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Teachers as group facilitators: Challenges of group work in the classroom

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Abstract

The efficacy of student working groups in face-to-face and virtual (synchronous distance learning) classrooms, with regard to cognitive development and subject learning, has been widely researched in recent decades in order to determine the conditions under which this method is effective. However, teacher attitudes and practices regarding this teaching–learning tool have been less extensively investigated. This paper focuses on the effectiveness and the applicability of a specific student group work model. This study addresses: (a) the types of difficulties encountered by prospective secondary education teachers who have been trained to use a student group work model when implementing it in practice, and (b) how they assess the applicability of this model. To answer these questions, a questionnaire was administered to prospective teachers after the completion of their group work teaching in real classrooms. The main findings are: (a) prospective teachers most frequently report difficulties in selecting appropriate open-ended tasks for group work and in handling student questions during the group work phase; and (b) the majority consider that the model can be used regularly in everyday school practice, despite some manageable difficulties.

Keywords: Group effectiveness; teacher difficulties; teamwork; teacher intervention; teacher preparation.

1. Introduction

The role of social interaction in individuals' cognitive development is strongly emphasized in psychology and pedagogy (Engeström, 2001; Mercer & Howe, 2019; Mugny 1985; Ravanis et al, 2008; Vygotsky, 1962). This indicates that group work is an important method of learning. Recent meta-analytic evidence confirms positive effects of cooperative learning on achievement and attitudes across educational levels (Kyndt et al., 2019). Working in groups is not an educational invention. One may contemplate on scientific research itself, where collaborative work plays a crucial role (Furio Mas et al., 1994; Li & Li, 2025). Besides, group work has already been implemented and studied in the production areas since the industrial revolution. Nowadays it constitutes a common working practice. Industrial production needs also led to the sociological study of group work.

Nowadays, people are often required to collaborate in everyday life outside schools. This according to Van der Linden et al. (2000:38) "can be seen as an important motive for introducing cooperative learning situations in education and training". But this reason is not enough according to these writers: "collaborative learning fits in perfectly with the changing views on learning and the nature of knowledge" they claim (idem, 38). We could reflect for instance upon theories concerning social construction of knowledge and metacognition. Group work in schools was frequently praised by pedagogical scholars throughout the 20th century; however, their enthusiasm often had ideological underpinnings as analysed by Meirieu (1989). Based on his research on group work, this author argues that there are two types of deviation in group collaboration; the 'productive' and the 'sentimental' deviation. The first describes group work which resembles group function in areas of production: each group member undertakes the part of the task which he is already better able to accomplish. The second refers to group work without focusing on the task in which games of charm and psychological influence appear. Neither approach is desirable in the classroom; hence, the term "deviation". According to Meirieu (idem) the first is linked to an overwhelming emphasis on evaluation of group's end result. The second is linked to no evaluation and to no rules having been set by the teacher.

Chiriac and Granström (2012) register student experiences when engaged in collaborative work when working as a group. They try to find how students describe constructive and destructive group work. Group work, according to student descriptions is characterised by "collaboration in a common and planned task in an allocated period of time" (p.349). Besides, students refer to six aspects helping or inhibiting high quality group work. These are: organisation, mode of working, task, report, assessment and the role of the teacher. In their concluding remarks Chiriac and Granström claim that from all the aspects promoting good group work in the classroom, the role of the teacher seems to be the most important. The other five aspects as they put it "concern the flames and the prerequisites created by the teacher" (idem, 360). The same authors have identified two crucial 'teacher duties' during teaching in group working situations in the classroom: the teacher as 'arranger' and the teacher as 'supporter'. The first concerns how to deal with the whole management of a group work teaching session. The latter refers to the handling of group member questions. To achieve a qualitative group work the teacher has to create an atmosphere where instrumental help seeking (Woznitsa et al., 2014) is encouraged. Such help seeking does not require direct answers but rather hints and "can be considered an adaptive strategy of self-regulated learning" (idem, p. 75). Students who feel that the focus is on learning and understanding are more likely to seek instrumental help (Karabenick, 2004, cited by Wosnitza et al., 2014 :75 ; Ryan et al., 1998). The teacher in turn has to provide such types of interventions which generate new questions, motivation and encouragement to the team members. Students' representations of the problem in group problem solving situations were studied by Gomatos (1996). It was shown that student representations become richer by the fact that multiple elements of representation are proposed during the discussion. Students, nevertheless, as pointed out by this writer, rarely arrive to the necessary combinations of elements in order to set up a solution to the problems. However fertile (in the sense facilitator of thinking on various elements) the group problem solving is, it does not seem to help the synthesis of the various expressed elements. It seems that interactions between students serve chiefly to move the attention from one element of representation to the other and rarely to fix the attention at one aspect in order to structure (Dumas-Carré & Gomatos, 2001). Hence the role of the teacher is crucial in providing the tools to facilitate synthesis. Other writers (González & DeJarnette, 2015; Van de Pol et al. 2014) examine teacher scaffolding (adapting support contingently to student needs by first diagnosing their current understanding) during group work, while Ruys et al. (2012) also focus on the role of the teacher during teaching sessions

