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Implementing Complex Instruction in Germany – relevant principles, contextual considerations, and first steps

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ABSTRACT

The present contribution illuminates the initial developments in the adoption of Complex Instruction in Germany, where the implementation of the approach has just begun. It gives insights into a teacher education project, a theatre project, and a planned project at secondary schools.

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Introduction

We have frequently heard Rachel Lotan remind us that ‘principles travel, context matters’ when she speaks about Complex Instruction (CI) being implemented in countries other than the USA, where it was first developed and evaluated. It has become important for us to consider what the main principles of CI are and which of these need to be sustained while adapting the approach to a new context in a meaningful way. To our knowledge, CI has been implemented and evaluated in a minimum of 10 countries worldwide. Germany is not one of them. As societies become increasingly diverse, embracing differences in educational settings emerges as a crucial aspect of fostering inclusive learning environments. Classrooms in Germany, like those in many other places, embody a rich tapestry of diversity. With its status as a primary destination for migrants in Europe, Germany exhibits a high level of linguistic, cultural, and demographic diversity. Educational theories often emphasise the immense potential inherent in diversity; yet in practice, diversity is frequently viewed as a formidable challenge. This discrepancy is evident in the persistent educational inequalities within the German education system, despite numerous reform efforts. International and national assessments, like the Programme for International Student Assessment (PISA), consistently highlight the ongoing struggle of the

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German education system to provide equitable support to all students, irrespective of their backgrounds (OECD 2023; McElvany et al. 2023). Instead of narrowing the gap, these studies reveal how such disparities persist and, at times, worsen over time. Criticisms abound regarding the German schooling system's perceived inequities and selectivity (Schofield 2010), particularly evident in the early division of students into different school types, as observed in most federal states, at the tender age of 10.

Teachers are expected to know and meet the needs of all students in heterogeneous classrooms. A recent large-scale interview study with teachers in Germany from different types of schools (Greiner et al. 2020) revealed that teachers mainly needed more knowledge about pedagogy that facilitates cooperation in the classroom. CI, a pedagogy explicitly developed for heterogeneous classrooms, is a promising approach. CI aims at providing equitable and excellent learning opportunities for all students by fostering the awareness that all students have something important to contribute to joint work on complex, open-ended tasks. CI stems from a sociological view of the classroom and an understanding of intelligence as multidimensional and changeable. It provides strategies for teachers to share authority in the classroom with their students, make sure that all students participate, foster students' ability to cooperate with each other, and make their competence visible (Cohen and Lotan 2014).

In Germany, although CI has not been systematically researched as a pedagogical approach, many of its principles and features have been discussed and implemented. For example, researchers have focused on the topic of equal participation in mainstream classrooms (e.g. Müller and Pfrang 2021; Niesta Kayser, Giera, and Schmalenbach 2024), including the social participation of different groups of students in mainstream classrooms (e.g. Huber 2021). Cooperative Learning is seen as one potential influence on this participation (e.g. Hank, Weber, and Huber 2021). Cooperative Learning is also addressed as a way of fostering socio-emotional learning (SEL) in combination with academic learning (e.g. Piegsda and Jurkowski 2022). Some of the fundamental publications of Cohen (especially Cohen 1993, the only text of hers available in German, but also Cohen 1994) have influenced the development of studies on Cooperative Learning in Germany (e.g. Gummels 2020; Schnebel 2003). Discourse in our country relating to cognitive activation through tasks (e.g. Schreyer 2024) is related to aspects of CI. Fürstenau (2012) stresses the relevance of joint open-ended complex tasks for the development of language and an appreciation of different perspectives in multilingual classrooms. Schwanewedel and other colleagues (e.g. Schwanewedel 2024) research complex tasks and the development of a growth mindset in students and teachers. We believe that a systematic adaptation, implementation and evaluation of CI in Germany can benefit from an interaction with these discourses and a consideration of relevant research results on related topics. At the same time, we are aware of the challenge of making sure that what we call CI is really

CI even after adaptations and interaction with other approaches. In this article, we present three approaches that introduce CI or aspects of it in Germany.

