Cooperative Learning, Motivation, and School Dropout Reduction

Emma Saraiello
University of Naples "Parthenope"
emma.saraiello@uniparthenope.it

Gianluca Gravino
University of Campania "Luigi Vanvitelli"
gianluca.gravino@unicampania.it

Fabiola Palmiero
University of Macerata
f.palmiero@unimc.it

Abstract
The study examines the effectiveness of cooperative learning in improving motivation and learning strategies, as well as in reducing the risk of school dropout among secondary school students. This mixed-method research involved two groups over the course of eight weeks during Italian lessons. The evaluation, based on the Motivated Strategies for Learning Questionnaire and qualitative data, shows that cooperative learning significantly increases self-efficacy, task value, and metacognitive strategies.

Key Words*: cooperative learning; motivation; school*

Introduction

Early school leaving and student disengagement are among the main problems facing the Italian education system, particularly evident in large metropolitan areas in the south, such as Naples, where the school dropout rate is significantly higher than in other regions. The analysis of the factors contributing to the phenomenon of early school leaving and student disengagement is part of a broader debate exploring the interactions between social, economic and psychological variables. In disadvantaged socio-economic contexts, such as those of many Neapolitan families, students face numerous obstacles, including low motivation, difficulty concentrating, and a poor sense of self-efficacy. These factors are closely related and can generate a cycle of disconnection and disengagement from education, contributing to the worsening of social and educational inequalities (Bennett et al., 2012). Bandura's (2001) studies on social cognitive theory highlight the importance of self-efficacy, which directly influences students' motivation, behaviour, and performance. Self-efficacy refers to an individual's perception of their ability to successfully cope with a given situation. According to Bandura, building strong self-efficacy can improve motivation, even in socio-economically disadvantaged contexts, by stimulating greater engagement in school activities. Motivation, in this case, depends not only on individual abilities, but also on the perception of being able to have a positive impact on the learning environment (Zimmerman, 2008).

Similarly, Zimmerman and Schunk's (2020) Self-Regulated Learning (SRL) offers another framework for understanding how metacognitive and self-regulation strategies can support students in their learning journey. SRL focuses on the process through which students plan, monitor and evaluate their own learning. Metacognitive skills are essential for academic

success, especially in situations where students face limited resources or an unstimulating learning environment. Acquiring these skills is often more difficult for students from disadvantaged backgrounds, but it can be enhanced through active teaching methods, such as cooperative learning (Johnson & Johnson, 2019).

Active teaching methodologies, and cooperative learning in particular, have been shown to be effective in improving student engagement, intrinsic motivation and self-efficacy. Cooperative learning is a teaching strategy that promotes learning through cooperation between students in small groups, in which each student is responsible not only for their own learning, but also for the success of the group (Gillies, 2007). Numerous empirical studies show that cooperative learning contributes to improving academic performance, especially among students from disadvantaged socio-economic backgrounds, reducing educational inequalities (Slavin, 2014; Roseth et al., 2008). Peer interaction, mutual support and shared responsibility promote the development of social, emotional and cognitive skills that are crucial for success at school and motivation to continue studying.

In addition, the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich et al. (1991) is one of the most widely used tools for measuring motivational aspects and learning strategies. The questionnaire allows for the collection of detailed information on variables such as self-efficacy, perceived task value, test anxiety, time management, and metacognitive strategies. This tool has proven its validity in assessing how students approach their studies, providing a useful framework for exploring the relationship between motivation and academic performance (Pintrich, 1999).

In light of these findings, this study aims to explore the impact of cooperative learning on motivation and learning strategies, particularly in a context such as Naples, which is characterised by significant socio-economic inequalities. The research also aims to assess whether students from disadvantaged socio-economic backgrounds derive particular benefits from cooperative learning compared to traditional teaching methods. In an educational context where poverty and social hardship are risk factors for early school leaving, the adoption of inclusive and collaborative methodologies such as cooperative learning could represent a concrete and effective response to counteract these phenomena, improving equity in the education system and helping to build an educational path that promotes the success of all students, regardless of their background (Slavin, 1996; Johnson et al., 2000).

