



WHYS AND WAYS GROUP ACTIVITIES CAN BE USED IN ENVIRONMENTAL EDUCATION

RAZONES Y FORMAS DE UTILIZAR ACTIVIDADES GRUPALES EN LA EDUCACIÓN AMBIENTAL

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ABSTRACT

Earlier this century, a group of Southeast Asian educators produced an “English via Environmental Education” textbook for undergraduates at universities in Indonesia, an emerging economy. Now, taking into account the important role of digital learning and the ever-worsening climate crisis, the book has been revised and is being made available for free online to increase its use throughout Indonesia and internationally. The present article uses the book’s activities as a model for why and how to integrate student-student interaction in environmental education (EE). Despite challenges, including unequal learning opportunities, peer dependency, time constraints, difficulties in individual assessment, and competitive academic cultures; the textbook illustrates that cooperation, whether on a small or large scale, makes a meaningful difference. The article advocates for the implementation of cooperative learning activities in EE to empower students as agents of change in building a more sustainable world and future for all.

Keywords: cooperative learning, environmental education, language learning, learning materials

RESUMEN

A comienzos de este siglo, un grupo de educadores del Sudeste Asiático elaboró un libro de texto titulado “English via Environmental Education” para estudiantes universitarios en Indonesia, una economía emergente. Actualmente, teniendo en cuenta el importante papel del aprendizaje digital y la creciente crisis climática, el libro ha sido revisado y se ofrece gratuitamente en línea para fomentar su uso tanto en Indonesia como a nivel internacional. El presente artículo utiliza las actividades del libro como modelo para explicar por qué y cómo integrar la interacción entre estudiantes en la educación ambiental (EE). A pesar de los desafíos, incluidos las oportunidades de aprendizaje desiguales, la dependencia de los compañeros, las limitaciones de tiempo, las dificultades en la evaluación individual y las culturas académicas competitivas, el libro de texto demuestra que la cooperación, ya sea a pequeña o gran escala, marca una diferencia significativa. El artículo aboga por la implementación de actividades de aprendizaje cooperativo en la EE para empoderar a los estudiantes como agentes de cambio en la construcción de un mundo más sostenible y un futuro para todos.

Keywords: aprendizaje cooperativo, educación ambiental, aprendizaje de idiomas, materiales didácticos



INTRODUCCIÓN

Nothing in nature lives for itself
Rivers don't drink their own water.
Trees don't eat their own fruit.
The Sun doesn't shine for itself.
Flowers' fragrances are not for themselves
Living for each other is the rule of nature.
-Anonymous

This article has two main purposes. First, the article highlights that cooperation among students and between students, teachers and others, makes mountains and oceans of sense in environmental education (EE). Second, the authors hope to convince readers that although cooperation among students and, indeed, between any people generally, can be difficult, a wide variety of simple, brief ways exist to add cooperation to EE activities. These ways are illustrated with examples from a new book, *EEE2*, "English via Environmental Education", 2nd edition, (Lie et al., in press). This is a free online book using environmental examples mostly from Indonesia and intended for senior high school and university students anywhere in the world.

Why Cooperation in EE Activities

The first section of the article highlights the value of cooperation in many spheres, with the ultimate goal of explaining why cooperation should be included as a major, but not the only, way students learn in EE. Cooperation makes sense in EE activities for at least five reasons. First, cooperation reigns in nature. Second, cooperation is essential in so much of human-human interactions. Third, EE is about humans understanding that the wise and kind paths lie in cooperation between humans and the rest of nature. Fourth, the research strongly suggests that student-student cooperation is associated with gains on cognitive and affective variables. Fifth, but not least, cooperating is more fun.

