COOPERATIVE LEARNING AS A CONSTRUCTIVIST STRATEGY IN TERTIARY EDUCATION

Dr Leela Ramsook
University of Trinidad and Tobago
Centre for Education Programmes
Corinth Road,
San Fernando,
Trinidad.
1-868-642-8888
leela.ramsook@utt.edu.tt

Abstract
Studies revealed that constructivist methods have been adopted by educators but researchers continue to criticize the use of cooperative learning. This research adopted a qualitative approach to investigate the use of cooperative learning as a constructivist strategy at a higher learning institution, the University of Trinidad and Tobago. The study focused on the experiences of 'prospective' teachers in cooperative learning activities. The sample included 78 part-time undergraduate students who are pursuing a Bachelor of Education degree. The results indicate that prospective teachers found that they derived many benefits from cooperative learning. One of the themes that emerged was 'Promotion of Creative Thinking'. However some prospective teachers felt that their learning was compromised at the expense of weaker learners. The findings suggest that cooperative learning is an invaluable constructivist strategy for teaching and learning. It is recommended as a method, not only for tertiary level, but all levels of the education system.
Keywords: constructivism, prospective teachers, experiences, tertiary education

1. Context

The University of Trinidad and Tobago (UTT) offers a four year Bachelor of Education (B.Ed.) degree to students who have met the matriculation requirements. The programme is offered on a full-time or part-time basis for specialization in primary education. Some part-time students are currently employed as teachers at various schools and are engaged in the programme to upgrade their academic skills and qualifications. Others have experiences with the On-the-Job (OJT) training programmes, while some have different occupations but chose to do the programme with the hope of employment by the Ministry of Education. (MOE). Many others are unemployed and aspire become employable as teachers upon graduation.

In this study all participants are referred to as 'prospective teachers' to encapsulate the diversity of the participants. A common factor is that all 'prospective teachers' participated in cooperative learning activities in a core course named 'Student-Centred Pedagogy'. In addition every 'prospective teacher' was exposed to 'practicum' whereby they were required to practice constructivist approaches under the guidance of their practicum advisors and cooperating teachers.

1.1 Purpose

The purpose of this study was to investigate the views of 'prospective teachers' about cooperative learning. The research also unearthed their experiences and the benefits they derived from cooperative learning as a constructivist method.

1.1.1 Significance of the Study

While there is phenomenal research on cooperative learning there is little on 'prospective teachers' experiences of cooperative learning in a specific course, at tertiary level, that actually teaches cooperative learning using hands-on experiences to equip students with student-centred practices.

2.   Review of Literature

Constructivism and Cooperative Learning

Constructivism is a theory of learning, or - perhaps more accurately – a label for a family of theories and models of learning in which cooperative learning is a significant element. (Kintsch, 2009) suggests, "The central idea of this theory (constructivism) is that meaning must be constructed, that knowledge building is an active process on the part of the learner, not a passive process of information absorption (p. 234).

Slavin (1995) defines cooperative learning as "to learn something as a team" (p. 5). Many principles have been proffered, and different models of cooperative learning have been outlined including Kagan's (1991) 'structural approach'; Slavin's (1995) 'student team learning' and Johnson and Johnson's (1999) 'learning together'. In addition, Slavin (2015) detailed different strategies that can be used for cooperative learning activities such as Jigsaw, Think Pair Share and Numbered Heads Together.

Studies have indicated that there are numerous positive aspects of cooperative learning such as higher achievement. According to Johnson, Johnson & Holubec (1994), some of the outcomes of cooperative learning are: "greater efforts to achieve . . . more positive relationships among students . . . and greater psychological health" (p. 12). In a study conducted in Turkey with ninety-nine prospective teachers, Artut (2016) found that "prospective teachers mentioned positive effects of working on non-routine problems in a cooperative learning" (p. 244). However, Terwell (2003) states, "Cooperative learning is not a technique for its own sake but needs content in order to be useful" (p. 55). He maintains that different models of cooperative learning are appropriate only for certain subjects. The suggestion is that cooperative learning activities must be carefully selected to suit the subject matter to be taught.