1. Material and methods

The study participants are 50 students (N = 50) enrolled in two third-year classes at a secondary school located in a working-class neighbourhood of Naples. The sample was divided into two groups:

- experimental class (n = 25): receives cooperative learning intervention;
- control class (n = 25): continued with traditional classroom teaching.

The inclusion criteria for participating in the study were defined in order to select a representative and homogeneous sample, ensuring that the socio-demographic characteristics of the students did not introduce significant bias in the results. The inclusion criteria were as follows:

1. age criteria: students had to be around 16 years old to ensure a homogeneous group in terms of cognitive development and school experience, given that student age is a relevant factor in the effectiveness of certain teaching methodologies;
2. gender composition: classes were selected to have a balanced gender composition, minimising the influence of any gender differences on variables of interest, such as motivation, learning strategies and participation;
3. disadvantaged socio-economic backgrounds: approximately 25% of students in each class came from disadvantaged socio-economic backgrounds, defined on the basis of:

- ISEE (Equivalent Economic Situation Indicator): students from families with a low ISEE were included to reflect the socio-economic reality of the neighbourhood, as this indicator measures family income and economic situation and was used as a parameter to select students who might be in a disadvantaged socio-economic situation;
- Social Service reports: formal reports from the neighbourhood Social Service provided further confirmation of the students' disadvantaged socio-economic status, considering situations of economic or family hardship that could negatively affect school participation and performance.

These criteria made it possible to select a sample that was as homogeneous as possible in terms of age, gender and socio-economic background, minimising bias and confounding variables that could have influenced the results of the study.

A quasi-experimental design with two groups (experimental and control) was adopted, with pre- and post-intervention assessment (McMillan & Schumacher, 2014). For the analysis of quantitative data, advanced statistical software capable of performing repeated measures ANOVA and other statistical calculations was used, Statistical Package for the Social Sciences (SPSS). SPSS is widely used for its user-friendly interface and its ability to perform complex analyses such as repeated measures ANOVA, analysis of significant differences, and management of large data sets. This approach allows for a comparison of the effects of cooperative learning with those of traditional teaching, monitoring changes in motivational and strategic variables. Qualitative data analysis was conducted using a thematic coding methodology, which allowed the main themes emerging from the collected data to be identified and analysed using NVivo software, which was used to manage, code and visualise the data efficiently. NVivo was also used to analyse the teachers' logbooks, allowing us to identify recurring themes and explore in depth the teachers' experiences and reflections on the intervention.

Given the breadth of the MSLQ (Motivated Strategies for Learning Questionnaire), this study chose to focus its analysis on a few relevant subscales:

- : to understand whether group work increases self-efficacy and perceived competence;
- task value: to assess how useful or interesting students find the activity;
- time management: to measure whether collaboration affects study autonomy;
- metacognition: to assess the ability to reflect on one's own learning processes (Zimmerman, 2008).

1.1. Tools

1. MSLQ (Motivated Strategies for Learning Questionnaire): administered in paper form, using a 7-point Likert scale (1 = 'not at all true for me' to 7 = 'absolutely true for me').
2. Semi-structured interviews: conducted with 16 students (eight in the experimental group and eight in the control group), balancing gender and socioeconomic status; the aim was to explore perceptions, emotional experiences and study- stratégies;
3. logbooks: completed weekly by teachers to record the level of participation, group dynamics and the use of learning strategies in the classroom.

1.2. Timing

The intervention lasted eight weeks, during the second term. Each week, the experimental class had two hours of Italian using cooperative methodologies; the control class covered the same content through traditional teaching methods.

- Pre-test (T0): initial administration of the MSLQ and start of the first individual interviews.
- intervention period: from the end of T0 until the beginning of the eighth week;

- post-test (T1): final administration of the MSLQ and conclusion of interviews.

Adopting a qualitative-quantitative approach allows for the integration of numerical data (MSLQ subscale scores) with information gathered through interviews and logbooks, providing a richer and more layered view of the phenomenon (Creswell & Plano Clark, 2017).