Cooperation in Nature

While the poet Tennyson highlighted competition in nature, describing the situation as "nature red in tooth and claw," a great many examples exist of inter- and intra-species cooperation, not to mention cooperation among members of nature's five kingdoms (Haskell, 2012; Maximino & Soares, 2021). Famous examples include the egrets who remove insects from water buffaloes and warn the buffaloes of danger, and fungi helping trees communicate (Pappas, 2023). However, this cooperation is alloyed with competition, including parasitism and predation. As Haskell (2012, p. 13) put it, "All life melds plunder and solidarity. Parasitic brigands are nourished by cooperative mitochondria within"

Cooperation among humans

Cooperation, not competition or going it alone, is by far the main way that humans live today. We can see this cooperation in how our food is produced and how that food reaches us in a division of labor that spans the globe. This cooperation has led to many benefits. Nowadays, we more than ever also have a division of



knowledge, as people around the world contribute their expertise to design smartphones, develop vaccines, and create more advanced microchips. Such cooperation among humans is neither easy nor ubiquitous, but without it, our world would be far more difficult and drearier.

Cooperation between humans and the rest of nature

The role of humans in relation to our environment has changed greatly. Humans initially were very minor actors in terms of both numbers and impact on others. For example, Kimmerer (2013) recounted that in the creation story of some North American indigenous peoples, humans are referred to as the younger siblings of creation. Now, human population stands in excess of eight billion, and humans have come to strongly impact other species and the physical environment (Harari, 2015). Indeed, some scientists have argued that, due to this impact, the current geological era should be called the Anthropocene, with anthro meaning human and cene referring to a geologic era (Steffen et al., 2011). While much of human impact has been negative, many examples exist of efforts by people to live in harmony with nature, e.g., nature reserves, sanctuaries for endangered species and animals whom humans would otherwise eat, efforts to clean up pollution, and technological innovations, such as alternative energy and alternative protein.

Cooperation among students

A great deal of theory and research support the regular use of thoughtfully planned group activities among students (Johnson & Johnson, 2009; Maslow & Lewis, 1987; McCafferty et al., 2006; Vygotsky, 1978). Learners of English as a second language are the audience for the book that is the focus of the current paper, and research and three hypotheses regarding second language acquisition also support the regular use of group activities. The Input Hypothesis states that if learners understand large quantities of speech and/or writing in the target language (the language they are studying), they will gain fluency in that language (Krashen, 1989), and in groups, students have more chance to obtain and understand input, compared to when alone they are reading or listening to teachers. A second hypothesis, the Interaction Hypothesis states that to make a larger percentage of the input students receive comprehensible, students need opportunities to interact with others, such as asking what a particular word means or how to spell a difficult vocabulary item (Long, 1981). While it is difficult for one teacher to engage in such interaction with a room full of students, groupmates can readily interact with each other. The third hypothesis is the Output Hypothesis which maintains that in addition to input and interaction, learners also need to produce output, i.e., speech or writing, in the target language, and that they learn more about the target language by observing whether others can comprehend their output. In a teacher-led class of, for example, 30 students, each student has few opportunities to produce output, but when students learn in groups of two, three, or four members, they have dramatically more output opportunities.

Cooperation is enjoyable

Humans are social animals (Aronson & Aronson, 2018). We need to belong and to feel the esteem of others (Ooi & Cortina, 2023). However, typical classroom rules – “Eyes on your own paper. No talking to your neighbors” – deprive students of the many benefits of social engagement. These benefits include greater motivation, higher achievement, wider perspectives, and development of social skills (Mendo-Lázaro et al., 2018). Fortunately, in the authors’ experience, group activities are common in textbooks for language



learners and teachers' guides for language educators, and such activities can brighten students' learning experience.

A Cornucopia of Unique Group Activities from the EEE2 Book

The second and most in-depth portion of the article looks at some of the nuts and bolts of how group activities can be incorporated in EE lessons. Examples are given from a book known as EEE2. This is the second edition of "English Via Environmental Education" (Lie et al., in press), a book written by a group consisting mostly of English lecturers at Indonesian universities.

Below are 31 different ways that the EEE2 book guides students to cooperate with peers and others. This collection of group activities helps students learn from each other by working together on English learning tasks, tutoring one another, discussing ideas, and doing projects. Through active engagement and knowledge-sharing, students reinforce their understanding, while the teacher guides the process. In this approach, students take on both teaching and learning roles in the classroom. Moreover, activities beyond the confines of the classroom are also present, further empowering students to participate broadly in environmental action in their role as good citizens engaged in participation toward a better and sustainable future.

