study found that systematic incorporation of basic elements of CL in group work made it more viable in creating and retention of interaction opportunities for learners in large classes. The teachers felt that group work created an inclusive classroom
Genç (2016)	To investigate the effectiveness of CL on students' achievement in science lessons, examining the five dimensions of CL entitled "positive interdependence", "individual responsibility", "face-to-face promotive interaction", "small group skills" and "group process"	Quantitative study. Solomon's four-group model with 135 sixth grade students in experimental and control groups, Turkey	CL activities in the experimental group meaningfully increased the students' achievements. There was a meaningful difference between the two groups in terms of FtFPI
Oortwijn et al. (2008)	To investigate popularity and perceive non-cooperativeness in multi-ethnic elementary schools	Quantitative study. Social-status questionnaire with 94 pupils in fifth grade, from five elementary schools divided into 26 teams, Netherlands	Structured cooperative learning (SCL) activities increased the popularity of immigrant pupils and decreased differences in perceived non-cooperativeness between immigrant and non-immigrant pupils
Mary (2014)	To investigate the role of co-operative games and circle time activities in fostering positive peer relations	Case study. Individual and focus-group interviews with 40 primary students, France	Increased acceptance towards peers, with students becoming aware of their own behavior and the effect it had on others
Mueller and Fleming (2001)	To determine students' experience and learning over five weeks of learning together	Ethnographic case study-interviews, self-evaluations and drawings with 29 grade 6 and grade 7 students across 11 group-work sessions, Canada	The students required periods of unstructured time to organize themselves and to learn how to work together towards a mutual goal

Appendix 3. Summary of studies of students' communication and support

Author/Year	Purpose of the study	Methodology	Main findings
Golub and Buchs (2014)	To demonstrate that a short preparation period related to social support and cooperative rules increases students' constructive interactions	Intervention study. Videotape of 32 students in grade 6, Switzerland	A short preparation period to help students to cooperate elicited more constructive interactions among the students
Gnadinger (2008)	To examine how elementary-school students provide scaffolding to one another during cooperative classroom activities	Case study. Videotape, interviews and field notes with students in grade 2 and 3, USA	Peers provided scaffolding for one another in various ways while modeling was found to be the most popular method of scaffolding used by the peers
Quebec-Fuentes (2013)	How teachers can interact with their students while they are working in groups to encourage and enhance student-to-student communication	Action research study. Videotape of 9th and 10th grade students in four groups of four students and one teacher, USA	By using the process of help interventions, the teacher promoted discourse between the students both when the teacher was present and not present with a group. Students were consistently asking questions of their peers, responding to these questions, listening to the explanations and critically evaluating each other's work
Ross (1995)	To assess the effects of a feedback strategy on the frequency and quality of student's attempts to help one another learn	Mixed methods. Audio and video-recordings with 18 mathematics students in grade 7, divided into five small CL groups, Canada	Results show that assessment increased the frequency and quality of help seeking and help giving and improved students' attitudes in asking for help
Webb and Mastergeorge (2003)	To explore how students' helping behavior within small groups influences student learning, especially for students who have difficulty with the material	Summary of several studies. Training, testing and assessment of students' group work skills in 7th grade so that the students had opportunities to help each other in learning mathematics collaboratively, USA	The study identifies that effective help seekers ask precise questions, persist in seeking help and apply the explanations received. In turn, help givers provide detailed explanations of the material as well as opportunities for help recipients to apply the help received and monitor students' understanding
Kershner et al. (2014)	To explore students' dialogues in managing group work within collaborative science activities using an interactive whiteboard	The qualitative study. Videotape and group interviews with 12 small groups of 8-10-year-olds and teacher discussion, England	Results revealed that students who talk about the need to wait and be patient during group work fall into the following categories: technical aspects, achievement and personal and social considerations. Group achievement in learning is based on rules such as how to talk together and work collaboratively

Appendix 4. Summary of studies within FtFPI leading to deep learning

Author/Year	Purpose of the study	Methodology	Main findings
Kutnick et al. (2008)	To assess whether a classroom-based and teacher-led relational approach to the development of group work amongst young children in primary schools enhances the quality of peer interaction learning and the motivation to work with others compared to the control group	Quasi-experimental study. 980 students from 17 classes of experimental (eight in grade 1 and nine in grade 2) and 21 control groups (ten in grade 1 and 11 in grade 2) assessed and compared for attainment (reading and mathematics), motivation for group work and behavioral/ communicative actions, the UK	Students in experimental classes improved more than children in control classes with respect to academic attainment and motivation to work with others, and showed high levels of communicative interactions with partners
Tan et al. (2007)	To evaluate the effects of the group investigation method (GIM) of CL versus effects of the traditional whole-class method in terms of academic achievement, students' intrinsic motivation to learn, and perceptions of group investigation	Experimental study. 241 students in grade 7 were taught in either the whole-class method (103 students) or the GIM approach (138 students), and there were three geography teachers, Singapore	Findings show that GIM in CL was not more effective than the whole-class method
Stamovlasis et al. (2006)	To explore the effectiveness of a CL approach where students discussed and elaborated on the concepts of physics on problem solving tasks	Effect study. Audiotape with 64 students in grade 10 distributed across 19 groups of three or four. The study consisted of three sessions, 45 minutes each, analyzing the effectiveness of the achievement in groups correlated with student's participation, and group activity through the "pre-test", "group-test" and "post-test" stages, Greece	Findings show the advantage of CL in physics learning in terms of the students' interactions, information exchange, roles as learners, and learning facilitator roles. Students showed "dramatic" cognitive gains within problem-solving tasks immediately after CL, but some students failed to retain them (post-test phase)
Asha and Al Hawi (2016)	To investigate the effect of CL on developing students' decision-making skills and their academic achievement	Experimental study. Mathematics teachers' observations and questionnaire given to two groups of 46 students in grade 6 divided between an experimental group that was taught using the CL strategy and a control group, Jordan	The findings from this study revealed the positive impact of interaction and cooperation among students on enhancing their decision-making skills in order to achieve their common goals. There were statistically significant differences between the experimental and control groups

(*Continued*)

Author/Year	Purpose of the study	Methodology	Main findings
Lehraus (2015)	To explore how cooperative skills can be integrated into teamwork learning tasks in the area of writing (composition) and to explore peer interactions of young pupils engaged in such learning situations	Intervention study. Videotaped two classes (grade 2) of primary schools while integrating both cognitive and cooperative skills into writing tasks based in French, Switzerland	Young pupils were able to work cooperatively in pairs on writing tasks without the teacher's help or support
Ahlquist (2015)	To explore a project based on the syllabus for English using Storyline approach with students working in small groups in order to promote learning of English as a second language	Qualitative study. Observation, notes, questionnaire, interviews, copies of the students' texts and video recordings with two teachers and 32 students (11–13-year-olds), Sweden	Findings showed that this approach proves to be highly motivational in engaging students in language learning and provided a meaningful context for speaking, reading and writing in a second language
Lafont et al. (2017)	To provide an overview of several studies on how interactions between students in cooperative group structures influence content learning in physical education	ISA[8] research group. Findings included quantitative data used to test the effectiveness of various interactive procedures and qualitative analyses of verbal protocols of interactive dynamics in CL and peer-assisted learning (PAL)	The studies have demonstrated the positive effects of CL on the relationships between peers, between students and teachers, and the content to be learned

Appendix 5. Summary of studies of teachers' influence on students' FtF

Author/Year	Purpose of the study	Methodology	Main findings
Chiu (2004)	To test a model of teacher interventions (TIs) within CL to examine how they affect students' subsequent time on-task (TOT) and problem solving	Quantitative study. 220 students from grade 6 to 9 classes (55 groups) and two teachers. Videotaped lessons are transcribed and analyzed using regression analyses, t-tests and Wilcoxon tests, Hong Kong	Results showed that teachers initiated most TIs during CL and typically did so when students were off-task or showed little progress
Kaendler et al. (2015)	To describe teacher competencies for implementing CL in the classroom	Review of summarized pivotal empirical research findings from experimental studies on CL conducted in primary and secondary schools	The focus on what a teacher can do to foster student interaction shows that effectiveness of CL largely depends on the quality of student interaction
Gillies (2016)	To examine the types of teachers' prompts and mediating behavior used to promote thinking, problem solving, and reasoning in students' interaction	Mixed-method videotape with three grade 7 teachers and 17 groups of students from their classes who were trained to use a dialogic approach, Australia	Teachers need to be instructed in how to engage students to promote their activity in interactions through dialogic discussions, while the teacher's role is to model and facilitate these dialogic exchanges
Jolliffe (2011)	To examine the gap between the potential of CL and its effective use in the classroom	Reviewing empirical findings from a case study of a network learning community (NLC) in two secondary and ten primary schools over five years, England	CL requires a sustained implementation where teachers work together to overcome its complexity, particularly when they are supported by a professional learning community of facilitators or in-house experts
Dzaferagić-Franca and Tomić (2012)	To examine opinions of teachers regarding the applications of CL in lower elementary school grades	Survey. 204 teachers (1–5 grades) in Tuzla Canton, Bosnia and Herzegovina	CL is a frequently applied strategy in school subjects such as my environment, physical education and mathematics
Buchs et al. (2017)	To examine teachers' opinions about their challenges in CL implementation	Survey study. 67 schools with 207 teachers (116 participants in lower primary) and (109 in upper primary schools) from the canton of Geneva	Teachers need support in continuous development to surpass challenges arising from CL implementation
Hayek et al. (2017)	To examine whether grades elicit disruptive interactions and reduce performance in a cooperative game task	Experimental study. 132 students from grade 5 (42 groups randomly structured into two experimental conditions: 20 in the neutral priming condition and 22 in the grades priming condition) from two primary schools, Switzerland	The findings show that the presence of grades, compared to the absence of grades in CL, impeded the students' cooperation in the form of negative dominant behaviors, which undermined the group performance and reduced the possibilities to achieve successful student learning

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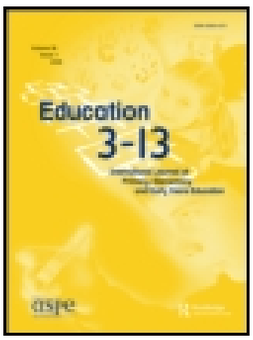

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Exploring pupils' and teachers' perspectives on face-to-face promotive interaction in cooperative learning

Selma Dzemidzic Kristiansen

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Exploring pupils' and teachers' perspectives on face-to-face promotive interaction in cooperative learning

Selma Dzemidzic Kristiansen

Department of Educational Science, University of South-Eastern Norway, Drammen, Norway

ABSTRACT

This study reports on pupils' and teachers' perceptions of face-to-face promotive interaction (FtFPI) in cooperative learning (CL) at two primary schools in post-war Bosnia and Herzegovina (BiH). Using mixed methods, the study asks (1) 'To what extent are the aspects of FtFPI most likely to influence pupils' CL group work?' (2) 'What are the challenges in applying pupils' FtFPI in small CL groups?' The findings reveal mostly positive beliefs of FtFPI influence on small CL group work. However, when it comes to pupils' and teachers' experiences, several challenges have been identified: (1) organisation of FtFPI, (2) planning and balancing between working on a group task and supporting peers, (3) interpersonal behaviours, and (4) supportive communication. The findings suggest that more classroom research related to peers' promotive interpersonal behaviour and supportive communication is needed.

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Face-to-face promotive interaction; cooperative learning; pupils' cooperation; peer support

1. Introduction

Research has shown that pupils' performance in small learning groups depends on the quality of group interaction (Webb 1982). Moreover, it is important for group learning that pupils are friendly, helpful and cooperative (Dzemidzic Kristiansen, Burner, and Johnsen 2019; Battistich, Solomon, and Delucchi 1993). As a pedagogical model, cooperative learning (CL) builds on interaction and cooperation between pupils supporting each other's learning and promotes their prosocial behaviour (Cohen 1994). However, even though pupils sit together in heterogeneous groups in most elementary schools, they do not necessarily work together but for various reasons solve the learning tasks individually (Baines, Blatchford, and Webster 2015). Group learning does not necessarily involve high-quality interaction and mutual support in mastering joint learning tasks (Huber and Huber 2008). Moreover, it is challenging for teachers to plan, monitor and support peer interaction in small group work settings (Kaendler et al. 2015). Placing pupils together in small groups does not seem to be enough to develop cooperation.

This article focuses on pupils' face-to-face promotive interaction (FtFPI), which together with positive interdependence, individual accountability, social skills and group processing contributes to successful CL (Johnson and Johnson 1999). The FtFPI as a type of social interaction refers to participation in and contribution to group work among pupils while they are supporting, encouraging and praising each other's efforts to accomplish their joint task (Johnson and Johnson 1999).