2. Teaching activities

In the experimental group, Italian lessons were reorganised according to the principles of cooperative learning () (Johnson, Johnson & Holubec, 2013; Slavin, 2014), structured as follows:

- formation of heterogeneous groups: each group consisted of 4-5 students, balancing language skills, initial motivation and socio-economic background (Gillies, 2007). The aim was to encourage collaboration and peer-to-peer learning;
- structuring of roles and activities: students were assigned defined roles (coordinator, verifier, reader, writer), which rotated weekly. This rotation encouraged the active participation of all members and reduced the risk of 'free-riding' behaviour (Johnson & Johnson, 2019). The teaching units included phases of comprehension, analysis and reworking of the texts;
- Positive interdependence: the success of the group depended on the effort of each student, who was assigned a part of the work that was essential for the final assessment (Slavin, 2014). This positive interdependence fosters a sense of individual responsibility.
- Metacognitive reflection activities: at the end of each module, students noted in a 'reflection log' the difficulties they encountered, the strategies they used to resolve them and their future goals (Zimmerman, 2008). These activities aimed to enhance awareness of cognitive processes and promote self-regulation.

In the control group, the same subject content (text analysis, comprehension, written production) was mainly addressed through lectures and individual assignments. No structured form of collaboration was introduced, except for brief moments of plenary discussion.

3. Qualitative results

The analysis process was divided into several phases:

1. transcription and organisation of data: the semi-structured interviews were transcribed in full and the logbooks were collected and sorted by date. The transcripts were then organised into a format suitable for qualitative analysis, with particular attention paid to maintaining the context of the interviewees' observations and statements;
2. Preliminary coding: Each transcript was carefully read to identify relevant units of meaning, such as expressions or phrases that reflected students' and teachers' perceptions of the intervention. These units were annotated and coded according to emerging themes, such as safety and mutual support, satisfaction with learning, active participation, and improved motivation.
3. Identification of main themes: the codes were then grouped into main themes. The themes that emerged from the analysis of the teachers' logbooks and student interviews included:
    - increased motivation and participation: many students reported an increase in their participation in class thanks to the opportunity to work in groups, and several teachers observed an improvement in student engagement, particularly among those who were more introverted or disinterested;
    - mutual support: a recurring theme was mutual support among students, which helped to reduce the isolation of some pupils and foster a more

inclusive and collaborative environment;
- development of self-efficacy: students perceived an improvement in their ability to tackle school tasks, thanks to the support of the group and the opportunity to reflect on their progress;
- improvement in learning strategies: the introduction of moments of reflection, such as reflection logs, encouraged students to use more structured study strategies, such as creating concept maps and collective summaries;

4. Consolidation of results and comparison between groups: once the themes had been identified, a comparison was made between the perceptions of the students in the experimental group and those in the control group. This analysis revealed significant differences in the perception of the intervention, such as a greater sense of involvement and motivation in the experimental group compared to the control group, which continued with traditional classroom teaching.
5. Data triangulation: finally, the qualitative results obtained from the student interviews and teacher logbooks were cross-referenced with the quantitative data from the MSLQ analysis to confirm the consistency of the evidence and reinforce the reliability of the results.

The topics investigated in both the student interviews and the teachers' logbooks included:

- motivation and engagement: how the intervention influenced student motivation and commitment;
- mutual support and collaboration: the role of peer support in learning and building an inclusive classroom environment;
- learning strategies: the use of new study methods, such as concept maps, summaries and reflections, to improve learning effectiveness;
- self-efficacy: the impact of the intervention on students' perceptions of their ability to tackle and solve school tasks;
- reflection on the teaching-learning process: teachers reflected on their pedagogical approach, changes in classroom dynamics and teaching methodologies adopted during the intervention.

3.1. Perceptions in the experimental group

The interviews showed that the students in the experimental group had a positive experience of group work. A 16-year-old student from a socio-economically disadvantaged background said:

'I feel more confident with my classmates. If I don't understand something, they help me and then I can help them too.'

A student from an immigrant family emphasised:

“Before, I was afraid of making mistakes when speaking Italian. Now, however, the group makes me feel more comfortable, so I try to express myself more.”