Take Turns

One of the most natural forms of cooperation in the classroom starts with working with one, two, or three partners. However, two problems can arise. First, one or more of the partners may attempt to dominate the group, depriving others of chances to learn and to contribute to the learning of the other group members. Second, one or more of the group members may attempt to avoid their fair share of the group's work. Both domination or avoidance not only hinder learning, they also harm the group's morale.

Turn taking may decrease the likelihood of these two problems. In Activity 1, students are working on a set of questions. To encourage everyone to have a chance and to nudge everyone to use that chance, students take turns. Giving reasons for answers provides learning support. In Activity 2, after everyone has had a turn to speak, the group attempts to agree on an answer to present to the class, along with the reasoning behind that answer.

1. "Work with a partner. Take turns to answer the questions. Give reasons for your answers."
2. "Make a group of four and take turns to give answers, and then try to agree on one answer for your group. Be ready to present your group's ideas with supporting reasons to the class."

Play Roles

In any kind of group, members frequently have roles. In education, where students need to develop in an all-around way, we want students to have opportunities to play many roles. From a language learning perspective, different roles use different language functions (Casta & Hufana, 2016).

In Activity 3, students play the roles of question asker and question answerer. Please notice that web resources support students' ability to check each other's answers. In Activity 4, one group member plays the role of facilitator. Roles should rotate, rather than the student best at a particular role always playing that



role. Activity 5 focuses on the role of spokesperson. When students do not know in advance who will do this role, it encourages everyone to be ready and to help all their groupmates to be ready. Activity 6 uses a number of roles.

3. "Work with a friend. One of you looks at the completed list in A and asks the other for the simple past tense form. When you are finished, the other partner will do the asking. If you have more time, find a web resource that has a complete list of irregular verbs. Take it in turns with your partner to test each other."
4. "Discuss the following questions in small groups. One group member will be a facilitator who helps everyone to have turns to speak."
5. "One of you will be called at random to report your group's solutions to the whole class."
6. "After you make a plan for your event, give each group member a job to do in carrying out your plan. Examples of jobs include:
 - a. make a poster to invite others to have a day without cars
 - b. design a flyer or video to post on social media
 - c. speak to another English class
 - d. distribute information about other types of transport besides cars and motorcycles."

Work Alone, then Together

Some students prefer time to prepare before interacting with groupmates. In particular, less proficient students can benefit from time to formulate what to say to other group members.

In Activity 7, students first work alone before sharing with their partner who checks their work.

7. "Make another True/False item related to the reading. Show the True/False item to your partner, see if the two of you have the same answer, and be ready to support your answer with evidence from the reading."

Discuss with Others

Many exciting and challenging questions arise in EE. Students need opportunities to talk over and develop their ideas with others. Partners provide a place for discussion that may be less stressful than a whole-class discussion. Then, after discussing with partners, if students do share with the entire class or with another group, they should be sure to include their partners' ideas, not just their own.

In Activity 8, to help students with ideas and vocabulary for their discussions, students can avail themselves of the internet and other assistance.

8. "With a partner, discuss the following questions. You can use the internet for help."



Work Alone After Cooperating

The goal of peer interaction is to strengthen students' ability to work on their own. Just as teachers can help students learn, so too can peers be of assistance. To paraphrase the famous educator Lev Vygotsky (1978), what we can do today with assistance, we can do tomorrow on our own.

In Activity 9, please notice that although near the end of the activity, students work alone, their partner is still available for support. This idea of ongoing cooperation fits with what was said in the first section of this article about the omnipresence of cooperation.

9. "Find a partner. Review the reading passage and find nouns formed from verbs and nouns formed from adjectives. Then, fill out the table. Please also supply the original verbs or adjectives. The first two examples have been done for you. When you finish, work alone to find examples not in the reading passage. Check with your partner, and then, add them to the table."

Receive and Give Assistance

Teachers need to emphasize that learning is a collaborative effort, where students are not alone, and they are free to receive and give assistance. As the saying goes, "Those who teach learn twice," i.e., they learned first, and then they reinforced and probably deepened their learning when they taught someone else. Of course, this is a two-way street; before students can help peers, peers need to show they are receptive to being helped.