Baloche (1998) posits, "For cooperative learning to be an effective equity pedagogy, there must be, among other things, (a) interaction that helps participants learn about themselves and each other as individuals and (b) conditions at encourage equal-status interaction (p. 48). But Onwuegbuzie, Collins, and Jiao (2009) point out, that individual accountability is key to the success of the overall group and helps to prevent "social loafing," or reduced individual effort resulting from too much dependence on other group members (p. 272). Other researchers such as Gillies & Ashman (2003) and Sachar, (2003) have maintained that prior knowledge, transfer of information and what some authors refer to a plurality competence are necessary components for successful cooperative learning activities.

Jacob, Power & Inn (2002) suggest that cooperative learning promotes "interethnic relations and acceptance of academically challenged students" (p. xi). In a study conducted by Hussain (2012), it was found that, "collaborative and cooperative developed contribution spirit among students overcoming their shyness and introversion" (p. 179). Reflection and analysis are also regarded as essential components of every cooperative learning activity. Terwel (2003) argues that, "there are indications that low-achieving students are more sensitive to the quality of their learning environment than high-achieving students, probably because the latter can rely on personal resources such as prior knowledge, experience, cultural background and habitus" (p. 57). Sharan and Sharan (1987) indicate, "As they practice these skills, the teachers also increase their awareness of how to cultivate the skills among their students". But concerns were expressed about resistance by educators and students who are still entrenched in traditional methods and have not bought into cooperative learning.

3. Design and Methodology

The research is situated to the qualitative paradigm. It seeks to determine the views and subjective experiences of 'prospective teachers' about cooperative learning. These outcomes are based on data gathered through questionnaires, focus group interviews and reflections.

3.1. Research Question

1. What were prospective teachers' views about cooperative learning?
2. What were prospective teachers' experiences with cooperative learning as a constructivist method?
3. What benefits did prospective teachers derive from cooperative learning?

3.1.1 Sample

The sample consisted of 72 'prospective teachers' who are currently at Year Two in the Bachelor of Education Programme at the University of Trinidad and Tobago. The cohort consisted of two classes of students who were engaged in a core course called Student-Centred Pedagogy. There were 8.3% males and 91.7 females. Participants' ages differed significantly ranging from nineteen to forty-two. There were heterogeneous groupings of students for the cooperative learning activities. But all students participated in the activities throughout the course.

3.1.2 Collection of Data

All data were gathered at the end of the course to avoid subjectivity. It means that 'prospective teachers' were not constrained in any way since all assignments and in-class assessments were completed. No coercion was used so that the participants wrote or voiced their opinions and experiences in an inhibited manner. Different methods were used for gathering data which allowed for triangulation (Cohen, Manion, & Morrison, 2007; Miles, Huberman & Saldana, 2014) and validation of data. They include:

• Questionnaires with structured and open ended questions which were administered to the participants. Both types of questions were appropriate to maintain the focus of the study.

• In-depth, one-on-one interviews were conducted with ten focus groups, each consisting of approximately 7 participants. This served to verify and confirm the data.

• 'Prospective teachers' were asked to write personal reflections, using the online platform, Canvas, about the cooperative learning activities they were exposed to, so that

individualistic views and experiences may be discerned and compared to establish the credibility of the data.

3.1.3 Analysis of Data

Data were transcribed verbatim to understand the essence of meaning of the views and experiences of the 'prospective teachers'. Data were analysed by reiterative readings of transcripts. Data from interviews, questionnaires and reflections were analysed and compared for verification. Codes were formulated by clustering common general ideas or determining commonalities (Creswell, 2012). These were further broken down into categories by eliminating redundancies but also searching for new ideas. Associative or related ideas were pooled together by condensing several codes to discern patterns. Saldana (2009) maintains that the aim of coding is to discover "repetitive patterns of action and consistencies in human affairs as documented in the data" (p. 5). Five themes emerged based on re-readings, analysis and interpretations. Direct quotes were used below to enlighten readers with explicit and verbatim accounts of the views and experiences of 'prospective teachers'.

4. Emergent Themes

Five themes which emerged from the data include: 1. Shared Knowledge for Common Goals 2. Enhancement of Social Skills 3. Limitless Benefits 4. Promotion of Creative Thinking and 5. Building 21st Century Skills. Selected verbatim accounts from 'prospective teachers' that substantiate the themes are outlined below.