comprising work in small groups. If the teacher's role is indeed so important, it follows that coordinating group work should be explicitly addressed in teacher training programs. Adl-Amini et al. (2024) highlight the theory–practice gap and the need for teacher training to address beliefs, not just methods. Ries et al. (2024) found that past implementation frequency (i.e., routine) was a stronger predictor of use during the COVID-19 crisis than beliefs or prior professional development.

The point of this paper is to describe an intervention during teacher preparation that comprises teaching practice using a specific student group work model by the trainee teachers and, to report experiences and opinions of the latter. Implementation research provides a useful framework for understanding how pedagogical innovations are translated from theoretical models or training contexts into everyday classroom practice. From this perspective, the present study investigates the enactment of a structured group work model by prospective teachers during their teaching practicum. By examining the difficulties encountered during implementation and teachers' perceptions of the model's applicability, the study contributes to understanding the practical conditions that facilitate or hinder the use of collaborative learning approaches in secondary education classrooms.

The research questions of this work are the following:

- What kind of difficulties do teachers who have been prepared to use a student group work model encounter when putting this model into practice?
- How do they assess the applicability of this model after having used it?

2. Method

The annual teacher preparation program (EPPAIK) of ASPETE (School of Pedagogical and Technological Education) is part of the institution's decentralized activities and is offered in 13 cities across Greece. Among other modules, it includes practical teaching exercises conducted by prospective teachers, which constitute a central component of the program. The Teaching Exercise module comprises several teaching sessions delivered by each prospective teacher. Four of these sessions take place at ASPETE in a simulated classroom setting (micro-teaching), where peers assume the role of school students, and one final session is conducted in real secondary school classrooms, very often in vocational education settings. Moreover, the module includes a small-scale apprenticeship, during which prospective teachers assist with and observe a number of teaching hours conducted by in-service teachers. The subjects taught by the prospective teachers concern primarily vocational education and vary from technology and engineering to economics, health or environment.

In the "Teaching Methodology" course of EPPAIK in Patras, student group work has long been considered a central topic. Usually, more than two two-hour sessions are devoted to the presentation and discussion of this topic. Additionally, in this course, group learning situations are frequently employed in classes as a teaching-learning tool. This is considered essential, as Ruys et al. (2012, p. 538) note that "collaborative learning is implemented only occasionally in teacher education and student teachers are not intensively trained in the pedagogical use of collaborative learning for their future classroom practice". The aim of the intervention was to invite EPPAIK students to undertake a school-based teaching session using a student teamwork model. The intervention was implemented over three consecutive academic years, immediately prior to the COVID-19 pandemic.

The basic features of this intervention were the following:

- Use of a student group work model, for at least four 2-hour sessions in ASPETE classes in the course of 'Teaching Methodology'
- Two 2-hour sessions devoted to theoretical presentation and discussion regarding student group work and to teaching of a specific group work model in the 'Teaching Methodology' course.

The model was inspired by previous research in which it was developed and implemented within a specific science education framework (Dumas Carré & Goffard, 1993; Gil Perez & Martinez Torregrossa, 1983, Gomatos, 1996; Ntzanis & Gomatos, 2013). The model was further elaborated to ensure flexibility across different subject areas and to incorporate key research findings on factors influencing the quality of student group work (Chiriac & Granström, 2012, Kyndt et al., 2019; Van der Linden & al., 2000). The written guide for the model (cf. Appendix I) which was distributed to the students, comprised concise practical guidance for the preparation and chiefly for the implementation of a teaching-learning session involving student teamwork. The practical guidelines and their theoretical foundations were discussed in the course so that prospective teachers would enter their school placements with a clearly articulated model that had been thoroughly examined during the EPPAIK program. The model was presented not as a rigid set of instructions but as a flexible framework from which teachers could deviate when justified, provided they explained their pedagogical reasoning. The idea was not to impose but to give basic ideas on how to do it. Emphasis was given during the preparation of the model summary to both crucial roles of the teacher (Chiriac & Granström, 2012) presented above i.e. both that of the 'arranger' and that of the 'supporter'.