In Activities 10 and 11, students are encouraged to seek and supply help. The idea is that the classroom, and indeed the world, is a place of lifelong learning, and cooperation facilitates that learning.

10. "If you are not sure what an irregular verb is, reread How English Works or ask another student."
11. "All the adjectives and adverbs in the reading passage have been underlined. Put a circle around the adjectives. If you finish before others, ask them if they want help."

Give and Receive Feedback.

Students can learn by providing each other with feedback. Students less proficient in English can learn grammar and vocabulary when they read what their more proficient peers have written. When more proficient students read their peers' writing, they can more clearly see where help is needed, as well as praising what was done well. Similarly, when environmental knowledge is concerned and pro-environment action is being planned, peer feedback can be useful. After all, one teacher cannot provide prompt advice to a classroom full of students, but groupmates are right there, and concerns and plans can, if necessary, later be taken to teachers.

In Activity 12, please note how students' writing is supported by the two drawings. In Activity 13, note that peer feedback is directed to focus on ideas, rather than grammar or punctuation. Then, in Activity 14, feedback is guided by a checklist.

12. "Look at the two drawings. One shows Indonesia in 1900, and the other shows Indonesia in 2025. Write about the differences and similarities you see. Compare what you wrote with what a partner wrote."
13. "Students work alone on a journal entry and then exchange entries. Then, they react to the ideas (not grammar or other surface features) of their partner's entry."



14. "Exchange your journal with a partner and review your partner's writing. Use the following Journal Peer Review Checklist. You may also use the checklist to review your own writing."
- Is everything clear?
 - Is there anything you would like to know more about?
 - What is the purpose of this piece of writing? Will it accomplish its purpose?
 - What is the best sentence or paragraph? Why is it good?
 - Is there anything you can learn from this piece of writing that can help you become a better writer?
 - Each lesson in this book has a language focus. Is the lesson's language focus used in this piece of writing?
 - Any suggestions for changing the vocabulary?
 - Any other ideas for improving this piece of writing?
 - Any suggestions to help the writer gain further understanding of the lesson?

Change Partners

Students' language skills and content knowledge can grow when they have repeat opportunities to discuss the same ideas. The easiest way to do this is for members of a group of two to exchange members with a neighboring pair. Similarly, students can be in groups of four who first work in pairs before reforming as a foursome and taking turns to share.

In Activity 15, students do what could be called Think-Pair-Switch. After thinking alone, they discuss with one partner and then change partners. In Activity 16, the sharing is with the entire class, but again, students need to include their partner's thoughts in what they share.

15. "Think alone first. Then, compare answers with a partner and discuss. Next, switch partners with another pair and share your partner's ideas plus your discussion with your new partner."
16. "Discuss the following questions with your partner. Be ready to share your discussion, not just your own ideas, with the class."

Develop Cooperative Skills

To be effective group members, students need many cooperative skills. These include (1) checking that others understand, (2) asking group members to paraphrase or repeat what they said, to explain a term, to speak more slowly or more loudly, (3) praising or thanking others, (4) disagreeing politely and responding to disagreement, and (5) asking for reasons, examples, spelling, or definitions. Students not only need to learn the English to use these skills, but they need repeated practice so that, one-by-one, these skills become part of how they interact with others.

In Activity 17, students work on listening attentively to groupmates, by paraphrasing what others have said in order to check for understanding. Paraphrasing also helps the person being paraphrased to check if they have spoken clearly.



17. "Remember to listen carefully to each other before you raise any objections to their arguments. One way to practice listening carefully is to paraphrase what the previous speaker said before giving your own ideas. Paraphrase means to repeat the same ideas but to change some of the words or the order of the words."

Cooperate Beyond the Classroom

Learning should not be confined to the classroom. The *EEE2* book includes activities in which students interact with people in addition to their groupmates and classmates.

In Activity 18, students connect with people across generations. In this way, they will often learn how the world was a different place before humans impacted the environment to such a large degree. In Activity 19, students do EE with people outside their school. In Activity 20, the people with whom students work are those in organizations doing EE and taking pro-environment actions.