CONTACT Selma Dzemidzic Kristiansen selma.dzemidzic.kristiansen@usn.no

Cooperative learning and FtFPI are seen as socio-cultural resources and mediating tools where the learning activities involve sharing knowledge and support in the social interaction of the group (Mercer and Howe 2012). Vygotsky (1978) points to the significance of peer interaction, asserting that what happens (e.g. dialogues, actions and activities) in the social environment helps pupils to learn and develop. This is a joint interactive process with more capable and cooperative peers moving the group beyond their current 'zone of proximal development' towards a higher level of mastery (Vygotsky 1978, 86). Thus, pupils apply their cultural resources, such as knowledge, beliefs and values, through 'social mediation' in facilitating peer learning as a joint activity (Moll 2014, 31).

Enhancing FtFPI in the early years of children's education is crucial for later development of their capacity to cooperate successfully (Ferguson-Patrick 2018). This includes using interpersonal abilities to communicate and give support effectively, but also planning and organising pupils' joint work more independently of the teacher (Gillies and Haynes 2011). Whilst pupils' understanding of the social processes within CL is important (Mary 2014), Dzemidzic Kristiansen, Burner, and Johnsen (2019) call for deeper insights into the FtFPI process by exploring pupils' and teachers' personal experiences.

Shedding light on pupils' and teachers' perceptions on FtFPI in CL groups at two primary schools in Bosnia and Herzegovina (BiH), this article asks:

(1) To what extent are the aspects of FtFPI most likely to influence pupils' CL group work?
(2) What are the challenges in applying pupils' FtFPI in small CL groups from the pupils' and teachers' perspectives?

The study will provide an understanding of pupils' and teachers' perspectives on aspects of FtFPI in small CL groups, including recognition and experience of such values as support, encouragement, respect and praise. Hammond et al. (2010) reported that pupils valued these social aspects of working with peers, but that they were less likely to agree that cooperation helped them to perform better in the assessed tasks. Accordingly, this study investigates the influences and challenges of FtFPI aspects of pupil cooperation in the context of small CL groups.

2. Face-to-face promotive interaction (FtFPI) for pupils' cooperation

Cooperative learning refers to framing pupils' positive interdependence and promotive interaction (Jolliffe 2015). Moreover, the quality of pupils' interactions in CL mostly relates to the readiness to cooperate, peer acceptance and one's own responsibility for learning (Buljubašić Kuzmanović 2009). Most pupils and teachers appreciate that supportive relationships are essential for the promotion of learning (Kutnick and Kington 2005). However, pupils' FtFPI differs through the individual's participation and contributions according to the degree to which the needs and motives are aligned between the pupils (Premo et al. 2018). Thus, FtFPI has to be considered within the context of group members encouraging and motivating each other to increase effort and support in their learning process (Pai, Sears, and Maeda 2015).

This may include several dimensions, such as peer encouragement, respect, paying attention and peer praise (Kagan and Kagan 2009). Moreover, when aiming to develop successful cooperation, the pupils might focus their attention on learning processes instead of only caring for the production of a group result (Huber and Huber 2008).

Thus, pupils have to be prepared to work cooperatively while also providing more help to each other and understanding each other's needs (Gillies and Ashman 1998). However, this requires carefully structured FtFPI for academic and social gains (Sharan 2010). Moreover, the five aspects of FtFPI have the potential to increase the pupils' success in CL: (1) pupils' interpersonal behaviour, (2) providing pupils' experiences in FtFPI processes, (3) interrelated communication and support, (4)

teachers' influence which all, in turn, (5) improve the pupils' cooperation (Dzemidzic Kristiansen, Burner, and Johnsen 2019).

In many countries, CL is not widely and successfully used (Ferguson-Patrick 2018). There is little understanding of how to put it into practice (Jolliffe 2015) due to low-quality peer interaction (Baines, Blatchford, and Webster 2015). Moreover, using pupils as an important resource for peer learning remains an untapped resource in many cases (Riese, Samara, and Lillejord 2012). Thus, both teachers and researchers are looking for ways to enhance pupils' involvement in their learning and to refine their interactivity (Woods-McConney, Wosnitza, and Sturrock 2016). One way is to listen to what pupils have to say about their experiences in school, particularly in all matters directly affecting them (Warner 2010).

2.1. The teacher's role when influencing pupils' FtFPI

When it comes to carefully structuring lessons to facilitate and encourage group processes (Kaendler et al. 2015), the role of the teacher is crucial (Sharan 2010). Teachers must have a clearer view of what works and does not work when they are preparing pupils for their promotive interaction (Mercer and Howe 2012). Thus, teachers need to encourage pupils to be more helpful and facilitate each other's learning by using more behaviour that encourages learning (Gillies 2003). To accomplish this, Webb, Farivar, and Mastergeorge (2002) found that teachers have to promote interdependence and pupils' willingness to help each other. Moreover, when teachers prepare pupils to practise listening to each other and understanding the perspectives of others, this may lead to responsive peers who in turn give more task-related help to each other (Gillies and Ashman 1998). Finally, teachers have to become aware of the fact that grading may influence the quality of the pupils' interaction (Hayek et al. 2017).

Whilst teachers act differently according to their values and their contexts when applying the new teaching method (Pescarmona 2011), they need more professional support to improve ability to cope with the challenges (Dzaferagić-Franca and Tomić 2012). Teachers' and pupils' mutual understanding of the particular aspects of their practice, such as pupil-pupil interaction, is without a doubt crucial for successful implementation of CL (Iliško, Ignatjeva, and Mičule 2010).

3. Methodology

Convergent mixed methods were used in an exploratory case study of two primary schools in BiH (Creswell and Creswell 2017). Questionnaires were used to investigate pupils' perceptions of different aspects of FtFPI, whilst semi-structured interviews were conducted to gain insights into pupils' and teachers' experiences of FtFPI. Data were collected in parallel, analysed separately and then the results were merged and compared (Creswell and Creswell 2017). Thus, the use of mixed methods provided a better understanding of the research problem than would have been accomplished if only questionnaires or interviews had been used. This also minimised the limitations of both approaches (Creswell 2014).

3.1. Context and participants

Education in post-war BiH is highly complex and fragmented, which leads to challenges when trying to implement educational reforms (Clark 2010). In the attempt to improve the quality of education in BiH (Tikly 2011), priority has been given to synchronising this work with contemporary European teaching and learning models (Framework Law on Primary and Secondary Education in BiH 2003).

Pupil-centred learning, as adopted by the Global Campaign for Education (2002), has served as the framework for implementing the concept of Child-Friendly Schools (CFS) initiated in 2002 by UNICEF. For this reason, 97% of lower primary school teachers had received basic or advanced pupil-centred methodology training (UNICEF 2010). The Centre for Educational Initiatives 'Step by

Step' NGO in Sarajevo provided the training. One of the aims was the teacher's preparation for a pupil-centred approach to teaching and learning and a CL model. However, as educational reforms evolve slowly, active learning methods, development of cooperation and scientifically based data on pupil learning are still lacking in BiH schooling (Brankovic et al. 2016).

Schools in Sarajevo were purposively selected (Creswell 2014) for the study. Classroom teachers were trained in child methodology as part of their professional development, including how to establish small CL groups in their classrooms (UNICEF 2010). In these schools, pupils have been involved in CL experiences two to three times a week across core subject areas (Bosnian language, Science and Mathematics). The sample consisted of two year 4 and two year 5 classes (N=192) in primary school A (48.4% of the pupils) and in primary school B (51.6% of the pupils), and four year 4 class teachers. The teachers were all female; two each in primary schools A and B displayed positive attitudes towards cooperative group work activities and were interested in participating in this research project. All four were qualified teachers (four-year Bachelor's degree), fulfilling the formal standards set by the BiH government, while two of them (T2A and T2B)[1] had a Master's degree in primary education. Three of the teachers (T1A, T1B, T2B) had respectively 24, 13 and 12 years of teaching experience, while the one in school A (T2A) had around five years of teaching experience.

3.2. Data collection

The data collection, carried out in the autumn of 2018, focused on certain aspects of FtFPI. The intention of the questionnaire was to examine the 'current pupils' opinions on issues and practices and their actual behaviours (Creswell 2014, 403) related to FtFPI in CL in all eight classes with pupils ranging from 9 to 11 years of age. Since it was the first time the pupils experienced this type of written questionnaire, the researcher explained the rating system and the meaning of each item. The questionnaire, given during one school class (approx. 40 minutes), used a five-point Likert-type scale consisting of ten items. The questionnaire was translated into Bosnian by the researcher and reviewed by professionals in the field. To eliminate ambiguous items, the questionnaire was piloted in another school. The items are based on the definition of FtFPI established by Johnson and Johnson (1999) and on the reviewed literature. The Cronbach's Alpha value of the questionnaire used in the present study was 0.79, indicating an overall high reliability, meaning that the scale items are closely related as a construct (pupils' FtFPI).

The second part of the data collection comprised semi-structured interviews conducted with 16 pupils in year 4 from schools A and B. The purpose was to gain a deeper understanding of the pupils' perceptions relating to key aspects of FtFPI. The interview guide had a list of topics to cover the items given in the pupils' questionnaire. All selected pupils have been in the same class from year 1 and were chosen by their teacher according to their grades in the class's protocol (two high, four medium and two low levels of achievement). All interviews, lasting between 15 and 45 minutes and tape-recorded for later transcription and analysis, were conducted in the pupils' and teachers' mother tongue, Bosnian. The transcriptions were later translated into English.

Prior to the data collection process, the researcher addressed practical and ethical issues, such as acquiring informed consent from the pupils, school administrators, teachers and parents.

3.3. Data analysis

Descriptive statistics were used for the quantitative data and frequency counts were tabulated for each of the items in the questionnaire.

Through a 'hybrid' approach of inductive and deductive thematic analysis (Fereday and Muir-Cochrane 2006), the interview analysis started with pre-defined categories derived from the modified framework model of the FtFPI aspects (Dzemidzic Kristiansen, Burner, and Johnsen 2019), and then subcategories, such as themes emerging from the participants' responses, were added to them. Emerging themes were refined, compared and organised to form the subcategories

Table 1. Concept map showing the main categories and subcategories of the modified FtFPI aspects model (Dzemidzic Kristiansen, Burner, and Johnsen 2019).

Challenges and possible ways of improvement			
Categories	Subcategories		
Interpersonal behaviour	Helping behaviours	Helping strategies	
Student's experiences and process	Organisation	Individual aspects	Environmental aspects
Communication and support	The four dimensions of FtFPI		
Deeper knowledge and learning	Teacher's role	Preparation	

so that similar data were give similar conceptual labels (Strauss and Corbin 1990). Finally, a concept map was then developed (Creswell 2014) (see Table 1) to represent the four main categories associated with the pupils' and teachers' perceptions: (1) Interpersonal behaviour, (2) Pupils' FtFPI experiences and process, (3) Communication and support, and (4) Improving knowledge and deeper learning about FtFPI.

4. Findings

The material below has been organised into two main sections. First, pupils' answers to the questionnaire ($n = 192$) provide an overview of the most important aspects of FtFPI influencing the CL process. The structure of the questionnaire and the organisation of the statistical findings have been inspired by Burner's article (Burner 2015). Second, qualitative in-depth descriptions of each item grouped around the four main categories (see Appendix 1) give insights into the pupils' ($n = 16$) and teachers' ($n = 4$) understanding of FtFPI aspects in small CL.

4.1. Statistical findings

The items were organised into five groups in order to present the pupils' ratings of the influence of FtFPI aspects on the small CL group-work process. They are: (1) the effectiveness of CL group work (Q1-Q3), (2) giving and asking for help (Q4-Q5), (3) pupils' attention focused on each other (Q6-Q7), (4) pupils' encouragement and praising (Q8-Q9) and (5) the teacher's role (Q10). Table A1 (see Appendix 1) indicates the mean averages of responses regarding the degree to which the pupils said the aspects influenced their CL process. It includes a percentage overview so the nuances can be seen in the following.

Sixty-seven per cent of the pupils reported to a great or very great extent that group work (Q2) and support from their peers (Q3) give them a better learning outcome. However, half of the pupils stated that they often did not learn in their group work (Q1) where the mean score was the lowest compared to the other nine questions (M=3.49). Sixty-seven per cent of the pupils said that asking for and giving help to their peers improved their group work to a great or very great extent (Q4-Q5). However, 36% of the pupils reported that paying attention to peers (Q7) improved their group work, ranging between very little and to some extent, and in particular only 18% stated that they listened attentively to peers (Q6). Nonetheless, 78% of the pupils indicated to a great or very great extent that encouragement (Q8) and praising (Q9) from peers improved their group work. Moreover, 91% of the pupils answered to a great or very great extent that their teacher taught them how to give good support to peers (Q10), where the mean score was the highest ($M = 4.56$).