Three approaches to introducing CI in Germany

The ongoing introduction of CI to Germany stems from two developments. Christine Schmalenbach wrote her doctoral thesis on Cooperative Learning (Schmalenbach 2018) and was a member of the International Association for the Study of Cooperation in Education (IASCE) for several years (2013–2019). Through this work, she became familiar with CI and met Rachel Lotan. They published an article together to introduce CI in Germany (Schmalenbach and Lotan 2022). In Hamburg, Christine Schmalenbach introduced Simone Plöger to the approach and they visited Stanford University and schools implementing CI in California.

In 2019, Daniela Niesta Kayser spent a sabbatical year at Stanford University, where she was invited to participate in the Inquiry into the Stanford Teacher Education Program (i.e. iSTEP), directed at international teacher trainers and educators. An ongoing cooperation with the Stanford Graduate School of Education has followed. In 2021, Daniela Niesta Kayser introduced Winnie-Karen Giera to CI. We were brought together by academies in Potsdam and Berlin, the research conference in Hamburg, and a joint publication (Niesta Kayser, Giera, and Schmalenbach 2024).

Berlin – first initiatives to integrate status interventions in classrooms

CI was first addressed in Germany at the Refugee Teacher Conference in Potsdam in March 2020. Rachel Lotan volunteered to hold a keynote on equitable teacher lounges, hereby addressing researchers and practitioners involved in academic qualification programmes for teachers with a migration or refugee background in Germany and abroad.

In April 2021, an intensive two-day course was held with a total of 25 participants from different areas of teacher education including professors, academic staff and student teachers on the topic of CI. Short presentations, video analyses and small group sessions provided insights into the theory and practice of the STEP-led principles and methods of equity and excellence in cooperative classrooms. The outcomes of these efforts included a better understanding and greater sensitivity of practitioners and teachers with regards to the intercultural origins of pupils in their respective school contexts (Niesta Kayser 2023).

Following up on these results and after founding and leading the Winter Academy in Potsdam in December 2022, Daniela Niesta Kayser led the second international exchange forum for prospective and in-service teachers, lecturers and interested parties on the topic of cooperative teaching-learning processes

and participation in heterogeneous learning groups, at a summer academy in 2024 at the Freie Universität in Berlin. The implementation of cooperative learning, appropriate planning to introduce and implement norms, teacher training and consideration of the individual needs of students were all discussed to address status differences in heterogeneous classrooms and to facilitate collaborative learning.

Future research is planned with the purpose of studying teachers' readiness to integrate cooperative learning formats based on the critical incident technique conducted with teachers and principals to study different needs and approaches in schools with heterogeneous classrooms.

Potsdam – enriching a theater project with aspects of CI

Children's reading skills in Germany are a concern, with one in three students lacking adequate reading comprehension (OECD 2023; McElvany et al. 2023), primarily due to underdeveloped reading fluency. Without foundational fluency, further reading skills like comprehension and strategic reading cannot fully develop. 'Stop bullying' (Giera 2021), a research initiative involving theatre, aims to address these challenges. Although not explicitly based on CI, the project within this initiative demonstrated elements of it such as cooperative norms, clearly assigned roles, and the use of students' different intellectual abilities to bring them closer to reading skills. Thus, it revealed CI's potential to enrich future projects. The project engaged 11 children (aged 7–11) from diverse backgrounds – varying in grade, school type, migration history, and linguistic abilities – in a theatre program during a University of Potsdam summer vacation program over eight days in the summer of 2023. The intervention study 'Stop bullying! A theatre project', of which the described project is a part, with all testing materials, was approved by the Potsdam University's Ethic Commission with the number 54/2021. Written informed consent by the parents was obtained prior to the beginning of the project. Registration was open to university members, including students, employees with children, and those connected with the university kindergarten. It was led by two theatre coaches, Giera and a student teacher, with the goal of enhancing individual reading skills through collaborative theatre activities. The children were asked to read a play about bullying for children and young people and then act it out. They used their whole body by first reading and then interpreting a character in the play. The children analysed the roles of the perpetrators, supporters, and victims of bullying. Sensitive scenes were discussed in the group and linked to the children's experiences. During a reflection session, it emerged that the pupils had either witnessed or been victims of systematic bullying in primary school.