Theme 1: Shared Knowledge for Common Goals

1. *Cooperative learning has also been beneficial to me as I have seen the different skills of my classmates that contribute greatly to our assignments. Working in groups also provided a shared workload for our project and this was indeed a benefit.*
2. *I can honestly say that I grasp instruction the best when I am actively engaged in the learning process and working cooperatively with other students in an attempt achieve common goals . . . it is the process of making meaning of knowledge construction . . . about a concept or topic but after discussing ideas and thoughts with group members, it always resulted in learning because it's not only my experiences that are shared but also the experiences of my group members.*
3. *By using this strategy, it promoted social skills, communication and listening skills in an individual. It allowed group members to collaborate for students to achieve a shared learning goal which was set by the teacher.*
4. *I have benefited when I was placed in cooperative learning groups with other class members. I had the opportunity to contribute to the success of my group . . . gain knowledge from other members as well as share my knowledge.*
5. *Cooperative learning . . . gives each individual in the group a certain role or responsibility to work towards achieving the group's goal for success.*

Theme 2 – Enhancement of Social Skills

1. *My social skills have also improved as I have interacted with different persons with different personalities. Through this interaction, I have learnt a lot and with thorough explanation from my peers, I have better understood various topics.*
2. *Cooperative learning emphasizes the importance of interactivity. This method is a social one where students work together in groups to accomplish something of importance to*

them. There were many instances where I was misinformed about certain things but working together in a group helped me . . . to correct my misunderstandings and guide me accordingly.

3. *I believe that the cooperative learning strategy proved to be most successful . . . (It) is motivating, appealing, captivating, interactive and student centered. It benefitted me and encouraged a significant role, building my interaction skills and fostering problem solving skills.*

4. *Cooperative learning method provides student centeredness as students work together to achieve goals. It creates a sense of responsibility as each student is responsible for contributing to the final outcome. Social skills are also improved as we had to interact within our teams.*

5. *I firmly believe that using this approach/ strategy is efficient and effective because there are a lot of benefits such as . . . it promotes social skills, facilitates scaffolding, increases collaborations, builds confidence in students by allowing students to participate and presenting their ideas and sharing each other's ideas and increases students accountability, This strategy also promotes listening skills which may lead to effective communication, builds self-regulatory skills, appreciation of group members/ other students, and promotes respect of diversity.*

Theme 3: Limitless Benefits

1. *Cooperative learning is also beneficial as it enables me to recognize my unique abilities, talents and creativity. It also helps me to have a clearer understanding which will in turn helped me appreciate each other's perspective in the group and developed their reflective thinking skills. I also see cooperative learning as a strategy that caters for diversity as children in groups may be of different socioeconomic backgrounds, ethnicity, race, religions and cognitive abilities.*

2. *As a prospective teacher, cooperative learning has benefited me in such a way that I was able to interact and learn from my peers. It also gave me the opportunity to become a leader within my group at certain times. I was able to give my insight and contribute my ideas towards assignments. I also felt responsible for making those contributions within my groups and I was also able to improve my self-esteem.*

3. *Cooperative learning benefitted us as it allowed us to learn how to trust each other, build leadership skills, problem solving skills, conflict management skills and decision making skills so we were able to achieve more than what would be possible on our own. It significantly contributes to improve student's academic, social and psychological aspects.*

4. *The benefits are limitless and it does not just focus on the one aspect, it aided me cognitively, socially and mentally . . . as we shared ideas.*

5. *In my Pedagogy classes I have been introduced to cooperative learning . . . I find it very enlightening as it helps me remember better what I have learnt. I believe that it is a good strategy. In instances where I may be confused or cannot fully understand a problem or be able to explain myself effectively, it would be beneficial to have another member explain a point further or widen my point of view by explaining the situation differently.*

Theme 4: Promotion of Creative Thinking

1. *Cooperative learning has also impacted on me greatly as I have seen how my ideas can merge together with that of others to create something beyond my thinking.*

