ORIGINAL RESEARCH ARTICLE   **OPEN ACCESS**

IMPLEMENTATION COOPERATIVE LEARNING IN TEACHER EDUCATION

*[1]Fahruddin and [2]Zulfakar

[1]Secretary of Graduate Program, Educational Administration, University of Mataram- Lombok- West Nusa Tenggara-Indonesia
[2]Education Administration Program, Faculty of Science Education, Institute of Teacher Training and Education Mataram, Lombok West Nusa Tenggara, Indonesia

ARTICLE INFO	**ABSTRACT**

This paper examines the impact of supporting pre-service teachers to use cooperative learning in one initial teacher education institution in England. In a context where the government requires all teacher education to be 'schoolled' and where school partners do not commonly use cooperative learning (Baines, Rubie-Davies, and Blatchford 2009), this presents challenges. Ensuring that government priority areas are fully addressed also squeezes the time available for pre-service teachers to develop the necessary depth of understanding of cooperative learning. Yet driven by a research led programme that supports students to examine effective learning and teaching approaches, one university has endeavoured over the last five years to help all its student teachers understand and adopt cooperative learning. In order to capture the impact, questionnaires and interviews with student-teachers have been utilised each year; results are summarised here together with research carried out by one of the students on the views of her cohort. Two short vignettes of former students in their early years of teaching signal the importance of formative experiences on teachers' positive self-efficacy, and particularly the lasting impact of observing effective practice early in the journey to become a teacher.

Citation: Fahruddin and Zulfakar, 2018. "Implementation cooperative learning in teacher education", *International Journal of Development Research*, 8, (04), 20128-20132.
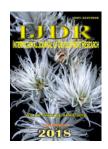
INTRODUCTION

Cooperative learning involves pupils working together in groups to accomplish shared goals. It requires careful structuring by teachers to ensure that each member of the group makes a contribution to the group's goal and in this way it differs from the common term 'group work'. The underlying theory that helps explain its effectiveness is 'social interdependence' (Johnson and Johnson 1975, in press). This theory identifies factors that are crucial in cooperative learning, in particular, the need for pupils to be mutually dependent and each pupil accountable for his or her share of the work. Over four decades, extensive research has demonstrated the benefits of working together cooperatively (Jenkins *et al*. 2003; Johnson and Johnson 1989; Kyndt *et al*. 2013; Sharan 1990; Slavin 1995); yet the use of cooperative

Corresponding author: **Fahruddin,**
Secretary of Graduate Program, Educational Administration, University of Mataram- Lombok- West Nusa Tenggara-Indonesia.

learning in classrooms worldwide is limited (Fernández-Lozano, González-Ballesteros, and De-Juanas 2012; Ruys, Van Keer, and Alterman 2012; Veenman *et al*. 2002). Large-scale studies in England by Galton *et al*. in 1980, repeated in 1999, and by Baines, Rubie Davies, and Blatchford 2009; suggest that within the majority of primary classrooms, children sit in groups but rarely work together as groups. One of the reasons for this lack of use of cooperative learning is the need for sustained professional development for teachers. As Fernández Lozano, González Ballesteros, and DeJuanas (2012) also note, without learning about cooperative learning and experiencing it during their initial teacher education, teachers will be less likely to later adopt cooperative learning in their teaching or, if they do, they will abandon it if they encounter difficulties. Developing effective programmes for pre-service teachers is therefore a key factor if cooperative learning is to become more widely used. In England, in spite of major research projects that have demonstrated the importance of collaboration and talk for learning, such as the Teaching and

Learning Research Programme (TLRP) (James and Pollard 2011), and the Social Pedagogic Research into Grouping (SPRinG) project (Blatchford *et al.* 2005), these appear to have held little sway over government policy or practice in schools. In initial teacher education, universities are faced with shrinking provision due to the growth of new routes into teaching that are led by schools. The pressures of heavy government regulation through inspection by Office for Standards in Education (OfSTED), are made even more onerous due to a new framework of core content being introduced by the government which makes no mention of any form of collaboration for learning, only of 'subject-specific pedagogical approaches' (DfE 2016, 15). This article provides a brief review of research into what makes effective professional development for cooperative learning, including in initial teacher education, as a basis for then examining the work of one university in England, which has sought to develop an understanding of cooperative learning for all its student teachers over the last five years. A brief summary of these findings is discussed here (for details see Jolliffe 2015), and this is supplemented by the research undertaken by one undergraduate student for her final dissertation into the use of cooperative learning by her cohort. But the real test of impact is on the practices of beginning teachers, and two short vignettes help provide indicators of influencing factors.