To address the research questions, a questionnaire was developed and administered to prospective teachers after they had completed their group work teaching in real classrooms. The questionnaire was designed to register student teachers' experiences with the model, their attitudes toward it, and the difficulties they encountered. The questionnaire was used within a wider framework of evaluating the Practical exercises module. It incorporated among others the questions specifically designed to answer the research questions:

Question 1

What was your major difficulty during the planning and the implementation of your student group work teaching?

Question 2

To what extent do you think that such a teaching model is applicable in the classroom?

a) Easily applicable. It can be used often without difficulties

b) Applicable with some difficulties that can be overcome.

c) It cannot be used often. If certain difficulties are overcome it can then be used.

d) Not applicable. Not feasible in real classes.

Open-ended Question 1 was designed to address the first research question, while the multiple-choice Question 2 addressed the second.

3. Results

The questionnaire was distributed to students in ASPETE classes toward the end of each academic year over the three-year period. Some of the students present had not yet completed their final school-based teaching session, in which teamwork was to be implemented. In

addition, a small number of students who had completed their final teaching session had not implemented the teamwork model for various reasons. Table 1 summarizes the quantitative characteristics of the sample:

Table 1: Quantitative characteristics of the sample

	year A	**year B**	**year C**	**TOTAL**
No of completed questionnaires (present students)	56	67	70	193
Completed 'teamwork learning' section	49	58	62	169

Overall, the number of students who completed the group work section and reported on their experience (49 in Year A, 58 in Year B, and 62 in Year C) represents a high proportion of those who responded to the questionnaire.

The open-ended responses to Question 1 were analyzed using qualitative content analysis. First, all responses were read multiple times to gain familiarity with the data. Initial codes were generated to capture recurring themes related to planning and implementation difficulties. These codes were then grouped into broader categories reflecting similar types of challenges such as task selection, coordination during teamwork, transition to the plenary session, and students' unfamiliarity with the method. Coding was conducted independently by two researchers, and discrepancies were resolved through discussion until consensus was reached. This procedure ensured that the categorization of difficulties was systematic, reliable, and representative of the perspectives expressed by the prospective teachers. The resulting categories and the frequency of difficulties reported by the prospective teachers are summarized in Table 2. The total number of reported difficulties exceeds the number of completed group work questionnaires (n = 169), as some respondents reported two or more difficulties.

Table 2: Categorization of difficulties during planning and implementation of group work, based on systematic coding of prospective teachers' open-ended responses (Question 1).

	Difficulty reported	frequency
	Difficulty to find the appropriate task a) The appropriate task for the group work b) The appropriate teaching unit to be treated by such a model of teaching-learning.	60 a) 51 b) 9
	Difficulty in coordinating and supporting during teamwork	32
	Difficulty in coordinating during the transition to plenary session	18
	Students of the class were unfamiliar with this teaching tool	17
	No difficulties	17
	No prior acquaintance of the students	14
	Too much noise	14
	Lack of time	11
	Various other difficulties	20

Each of these difficulties is examined more closely in the following.

The most frequently reported difficulty was selecting an appropriate task for group work. Within a learning framework, the task constitutes the rationale for group formation: it provides a shared objective that brings students together. The task must be sufficiently challenging and aligned with students' subject-related abilities. Here are some characteristic answers (protocol number in parenthesis): "To choose the appropriate task that could motivate students" (C29), "to imagine activities that could be realized in group" (C36), "to find a task that could be both appropriate regarding the object of teaching and motivate the students" (C39). Within this broad category, some prospective teachers focused on the

suitability of the teaching content for group-based learning: "the subject of teaching. I think that not every learning unit is suitable for teamwork teaching" (C13), "to find the proper unit and propose the appropriate task" (B7). However, most responses in this category referred specifically to the nature of the task assigned to the groups: "to find the combination of questions and activities for the groups" (A50). Many of them write directly about the open-ended characteristics of the proposed task: "to create open ended questions" (A19), "to find a task which can be approached and treated by different ideas, aspects and answers" (A23).