2. *From my experience with cooperative learning as a constructivist method, I was able to see how this strategy embodies the aspects of constructivism by the social interaction of groups, sharing of knowledge, connections being made from past knowledge and experiences, observations and discovery of new information.*
3. *Cooperative learning served as the foundation for learning new material . . . Peers tended to breakdown information to a less difficult level with new meaning . . . I utilized my own experience to solidify knowledge and also gain from the thoughts and experiences of others.*
4. *I have learnt a new method to teaching and learning. From my experience, cooperative learning has helped me to be able to work together with others to share information/knowledge and develop new ideas.*
5. *My experience with cooperative learning as a constructivist learning method is that it allowed for greater productivity and it helped me to create and construct new ideas.*

Theme 5: Building 21st Century skills

1. *When I become a teacher, I do intend to use cooperative learning strategies in my classroom . . . Children will be given the opportunity to explore for themselves and learning by experience is definitely what the constructivist view of teaching and learning is based on. I want to be a different type of teacher . . . I want to cater for all the different types of learners and intelligences in my classroom. So, to ensure I get through to all my future children, I need to have a constructivist approach and cooperative learning methods actively happening in my classroom.*
2. *I would use cooperative learning as a method to teach my students because I think it is important as it allows students to work together towards a common goal and helps them develop their critical thinking skills, problem solving skills, decision making skills, social and communication skills, thus allowing them to benefit not only short term but also long term as it helps them be equipped and prepared for situations in the future that requires them to critically think and interact with other individuals.*
3. *I would use cooperative learning because I honestly believe that using this approach facilitates higher achievement levels among students, greater development of skills, shared responsibility of students, improve my students' levels of self-esteem, help them to be creative, cater for their all-round development, enable them to become reflective thinkers, engage in metacognition and also help others at the same time.*
4. *I would use cooperative learning as a method to teach my students to promote my students holistic development because cooperative learning is fun and actively involves all students, also to develop my students' higher order thinking. By using cooperative learning my students would learn to resolve conflict with other peers, develop respect for diversity and others, learn new ideas from their peers boosting their creativity. My students would also learn to think reflectively.*
5. *I would use cooperative learning as a method to teach my students because it allows for me to teach one lesson in many ways so that my students do not get bored . . . By allowing monitored group work, it prepares students with 21st century life skills because when students reach the workforce so many jobs need them to be part of a team to work collaboratively . . . This method allows for discovery learning where students retain more information.*

4.1 Reflections

Reflections helped 'prospective teachers' to ponder on personal growth, group collegiality, social interaction, openness, transparency, strengths and weaknesses. They were also able to express their views and experiences about the quality of the cooperative learning activities. More importantly reflections provided an avenue for 'prospective teachers' to express their feeling and emotions, misgivings, disappointment, frustration and anger in an uninhibited manner. Sharan & Sharan (1987), believe that, "Reflection is the bridge between the concrete experience and the formal learning of relevant concepts" (p. 23). They also contend that, "While designing cooperative learning situations for the real world of their classrooms, teachers recreate their learnings by synthesizing their subjective preferences with the method's objective requirements" (p. 25). 'Prospective teachers' had real experience of cooperative learning, so it is expected that they have a benchmark for formulate their own ideas about how to implement cooperative learning. Some reflections on the benefits of cooperative learning as a constructivist strategy as related by 'prospective teachers' are outlined below.

1. *After actually experiencing being in cooperative learning groups for my course, I realized that it helped me to grow socially; learn to harmoniously; work with random people, all of which are important for creating a learning community that values diversity. I've been in groups, with students who have had different learning styles, thinking styles and religions, throughout the course of working together. It amazed me how much I began to understand and appreciate their uniqueness even more, I know for a fact that this is a method that is essential in the modern education system.*

2. *Cooperative learning was also beneficial as it enabled me to recognize my unique abilities, talents and creativity. It helped me to have a clearer understanding which in turn helped me appreciate each other's perspectives in the group and also everyone developed their reflective thinking skills.*

3. *My experiences with cooperative learning as a constructivist learning method were in class with group activities that we did every week or when we had a new topic in class . . . From my experience also, I have learnt that if one individual fails to uphold his/ her responsibility within the group, the entire group fails to achieve the common goal, hence it is important that each individual is organized, well-coordinated, work together and clearly understands what he/she has to do in order to be successful.*