Professional development for cooperative learning

Studies into implementing cooperative learning indicate some dominant themes for professional development to be effective. First, the need to ensure a depth of understanding of cooperative learning, (Brody and Davidson 1998; Johnson and Johnson 1989; Sharan 2010) and to provide opportunities for teachers to relate these underlying theoretical perspectives to their own conceptions about learning (Brody 1998). Second, the need to ensure cooperative learning is experienced first-hand in training (Delli Carpini 2009; Lyman and Davidson 2004; Veenman *et al.* 2002), together with modelling of the use of cooperative learning, particularly in initial teacher education programmes (Loughran and Berry 2005; McAlister 2012). When these factors are combined with a phased programme alongside peer support, the understanding and use of cooperative learning has been shown to be more effective (Harris and Hanley 2004). Studies into barriers in using cooperative learning found that one of the inhibiting factors in students applying it in classrooms was the use of differing approaches in schools, with the demands of high-stakes testing often leading to teacher-dominated practices (Foote *et al.* 2004). Student-teachers also found that the planning time required for this strategy often overwhelmed them (McAlister 2012). A further recurrent problem relates to classroom management, particularly, how to handle an increase in noise levels and to keep pupils on task and avoid domination by certain students (Slostad, Baloche, and Darigan 2004). Ruys, Van Keer, and Alterman study (2011) shows that the most important factor in the successful adoption of cooperative learning by student-teachers is their general feeling of self-efficacy. Buchs *et al.* (in press) also explore the link between teacher beliefs and cooperative learning implementation. In summary, professional development for cooperative learning requires sustained support and the need for recursive opportunities to enhance understanding and support application in the classroom. Johnson and Johnson (in press) describe this as a process of 'master, retain and transfer'.

Such a process could help student-teachers to gain confidence and competence, and thereby nurture self-efficacy.

Investigating the impact of cooperative learning on pre-service teachers

In the English university which is the focus of this research all pre-service teachers (either undertaking one-year postgraduate programmes or a three-year undergraduate programme) are introduced to cooperative learning at the beginning of their courses through first-hand experiences, including learning about its theoretical and wide research base. They work in teams, using a wide variety of cooperative learning strategies such as roles in groups, jigsaw, and group investigations. A number of tutors have become proficient in cooperative learning and model it in teaching sessions. Student-teachers' early views are obtained, and follow-up sessions take place at strategic points each year. For those on a three-year undergraduate course, they also study cooperative learning in their final year within a module on critical issues in education.

A key dilemma is how to provide sufficient support for cooperative learning alongside addressing the wide-ranging primary curriculum and particularly meeting government priority areas, for example, the extensive time required for the teaching of phonics. A further major dilemma is to find schools where the use of cooperative learning is common, and indeed sufficient schools for the large number of students who require placements (practicum). It is also difficult to ensure that all university tutors who visit student-teachers in schools are proficient in cooperative learning and able to offer support. Each year amendments to programmes are made to help address these dilemmas and are evaluated through student-teachers' responses to taught programmes.

Over five years, the impact of developing cooperative learning with students has been captured through questionnaires comparing views at the beginning and end of programmes. This has been supplemented by semi-structured interviews with samples of student-teachers. The main research question examined: what is the impact of training in cooperative learning during initial teacher education on student-teachers' ability to apply this pedagogy in the class-room? Interviews were held in 2012 with a focus group of three postgraduate students, and also three individual interviews with final year undergraduate students. Students were also asked if they would be willing to keep in touch during their first year of teaching and whilst all appeared willing, most likely because of the heavy demands of the job, only two newly qualified teachers (NQTs) responded to requests. One interview with an NQT was held in 2013, and a follow-up in 2015, and an interview with a further NQT in 2016. Key findings from one undergraduate student, who studied her fellow students' views and practices of cooperative learning are included to help shed further light on the impact of the taught programme on students' application of cooperative learning in the classroom.

RESULTS

Whilst questionnaires are limited in providing a depth of views, responses over five years elicit some recurrent themes. A summary of these themes obtained from analysis of both questionnaires and interviews is provided here (full details of the questionnaire and results can be found in Jolliffe 2015). Three key areas are highlighted: first students' attitudes to

cooperative learning; and second, the barriers they found in actually using it; and third, further support required. Additional data provided here, obtained by one undergraduate student, in addition to two vignettes of beginning teachers, help provide further indicators for implementing cooperative learning.