The part of the questionnaire with statements that the pupils responded to with either yes or no presented differences in their experiences of FtFPI in CL group work (Q1a-Q9a) and their beliefs about how it could improve group work (Q1b-Q9b) (see Table A2 in Appendix 2). The number of pupils who expressed this was almost equal when comparing both gender and grade; those showing differences are displayed in the graphs. Ninety-three per cent of the pupils reported that they gave help to their peers in group work (Q1a), 88% stated that they received help from their peers (Q2a) and 86% believed that they worked well when receiving peers' help (Q2b). However,

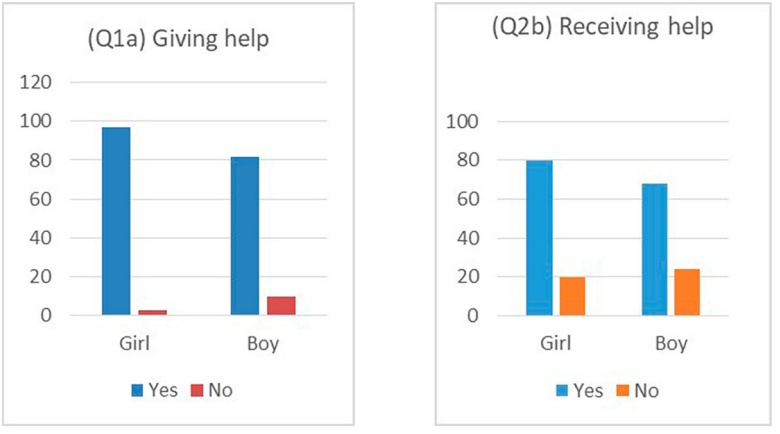

Figure 1. Giving and receiving help.

17% of the pupils did not feel that they worked well when giving help to peers (Q1b). Girls gave more help to peers and more girls than boys believed that they worked better when receiving help from peers (see Figure 1).

Regarding peers paying attention in group work, 27% of the pupils said this was not their experience (Q3a) and 23% answered that their peers did not listen to them attentively (Q4a). More than one-third of the pupils (34%) did not believe that paying attention to peers improved their group work (Q3b). The most important aspects that pupils believed could contribute to working better in groups were peers' encouragement (85%) (Q5b), peers' praise (Q6b) and knowing how to help peers (Q7b) (83%). Finally, 23% of the pupils did not experience peers' encouragement (Q5a) and 20% did not receive peers' praise (Q6a). Year five pupils had slightly more peer encouragement than Year 4 pupils, whilst girls were more likely to encourage peers than boys were (see Figure 2).

A total of 83% of the pupils reported that they might work better when knowing how to help peers (Q7b), whilst 19% did not know how to encourage peers (Q8a). Girls knew better how to help and especially encourage peers compared to boys. Year 4 pupils believed more that knowing how to encourage peers improved group work (see Figure 3).

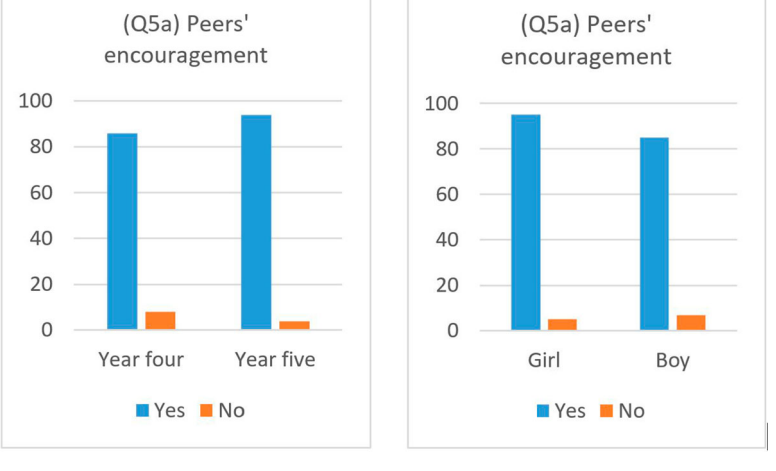

Figure 2. Peers' encouragement.

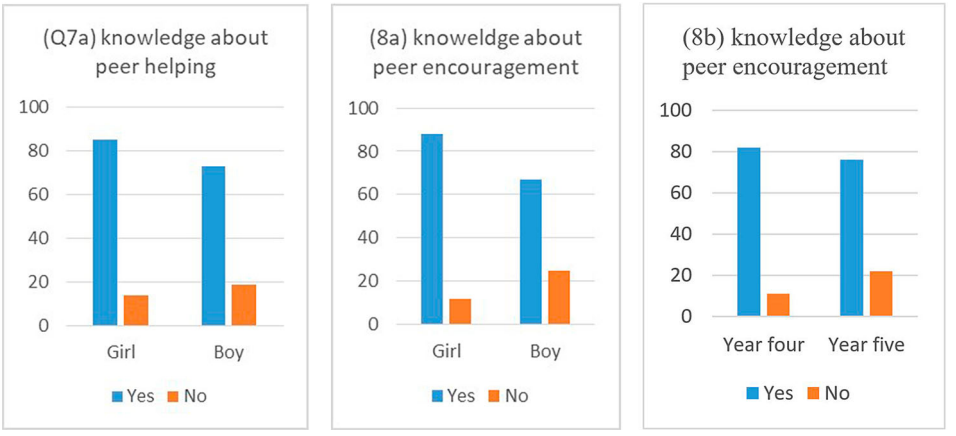

Figure 3. Sufficient knowledge about peer encouragement.

Almost all pupils (94%) reported that their teachers taught them how to support their peers (Q9a) and thought this helped them to work better in groups (9b).

In sum, based on the quantitative results, pupils were mostly positive about the FtFPI aspects, even though they did not work often in CL groups. The pupils recognised the teachers' role as the most important aspect of supporting their FtFPI. However, a considerable number of pupils had insufficient knowledge on how to encourage, praise or pay attention to their peers in group work.

4.2. Qualitative findings

This section reports on the findings from the interviews conducted with pupils and teachers. They shared their understanding of FtFPI aspects and the challenges when using FtFPI in small CL group work.

4.2.1. Interpersonal behaviour

In describing pupils' interpersonal behaviour in relation to helping behaviour for those who give and receive assistance, the teachers and pupils emphasised the need to recognise and understand each other's academic and socio-emotional needs:

> Their facial expression shows they're confused, they're intensely thinking about something. (SB-HLA2-Girl)[2]

> I noticed that some pupils are proud if they take care of their peers, help them. (SB-T1)[3]

When considering how helping behaviour might encounter interfering factors, the interviewees reflected on the level of pupils' cooperation that enables such support, for example:

> I want to help, but he's not interested. (SA-MLA3-Girl)

> I mention the passive observers, withdrawn and shy … they leave their work to the one most open pupil … (SB-T2)

In many cases, the helping strategies were mentioned in relation to subject knowledge and pupil cooperation that was not always successful:

> I find it difficult to come up with some form of support or other every time. (SA-MLA1-Boy)

> If another child is uninterested, if I interfere at a particular moment, a child like this will come back at that moment, but the aforementioned will happen again. (SA-T2)

Thus, both the pupils and teachers expressed the importance of improving their interpersonal behaviour and supporting each other:

> I would like my classmates to evaluate me and tell me what they think is not good in my behaviour. (SA-HLA2-Girl)

> I know five of my colleagues to whom this would give wings, but there is no follow-up information. (SB-T2)

4.2.2. Pupils' FtFPI experiences and process

Three main subcategories contributed to an understanding of how the pupils and teachers experienced the FtFPI process from an organisational, individual and environmental perspective. Both pupils and teachers found that it is challenging to organise positive interdependence in FtFPI:

> It's difficult when we're to bring all the ideas together. (SA-LLA2-Boy)

> It's very hard for them to get organised because everyone wants to be in charge. (SA-T2)

Moreover, one of the pupils mentioned balancing between working on a joint task and helping others:

> We have to think about how to make it a good process, to work on the task and to help. (SB-LLA1-Boy)

For this reason, almost all the teachers were facing challenges in planning and selecting the joint task for FtFPI:

> If you don't choose the tasks properly, if you don't adapt them to the pupils' age, their pre-knowledge, the work will naturally be difficult. (SB-T2)

Teachers and pupils experienced how pupils' characteristics and individuality shaped the FtFPI process:

> He or she just keeps quiet. (SB-MLA2-Boy)

> Pupils as passive observers in the group … who don't want to accept help, probably due to their self-esteem. (SB-T1)

In the environmental-aspect subcategory, a considerable number of pupils focused on grades, while all teachers saw that grading pupils influenced the FtFPI process:

> There's no chance of getting an excellent mark, and then there's no teamwork there. (SB-HLA1-Boy)

> Some pupils request marks and learning outcome indicators from me … this refers to knowledge and outcomes that are measured, not the interaction among pupils, and the latter is the key. (SA-T1)

4.2.3 Communication and support

The pupils and teachers were aware that both verbal and non-verbal communication are crucial for managing pupils' support by using attention, encouragement, praise and respect.

First, they pointed out how attention and respect may support FtFPI, but proper behaviour is also important:

> I share my knowledge and allow them to share their knowledge with me … to hear all their information. (SA-HLA1 Girl)

> … To respect each other … if they have good communication, mutually assist each other … it absolutely leads to better learning. (SA-T2)

Moreover, listening attentively was a focus of the pupils' attention:

> They look at me and listen and when I finish, they ask me something about what I have been talking about. (SA-LLA2-Boy)

However, both teachers and pupils found that paying attention is still challenging:

> Working on communication needs to be improved, when it comes to their patience, listening. (SA-T1)

> Some of them don't look at me when I'm talking, they turn away and speak when I speak. (SA-MLA1-Boy)

Almost all the pupils saw that encouraging and praising each other was a step in accomplishing the joint task, getting better grades and feeling good about themselves and their work. Moreover, the pupils understood that being encouraged is more about refusing to give up; peer praise refers to even small successes.

> I can correct any bad mark because my classmates give me that power. (SB-LLA1-boy)

> I feel like I can achieve much more. They open my eyes so I realise I have to work more. (SB-MLA3-boy)

Similarly, the teachers noticed that encouragement and praise helped the pupils to work better:

> … often hear them commending someone … this was an absolute impetus for some pupils for moving so much forward from the starting point while before they couldn't move at all. (SA-T1)

This teacher added that pupils' praise might be taken a step further towards rewarding peers for shared success:

> They monitor and reward each other in terms of who progressed. (SA-T1)

However, all the teachers agreed that these dimensions take time and require constant effort to make them work:

> It's difficult, tough and extremely demanding work. (SA-T1)

4.2.4. Improving knowledge and deeper learning about FtFPI

This category focused on pupils' preparation for FtFPI and teachers' influence. All the teachers thought that having more experience might improve the pupils' FtFPI:

> The time and their experience of working together are important factors for improving. (SB-T2)

> Involve them as much as possible, then they understand better. (SA-T2)

Moreover, the teachers needed more training, consistency and support in their practice:

> I think it's a long-term process, but we can achieve this through consistency. (SA-T2)

> To learn things, to see examples of other teachers, professors, experts in these fields. (SA-T3)

Most pupils explicitly said that they needed greater FtFPI skills to provide peer support:

> … to know how to help and to be able to help others. (SA-HLA2-Boy)

> … to learn how to communicate as much as possible to make our work better. (SB-HLA1-Boy)

One of the pupils emphasised teacher's monitoring as a necessary aspect influencing the learning process:

> The teacher should listen when we're working to see whether we get along well in the group. (SA-MLA1-Boy)

5. Discussion

This article has posed two research questions. The first refers to the extent to which the aspects of FtFPI are most likely to influence pupils' CL group work. The second explores the challenges the pupils and teachers face when applying FtFPI. In the following, the quantitative and qualitative findings will be merged to shed light on the research questions.

5.1 FtFPI aspects that have great influence on pupils' small CL group work

Generally, the pupils positively express that both CL group work and peer support assist in their learning (67%). However, this study reveals differences between FtFPI aspects influencing pupils' learning together.