18. "Talk to your grandparents or someone of their age about their town in the days when they were young. How much pollution was there then?"
19. "Then, work with two or three classmates to develop your own questionnaire. Fill up the questionnaire about your own water use and compare results. Then, use the questionnaire with people outside your class. Based on your findings, teach people how they can save water. You can use brochures, posters, plays, social media posts, videos, or other ways of teaching. Check to see if you have used commas correctly."
20. "Work with environmental groups to deliver the praise and suggestions to local authorities."

Participate in Pro-Environment Actions

A Malay proverb tells us that "A rope of three strands is not easily parted." In other words, there is strength in numbers. When group members work together to plan and carry out actions to protect the environment (with teacher guidance), the group's brains and energy greatly multiply what one student could do alone. Thus, $1 + 1 = 3$, not 2.

In Activity 21, students decide on the own pro-environment action, with their partner(s) to provide encouragement. In Activity 22, group solidarity is manifest in a special group handshake, a way to promote a common group identity, just as sports teams might do so via special colors, mascots, cheers, or logos. In Activity 23, groups need to consider many factors to choose an impactful and doable project. This connects to the 5th EE objective of evaluating proposed solutions. Activities 24 and 25 focus on writing. Even if English is not the right language for an intended audience, students can do an English version to promote their English skills as a companion to the version in the other language.

21. "What is one way that you will help reduce global warming? Explain what you will do to a partner. One week later, report to your partner about what progress you have made."
22. "Next, work together to find possible solutions for the problems. Each time you agree on a solution, give one another your special handshake and then go back to work."
23. "First, read about the efforts some Indonesian people have made to help reduce flooding. Then, choose a project to work on with your group."



24. "Think about something you and other people can do to solve the problems. Write a letter, email, social media post, etc. Each group member should send what the group wrote to a different newspaper, a magazine, social media platform, etc., and tell the group what reaction they receive."
25. "Reaching out can be to educate others, and we can also reach out to others to learn from and with them. Who could you contact to learn more about sustainability in your area? Write a letter, email, text, or message (or call or visit them):
 - A local recycling center
 - A community organization working on environmental issues
 - Your university administration about improving waste management programs"

Do Whole-Class Activities

It is exciting for an entire class to work together. These projects provide students with a sense of agency and collective responsibility. This grows the powerful unity of all the classmates. The class becomes a group of groups. Students who might never talk to each other now have a reason to get to know each other. A student who might have been ignored or even bullied by classmates can now be an important member of their class.

In Activity 26, the class plans how to reach out to others at their school and beyond. Maybe the school's classes can hold a friendly competition to see which class can do the most impactful environment action project. In Activities 27 and 28, students use their acting and singing skills. The creative aspect of the projects makes learning more enjoyable, fostering a sense of pride and accomplishment, as students contribute to a cause they care about.

26. "With your class, choose some ideas that you can implement in your class, at home, or in your school. You can write a speech to be shared at a school-wide assembly to list all the things your class will do and share it with the rest of your schoolmates. These ideas can be ones implemented by individuals, as well as by companies, governments, and other organizations, such as universities."
27. "Organize a small play or performance for your community. You can write the script first in English if you like, but you should perform in the right language for your audience."
28. "Collect songs related to environmental issues. The songs can be in Indonesian or English. Create a bilingual song book with each song in both Indonesian and English. Sell the book to raise funds for environmental causes. Arrange for a concert where songs from your book are sung. Make your songbook more interesting by adding some pictures or photos related to the topics."

Do Self-Reflection

One of the essential aspects of EE is that students reflect on what their unique role is with regard to the future of the planet. Group activities can promote reflection on this, as well as on how students contribute to the effectiveness their EE group. The hope is that students will make reflection a regular part of their lives.

In Activities 29 and 30, students consider their experience as a group member. Many reasons exist why groups may not function optimally. Indeed, it is an important learning experience for each student to understand themselves as group members and what they can do to optimize the contribution of their groupmates. Activity 31 calls on students to consider their own participation in sustainable practices.



29. "Did you find it useful to work in a group? Why/why not?"
30. "When you have finished your group project, write how you participated and what you learned from the experience, including what you learned about how to work with others."
31. "How can people you know be persuaded to use the practice of *sasi* in their lives? Work in a small group to brainstorm ideas. For example, eating local foods would be one type of *sasi*. Or, you could only buy paper goods, such as notebooks, made from recycled paper. When you make your choice, put the *sasi* into practice for two weeks. At the end, tell others about what you did."