Attitudes to cooperative learning

Students were very positive in their attitudes to cooperative learning in questionnaires: over 90% of each cohort rating it as a very effective, or effective, learning and teaching strategy and they valued experiencing cooperative learning first-hand in sessions. When asked to cite one thing cooperative learning made them think deeply about, they talked about the importance of helping children to 'grow life skills' and its potential 'to empower all children'. Interviews also highlighted their views on how cooperative learning helped include all pupils in learning and students cited various examples they had seen in classrooms, such as a postgraduate student who described: 'one girl who never said anything but did a lot of thinking but she just never shared it and now she will share it … and she's blossomed'. Students appreciated the impact on their professional identity and one undergraduate student noted it allowed her to be 'more of a facilitator' using 'more open questioning to provoke thoughts and ideas'. Over 90% of students, with a mean of 63 students each year, stated that they intended to use cooperative learning in their teaching and between 90 and 100% of students later reported using it in classrooms. Analysis found that students relied on simple paired strategies such as 'think, pair, share', with students reporting levels of confidence of between 82 and 90% at using these strategies. Questionnaires indicated less than 5% reported the use of teams that are established for a period of time, although those interviewed cited some examples of pupils working cooperatively in groups.

Barriers in using cooperative learning

Analysis of barriers showed cooperative learning was much more difficult for students in schools where it is not commonly used and those interviewed noted a lack of understanding by teachers of what they were trying to achieve. One postgraduate student found teachers 'quite sceptical about it because they see it as being soft skills'. The student reported that the teacher who observed her lesson asked this student 'what are they doing? There's a lot of noise going on but what are they actually doing?' The student-led focus group also reported that they were concerned about how cooperative learning appeared to teachers who lacked understanding of it: 'if you've just stepped into the lesson and you've just set off a cooperative learning task … it looks a bit chaotic to anyone walking in'. Student-teachers were also aware of the pressures schools are under for results which can deter the use of cooperative learning, and as one postgraduate student commented this can lead to 'an expectation when they get to year 5 and 6 [ages 10 and 11] … they're expected to work on their own and work in silence'. Many reported issues related to behaviour management when using cooperative learning, particularly ensuring children remained on task and attempting to ensure equal participa- tion, with comments such as 'some children tend to lead learning while others just listen'. The student-led focus group identified student views on the importance of structuring cooperative learning, including giving pupils a role in order to ensure that they 'learn some- thing from the group work'. This focus group also identified time as one of the main

barriers in the implementation of cooperative learning. This particularly related to the time to organ- ise groups in lessons: 'you know when you're moving them around, you've got to take very often like 5 min off your lesson'. And the time needed for student-teachers when planning cooperative learning, for example: 'a majority of my time, if I was doing group work, thinking who is going with who'.

Future Support Required

Students clearly wanted more support in using cooperative learning. Over 68% of the undergraduate students requested this, with fewer postgraduate students (56%). The student-led project also reported that over 65% of students surveyed required further support to use cooperative learning more fully. The focus group carried out by the undergraduate student also showed a lack of understanding of cooperative learning of fundamental aspects such as being sure 'whether it would be group work or if it would be properly cooperative learning'.

Summary of Finding

Results identified students' positive attitudes to cooperative learning with some reports of success in practice. The main difficulties in implementing it were due to limited use in schools and some evidence of insufficient understanding and confidence by the students. In order to explore any lasting impact, the next step was to examine the practices of teachers in their first year of teaching. The following short vignettes of two beginning teachers help provide some further insights.

Newly Qualified teacher 1 (pseudonym Jane)

Jane was an undergraduate student. She was a few years older than the majority of her cohort. She was a student who achieved high grades for her teaching in school on her placements and for her academic work, leading to achieving a first-class honours degree. Jane's interest in cooperative learning had been sparked by an early school placement. This school had taken part in the 'The Talk for Learning Project' (Alexander 2004). She talked about the way this 'engages the children, and it is so linked to real life, and developing so many skills within that'. She also noted that 'rather than it all being the teacher at the front, the children … could actually develop their learning, become more independent, be more involved'.