Almost all of the pupils (94%) state that their teachers have taught them how to support their peers, showing that teachers' promotion of FtFPI among pupils is one of the most important aspects leading to successful CL (Sharan 2010). However, 83% of the pupils believe that they could be better at helping their peers, and 15%, the majority of them boys, think that they lack sufficient knowledge to do this. This discrepancy between what pupils answer on the Likert scale and what they respond on the yes/no items is confirmed by the findings from the interviews. Pupils with a high and middle level of achievement, in particular boys, need to improve their knowledge on FtFPI. Similarly, teachers' responses in the interviews call for more education, support and consistency with respect to FtFPI. Dzaferagić-Franca and Tomić (2012) also note teachers' needs for more professional support, and Bronkhorst and Akkerman (2016) call for a pedagogical and didactic focus on interactional patterns between pupils.

The pupils report that giving and receiving help had a very positive influence on their CL group work. This finding agrees with previous studies on helping behaviours as a core contributor to learning in the pupils' promotive interactions (Gillies and Ashman 1998). The present study shows that girls are more likely to give help to peers and are more likely to believe that they can work better when receiving help from peers. Thus, teachers must understand that girls and boys may be drawing upon distinct cultures that may or may not support learning in their classrooms (Kutnick and Kington 2005). On the other hand, 17% of the pupils feel that they do not work well when giving help to peers. This surprising finding indicates that pupils probably need to have a better understanding of others' implicit needs, including how to initiate help (Gillies and Ashman 1998; Gillies 2003). Some pupils find that they need to have more skills in recognising and understanding each other's needs. This is confirmed by their teachers who point to the importance of eliminating factors that interfere with interpersonal behaviours.

The core dimensions of FtFPI that are identified in the literature on effective peer support during CL processes are a mixture of pupils' encouragement, attention and praise. Nearly eight of ten pupils (78%) in the present study report that peer encouragement and praise positively influence their CL group work to a very high degree. This finding is confirmed in the pupil interviews, in particular, one boy (SB-MLA3-boy) states that encouragement 'opens my eyes and I feel like I can achieve much more'. Moreover, teachers agree that 'this was an absolute impetus for some pupils to move on and make more progress' (SA-T1). This corroborates, as Gillies (2003) notes, the notion that pupils' self-efficacy is often raised by encouragement from their peers, while in turn, this has positive impact on their cooperative behaviour. However, 23% of the pupils express that their peers did not encourage them, particularly the boys and fourth graders, perhaps because they have insufficient skills in how to encourage peers, which is reported by 19% of the pupils. Similarly, 20% of the pupils do not receive any praise from their peers in their efforts to learn, which in turn may influence CL group work negatively, for example, if these two out of ten pupils are placed in the same CL group.

Too many pupils, 34%, do not believe that paying attention to peers improves their learning outcome, whilst 27% do not experience peer attention. The Likert scale corroborates this, where 36% of the pupils claim that this does not influence their CL group work. With such a lack of peer attention, it would be extremely difficult to respond to pupils' needs. Receiving a low level of peer attention may be due to the pupils' having a focus on grades instead of mutual learning. Accordingly, in their interviews, the pupils may be expressing that they are nervous about their school performance when they reveal that they are worried about their grades. For example, one of the high-performing pupils (SB-HLA1-boy) says that there is 'no chance to get an excellent grade'. Moreover, Hayek et al. (2017) found that the self-evaluation threat implied by grades is so

rooted in pupils that the mere mention of grades may impair group performance and intra-group relations. Thus, the present study indicates that maximising pupils' attention on each other during FtFPI may be beneficial in overcoming the challenges they are facing, for example, providing help and thinking about grades. Huber and Huber (2008) note that the pupils' attention may focus on learning processes instead of caring only for the production of a group result. Furthermore, the teachers' interviews highlight the need to improve their peer's attention, particularly the need to listen attentively. Similarly, 23% of the pupils confirm that their peers do not behave accordingly.

5.2 Pupils' and teachers' challenges when applying FtFPI

Both pupils and teachers confirm in the interviews that FtFPI in small CL groups facilitates the efforts of others to complete tasks during the pupils' learning process (Gillies and Ashman 1998). As one teacher states (SA-T1): 'This is about the power in what a peer can convey to another peer'. Despite the learning potential that FtFPI offers, the teachers and pupils face certain challenges when applying it.

Organising pupils in a promotive interaction session by balancing their equal participation in a joint task is the most challenging aspect that has been experienced by the teachers and pupils. The reason for this, according to the pupils, might be a lack of helping strategies. The teachers, on the other hand, point to a lack of 'consistency'. Perhaps this refers to a lack of clear behavioural norms that focus specifically on supportive interaction (Webb, Farivar, and Mastergeorge 2002).

It seems that the positive interdependence has not been adequately developed as a crucial part of the co-learning process. A considerable number of pupils mention this, but one teacher formulates this well (SA-T2): 'they do not have something that will indicate that they should help'. One of the complications seems to be the lack of detail, in particular, the explicit implementation of goal-interdependency among group members. Thus, positive interdependence and individual accountability have to adhere to the form of peer interaction to be cooperative (Johnson and Johnson 1999).

Teachers find it challenging to plan appropriate tasks that foster social growth and help pupils' achievement (Lotan 2003) when selecting and structuring joint tasks. Thus, teachers need to prepare for task-related interactions that can improve group productivity and co-learning (Cohen 1994). It is challenging to find the balance between preparing pupils for subject-related knowledge that will be measured and teaching pupils FtFPI. This can pressure the teacher's role in preparing pupils for successful FtFPI. It is interesting when a majority of pupils (94%) say that teachers teach them about FtFPI, when at the same time it also becomes clear that such preparation is not sufficient. In fact, systematic preparation is necessary for more effective and sustainable FtFPI (Dzemidzic Kristiansen, Burner, and Johnsen 2019).

Communication is one of the most challenging aspects as pointed out by both the teachers and pupils. In particular, the need to pay attention and listen to peers attentively requires careful consideration of peer respect, encouragement and praise. This is also verified by the pupil questionnaires. All the teachers agree that it takes time and consistent effort to develop pupils' FtFPI. Golub and Buchs (2014) argue that pupils who are prepared and think about cooperation display more support, actively listen and pay more attention to others. Likewise, the role of teachers has to be reconsidered with focus, as one pupil states, on teachers' monitoring of pupils while they are working in groups. This may help pupils to understand how the teacher monitors, supports and consolidates their interaction (Kaendler et al. 2015).

In fact, teachers need more cooperation amongst themselves by expanding this work to all stakeholders. This will make it possible to gain more support for what they are doing so they can improve FtFPI in CL. Currently, mutual support is seen as challenging, as one teacher stated (SB-T2) 'there is no follow-up information'. This teacher's need corresponds to what Jolliffe (2015) has pointed out, that extensive cooperation utilises effective networks where teachers share information and provide professional support to one another.

6. Conclusion

This study reports on the perceptions of primary school pupils and their teachers who had implemented CL in post-war BiH and investigates aspects of FtFPI. The findings reveal mostly positive beliefs on all aspects of FtFPI reported in the quantitative section of the study. Conversely, the pupils reported struggling with such aspects as paying attention to each other, listening carefully, encouraging and praising peers. Bearing in mind the development of pupils' promotive interaction (Sharan 2010), the present study finds a lack of positive interdependence. Moreover, both the quantitative and qualitative results show that pupils need to be more involved in small CL groups and need to acquire more knowledge about FtFPI. This refers to communication when interactively using such dimensions as attention, encouragement and praise. This also corresponds well with teachers' preferences to give pupils more exposure to FtFPI situations, as they are aware of the positive effects of cooperation on pupils' ability to learn (Kyndt et al. 2013). However, in the present study, the teachers' opportunities to develop and promote FtFPI face challenges.

Several challenges have been identified in the area of (1) pupils' organisation of FtFPI, (2) planning and balancing between working on an appropriate group task and supporting peers, (3) interpersonal behaviours that have been influenced by individuals' characteristics and (4) supportive communication. Finally, the process of developing FtFPI requires time, consistent support and more 'space' for working on pupils' FtFPI without pressure from grading. Even though teachers are highly regarded for their commitment to enhancing their knowledge and professional skills in implementing relatively short CL as an innovative practice in the BiH, there is a lack of adequate and ongoing support. To overcome the challenges, teachers and all stakeholders must cooperate if the potential of pupils' FtFPI as a social pedagogic tool is to be fully realised (Baines, Blatchford, and Webster 2015). Bearing this in mind, pupils and teachers do not merely need more insight into FtFPI in CL, but also into positive interdependence, individual accountability, social skills and group processing. With better insight, they can increase their knowledge on FtFPI, along with other elements of CL, aiming for long-term cooperation.

In the present study, generalisation is problematic as CL is not a common practice in BiH, and the study has only a small number of teachers and uses purposeful sampling. It is possible to say that 'analytic generalisation' (Yin 2009, 39) may enable the use of these empirical results in a similar context. The present study suggests that more classroom research is needed to investigate the pupils' practices related to aspects of FtFPI, such as promotive interpersonal behaviour and supportive communication. Ultimately, the possibility that pupils and teachers will reflect on their classroom experiences is a step towards improving the quality of education in BiH.

Notes

1. T1A and T2A (year 4 classroom teachers – one and two from case school A).
   T1B and T2B (year 4 classroom teachers – one and two from case school B).
2. Each pupil in year four has been numbered in the following way: SA refers to school A; SB is school B. HLA 1- pupil 1 with high-level achievement, HLA 2 – pupil 2 with high-level achievement and so forth. MLA 1 – pupil 1 with mid-level achievement, LLA 1 – pupil 1 with low-level achievement and so forth. SA-HLA1= Pupil number 1 with high-level achievement in School A.
3. SB-T1 (School B – Teacher one).

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ORCID

Selma Dzemidzic Kristiansen http://orcid.org/0000-0002-6480-8012

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Appendices

Appendix 1

Table A1. Pupils' opinions on aspects of face-to-face promotive interaction of cooperative learning.

Questions	Very little extent	Little extent	Some extent	Great extent	Very great extent	Mean	SD
Q1.To what extent would you say you often learn in group work?	6.3% (*n* = 12)	10.9% (*n* = 21)	32.3% (*n* = 62)	28.6% (*n* = 55)	21.9% (*n* = 42)	3.49	1.14
Q2.To what extent would you say group work helps you to learn better?	4.7% (*n* = 9)	10.4% (*n* = 20)	17.7% (*n* = 34)	24.5% (*n* = 47)	42.7% (*n* = 82)	3.90	1.20
Q3.To what extent would you say support from your peers helps you to learn better in group work?	5.7% (*n* = 11)	9.4% (*n* = 18)	17.7% (*n* = 34)	31.3% (*n* = 60)	35.9% (*n* = 69)	3.82	1.18
Q4.To what extent would you say giving help to your peers improves your group work?	1.6% (*n* = 3)	7.3% (*n* = 14)	24.0% (*n* = 46)	25.5% (*n* = 49)	41.7% (*n* = 80)	3.98	1.05
Q5.To what extent would you say asking for help from your peers improves your group work?	4.7% (*n* = 9)	5.7% (*n* = 11)	22.9% (*n* = 44)	35.9% (*n* = 69)	30.7% (*n* = 59)	3.82	1.08
Q6.To what extent would you say listening attentively to your peers improves your group work?	2.6% (*n* = 5)	4.7% (*n* = 9)	10.4% (*n* = 20)	30.2% (*n* = 58)	52.1% (*n* = 100)	4.24	1.00
Q7.To what extent would you say paying attention to your peers improves your group work?	6.3% (*n* = 12)	7.3% (*n* = 14)	21.9% (*n* = 42)	26.0% (*n* = 26)	38.5% (*n* = 38)	3.83	1.20
Q8.To what extent would you say encouragement from your peers improves your group work?	1.6% (*n* = 3)	8.9% (*n* = 17)	12.0% (*n* = 23)	21.9% (*n* = 42)	55.7% (*n* = 107)	4.21	1.06
Q9.To what extent would you say praise from your peers improves your group work?	2.6% (*n* = 5)	4.2% (*n* = 8)	15.1% (*n* = 29)	29.7% (*n* = 57)	48.4% (*n* = 93)	4.17	1.01
Q10.To what extent would you say your teacher teaches you how to give good support to peers in your group work?	1.0% (*n* = 2)	3.1% (*n* = 6)	5.2% (*n* = 10)	20.3% (*n* = 39)	70.3% (*n* = 135)	4.56	.82

Appendix 2

Table A2. Pupils' experiences and beliefs concerning giving and receiving help, peer attention, encouragement, praise, pupils' knowledge and teachers' role in CL group work.