4. *Though we learn about cooperative and constructivist learning it is seldom practiced by all. I have had the pleasure of working with a group where all members actively participated in doing the assignment to the best of our abilities. Everyone worked together to help team members when needed, share information and resources, and practiced good communication. At some point in processing, disagreements arose but were sorted out quickly. This led to the success of the assignment and team. This is one experience where the theories of cooperative learning as a constructivist learning method was understood and practiced by all team members. Unfortunately for me there have been more experiences of 'group work' rather than cooperative learning and constructivism in other courses.*

5. *Cooperative learning has benefited me as a prospective teacher in the sense that I am equipped with the knowledge that using this student centered approach to teaching and learning can yield favourable outcomes in my classroom. I now understand ways that I can enhance creativity among my students, help to motivate them so that their self-efficacy and self-esteem remain at a maximum, help them to appreciate differences in*

> *perspectives and how to respect those different perspectives, give them the opportunity to think reflectively, allow for higher order thinking skill development and how to use these skills to help others in the process as well.*

5. Discussion

As demonstrated in the themes and reflections, all participants agreed that there are tremendous benefits with cooperative learning. The findings are in tandem with those of researchers such as Hussain, (2012); Laal & Ghodsi, (2012); and Briede & Peks, (2014). However, in this study, one participant lamented about being demotivated and strongly believed that weaker students are facilitated at the expense of others. The individual bemoaned:

> *Working cooperatively would be a way to facilitate the weaker ones to grasp concepts as they may be intrigued and motivated to work together with peers.   But personally I felt demotivated at times . . . concerned about my mark and progress . . .   every student is accountable and responsible for his for her actions.*

In a study, Ramsay and Richards (1997) revealed that gifted children found cooperative learning uninteresting. Also, studies conducted in Israel and Singapore indicate that gifted learners prefer to work individually. Cooperative learning activities should therefore be carefully organized and implemented so that the needs of all learners, inclusive of gifted students, are met. The difficulty may lie in catering for special needs and providing individualized attention. However, benefits were derived in terms of team-work, camaraderie, interactive social skills as well as emotional well-being.

While 'prospective teachers' have acknowledged that cooperative learning has merits, there are also demerits. Some believe that their time was spent rendering assistance to others rather than increasing their own capacity and personal efficacy. One participant lamented:

> *Though this method is beneficial and could produce favourable outcomes in   student learning, there are downfalls in this method. I think that within every   classroom that there would be students, like me, who feel they are just spending their time helping others.*

While the achievement levels of some students increased with cooperative learning in agreement with a study by Oguz (2008), the outliers in this study demonstrate that there are associated problems. Cooperative learning is considered to be ineffective for certain individuals. They viewed it as cooperative learning as a compromise. Similar to research findings by Johnson, Johnson & Hobulec (1994), this study reveals significant benefits of learning together with the more-knowledgeable-others and positive group dynamics. But it seems that high achievers are not too enthused with cooperative learning even though they agree that there are benefits to the method. They expressed negative emotions and felt that their personal learning was constrained and not maximised.

One individual complained that while there are advantages to cooperative learning, there are also disadvantages. For example, the participant indicated that some group members contributed minimally and expressed concern that a dependency syndrome was being fostered through cooperative learning, as demonstrated in the following verbatim remark:

> *Having to work in groups or teams in order to complete projects and assignments has had many positive but also negative aspects. Unfortunately for me, there have been some negative experiences . . . some group members did not pull their weight . . . (they) should develop independence, a sense of pride and positive attitudes to achieve.*

While cooperative learning helps members build their confidence and self-esteem because of support from the group, others become complacent and dependent on their colleagues. The suggestion is that some group members may participate fully or are comfortable with a mediocre score. In tandem with findings by Joyce (1999) who found that in cooperative learning, "there is the potential for a *free-rider* problem when students do not participate to the best of their abilities" (p. 271), the results of this study also demonstrates that there are concerns about free-riders. Joyce (1999) suggests that "group-member rotation is used as a means to overcome the free-rider problem" (p. 271). However, this study recommends that both a generalized group score as well as an individual score to alleviate or minimize the challenge of 'free riders'.