Some of the educational design principles are thematically connected to the life experiences of the students through the choice of the play, group discussions about the interpretation of scenes and the roles, creativity during

the play, co-determination/co-design of the project, team games/theatre pedagogical warm-up, and structured reflection phases after every theatre session. These open ways to handle, play, and perform with a theatre text are related to the group worthy tasks of CI (Cohen and Lotan 2014). Also, the children gave each other feedback on reading and acting, guided by self-chosen and posted group rules like 'We listen to each other!' or 'We give our best!'.

The project culminated in a public performance in the university's theatre, attended by parents and guests. It motivated children to read and perform confidently. Despite challenges, the group collaborated to enhance performances, highlighting interdependence and teamwork.

Hamburg – adapting CI to a new context in collaboration with teachers

In light of the diverse student body in Hamburg, we plan to conduct a research project at two district schools in Hamburg to introduce CI into the German school landscape. The project is being planned within the framework of Design-Based Research (McKenney and Reeves 2019), combining qualitative and quantitative data collection methods. Secondary level I teachers (5th to 10th grade) will undergo training in CI, and materials for an intervention in mathematics and project-based learning will be developed in collaboration with them. In an ethnographic exploration phase, an inventory will be conducted at a first research school to gather information on experiences with group work and the materials used in project-based learning and mathematics instruction in three classes of secondary level I. During the initial implementation, CI will be introduced in the classes, while ongoing ethnographic data collection monitors interaction and communication. Group interviews with teachers and students will be conducted to explore unintended effects and inform theory development and implementation redesign. Additionally, the EQUIP-App will be used (Reinholz and Shah 2018) for observing and documenting equity patterns in student behaviour and participation changes that occur over the course of the intervention. In a second iteration, utilising revised materials and professional development content, the implementation of CI will be carried out in two schools at the same level as before. In each participating class, student behaviour focusing on participation will be assessed at six time points, allowing for an evaluation of the implementation of CI. Furthermore, as part of a quasi-experimental sub-study in a pre-post control group design (with two control classes per school), a survey will be conducted before and after the implementation. The subject of comparison will be students' self-perception regarding their participation (equity) and their subject-specific and socio-emotional learning (excellence). Reflective group discussions with the participating teachers will be conducted to enhance teacher training and material development. Based on the redesigned implementations and the qualitative and quantitative results,

design principles for CI in the German-speaking context will be generated for use in various classes. The project thus aims at introducing the approach in cooperation between researchers and practitioners, deducing factors for a successful implementation in Germany and developing relevant materials for teaching and for teacher training.

Conclusion

All four authors of this article have delved into CI and are making connections to existing ideas and projects in Germany. We are all guided by the question of how the principles of CI can be implemented in different German contexts in a way that connects to what is already there without compromising what is novel about CI. In these efforts we benefit from an exchange with colleagues from other countries with experience in the adaptation, implementation and evaluation of CI and from an exchange with colleagues in Germany who work on related topics and approaches. Regardless of the outcomes, what is learned during these initiatives will contribute to inform efforts to develop a more inclusive pedagogy in Germany.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Christine Schmalenbach is assistant professor for special education with a focus on learning and socio-emotional development at the University of Hamburg, Germany. Some of her main topic areas are cooperative learning, self-regulated learning, group processes and socio-emotional learning.

Winnie-Karen Giera is assistant professor for German didactics in an inclusive context/special educational needs in language and communication (secondary level) at the University of Potsdam, Germany. Her current research investigates and promotes secondary school students' writing skills and reading skills.

Daniela Niesta Kayser is a psychologist and interim professor for special education with a focus on emotional and social development at the Free University Berlin, Germany. She integrates questions of cultural identity, (forced) migration, intergroup processes and cooperative forms of learning and teaching in her research and teacher training.

Simone Plöger is assistant professor for education with a focus on school research and inclusion at Johannes Gutenberg University Mainz, Germany. Her primary teaching and research interests encompass social inequality, discrimination, and diversity in secondary education, along with new immigration, multilingualism, and language education.

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