In their logbooks, teachers noted a significant increase in participation, especially among those who had performance difficulties or low self-confidence at the beginning. The classroom atmosphere was more relaxed and collaborative, with fewer conflicts and greater solidarity among peers. Some students who were previously reluctant to interact began to speak up more often, ask their classmates for explanations, and contribute their own ideas during text discussions.

In addition, several teachers noted that the introduction of moments of reflection (especially through 'reflection logs') helped students become more aware of their own study methods. The notes show that, through group discussions, pupils began to experiment with more diverse strategies (e.g. shared concept maps or collective summaries) and to verbalise their doubts in a

more structured way. This led to a gradual increase in their sense of self-efficacy and satisfaction with their progress.
Another aspect highlighted in more than one logbook concerns mutual support in motivating students at risk of dropping out: feeling less alone and more involved in the activities, they showed less desire to 'disconnect' and more constant attention during lessons.

3.2. Perceptions in the control group

In the control group, interviews show a more individualistic approach to studying. A 16-year-old student in a fragile economic situation commented:
'I would like to work with my classmates, but we usually just have lessons and take notes. When I don't understand something, I sometimes feel embarrassed to ask the teacher in front of everyone.
Another student described the lessons as 'all the same and a bit boring', highlighting the difficulty of maintaining attention throughout the duration of the lecture. These statements are also confirmed in the teachers' logbooks, which state that several at-risk pupils tended to 'switch off' after the first few minutes, remaining silent and limiting their participation to passive listening.
There was less exchange of ideas and a reduced tendency to ask spontaneous questions. One teacher noted in particular:
'Many students, especially those with more difficulties, struggle to ask for clarification and prefer to remain in the background. They limit themselves to taking notes, often without really understanding.'
The lack of structured moments of interaction meant that students with greater basic deficiencies found themselves at a disadvantage: unable to rely on immediate comparison with their peers, they continued to fall behind, widening the gap with the rest of the class. According to the teachers, this could increase the risk of disaffection and, in the long term, of dropping out of school.
Overall, the qualitative data indicate that the introduction of cooperative learning has fostered a greater sense of self-efficacy, increasing the involvement of those who started from a disadvantaged position. In contrast, signs of frustration and passivity were observed in the control group, especially among the most vulnerable pupils, with worrying implications for their continued education.

4. Quantitative results

For the quantitative analysis, the MSLQ subscale scores for self-efficacy, task value, time management and metacognition were considered. The data were analysed using a repeated measures ANOVA (within-subjects factor: time – pre/post; between-subjects factor: group – experimental/control):

- self-efficacy
  pre-test (T0): similar mean scores in both groups ($p > .05$).
  post-test (T1): significant increase in the experimental group ($M = 5.7$; $SD = 0.8$) compared to the control group ($M = 4.9$; $SD = 0.7$), with $F(1, 48) = 5.12$, $p < .05$;
- task value:
  pre-test (T0): average values around 4.5 in both groups.
  post-test (T1): the experimental group achieved $M = 5.8$ ($SD = 0.6$), while the control group achieved $M = 5.1$ ($SD = 0.7$), a significant difference ($p < .05$);
- Time management:
  pre-test (T0): modest scores (around $M = 4.2$) in both groups.

post-test (T1): marked improvement in the experimental group (M = 4.9; SD = 0.8), while the variation in the control group is not significant (M = 4.4; SD = 0.7);

- Metacognition:
  pre-test (T0): homogeneous scores between the two groups (M = 4.6 experimental, M = 4.7 control).
  post-test (T1): the experimental group showed an increase to M = 5.5 (SD = 0.8), compared to a slight increase to M = 5.0 (SD = 0.6) in the control group ($p < .05$).