Statements	No	Yes
Q1a. My peers receive my help in group work	6.8% (*n* = 13)	93.2% (*n* = 179)
Q1b. I work well in groups when giving help to my peers	17.3% (*n* = 33)	82.7% (*n* = 158)
Q2a. My peers give me help in group work	12.0% (*n* = 23)	88.0% (*n* = 169)
Q2b. I work well in groups when receiving help from my peers	13.6% (*n* = 26)	86.4% (*n* = 165)
Q3a. My peers pay attention to me in group work	26.6% (*n* = 51)	73.4% (*n* = 141)
Q3b. I work well in groups when paying attention to my peers	34.0% (*n* = 65)	66.0% (*n* = 126)
Q4a. My peers listen to me attentively in group work	22.9% (*n* = 44)	77.1% (*n* = 148)
Q4b. I work well in groups when listening attentively to my peers	17.3% (*n* = 33)	82.7% (*n* = 158)
Q5a. My peers encourage me in group work	23.4% (*n* = 45)	76.6% (*n* = 147)
Q5b. I work well in groups when encouraged by my peers	14.7% (*n* = 28)	85.3% (*n* = 163)
Q6a. My peers praise me in group work	19.8% (*n* = 38)	80.2% (*n* = 154)
Q6b. I work well in groups when praised by peers	17.3% (*n* = 33)	82.7% (*n* = 158)
Q7a. I have sufficient knowledge to help my peers in group work	15.1% (*n* = 29)	84.9% (*n* = 163)
Q7b. I work well in groups when knowing how to help peers in group work	17.3%	82.7%

(*Continued*)

Table A2. Continued.

Statements	No	Yes
	(*n* = 33)	(*n* = 158)
Q8a. I know how to encourage my peers to participate and contribute to group work	19.3%	80.7%
	(*n* = 37)	(*n* = 155)
Q8b. I work well in groups when knowing how to encourage peers to participate and contribute to group work	18.3% (*n* = 35)	81.7% (*n* = 156)
Q9a. My teacher teaches me how to support my peers in group work	6.3%	93.8%
	(*n* = 12)	(*n* = 180)
Q9b. I work well in groups when my teacher teaches me how to support my peers in group work	5.8% (*n* = 11)	94.2% (*n* = 180)

Article 3

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Article

Becoming a Socially Responsive Co-Learner: Primary School Pupils' Practices of Face-to-Face Promotive Interaction in Cooperative Learning Groups

Selma Dzemidzic Kristiansen

Department of Educational Science, The Faculty of Humanities, Sports and Educational Science, University of South-Eastern Norway, 3045 Drammen, Norway; selma.dzemidzic.kristiansen@usn.no

Abstract: Promoting pupils' face-to-face promotive interaction (FtFPI) is crucial for effective cooperative learning (CL) in group work. This article provides insight into interpersonal behaviour and supportive communication as two important aspects of FtFPI. Sixteen pupils 9–10 years of age were videotaped in four structured mixed-ability groups during CL sessions at two primary schools in post-war Bosnia and Herzegovina (BiH). The features of FtFPI that pupils use for peer support in small CL groups and on interfering factors that pupils encounter during FtFPI were analysed using a thematic hybrid approach. The study found that pupils used verbal and non-verbal features for co-learners' responsive actions during FtFPI. However, the findings also revealed some factors that interfere with the pupils' FtFPI, such as having insufficient knowledge and personal skills about peer attention, encouragement and praising. The study recommends that future studies should implement the intervention necessary to foster both teachers' and pupils' understanding and functional knowledge of FtFPI for successful small CL groups.

Keywords: face-to-face promotive interaction; cooperative learning; cooperative practice; peer support

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1. Introduction

Relationships are a fundamental part of successful group work, while supportive interactions are essential for the promotion of learning [1]. The ability of pupils to provide mutual support helps co-learners to make progress towards their joint achievement in small learning groups [2]. Social competencies and the ability to create and maintain effective peer relationships enhance such personal skills as engagement, communication and prosocial behaviour, in other words, skills that are needed if individuals are to be able to connect with others and support each other's academic success [3,4].

This article focuses on pupils' face-to-face promotive interaction (FtFPI) as a type of social interaction that refers to ways individuals encourage and facilitate each other's efforts, thus leading to successful cooperative learning (CL) [5]. However, previous studies have shown that when working in heterogeneous groups, pupils do not spontaneously engage in activities that enhance their learning or necessarily support each other in mastering their learning tasks [6]. In fact, Baines, Blatchford and Webster [7] found that in most primary schools, pupils' group work lacks supportive features.

If group members lack cooperative skills when it comes to co-learners providing and receiving help, they will not work productively in groups [8,9]. Moreover, when pupils choose to avoid or blame rather than engage with another group member, they are showing their inability to build their co-learners' social competence [10]. Hence, more observational studies on CL practices are needed in classrooms worldwide if the increasingly diverse pupil population is to thrive [11]. It is important to focus on the lower grades of primary education due to their high exposure to social, economic and educational disadvantages and the earlier development of their capacity to successfully cooperate [11–13].

CL is widely recognised as a pedagogical practice that promotes small group learning and socialisation [14,15] and leads to positive social interaction and achievement among pupils across different subject areas, where they provide mutual support, share resources and celebrate joint success [5,16]. Bearing this in mind, CL is of interest in the post-war educational reform aiming for a more child-centred pedagogical practice in Bosnia and Herzegovina (BiH) [17]. However, when practising a new teaching method such as CL, pupils and teachers encounter challenges associated with their interpersonal behaviour and supportive communication during cooperative activities [18,19].

CL and FtFPI may be seen as socio-cultural resources for human interaction when learning activities involve supporting others [20]. Employing "mediational means", such as socio-pedagogical tools and language, shapes the pupils' approaches to promotive interactions [21]. In CL, promotive interdependence is a vital component where students engage in promotive interactions by helping each other through support, help and encouragement, and this helps determines pupils' learning outcomes [2]. Thus, following social interdependency theory [22], three interactional dimensions maximize peer promotive interaction success: (a) Substitutability (e.g., the actions of one person substitute for the actions of another), (b) cathexis (e.g., the investment of psychological energy in events outside of oneself), and (c) inducibility (e.g., openness to influence). However, due to the complex relationships associated with challenges and different features of peer support, pupils' FtFPI does not always guarantee that the desired results are achieved due to the problematic practice of CL [23].

The article's point of departure is linked to the theoretical concept of FtFPI. The focus is on pupils' interpersonal behaviours and supportive communication that might contribute to pupils' active engagement as responsive co-learners in small CL group work [1,24]. Thus, the aim of the present study is to understand and discuss how pupils practice FtFPI in small CL groups by investigating pupils' supportive and interfering actions. These actions shape both pupils' openness and responsiveness to others for shared social and academic gains [3,18,19,23]. Specifically, the study attempts to answer the following research questions:

(a) Which features of FtFPI do pupils use for peer support in small CL groups?
(b) Which interfering factors do pupils encounter during FtFPI in small CL groups?

To address the research questions, the study here focuses on two aspects of FtFPI that have the potential to increase the chances of pupils succeeding in CL: (1) Interpersonal behaviour and (2) supportive communication [24]. Pupils' interpersonal behaviour refers to two dimensions: (a) Recognising that peers need help and (b) willingness to help. Supportive communication consists of interrelated dimensions: (a) Paying attention (b) encouraging peers and (c) peer praising [25]. This study does not only investigate whether pupils encourage, praise and pay attention to each other within group work, but also analyses the ways in which pupils do this.

Previous Research on Forming and Functioning Aspects of FtFPI

Promotive interaction is a core element if pupils, exceptionally high-risk pupils and those with individual need, are to benefit from the opportunities CL provides [15]. Pupils are more likely to facilitate each other's learning in mixed-ability groups (high, medium low ability) and gender-balanced compositions [14,26]. However, pupils' behaviour during group work and their joint attention can vary considerably from one group to the next [27,28]. Having skills to communicate effectively through listening, explaining and sharing ideas enables pupils to have more cooperative behaviour [26]. Nevertheless, effective group work also depends on pupils' socioemotional group ethos, taking into account group maintenance and group blocking [13]. Moreover, pupils need to develop prosocial behaviours, such as promoting and seeking help [8] to become responsive co-learners. For pupils' actions to be promotive in CL groups, all the group members must be aware of their own active role in their interaction and be aware of the needs of others [29]. Moreover, pupils' self-confidence may affect their behaviour [30].

Researchers have underlined the need to prepare pupils for promotive interactions [6,31]. A recent review study on aspects of FtFPI has pointed out the importance of preparing co-learners for each aspect of FtFPI [24]. Moreover, pupils need to learn about a variety of FtFPI aspects in line with their forming and functioning dimensions in practice. The term forming dimension refers to the organisation of the group and the establishment of minimum norms for appropriate cooperative behaviour [14]. For this reason, the key roles social interdependence and a joint task play in establishing a group structure that motivates group members to engage in FtFPI and actively support each other's learning [32,33]. Moreover, the collaborative more open-ended task is often suggested as effective in facilitating FtFPI [14]. Accordingly, group members as interdependent co-learners in a reciprocal fashion contribute and exchange resources with others before completing the task [14,23].

Functioning dimensions are needed to manage the groups' activities in completing a task and in maintaining effective working relationships among pupils (e.g., asking for help, expressing support) [2]. Moreover, affective factors such as pupils' socio-emotional experiences may influence CL group work and originate from each group member's perceptions of his/her peers during the interactions [34]. In addition, a group member's personality traits such as self-consciousness and self-monitoring may also contribute to the role of learner-facilitator during FtFPI [35].

Previous research has increased our understanding of specific aspects associated with pupils' FtFPI, for example, seeking and providing help [9]. Pupils' responsiveness to others [36] and their willingness to seek and give help [37] have been recognised as initial dimensions of interpersonal behaviour in FtFPI. Webb and Mastergeorge [9] highlight that high-quality help is only useful to the receiver when it is sufficiently elaborated on, corrected on time and linked to the need for help. However, the most accurate predictor of positive support is whether the receiver of the help makes use of it [38].

To promote the pupils' ability to provide mutual support in co-learning tasks [16], the verbal and nonverbal behaviour that is part of supportive communication requires active listening, paying attention and encouraging and praising others [25]. Moreover, using supportive communication that can serve as a peer model that others can and should imitate is a way of helping pupils to achieve successful FtFPI [39]. A supportive peer model refers to behaviour that occurs when pupils observe other pupils' actions and then imitate them as an incentive to help others [40]. However, the teacher's role in modelling helping behaviours is crucial for effective pupils' help-related conduct during small CL group work [9].

Moreover, the teacher's role includes the structuring of group work for cooperation and status relations in interaction [41]. Following up on the social norms for interaction, teacher's monitoring and intervening occurs in the group work when needed [9,31,42]. While balancing pupil status can play a critical role in making cooperation in small groups successful, teachers must create a group-worthy task that requires each member's contribution and the help group members offer one another [14,43].

2. Materials and Methods

The present descriptive case study [44] took place in two purposefully selected primary schools [45]. Qualitative video data were collected on interpersonal behaviour and supportive communication that enabled the researcher "to dig into" the pupils' FtFPI as a complex practice, thus allowing her to look at a particular FtFPI situation several times [46].

2.1. Context and Participants

In post-war BiH, an education reform introduced a child-centred educational process based on participatory, active and cooperative methods aiming to harmonise the quality of teaching and learning practices with contemporary European teaching and learning models [17]. However, the educational system is still highly complex and fragmented thus that the problem of divisions and discriminatory behaviour limiting human cooperation

on educational progress continues [47]. Moreover, systematic measurements of the quality of the education and scientifically based data on pupils' learning are lacking [48].

The case in this study presents School A and School B, 2 institutions that have implemented the reform efforts by moving from teacher-led to child-centred pedagogical practices. The schools were located in a socioeconomically less-privileged area of Sarajevo where the pupils' families were dealing with such post-war consequences as trauma, migration from other parts of BiH, low-income, one-parent family and a minority group of Roma people. Thus, while dealing with adversity and diversity and coupling this with the power of cooperation, these schools were focusing on CL activities thus they could facilitate their pupils' learning process. Two classrooms, one from each school, were selected based on teachers' willingness to participate, and their pupils were involved in CL experiences 2 to 3 times a week across various school subjects.

Sixteen pupils were selected from a larger sample (N = 192). The selected pupils were engaged earlier in the previous study that explored a deeper understanding of their perceptions about key aspects of FtFPI by conducting a face-to-face interview [18]. Accordingly, the pupils' perspectives on the FtFPI [18] and the present video observations may provide a complete picture of FtFPI' situations in small CL groups [49]. Using the pupils' grades in the class' protocols, the teachers chose a sample of 16 pupils 9–10 years of age (8 boys and 8 girls), as the power of mixed academic levels or mixed social status supports learning among peers [14]. The selected pupils have been in the same class from Year 1, and the same pupils were invited to participate in the present study. The teachers and pupil's parents gave written consent for their own and their child's participation in the study. The participants had no additional preparation relating to FtFPI for CL other than the child-centred methodology. The teachers' instructions in both classrooms about a joint task and cooperation between pupils before the group sessions required that everyone cooperated, everyone listened to each other, shared their knowledge and helped one another [38]. Sometimes, pupils themselves were asked to remind group mates about these rules along with helping behaviour.