The second most frequently reported difficulty concerned coordinating group work and ensuring active student participation: "that some groups had to be repeatedly called to order" (C5), "to coordinate the teams and to activate all the students" (A29), "difficulty during teamwork. Some groups did not manage to work properly" (C3), "no engagement by some groups which led to repeated teacher intervention that spoiled class atmosphere" (A57). Monitoring all groups simultaneously during the teamwork phase proved challenging for some trainee teachers: "to follow all the groups at the same time and to provide appropriate help" (C63), "Concentrating to multiple group works at the same time" (C48). In general, the concern of teachers includes both motivation and help providing. Systematic reviews highlight that contingent teacher guidance during collaborative learning requires ongoing diagnosis of student understanding and flexible intervention strategies (van Leeuwen & Janssen, 2019).

The third category in Table 2 concerns difficulties during the transition from group work to the plenary session, a difficulty to coordinate the phase of plenary session just after group work especially to assure that teams listen to other teams' product presentations and not continue with their own discussions: " to coordinate the teams during the expression of their suggestions and conclusions after teamwork" (A44), "some team members would not allow their representative to speak on behalf of the team" (A41), "speaking time was exceeded during the final presentation due to mismanagement" (C55), "there was some intra-group talking while another group was presenting their results" (B39). This finding aligns with Chiriac et al. (2012) who reported that student perceptions of low-quality group work were often linked to negative experiences during reporting procedures.

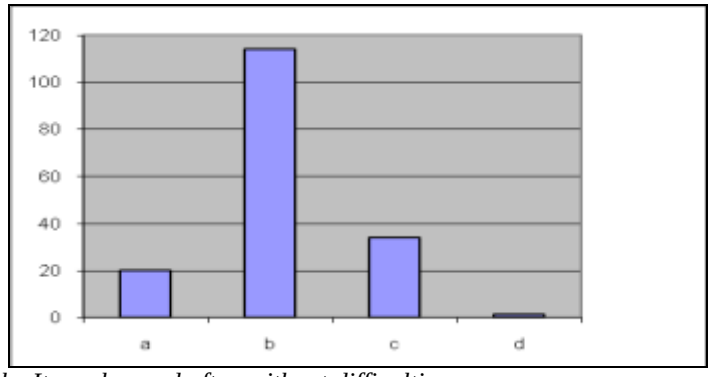
A considerable number of teachers noted that students were unfamiliar with this instructional approach: "I had to explain why we work this way. They had not done it before" (A34), "it was their first experience with the method and they were reluctant in the beginning but finally they found it interesting" (A 52), "Students were not familiar with working in groups. They felt strange" (B46), "to persuade students that this can be a real part of learning" (C48). In order to have successful student teamwork sessions, students need to be trained, as Gillies (2008) claims, to listen, explain, argue and share ideas.

Additional reported difficulties included lack of prior familiarity with the students "As we didn't know the students and their prior knowledge before we had to work on hypotheses which might prove wrong" (C8) and excessive noise "to deal with the high level of noise during the group work phase" (A29). The difficulty in handling the time (see also C55 above): Difficulties such as «the estimation of the duration of the whole process" (B4), "a lot of time was lost until they formed their groups in the beginning" (C11), "time management; long teamwork phase" (C55), were reported by 11 prospective teachers.

Finally, some other difficulties were reported as well, less frequent than the major ones mentioned above. Among them "Students not wishing to join a group" (5 times), "too much time given to what students think" (3), "No suitable classroom for this type of work" (2). This last difficulty was also the reason for not putting the model in practice by a very small number of prospective teachers.

Concerning the second research question, the results indicate that most prospective teachers believe the model can be used regularly in everyday school practice, despite some difficulties that can be readily addressed. In Figure 1 the distribution of the answers to Q.2 is shown.