5. Discussion

The joint analysis of qualitative and quantitative data confirms that cooperative learning has a positive influence on motivation (self-efficacy, task value) and learning strategies (time management, metacognition). These results are in line with the existing literature (Johnson & Johnson, 2019; Slavin, 2014) and reaffirm the effectiveness of collaborative methodologies in promoting active participation, positive interdependence and the empowerment of each student. The results suggest that cooperative learning had a positive impact on students' motivational and learning strategy variables, particularly in a disadvantaged socio-economic context such as Naples. In particular, the cooperative approach contributed to improving:

1. self-efficacy: students in the experimental group reported a significant increase in their perception of competence and ability to cope with school tasks. This finding is consistent with Bandura's (2001) theory of self-efficacy, which highlights how the perception of success in school activities can further motivate students to engage. This improvement in self-efficacy has been confirmed by subsequent studies (Zimmerman, 2000; Slavin, 2014), which show how peer support can positively influence the perception of one's own abilities;
2. Task value: students in the experimental group attributed greater value to school activities, showing increased interest and motivation compared to those in the control group. The opportunity to work in groups and reflect on content together ( ) made learning more meaningful and engaging. Slavin's (2014) research highlighted that cooperative learning can increase the value that children attribute to school assignments, improving their intrinsic motivation.
3. Time management: the ability to manage time and organise one's own study improved in the experimental group, suggesting that peer cooperation helped students develop self-regulation skills, which are essential for long-term academic success (Zimmerman, 2008).
4. Metacognition: the experimental group showed a significant improvement in metacognitive skills, such as the ability to reflect on their own learning processes and identify more effective strategies. Reflection activities and interaction with peers facilitated self-regulation and awareness of their own strengths and weaknesses.

In contrast, students in the control group, who followed traditional teaching methods, showed minimal changes in these areas. This supports the idea that cooperative learning not only facilitates understanding of content, but also promotes motivational and metacognitive growth that does not always occur with traditional classroom teaching. These findings are also supported by research by Johnson and Johnson (2019), which highlights the benefits of cooperative interaction in increasing students' motivation and metacognitive skills.

The results of this study suggest that cooperative learning can be an effective methodology for addressing early school leaving and student disengagement, especially in disadvantaged socio-economic contexts such as those in Naples. Peer collaboration, combined with metacognitive reflection and a greater perception of self-efficacy, appears to be a powerful tool for stimulating student interest and engagement, reducing the risk of school dropout.

The cooperative approach also seems to improve metacognitive skills and time management, preparing students not only to overcome immediate academic difficulties, but also to develop skills that will help them in the long term. Research suggests that, in an educational context where socio-economic inequalities are particularly marked, the integration of active and inclusive teaching methodologies, such as cooperative learning, could represent a concrete response to improving the equity and quality of education (Slavin, 2014; Johnson & Johnson, 2019). The practical implications of these findings go beyond the local context and could be applicable to similar contexts, helping to reduce early school leaving throughout Italy and in other areas of the world where educational disparities are a persistent problem.

Of particular note is the marked benefit found among students from disadvantaged socio-economic backgrounds, who showed an increase in perceived competence and greater engagement. This is consistent with Bandura's (2001) socio-cognitive perspective, according to which observing positive role models and mutual peer support increase one's sense of personal efficacy. Research by Zimmerman & Schunk (2020) supports this view, suggesting that peer interaction contributes to developing motivation and self-efficacy.

The metacognitive dimension is crucial for long-term educational success, as it allows students to regulate and monitor their own learning strategies. In our study, the MSLQ results showed a significant increase in metacognition in the experimental group, suggesting that shared reflection on teaching strategies within cooperative groups provides a privileged context for developing self-regulation skills (Zimmerman & Schunk, 2020).

A further aspect that emerged from the observations is the need for specific skills to effectively design and manage cooperative activities. As Gillies (2007) points out, the teacher must take on the role of facilitator, promoting positive interdependence and monitoring the quality of peer interactions. These skills require training investment, but offer significant benefits in terms of improving the classroom climate and reducing dropout rates.

In recent years, there has been a growing spread of innovative teaching approaches – such as the flipped classroom, problem-based learning and game-based learning – which are often compared with cooperative learning. On the one hand, these approaches share the idea of actively involving the student; on the other, they differ in the criteria for structuring the activity and in the role of the teacher. The particular advantage of cooperative learning seems to lie in its focus on planned peer interaction, recognised as a crucial factor in increasing the sense of belonging and reducing the isolation of the most vulnerable students (Johnson & Johnson, 2019).