She had continued to explore cooperative learning during her course, both on later place- ments and through further study. In her first year of teaching, a visit to the school proved enlightening. She talked about her use of a range of strategies and cited the key role of 'the cooperative learning strategy; I found really successful in engaging the children, getting them motivated, getting them all involved'. Jane talked enthusiastically about using cooperative learning; developing teams for a sustained period and how pupils had taken ownership over their learning in a range of ways. She had numerous examples of joint work produced, photographs and short videos of the children working cooperatively. This had impressed staff in the school, and as a result, they invited her to lead whole-staff training on cooperative learning. Jane attended the International Association for the Study of Cooperation in Education (IASCE) conference in 2013, which further extended her knowledge and enthusiasm for cooperative learning and where she also presented her work to

delegates. Two years later, whilst she was working at a different school in the region, a further interview was carried out and it was clear that cooperative learning was a central part of this teacher's professional identity. In response to a question about what had helped her be distinctive, she cited cooperative learning because: 'It's made such a difference in how they [the children] work together and how they communicate'. Again, in this school as in the previous one, she was leading staff development, influencing others' practice and also posting her work to a larger audience on Twitter, with short videos of her class working cooperatively. Cooperative learning has become a key part of this teacher's professional identity.

Newly Qualified teacher 2 (pseudonym Charlotte)

Charlotte was an undergraduate student, aged 18 when she commenced the course and throughout showed she was a very enthusiastic and conscientious, achieving high grades for her academic work and good progress on school placements. She also completed with a first-class honours degree. One of her formative experiences was during the first year of her degree when the IASCE conference was held on campus in 2013 and she took the oppor- tunity to attend. She commented that the range of research and types of projects cited struck her and that: 'my colleagues probably don't realise how big CL really is … and it was nice to see how it was used across the world'.

One particular element that Charlotte reported during her programme was the benefit of students working together cooperatively: 'that was the best. It was working on things together … especially as we all had different strengths and weaknesses'. She also found that when there were opportunities to apply cooperative learning in dif- ferent areas of the curriculum on the course this was helpful. Her experiences in schools were more difficult, as she was placed in schools that did not use cooperative learning. In her final school placement, whilst she made some use of cooperative learning, it was not as extensive as she would have liked as she found particular behaviour issues made it difficult to implement. Charlotte's interest in cooperative learning was nevertheless sustained and led her to choose the topic for her final undergraduate dissertation because she was interested in 'the gap between what you see in schools and what the research says'. The dissertation demonstrated her strong academic skills and gave her insight into the views of her fellow students. At an interview at the end of the taught programme, Charlotte reported she was keen to use and develop cooperative learning as a teacher, however, she had lacked sustained experiences of using it in school so far.

In the final term of Charlotte's first year of teaching, an interview at her school examined whether she had been able to apply cooperative learning. She showed a continued interest, but she found it challenging without support from the school. Her concerns with a range of areas to master left her at the end of her first year with a sense of just surviving: 'I made it through'. In respect of cooperative learning, she commented that 'I have done some, honestly not as much as I would like'. She noted difficulties with personalities of a few children in her class who 'don't get on socially'. She nevertheless affirmed that 'it has not been forgotten but in a different class I would use it more'. Charlotte has endeavoured to apply cooperative learning in practice, but has lacked the opportunity to observe it in schools and experience success.

Contrasting factors

These two short vignettes of beginning teachers provide sharp contrasts. Jane has undoubtedly been far more successful to date in using cooperative learning and in leading and supporting others. Nevertheless, both were excellent students who achieved the same final results and obtained first-class honours degrees. They had both studied cooperative learning in depth and had the opportunity to attend an international conference. The main discernible difference, apart from a few years in age which may have impacted on maturity, is that Jane had observed and practised cooperative learning from her first placement in school. She witnessed the impact this had on pupils and built on this successfully, developing her under- standing and skills. This helped her build a positive sense of self-efficacy as a teacher. An important question is whether this ability to build on early success and thereby enhance self-efficacy is the key to implementation. Indeed studies on teacher personal efficacy (Poulou 2007, 194) have found that 'self-efficacy is malleable early in learning and that support in the first years of teaching could be critical to the development of teacher efficacy'. This is an area worthy of further research for beginning teachers.

Conclusion

This paper has set out the challenges of developing cooperative learning for pre-service teachers at one institution in England. Giving students in this institution a grounding in cooperative learning has had mixed results. Whilst they are positive about cooperative learning and show a desire to use it, many appear to have had limited opportunities or success. The main discernible difference between the two teachers cited concerned early experiences of observing and using cooperative learning in school and then building on this successfully, so that after three years of teaching Jane claimed that 'I think it comes into everything that I do now'. It is important to note the limitations of this study: it represents findings from one insti- tution and would require tracking far more teachers in their early years of teaching to demonstrate factors that impact on implementation of cooperative learning, rather than the two teachers who were willing to participate here. As this article has shown in a schoolled teacher education system, encouraging student-teachers to use a pedagogy that is uncommon can be problematic. However, it does show that early experiences of success can have a lasting impact and help build selfefficacy, and that, as in Jane's case, this can influence practice more widely.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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