Figure 1: Prospective teachers' opinions concerning the applicability of the model



a) Easily applicable. It can be used often without difficulties

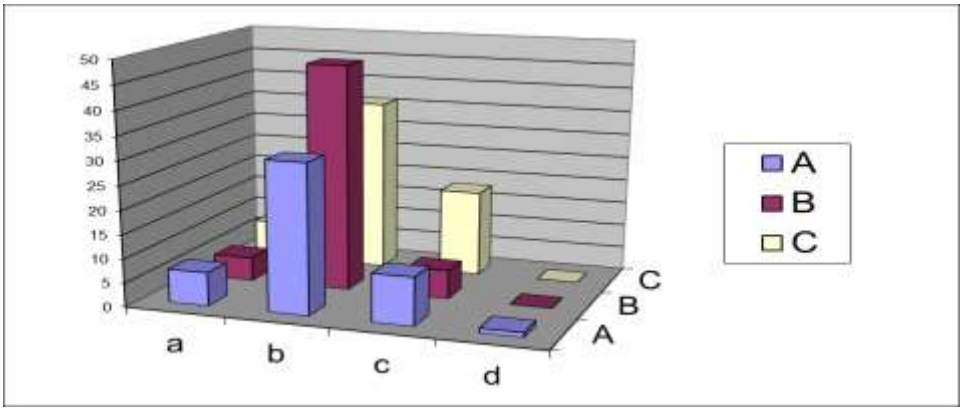
b) Applicable with some difficulties that can be overcome.

c) It cannot be used often. If certain difficulties are overcome it can then be used.

d) Not applicable. Not feasible in real classes.

Notably, the distribution of responses remained almost identical across the three years of the intervention.

Figure 2: Distribution of answers to Question 2 for years A, B and C



This finding is encouraging when compared to the rather cautious, reluctant attitude of in-service teachers towards the systematic use of student group work in secondary education. Baines et al. (2008) for instance point to the teachers' unwillingness to move the furniture in the classroom in order to provide seating appropriate for group work. It is worth mentioning that one of the student teachers reports that he didn't use group work at all in his teaching because in a preceding discussion with the headmaster he was advised "don't you dare try it in this particular class" (B47).

4. Conclusion

The positive attitude of prospective teachers toward the use of the model is encouraging, particularly when contrasted with the difficulties and hesitations often reported by in-service teachers regarding classroom teamwork. Beyond the characteristics of the model itself, the fact that prospective teachers implemented it in authentic school settings may have contributed substantially to these positive attitudes. Teaching is a profession with strong

practical dimensions, and it can be hypothesized that individuals who implement an approach in a prepared and reflective manner are more likely to use it again, even if the initial attempt reveals certain difficulties. Cooperative learning is a complex teaching method that presents multiple challenges for teachers (Buchs et al., 2017). Besides, empirical studies support a positive relationship between aspects of teacher expertise and the quality and frequency of cooperative learning implementation (Abramczyk & Jurkowski, 2020). Teachers' innovative instructional behaviour has been shown to depend on prior implementation experience, self-efficacy, and perceived support structures (Thurlings et al., 2019).

The primary difficulties concerned the selection of appropriate tasks, as well as providing student support and fostering motivation for teamwork. Two considerations emerge from these findings. First, the findings raise the question of when group-based learning constitutes an appropriate pedagogical choice. Although this depends on multiple factors, and setting aside for the moment the social and emotional benefits of collaboration, it must be acknowledged that not every teaching unit is equally suited to a group-based approach. The nature of the subject, its cognitive characteristics, the learning objectives and the possibility of proposing an interesting task which will support properly the learning objectives have to be thoroughly considered before a teacher makes the choice of using group learning situations in class. An appropriate task provides scaffolding for achieving educational objectives, particularly when undertaken collaboratively. As realized by Chiriac and Granström (2012:354) in their research regarding student conceptions and experiences about working in groups in the classroom "an interesting task seems to promote high-quality group work and have positive influence on the students' willingness to work". This recognition by trainee teachers of the centrality of the task echoes, in a sense, Kuhn's (1962) epistemological emphasis on the role of problems in knowledge development. In this research the margin of choices regarding the teaching unit was rather restricted for the prospective teachers because they had to choose from a narrow palette of teaching units: they had to keep pace with the advance of the class at the final point of the teaching exercise.

The second consideration concerns the coordination and support of the group learning phase. Some of the reported difficulties relate to the "organizer' duty of the teacher while some others to that of the 'supporter'. This difficulty may be partly related to the selection of an appropriate task, as discussed above. An appropriate task is likely to entail a high degree of participation during teamwork phase. As a teacher states: "How to form the task so that all members express their opinions" (B23). If productive discussion occurs during the group work phase, the entire teaching session-including the plenary discussion-is more likely to remain focused and pedagogically coherent. However, the causes of limited participation may extend beyond the quality of the task itself. The fact that often, as reported by the prospective teachers, the students have not been trained for this type of classroom work or some sort of social conflict in a group constitute some of the reasons that might prove a hindrance to an effective group collaboration.