6. Conclusions

This study, carried out in a secondary school in Naples with 16-year-old students, highlights how the introduction of cooperative learning can significantly improve students' motivation and learning strategies, also acting as a potential factor in combating early school leaving. These effects are particularly strong in those from disadvantaged socio-economic backgrounds, suggesting that collaboration in the classroom can act as an inclusive lever, increasing self-efficacy and active participation.

The results encourage the adoption of collaborative teaching practices, calling for greater training of teachers in the design of heterogeneous groups, the definition of roles and the planning of moments of metacognitive reflection (Gillies, 2007). The creation of environments in which students feel supported and empowered can be an antidote to the dynamics of marginalisation and dropout, especially in areas of high economic hardship.

Among the limitations of the research are the relatively short duration of the intervention (eight weeks) and the adoption of a single school context, aspects that suggest the need for further longitudinal studies in different institutions to confirm the stability and transferability of the results. Furthermore, the inclusion of a greater number of variables – such as socio-emotional

skills and the perception of belonging to the school – could offer a more complete picture of the effects of cooperative learning, especially in relation to the prevention of school dropout.
Despite these limitations, the data collected provides encouraging insights for teachers and school leaders interested in implementing innovative and inclusive teaching methods. Encouraging cooperative participation within classrooms not only improves academic performance, but also helps to build a more positive learning environment, capable of supporting students' long-term well-being and growth, while limiting the risk of early school leaving.

References

Bandura, A. (2001a). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1–26 http://doi.org/10.1146/annurev.psych.52.1.1

Bandura, A. (2001b). Social cognitive theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 154–196). Guilford Press

Bennett, R. E., Dunne, M., & O'Connor, J. (2012). The impact of socio-economic background on educational achievement and educational expectations: Evidence from an international study. *British Journal of Educational Psychology, 82*(3), 365–376 http://doi.org/10.1111/j.2044-8279.2012.02089.x

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (2nd ed.). SAGE

Gillies, R. M. (2007a). *Cooperative learning: Integrating theory and practice*. SAGE http://doi.org/10.4135/9781483329533

Gillies, R. M. (2007b). Cooperative learning: A smart pedagogy for successful learning. *Australian Journal of Educational and Developmental Psychology, 7*, 27–40

Johnson, D. W., & Johnson, R. T. (2019a). Cooperative learning: The foundation for active learning. *Active Learning in Higher Education, 20*, 151–165 (SAGE Publications)

Johnson, D. W., & Johnson, R. T. (2019b). The impact of cooperative, competitive, and individualistic learning environments on achievement. *Journal of Educational Psychology, 111*(6), 987–1002 http://doi.org/10.1037/edu0000372

Johnson, D. W., Johnson, R. T., & Holubec, E. (2013). *Cooperation in the classroom* (9th ed.). Interaction Book Company

McMillan, J. H., & Schumacher, S. (2014). *Research in education: Evidence-based inquiry* (7th ed.). Pearson

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. The University of Michigan

Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Cooperative learning and achievement: The influence of goal structure on students' achievement in science. *Journal of Educational Psychology, 100*(1), 8–18 http://doi.org/10.1037/0022-0663.100.1.8

Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know. *Contemporary Educational Psychology, 21*(3), 143–150 http://doi.org/10.1006/ceps.1996.0010

Slavin, R. E. (2014a). Cooperative learning and academic achievement: Why does groupwork work? *Anales de Psicología, 30*(3), 785–791 http://doi.org/10.6018/analesps.30.3.201201

Slavin, R. E. (2014b). Cooperative learning and academic achievement: Why does groupwork work? *International Journal of Educational Research, 63*, 120–127 http://doi.org/10.1016/j.ijer.2013.07.002

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal, 45*(1), 166–183 http://doi.org/10.3102/0002831207312909

Zimmerman, B. J., & Schunk, D. H. (2020a). *Handbook of self-regulation of learning and performance* (2nd ed.). Routledge http://doi.org/10.4324/9780429292565

Zimmerman, B. J., & Schunk, D. H. (2020b). *Self-regulated learning and academic achievement: Theoretical perspectives* (3rd ed.). Routledge