2.2. Data Collection

Two gender-balanced groups in Year 4 in both schools (N = 4) were videotaped throughout group sessions across the subjects Mathematics, Bosnian language and Natural Science in the spring of 2019. Each group consisted of 1 high, 2 medium and 1 low level achiever (N = 16) (see Figure 1). The intention behind the video recording of the groups was to examine in detail the current pupils' practices in relation to FtFPI, such as promotive actions and actual supportive or interfering dialogues [50].

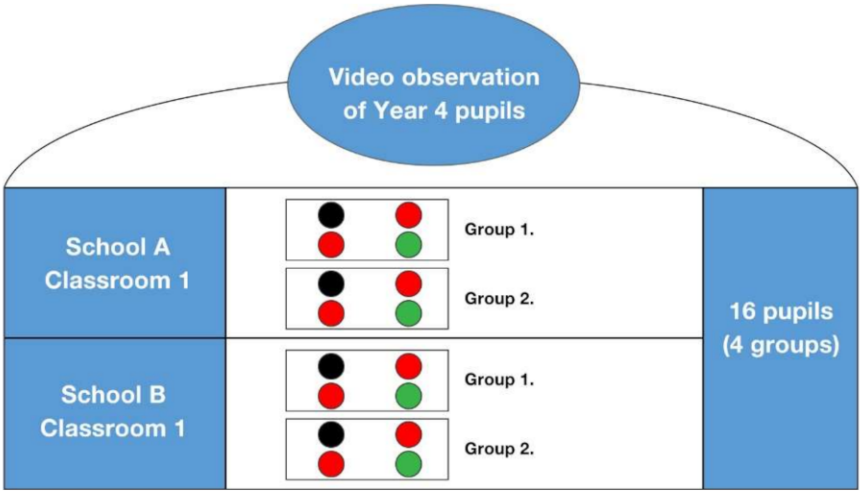

Figure 1. An overview of the setting for the video data collection.

The study had a total of 11 h and 27 min of recorded material, including 2 to 3 sessions a day in the same groups. The length of the sessions varied between 15 and 30 min depending on the assignment given. The collaborative assignment, which was very different in nature and content, was designed for CL purpose with an open-ended question and a strong narrative structure. The teachers planned the authentic assignments to engage pupils in joint productive activity (see Appendix A). Using dialogical and analytical skills, pupils worked together toward a common goal (e.g., creating mind maps, making a report/common argument for class debate or solving mathematical problems). All mathematical tasks were adjusted from the regular mathematical curriculum and were embedded in contexts exercising together. Sometimes pupils thought or wrote individually, and later they discussed the solution for the problem as a group. For each transcript of videotaped sessions across the school subjects, the researcher developed codes including the date, the school, the group, and the session number, e.g., SA-G1-S1 (School A, group 1, and session 1). Each code interpreted the session schedule, including the school subject, joint task, and main purpose.

Two cameras (Zoom Q2n Handy video recorders) were placed on a tripod and angled on the pupils' group work, including two dictaphones (H1n Handy Recorders), each in Group 1 and Group 2 (see Figure 2).

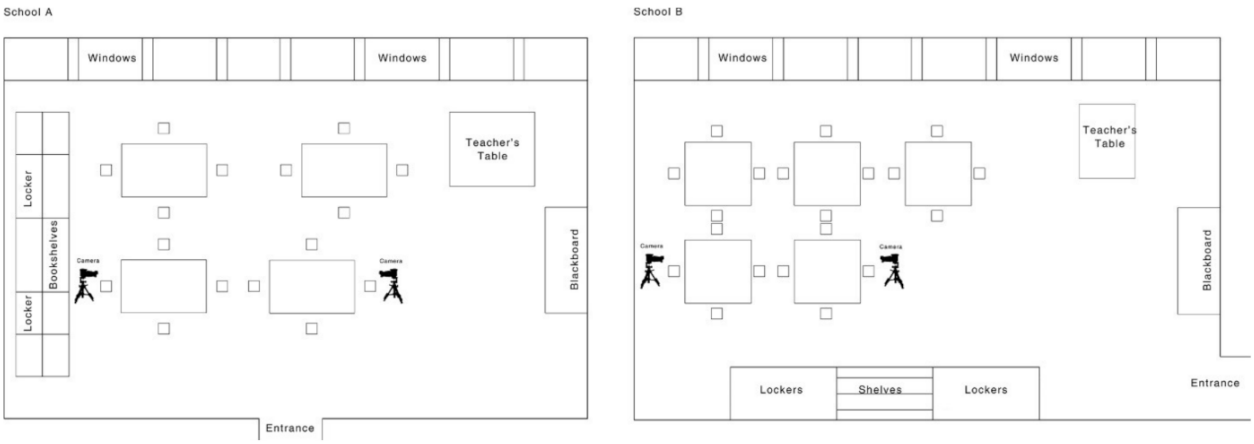

Figure 2. Classroom maps of recorded group work.

Moreover, the researcher recorded "off-camera" contexts by using the observational protocol [45]. The questions that guided this researcher's observations were "What did the pupils do when they left their groups? Did they ask for help from their teacher or peers outside their group, and what happened later?" These notes were useful for understanding and capturing the context within which the pupils interacted and were later incorporated into the videotaped transcripts [51].

The "appropriateness" of this research process and data were addressed in the internal and external validity check. The data material were collected in the authentic setting of primary-school classrooms, while the videos provided the opportunity to review the pupils' group and individual actions over and over for their accuracy [51].

Prior to the data collection process, the researcher addressed practical and ethical issues, such as acquiring informed consent, gaining trust and avoiding misunderstandings relating to the pupils' participation during the entire research process, as well as storing, organising, analysing and presenting the videotaped material [52].

2.3. Data Analysis

Thematic analysis employing a hybrid approach of deductive and inductive reasoning was utilised with the pre-defined FtFPI categories that were both a precursor to and an outcome of the data analysis [50,53]. The researcher transcribed and coded the video data. This process included searching for and identifying common features that extended across

FtFPI fragments divided into interpersonal behaviour and supportive communication in CL groups [44,54] (see Appendix B). Through a bottom-up, inductive, data-driven process, emerging themes from the participants' activities were refined, organized and added to FtFPI's categories [55,56]. The analysis was viewed as ongoing and iterative, requiring the researcher to constantly question the transcriptions by writing reflection notes while viewing the videos [53].

First, the researcher produced rough transcriptions without specific marking details, such as gestures [55], typing them electronically in the participants' mother tongue, Bosnian. The choice of manual analysis of qualitative data allowed the researcher to read the data, use colour-coding to mark parts of the text and divide them into segments according to the pre-defined FtFPI's categories. Operating within a small database, with fewer than 300 pages of transcripts, the researcher could efficiently sort and organize text sentences into file folders by having a hands-on feel close to the data [45].

The second step of the analysis consisted of careful reading and rereading the transcripts while viewing the videos to obtain a general sense of the FtFPI situations. Next, the researcher refined the transcriptions as specific "key video-clips" relating to FtFPI by adding the multimodal features of the data for the microanalysis [57] (see Appendix C). A Bosnian primary-school English teacher served as an external auditor and collaborative partner in post-recording phases [45]. She reviewed concurrence between the video clips and the transcripts and later translated the transcriptions into English. We also shared responsibility for the data analysis to review the findings and discuss the links between the actual empirical data and the multimodal features added to justify the interpretations [46]. This member-checking process [45] was used to reveal any biases and carefully support the basis for the data interpretation.

A unit of analysis was the video excerpts [55], where the FtFPI based on pupils' activities was identifiable and defined by the FtFPI sub-categories [18] (see Appendix B). Seeking to understand the pupils' interpersonal behaviour and supportive communication, the purpose of this phase of analyses was to extract the supportive and interfering features associated with both recognition and willingness to help each other, and encouragement, praising and paying attention to each other [50]. In addition, the analytical strategy focused on verbal and non-verbal features, using line numbers to help identify the location of these specific segments [58]. Although special attention was paid to pupils' lines, teachers' lines were also included in the analysis since teachers played a key role in FtFPI's development among pupils [9,31,41,43].

The microanalysis started by focusing on the groupmates' engagement in helping and supporting situations with peers during a joint task. Then, the researcher examined whether groupmates reacted by using verbal or nonverbal features; how and when their peer needed some help. The supportive features and interfering factors, and the words and gestures that pupils used to support learning together were examined. The microanalysis also paid attention to teacher's activities identifiable in the recorded groups to obtain an insight into teacher's engagement in supportive relationships.

3. Results

The excerpts (N = 10) below have been chosen for detailed analysis of FtFPI in small CL groups. Categorising FtFPI (see Appendix B) into sub-categories of (1) interpersonal behaviour and (2) supportive communication, the findings report (a) features of FtFPI that pupils used to support their co-learning, (b) interfering factors identified during FtFPI and presented in each FtFPI sub-category.

3.1. Interpersonal Behaviour

The analysis of pupils' interpersonal behaviour refers to such interrelated dimensions as recognition and willingness to receive and provide help as a response to peers' needs during FtFPI.

Peers' Recognition and Willingness to Help

Excerpts 1 and 1.1 from the same group session are examples of how pupils recognised certain cues indicating a peer's need for help. However, in the first example, the pupil who needed help rejected the offered assistance, which then impeded the group work at that particular moment. One group member then intervened to help the group members to continue their work.

Excerpt 1 (Each pupil in the group has been numbered in the following way: HLAg pupil, girl with high-level achievement, MLAb pupil, boy with mid-level achievement, LLAb pupil, boy with low-level achievement and so forth).

1. HLAg: "We all have the right result for this one."
2. MLAg: "Stop!" (.) "for (D.)" (LLAb)
[. . .]
4. LLAb: "I'm just about to. (Hhhhh)" (rests his head on his elbow)
5. MLAg: "Do you know how to solve it at all?"
6. LLAb: "I know"
7. MLAg (moves closer to LLAb, leans over his notebook)
[. . .]
11. MLAg: "Well, just tell me where you got that two from!" (She gets up a little from her chair and leans even more over to see what LLAb is writing): "You should have done that in the beginning."
12. LLAb (starts erasing).
13. MLAg: "Well, just tell me (..) where did you get that two from?"
14. LLAb (takes the notebook from the desk and closes it)
15. HLAg (looks at LLAb with her serious face): "The teacher said that our notebooks should not be closed."
16. LLAb (puts his notebook on the desk again and opens it)

MLAg stopped the group activity by recognising that LLAb was still working (1) and became aware that LLAb needed help by posing him questions relating to the task (5, 11). While LLAb claimed that he understood the task (4, 6), his audible exhaled sigh while positioning his head on his elbow (4) and erasing something (12) showed the opposite. MLAg was persistent in offering him help (13) that in turn influenced LLAb to close his notebook (14). To get LLAb back to work, HLAg used the authority of her gaze, thus invoking the authority of the teacher (15).

Excerpt 1.1

1. LLAb (looks at MLAg's notebook): "I don't get this at all."
2. HLAg: "So, 8 divided by 4 (..) you see here how much that is."
3. MLAg (moves closer to them): "Write two!"
4. HLAg: "Because 4 times two can be eight (.) right?"
5. LLAb: "Yes"

HLAg reacted at the right time (2), after LLAb stated his confusion and by looking in MLAg's notebook (1). HLAg's proximity to LLAb (2) and MLAg's body movement closer towards LLAb and HLAg (3) indicated their openness and HLAg's willingness to help. However, it can be discussed whether MLAg's answer and HLAg's explanation were the proper way of providing help in this situation (3, 4).

Below is an illustration of a "peer help recogniser" who could not provide help but indicated who might be able to help.

Excerpt 2.

1. LLAb (is leaning on his elbow while holding his forehead and looks at the worksheet)
2. MLAb: "Ask (N.)" (points at HLAg)
3. LLAb (calls HLAg): "(N.)"
[. . .]
6. HLAg (looks at MLAb): "And why don't you help?"
7. MLAb: "I'm not sure myself (.) It's better to ask you."

When MLAb realised that he could not help (7) while the body language of LLAb indicated his need for help (1), MLAb gave LLAb the incentive to ask for help (2). However, the potential helper, HLAg, did not seem to be willing to help (6).