A participant criticized the method with the following remark:

> *I believe I was not given the chance to show my ability in cooperative learning groups. My ability to show what I can do is stifled by other members of the group. . . I was frustrated . . . It also limits my knowledge of the entire topic.*

Another participant expressed similar sentiments as follows:

> *While I recognize that working in cooperative groups is important, I felt as though I was being kept back and I was not able to showcase my potential. It was overwhelming, frustrating and very painful. Why should my grade be dependent on a group of people?*

The outlier implies that there may be elements of inequality in cooperative learning. Some participants felt that their capabilities were not maximized as valuable study-time was spent being bored or feeling smothered by other group members. In fact one individual felt that the experience was painful. In the two instances mentioned above, cooperative learning failed to optimize personal levels of learning, in direct opposition to the argument by Millis (2010); Tsay & Brady (2010) and Colak's (2015) findings, that it enhances deep rather than surface learning. The two participants lamented that their learning was superficial rather than profound. The results also suggest that there may be domineering members who do not give voice to other participants an equal and equitable manner.

One can argue that instructors should take full responsibility to avoid the issues raised with the outliers but tertiary level is about adult learning and instructors can only use moral suasion for the tenets of cooperative learning to be upheld fully. In addition it must be noted that in the case the Bachelor of Education at UTT, students have attained a particular level of education but there is the issue of differentiation. Some students have been accepted into the B.Ed. programme based on passes in five subjects at the Caribbean Secondary Education Certificate (CSEC) level. Also, there is a cadre of students who have completed the Caribbean Advanced Proficiency Examination (CAPE) (that is, two years of study beyond CSEC).Others have certification in areas like nursing, banking and some have even acquired a first degree. Therefore there are different categories of students with different levels of qualifications, competencies and capabilities in the same class. These complexities suggest that cooperative can be very complex in a diverse classroom. Perhaps students need training to engage in cooperative learning. It seems that the principles outlined by various theorist are geared towards the 'ideal' classroom or context.

The study demonstrates that cooperative learning helped 'prospective teachers' to adopt a reflective approach. But a question that arises is whether cooperative learning takes into account the different learning styles of students and their preferences in different modes of learning. Also, while the idea of grouping high ability students with weaker ones has its advantages, it has been demonstrated that learning is compromised for some. The implication is that perhaps differentiated instruction should be incorporated into cooperative learning activities and careful consideration must be given to the

criteria used for structuring groups. It also means that instructors should have cumulative information, including certification and previous knowledge, about 'prospective teachers'. The challenge that continues to prevail is assessment and possibly a general group mark as well as an individual mark may minimize some of the challenges of cooperative learning. Perhaps students can be asked, not only to self-reflect but to assess their colleagues and the process of cooperative learning.

6. **Conclusion**

It can be concluded that 'prospective teachers' benefitted from cooperative learning as a constructivist method. They were appreciative of the social interaction, positive group dynamics and shared learning. However, a few participants felt that they were either kept back, spent their time assisting others, or expressed concerns about their scores, and not achieving their full potential. Cooperative learning is not without challenges and the assessment procedures particularly, at the tertiary level, need to be evaluated to minimize concerns about cooperative learning as a constructivist method. Whether 'would use cooperative learning in their classes; link cooperative learning with direct instruction, as well as the perspectives of high achievers may be interesting research in the future.

References

Artut, P.D. (2016). Effect of cooperative learning method on prospective teachers' non-routine problem-solving skills and their views about the method. *US-China Education Review*, 6 (4) 244-254. doi:10.17265/2161-623X/2016.04.004

Baloche, L. A. (1998). *The cooperative classroom: Empowering learning*. Upper Saddle River, NJ: Prentice-Hall.

Briede B. & Peks, L. (2014). A constructivist approach in teaching in higher education for getting methodological and reflection competences. Rural Environment. Education. Personality Jelgava, 7, 84-89.

Chiriac, H. E. (2014). Group work as an incentive for learning - students' experiences of group work. *Frontiers in psychology*, *5*, 558. doi:10.3389/fpsyg.2014.00558

Colak, E. (2015). The Effect of Cooperative Learning on the earning approaches of students with different learning styles. *Eurasian Journal of Educational Research,* 59, 17-34.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York, NY: Routledge.

Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (4th ed.). Upper Saddle River, NJ: Pearson.