Prospective teachers have reported to a certain extent that students were unfamiliar with teamwork in the class. This finding is concerning, as it may reflect a broader reality within Greek secondary education in which classroom group work remains marginal.

The fact that some reported difficulties (e.g., Categories 4 and 6) relate specifically to the teacher training context rather than to regular classroom conditions supports cautious optimism regarding the broader applicability of the model.

The diversity of perspectives expressed by teachers highlights the need for systematic analysis and sustained practice in group learning approaches if they are to become effective and practical teaching tools. This need comprises both research on the subject and personal

training of prospective teachers in order to build a personal knowledge base on the pros and cons, the when and how of using group work learning situations.

The teaching profession has many characteristics of a collective work analyzed by Grangeat and Gray (2008). Training in collaborative work is part of training for the teaching profession. Moreover, teachers put in place and manage group working situations of their students. This is an important skill that can be partly acquired during teacher preparation when combined with coordinating such student activities in praxis. The discussion of practical difficulties presented in this study helps identify key areas for the training of prospective teachers. These areas include task selection and design, effective enactment of both the "arranger" and "supporter" roles, and careful management of the transition to the plenary session. Based on the difficulties reported by prospective teachers, a practical toolkit can support effective implementation of group work in classrooms. This toolkit includes task-design heuristics to guide the selection of appropriately challenging and open-ended tasks, scaffolding scripts to support students during teamwork while encouraging self-regulated learning, and transition protocols to manage the shift from group work to plenary discussion efficiently. Additionally, it suggests procedures for students unfamiliar with collaborative learning which can help establish clear norms and expectations. Together, these elements translate the study's findings into actionable guidance for teachers, bridging the gap between theoretical models and classroom practice. A detailed version of the toolkit is provided in Appendix II.

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Appendix I

TOWARDS A MODEL OF TEACHING USING STUDENT GROUP WORK

The students…

are invited to form groups of three or four members. They arrange their workspace so that they sit comfortably, facing one another.

The problem...

presented to the students-preferably in written form-has open-ended characteristics, allowing for multiple, equally valid propositions and ideas. This enhances the possibility of personal expression by each student and facilitates collaboration within the group towards a shared solution.

Each group is required…

to deal with the problem for about 15-20 minutes and subsequently present and justify its final production during the plenary session that follows.

The teacher…

During the teamwork follows with discretion the work of each team registering the eventual difficulties or dysfunctions in each group. Intervention occurs only when requested or when deemed necessary. When responding to students' questions, the teacher does not provide direct answers; instead, guiding questions are posed to support the group's problem-solving process. Active participation by all group members is encouraged.

During the plenary session the team conclusions are listened to ensuring that all students listen attentively. The discussion is then coordinated by addressing points of divergence among the groups' results. Towards the end of the plenary session the contributions are synthesized and unresolved questions are addressed. The newly acquired knowledge—and the process through which it was constructed is explicitly highlighted.

The central phases…

of the lesson are two: teamwork and investigation in plenary session. These phases can alternate i.e. if the subject offers possibilities of successive inquiries, the class may move into a new phase of group work followed by another plenary discussion. Such alternation is more easily implemented in extended teaching periods than in traditional 45-minute secondary school lessons.

These central phases are distinct. During teamwork the teacher assigns the students the responsibility-and the privilege-of constructing knowledge. The teacher acts as a mediator between student contributions and scientific knowledge. During this phase the students are never addressed even when questions are called out from across the classroom. The role of group facilitator is strictly adhered to.

During the plenary session the teacher resumes a central role. The students turn their chairs to suit the new plenary arrangement without leaving their groups. The work and contributions of each group serve as reference points during the plenary session.

Appendix II

PRACTICAL TOOLKIT FOR IMPLEMENTING STUDENT GROUP WORK

Reported difficulty	**Suggestions**
Selecting appropriate tasks	Task-design heuristics: open-ended, challenging, motivating, aligned with learning objectives, flexible for multiple solutions. Include example prompts.
Coordinating/supporting group work	Scaffolding scripts: teacher "arranger" and "supporter" cues; hints rather than answers; questions to stimulate discussion.
Transition to plenary session	Transition protocols: structured steps for group presentations; time monitoring; guidelines to ensure all voices are heard.
Students unfamiliar with teamwork	Onboarding checklist: short intro to group norms, roles, and collaboration expectations; preparation exercises.