Excerpts 3 and 3.1 below illustrate the groupmates' non-response to solicited help (3) and non- willingness to help because the "helping points," previously assigned to pupils in need (3.1) within the same group session, had been used up.

Excerpt 3.

1. LLAg (coughs a bit): "Here it is (.hhh)"
2. MLAg (looks at the worksheet of LLAg and slightly frowns)
3. LLAg (looks away from MLAg's face and onto her worksheet)
4. MLAg (raises her eyebrows a couple of times and sticks out her tongue a bit)
5. LLAg (quietly): "I want someone to help me" (groupmates are occupied with work) (. . .)
6. LLAg (raises her hand) (. . .) (rises from her chair, looks at HLAb): "I have to tell the teacher something." (leaves the group)

After slight coughs and an audible inhaled sigh made by LLAg (1), MLAg recognised these non-verbal cues as an invitation to give some kind of help to LLAg (2). However, MLAg did not offer any task-related help other than her facial expression signalling that something was wrong in LLAg's work (4). That, in turn, triggered LLAg to ask for help explicitly (5, 6). However, the group did not react, and LLAg left the group to seek external help (6).

As the group work continues, the groupmates more clearly stated that they could not help anymore because LLAg had used up all her "helping points" (1).

Excerpt 3.1.

1. MLAb (looks at LLAg): "So, we can't help you anymore (.) you've spent all three points, you're in the hole"
[. . .]
3. Teacher: "Did anyone make a lot of mistakes?"
4. HLAb (loud): "(V.) (LLAg) used all three points."
[. . .]
7. Teacher (approaches the group where LLAg is sitting): "That's not, that's not much (..) come on."

HLAb's confirmation that LLAb had exhausted his opportunities for help (4) and the teacher's encouragement concerning LLAb's mistakes (7) show the possible detrimental consequences of pupils' willingness to help and reactions to help when applying "helping points."

Below, the same group, but in another session, needed their teacher's intervention to activate the pupils' willingness to give peer help.

Excerpt 4.

1. Teacher (looking at the LLAg's notebook): "What task did you come up with?"
2. LLAg: "We-e-e-ll."
3. Teacher: "Which one was yours (V.)?" (but teacher looks at HLAb)
4. HLAb: "She needs to do this one" (..) "111"
5. Teacher (turns the handout to LLAg): "Come on (..) You have numbers 111 and 8."
6. MLAb and MLAg follow while the teacher helps LLAg
7. LLAg (looks at the teacher): "I don't know what I should end up to with (. . .) Can I get some help?"
8. Teacher: "What can you suggest to her?" (looks at HLAb and MLAb in turn)
9. MLAb (looks at the teacher and LLAg in turn): "Write this . . . " (. . .) (looks up)
10. Teacher: "How many boxes (. . .) and the number of pieces is . . . ?"
11. HLAb: "Write it like this."

As the teacher realised that LLAg had not finished her task (2), the teacher's gaze activated HLAb's willingness to help by reminding them about LLAg's task (3). Moreover, the teacher's explicit verbal invitation along with her gaze directed on HLAb and MLAb (8) initiated their willingness to help. However, MLAb did not seem to have a readiness to help, which he showed by pausing and looking up (9). Thus, HLAb only offered help (11) after the teacher posed the task-related question (10).

3.2. Supportive Communication

This section presents the analysis of groupmates' encouragement, praise and attention as three interrelated dimensions illustrating pupils' verbal and non-verbal features used during (non)- supportive communication.

3.2.1. Paying attention and praising

Excerpts 5 and 6 present the same group, but in two different sessions illustrating helping situations. In particular, the group leader HLAg pays attention to all members of the group, including all who are in the task-related conversation, and praises their efforts while simultaneously offering peer assistance.

Excerpt 5.

1. HLAg: "So, 23 times 32 (. . .) what are we to write and where?"
[. . .]
4. HLAg (addresses LLAb): "Let me see how you're getting on."
7. LLAb (shows in his notebook)
8. HLAg: "Bravo!"
[. . .]
10. HLAg: "Three, (. . .) let me see . . . put this a bit higher(..) a bit h-i-i-i-i-i-gher."
[. . .]
14. HLAg: "(K.) (LLAb) . . . how much is 2 times 3?"
15. LLAb: "Six."
16. HLAg: "Bravo! (.) And we're to write it below what?"
17. LLAb: "Below 2."
[. . .]
25. HLAg (calls to MLAg): "How much is two times two?"
26. MLAg: "Four."
27. HLAg: "And where are we supposed to write it below?"
28. MLAg: "Below four."
29. HLAg: "Bravo!"
30. HLAg (calls to MLAb): "How much is 3 times 3?"
31. MLAb: "We write nine below four."
32. HLAg: "Bravo!"

HLAg attracted her groupmates' attention in order to evoke their understanding about the procedure for solving the task (1). She began by helping LLAb (4) and praised his efforts along the way (8, 16). Using a slow dynamic for her voice and by taking short pauses, HLAg supported LLAb's task understanding (10). HLAg paid attention to other groupmates by inviting them to confirm their understanding of the task procedures, which HLAg also commended (25–31).

As the group leader continued to have her full attention on helping LLAb, the class teacher explicitly praised this situation, particularly HLAg's efforts.

Excerpt 6.

1. HLAg (focused on LLAb): "How much is 4 divided by 4?"
2. LLAb: "Zero."
3. HLAg (repeats in a slightly different questioning tone): "4 divided by 4?"
4. LLAb: "Two."
5. HLAg: "Four divided by four?" (little slower while looking at him)

[. . .]

8. LLAb: "One."
9. HLAg: "Bravo! Because you always need to check how many times 4 can go into 4."
10. Teacher (approaches the group): "How's it going (M.)?" (HLAg)
11. HLAg: "Good . . . Good."
12. Teacher: "Super... Hats off." (pats HLAg on her head)

[. . .]

77. Teacher: "Here hats off! Applause for (M.) She works so hard and help." (everyone applauds)

[. . .]

92. HLAg: "(K.) (LLAb) please, always tell me if you don't understand a task."
"If you think you know (..), don't be ashamed."
93. LLAb (nods)
94. HLAg: "If you make a mistake (. . .) it doesn't matter. It's okay!"

HLAg showed her patience in guiding LLAb to answer properly, repeating the same question, changing her questioning tone and the dynamics and timbre of her voice (1–5). Beyond a task-related explanation (9), HLAg encouraged LLAb's insecure behaviour in group work (92, 94). Their teacher was aware of this and praised this helping situation with the word "super" and the metaphor "hats off" (10, 12), initiating the pupils' applause (77).

3.2.2. (Dis)encouragement

The findings in excerpts 7 and 8 reveal that one groupmate's positive or negative attitude can (dis)encourage the further flow of the group work.

Excerpt 7.

5. LLAb: "So we only did two tasks."
6. MLAg: "What to do, that's what we have on the desk."
7. MLAb: "Maybe it's not too late. Let's try! Never give up."
8. LLAb (looks at MLAb and smiles): "Let's try" (addresses HLAg)
9. HLAg: "If we put (. . .) branch 4 . . .
10. MLAb: "We put 4." (adding cheerfully) (. . .) "Never give up!"

MLAg and LLAb (5-6) expressed their dissatisfaction over what they had done thus far. However, MLAb started to encourage other groupmates to continue (7, 9) by showing his positive energy and using a cheerful voice (10). Ultimately, HLAg began by suggesting how to proceed on the task (9).

On the other hand, one groupmate's negative attitude to the assigned task may discourage the group from starting to work.

Excerpt 8.

1. MLAb: "This is the most difficult task that we've got in the group."
2. HLAg: "The teacher thinks (.) we're good pupils (. . .) we'll do it easily."
3. MLAb: "No, that's certainly not true."
4. MLAg: "We've got nine more minutes."
5. MLAb: "The minutes go by like this." (snapping of his fingers)
6. Teacher (approaches the group): "Yes, you can do it!"
7. MLAb: "Teacher, why have you given us this task?" (somewhat plaintively)
8. Teacher (smiles): "Let's get down to business."

MLAb was complaining that their group task was very difficult, but HLAg tried to encourage him by explaining why this had been assigned to them (1, 2). However, MLAb explicitly disagreed with HLAg's explanation (3). Attempting to turn this discouraging atmosphere around, MLAg warned that time was running out (4), but MLAb kept being negative (5). Indeed, in reply to the teacher's encouragement (6), MLAb complained yet again (7).

Excerpts 9 and 10 illustrate how lack of peer attention among groupmates influences pupils' working relationships.

Excerpt 9.

1. Teacher: "You've got five minutes."
2. HLAg: "Hurry up!" (frowns and looks at MLAg)

[. . .]

6. HLAg: "We'll never finish this."

[. . .]

10. HLAg: "Look how ugly you're writing . . . Oooh, my God!"
11. MLAb: "Look how her letters are so small."
12. MLAg (angrily pushes the paper away): "Okay! You write."
13. HLAg (returns the sheet of paper with a smile): "You do it."

HLAg showed her nervousness by rushing MLAg to finish their task (2), remarking negatively about the group's progress (6). Moreover, HLAg's negative comments about MLAg's writing (10) also triggered MLAb to add a negative comment (11). This caused MLAg to stop writing where she angrily pushed the task over to HLAg (12).

Excerpt 10 shows the teacher's intervention after one groupmate has left the group.

Excerpt 10.

1. Teacher (approaches the group): "What is (V.) (LLAg) doing?"
2. HLAb: "She wants to draw while we're writing this."
3. LLAg (returns to the group)

[. . .]

5. Teacher (addresses LLAg): "You see, you draw, you're creative!

[. . .]

7. LLAg (addresses her group): "You see (.) teacher claims, I'm creative."
8. HLAb: "We told her that you're drawing (..) we're just supposed to write things down."
9. LLAg: "Then I'm sorry I didn't hear that."
10. HLAb: "You didn't hear us."

The teacher was fetched by LLAg to intervene in the joint task (1–3). Encouraged, LLAg (5) showed her self-confidence by repeating the teacher's words (7). However, it seemed that failure to pay attention and listen attentively to each other was what led LLAg to leave the group to seek teacher intervention (8–10).

4. Discussion

The aim of the study was to investigate which features of interpersonal behaviour and supportive communication of FtFPI the pupils used in small CL groups and which

interfering factors the pupils had to deal with. Thus, the interrelated supportive and interfering dimensions associated with the two mentioned aspects of FtFPI will be discussed to shed light on the research questions. Moreover, the theory of social interdependence [22] provides the framework for the discussion on the FtFPI dimensions.

Building on the knowledge of which didactic and pedagogical support of learning is appropriate for each group learning situation [16], this study has attempted to contribute to research by exploring pedagogical factors in interpersonal behaviour and supportive communication that might be conducive to and constructive in maximising pupils' FtFPI and thus having successful CL group work. Therefore, the present study supports the finding that it is necessary to understand pedagogical tools to have effective social interaction in CL [10].

4.1. Recognition and Willingness to Respond to Peer's Needs

The findings point out that the supportive dimensions of interpersonal behaviour among pupils across small CL groups provide certain indicators for recognising peers' need for help and their willingness to respond to it. Some of these are verbalised as explicit requests for help or general statements of confusion such as "I don't get this at all," which has also been found in previous studies [9,18]. The present study also identifies non-verbal signals, for instance, pupils use audible exhaled sighs or slight coughs together with their upper body movement as potential cues for wanting help. Some pupils look into their peers' notebooks, and this may then initiate their groupmate's reactions as a response to a possible need for help. Accordingly, pupils' responsiveness to others and their willingness to seek and give help increase efforts to engage groupmates in FtFPI for successful CL [28]. In most of the excerpts, the peer's need for help is recognised. However, the pupils do not always show a willingness to help for reasons that will be discussed below as interfering factors within FtFPI.

The micro analysis gives insight into how the pupils demonstrate their willingness to help [26] that may lead to better understanding of the peers' implicit needs [36]. For example, Excerpt 1.1 shows how the peer helper and peer receiver create a resource to indicate willingness in the help process through their body postures and proximity [27]. The same excerpt shows that continuity in helping and peer modelling are an incentive for other groupmates to orient themselves towards helping the receiver [39]. However, the quality of task-related help remains questionable. Moreover, the findings suggest that pupils' abilities to recognise the need for help and to be willing to help are crucial aspects for forming and functioning in FtFPI, but they are not sufficient for joint task achievement [2]. Groupmates' knowledge and skills in helping others during FtFPI will be successful if the help giver provides elaborate explanations and monitors the pupils' understanding of the explanations and their ability to apply them [9]. Excerpt 5 demonstrates the above-mentioned approach to help where all the groupmates are included in the supportive process of co-learning. However, many of the excerpts show that the receiver of the help must first be actively included in the FtFPI process. Bearing this in mind, all group members must be self-aware of their active role in FtFPI [29].