Gillies, R. M. & Ashman, A. F. (2003). *Cooperative learning. The social and intellectual outcomes of learning in groups.* New York, NY: Routledge.

Hussain, I. (2012). Use of constructivist approach in higher education. *Creative Education*, 3 (2) 179-184. doi.org/10.4236/ce.2012.32028

Jacob, G. M., Power, M. A. & Inn, L. W. (2002). *The teacher's sourcebook for cooperative learning*. Thousand Oaks, California: Corwin Press.

Johnson D. W. & Johnson, R. T. (1999). *Learning together and alone. Cooperative, competitive and individualistic learning.* London, UK: Allyn and Bacon.

Johnson, D. W., Johnson, R. T. & Holubec, E. J. (1994). *Cooperative learning in the classroom*. Alexandria, VA: Association for Supervision and Curriculum.

Joyce, W. B. (1999). On the free-rider problem in cooperative learning. *Journal of   Education for Business,* 74 (5), 271-274, DOI: 10.1080/08832329909601696 Retrieved   12.12.18   from https://www.tandfonline.com/doi/abs/10.1080/08832329909601696

Kagan, S. (1991). Cooperative learning. San Juan Capistrano, CA. Resources for Teachers.

Kintsch, W. (2009). Learning and constructivism. In S. Tobias & T. M. Duffy (Eds.), *Constructivist Instruction: Success or failure?* (pp. 223-241). New York: Routledge.   Retrieved 27.5.18 from http://psych.colorado.edu/~wkintsch/Constructivist.pdf

Laal, M. & Ghodsi, S. M. (2012). Benefits of collaborative learning. *Procedia - Social and Behavioral Sciences,* 31, 486-490. doi:10.1016/j.sbspro.2011.12.091 Retrieved 17.12.18 from https://ac.els-cdn.com/S1877042811030205/1-s2.0-S1877042811030205-main.pdf?tid=0b28a6e5-973f-41c3-b1aa-d55b0a96190c&acdnat=1545524573_0e8bab15fb36aeade1cde73486650f1b

Miles, M. B., Huberman, M. A. & Saldana, J. (2014). *Qualitative data analysis. A methods sourcebook* (3rd ed.). Beverly Hills, CA: Sage.

Millis, B. J. (2010). Cooperative Learning in Higher Education: Across the Disciplines, Across the Academy. Stylus Publishing.

Oguz, A. (2008). The effects of constructivist learning activities on trainee teachers' academic achievement and attitudes. *World Applied Sciences Journal*, *4* (6) 837-848, 2008

Onwuegbuzie, A. J., Collins, K. M. T. and Jiao, Q. G. (2009). Performance of cooperative learning groups in a postgraduate education research methodology course. *Active   Learning in Higher Education, 10* (3), 265-277.

Ramsay & Richards (1997). Cooperative learning environments: Effects of academic   attitudes of gifted students. *Gifted Child Quarterly*, 41, 160-168

Sachar, H. (2003). Who gains what from co-operative learning: An overview of eight   studies. In R. M. Gillies and A. F. Ashman (Eds*.). Co-operative learning* pp. 103-118.   Oxon, UK: Routledge.

Saldana, J. (2009). *The coding manual for qualitative researchers.* Retrieved 8.5.18 from http://stevescollection.weebly.com/uploads/1/3/8/6/13866629/saldana_2009_the-   coding-manual-for-qualitative-researchers.pdf

Sharan, Y. & Sharan, S. (1987). Training teachers for cooperative learning. *Association   for Supervision and Curriculum Development.*

Slavin, R. E. (1995). *Cooperative learning* (2nd ed.). Needham Heights, MA: Allyn & Bacon.

Slavin, R. E. (2015). Cooperative learning in elementary schools. *Education 3-13, 43*(1), 5-14.

Terwel, J. (2003). Cooperative learning in secondary education: A curriculum perspective. In   R. M. Gillies and A. F. Ashman (Eds*.). Co-operative learning* pp.54-68. Oxon, UK: Routledge.

Tsay, M. & Brady, M. (2010). A case study of cooperative learning and communication   pedagogy: Does working in teams make a difference? *Journal of the Scholarship of   Teaching and Learning,* 10 (*2*) 78-89.