The findings reveal three interfering factors that influence pupils' responsiveness and willingness to help. The first is the lack of personal attention invested in FtFPI. On the one hand, either the potential help receiver or the help giver does not show interest, but on the other hand, if the pupil's willingness to help is too intrusive, as in Excerpt 1, the help receiver's behaviour will be affected. Similar to this finding, the pressure from high-ability pupils to complete tasks quickly undermines the participation of the less able [59]. The second factor is that relevant knowledge and skills relating to helping strategies are lacking. Excerpts 2 and 6 show that the pupil's self-confidence and their lack of willingness to help others are related to the lack of a helping strategy. Similarly, Yoruk [30] reported that pupils' self-confidence and self-efficacy affect their cooperative behaviour. Third, two external factors have been identified in the present study that affects pupils' FtFPI: (1) Pupils' dependency on the teacher's intervention to incentivise

and increase the willingness to help, (2) the use of co-called "helping points" may impede FtFPI or decrease the willingness to help, as documented in Excerpt 3.1. Rather than using extrinsic motivation, pupils should have intrinsic motivation to strive for the common good where each pupil sees their own achievement as a possible service to others [5].

According to social-interdependence theory [22], the responsiveness and willingness to succeed in FtFPI for the common good require an understanding of both oneself and others. Moreover, the pupils' inducibility should be a trigger for social and individual mediation in cooperative groups responding to peers' needs and supporting the CL process [19]. Peer support through FtFPI facilitates both social and academic learning, especially for disadvantaged groups where peers play an active role in the induction of new or less able members into a cooperative community [40]. However, the interfering factors presented here, and which concur with the findings in previous studies [18,27] reveal a lack of peer attention and insufficient knowledge of how to help peers to work in small groups that are aiming to be cooperative. For this reason, the teachers' role supports the multiple ability treatment and assigning competence to low-status pupils' cooperative group work in terms of equal access to the group task [14,41]. In Excerpt 10, the teacher's intervention helps the LLAg pupil become self-aware of her creative ability. By doing this, teachers raise the status of low-level pupils by providing more public recognition that everyone has an important ability to contribute to group work by altering the expectations for competence that pupils may hold to each other [41].

4.2. Supporting Others through Supportive Communication

To maximise the potential of FtFPI, the interconnected aspects of paying attention, encouraging and praising are crucial for group functioning and managing peer support in CL [18,25]. The findings in the present study indicate that pupils use several pedagogical tools, verbally and non-verbally, to support their groupmates' work. The analysis across the excerpts found that to praise their groupmates, the pupils used the word "Bravo" or applauded, and they would also smile, nod or say "come on" to encourage groupmates. However, there is a need for more than "Bravo" and "Come on" when praising and encouraging others' participation while working together. Pupils' variation in the use of pedagogical tools is necessary to support more connectedness between groupmates, such as making explicit efforts to involve others and getting them to participate [3,60] and prevent discouraging situations from arising in FtFPI. Accordingly, Year four pupils believe that knowing more about how to encourage and praise peers may improve their co-learning, particularly the boys, who lack sufficient knowledge in this area compared to girls [18].

As a positive example of supportive communication, Excerpt 5 demonstrates an inclusive style practised by the group leader, who simultaneously pays attention to a less able pupil and other groupmates. Richmond and Striley [61] argue that the inclusive leader should bring the task-related question to everyone's attention, ask group members for their opinions and encourage their participation. In Excerpt 5, HLAg is an inclusive leader who uses a dynamic voice and timbre by taking short pauses, combined with a facial expression and mindful gaze during FtFPI. While these tools regulate the groupmates' attention, they may also support the LLA pupils' understanding of the task. Moreover, in Excerpt 6, the same pupil, HLAg continuously praises each effort and the answers of an LLA pupil by saying "Bravo." Praising LLA pupils who demonstrate a particular skill and then linking that ability to task requirements reduces the gaps in status in heterogeneous groups [41]. By doing this, HLAg expands her encouragement of LLAb in advising her peer how to be more self-confident during group work. HLAg seems primarily to want the LLAb groupmate to succeed. According to the social interdependence perspective, pupils help each other to learn because they care about the group and its members [15,22].

In turn, the teacher who monitored the FtFPI situation praises HLAg's patience and commitment to the help receiver and initiates the pupils' applause, serving as group praise. Accordingly, the teacher demonstrates guidance on the CL skills of individual pupils

and the group as a whole that support the pupils thus they cooperate effectively [38], in particular stimulating their supportive communication. However, the teachers did not give pupils specific feedback on their cooperative behaviours nor asked them to reflect on how the group behaves concerning FtFPI. The CL literature specifies that teachers need to monitor, support and consolidate the pupils' interaction, including group processing as a tool for reflection for successful group learning [2,62].

Otherwise, the pupils in some of the groups in the present study show a dependency on their teachers' involvement to regulate their FtFPI. Without an appropriate knowledge base, or the ability to organise processes such as FtFPI, pupils are more dependent on their teachers to help them take more control of their learning process [26,40,63]. Excerpts 10 and 4 show situations where the teacher regulates LLAg's involvement in a group task and encourages groupmates to work together as they have insufficient knowledge about FtFPI. These findings concur with other challenges that undermine supportive communication in joint CL activities due to a lack of cooperative skills or not knowing how to provide help and encourage peers [8,18].

When groups lack sufficient strategies for dealing with group maintenance and stalled cooperation, the situation can become very tense and frustrating for all involved [60]. The present study identifies particular factors interfering with or stalling FtFPI that relate to the cathexis of the pupils' positive or negative investment of their own energy in each other's actions that may determine their progress or lack of progress in FtFPI [22]. First, a groupmate's negative speech or gestures relating to the progress of the learning process or assigned group task discourages the working atmosphere among group members, as MLAb demonstrates in excerpts 8 and 9. Conversely, a groupmates' positive attempts support the group work and encourage groupmates to continue, as another MLAb shows in Excerpt 7. Accordingly, a positive group member's personality characteristic may serve as a resource to facilitate socially responsive co-learning during FtFPI [34,35]. However, pupils need to be empowered by personal skills through supportive communication and prosocial inter-personal behaviour to connect with others, avoid interfering factors and sustain FtFPI based on positive interdependence [3,23].

5. Conclusions and Recommendations

This study has shown that working together consists of many different aspects of inter-personal behaviour and supportive communication as a key to enabling pupils' support in a highly complex process of FtFPI. Specifically, this study investigated supportive features and interfering factors of FtFPI that shape pupils' openness and responsiveness to others, leading them to be socially (non)responsive co-learners for shared social and academic gains [3,18,19,23]. Research findings reveal that verbal and non-verbal features of FtFPI can be conducive to maximising pupils' recognition and willingness to help, thus leading groupmates might pay more attention to, encourage and praise one another in small CL groups. If pupils have insufficient social skills and lack practical knowledge about FtFPI, supporting one another's needs is not an easy practice, as demonstrated in the present study. Engaging in socially responsive co-learning requires its deeper understanding. The use of supportive socio-pedagogical tools and practical strategies for group maintenance and peer support is particularly needed for pupils to respond to one another's needs towards group success.

Moreover, the teacher's involvement and pupils' background characteristics [11,38] are important dimensions to consider if FtFPI is to lead to successful cooperative groups, where groups can be seen as an arena of personal and collective socially responsive development. In particular, Ferguson-Patrick [11] points to the importance of an engaging and caring environment with social responsibility and concern for others in supporting pupil growth and learning. This study can guide future intervention studies aimed at improving factors that support or impede pupils' group learning, promotive interaction and prosocial behaviours (see also the SPRinG programme of Baines et al., [7]) and Complex Instruction [14,41]. In a particular context aiming to convert the teacher- led to student-

centred pedagogical practices, such as post-war BiH, the educators' roles in FtFPI call for a reconsideration of how to foster a high-quality FtFPI process to support "success for all" [13]. To accomplish this, the teacher's role and preparation in implementing CL practice require teachers to modify their actions towards FtFPI in responding to pupils' socializing and working together [23,42]. Thus, this study has explored in-depth FtFPI' features for small CL group work to find ways of enhancing pupils to become socially responsive co-learners and cooperative peers.

While implementing FtFPI in CL classrooms does not come without appropriate pupils and teachers' preparation, future studies of FtFPI in CL approach are necessary to accentuate training to promote interpersonal behaviour and supportive communication. Furthermore, using the qualitative and quantitative methodology, a larger sample size would be needed in future studies to examine the variation of socio-pedagogical tools for each aspect of FtFPI.

Ultimately, these findings are encouraging but also limited because only four groups could be videotaped. Moreover, a major limitation of this qualitative study is the reliability factor. However, this study, situated in authentic classrooms, may have some replicable factors for similar studies of peer primary groups using the same data sources and analytical procedures. As the findings here have been confirmed in other studies, they will have practical implications for implementing FtFPI group practice.

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee). Ethical approval for this research was obtained from the Norwegian Social Science Data Service (NSD). The study follows NSD's ethical guidelines, which include securing the confidentiality and anonymity of participants. Project number is 60754.

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Data Availability Statement: The research data is available at the following link: https://figshare.com/s/f560ec67133266bb99d0, accessed on 21 April 2021.

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Appendix A

Table A1. Excerpts of video sessions related to pupils' group assignments.

Year: 2019	Code	Excerpt	Videos (min)	School Subject	Task	Purpose
15 April	SA-G2-Ses.1	5 7	09:35–11:53 02:08–03:29	Mathematics	Different arithmetic operations within the joint task	Preparation for test
16 April	SA-G1-Ses.2	9	02:40–03:23	Science	"Plant Detectives"	Analysis of leaves and their structure
17 April	SA-G1-Ses.1	8	0:23–1:00	Bosnian Language	Analysis of the main character in the text	Preparation for a debate
19 April	SA-G1-Ses.1 SA-G2-Ses.1	1 1.1 6	0:24–01:05 09:19–09:48 03:54–12:07	Mathematics	Division of a three-digit number by a single-digit number	Exercise

Table A1. *Cont.*

Year: 2019	Code	Excerpt	Videos (min)	School Subject	Task	Purpose
25 April	SB-G2-Ses.2	4	15:34–16:12	Mathematics	Multiplication of a three-digit number by a one-digit number	Revision
26 April	SB-G1-Ses.1 SB-G2-Ses.1 SB-G2-Ses.2	2 3 3.1 10	11:10–11:22 04:46–05:12 13:16–13:40 13:04–13:39	Mathematics Science	Multiplication of a three-digit number by a one-digit number with transition Past, present and future	Exercise Design mind maps

Appendix B

Table A2. Clarification of the pupils' FtFPI.

FtFPI		Definitions	
Main categories	Sub-categories	Researchers' perspective	Pupils' perspective (Author, 2020)
Interpersonal behaviour	Recognising the need for help	Pupils use verbal and nonverbal cues that help them to recognise pupils' signals of confusion (Webb, 1982) Pupils explicitly state about asking for help, Help-seekers persist in asking for help (Webb and Mastergeorge, 2003)	"Pupils' facial expressions show their confusion" "They ask questions or look around" "He would just keep silent" "They are unable to do the task"
	Willingness to help	Pupils show their motivation to help one another and facilitate one another's performance with whatever means they have (Slavin, 2015) The help givers expand their efforts to provide relevant help, more elaborated help that is both solicited and unsolicited (Gillies, 2003)	"I first ask her where she is not quite certain" "I ask them whether they need any assistance and if they say yes, I give them an explanation"
Supportive communication	Paying attention	Pupils establish eye contact with the speaker and listen actively, e.g., nod, acknowledge the speaker, affirm another pupils' response, make statements that hold the attention of other pupils (Gillies & Ashman,1995)	"Peers look at me and listen, and when I finish they ask me something about what I have been talking about" "They don't interrupt me when I speak"
	Encouragement	Making explicit efforts to involve others through verbal and nonverbal gestures; speech or gestures that may encourage the interaction of the group that draws others in (Baines et al., 2009).	"They say something that makes me happy" "I see their smile"
	Praising	Promote one another's success that may include eye contact, name use, appropriate statements, pupils' suggestions respected, celebrate success (adapted from Baron, 2003)	"I say super, bravo or you've done this well" "They give me a big hand"

Appendix C

Transcription key
Hhhhh audible sigh (exhalation)
.hhh sigh (inhalation)
[. . .] excluded part of the dialogue
(.) silence, about 1 s
(..) silence, about 2 s
e-e-e words or sounds that are held
! rising intonation
(D.) (saying pupil's first name)

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