DISCUSIÓN Y CONCLUSIONES

Cooperative learning, while beneficial, presents several challenges that educators must address to promote its effectiveness. One common issue is unequal participation, where some students dominate discussions while others are deprived of opportunities to participate, leading to an imbalance in learning opportunities (Keramati & Gillies, 2021; Lim et al., 2023). The flip side of this problem is dependence on peers when some students may not engage actively (Hsiung, 2012). These two problems can be addressed in various ways, as seen in some of the activities in the previous section. Here are some of those ways:

- Taking turns
- Playing roles
- Randomly selecting who speaks to the class
- Providing time for each group member to work alone
- Engaging in peer feedback
- Doing self-reflection

Last but not least, the hope is that EE lessons are not what has derisively been called TENOR (Teaching English for No Obvious Reason) lessons (Abbott, 1989). EE gives students powerful reasons to learn English and help their peers learn: so that they can combine with others

to save our species and the other species with whom we share the planet.

Another significant challenge when using cooperative learning is time constraints, as cooperative learning often requires extended periods for discussion and negotiation, which may not fit into strict curricular schedules (Farzaneh & Nejadansari, 2014). This challenge can be addressed in several ways.

- In the Flipped Classroom, students learn content outside of class, e.g., watching videos of teacher lectures, reading background material, and finding internet resources (Galindo-Dominguez, 2021). Then, in class, students have more time for peer interactions.
- Students can cooperate outside of class, either in person or electronically.
- Indeed, EE is often about what students do outside of class, whether it is monitoring water quality, educating younger students or seniors, interviewing people involved in environmental protection, taking part in community events, or visiting companies to learn about how green the companies really are.

Assessment challenges arise with cooperative learning, as individual contributions within group work can be difficult to measure fairly, sometimes leading to frustration among students who feel their efforts are not adequately recognized (Lim et al., 2023). Several points deserve to be understood here.



- Not everything students do needs to be graded.
- Formative assessment can be used. Peer- and self-assessment can be part of this.
- Sometimes, students can work together but be assessed alone. After all, that is what happens with teachers helping students: they prepare students for assessment, but do not do the assessments with students.
- When students' grades are partially dependent on the quality of their groupmates' work, this motivates students to skilfully and persistently help their groupmates. As pointed out in the first section of this article, in so many aspects of life, humans depend on each other.

Additionally, cultural differences can impact cooperative learning, as competitive academic cultures may hinder the collaborative mindset needed for effective teamwork (Keramati & Gillies, 2021). The competitive culture, not just in academics but also in many other spheres of life, may be the more difficult challenge to successful group activities in EE. Too many people feel that life is a zero sum, win or lose game. Thus, helping others harms the helper. Relatedly, people feel scarcity, not abundance, in terms of knowledge, skills, grades, places at university, and other areas of human endeavor. Thus, for example, raising money to help endangered animals or to promote alternative energy use by small farmers is throwing money away.

However, a great deal of data and human experience shows the foolishness of this scarcity view. As the ancient Chinese philosopher Lao-Tze is believed to have said, "The wise do not lay up treasure. The more they give to others, the more they have for themselves." Similarly, the 17th century English author John Bunyan wrote

in *The Pilgrim's Progress*, "A man there was, though some did count him mad. The more he cast away, the more he had." Research-based support for the wisdom of helping others comes from the studies done by Webb and her colleagues who found that when students helped peers by giving explanations, both the helped and the helpers benefited (Webb et al., 2009). For a simple environmental example, when students do tree planting, those trees benefit the people in their immediate area by adding beauty, cleaning the air, and lowering the temperature. At the same time, by removing CO₂ from the Earth's atmosphere, the trees benefit people everywhere in the world.

This article has had two goals. One, the article sought to encourage fellow educators and environmentalists to look at the world through the lens of abundance and cooperation. Yes, scarcity, competition, and self-absorption also exist, but focusing on the world we hope to see makes it easier to grow that world. Two, the article hoped to show that while obstacles to student-student cooperation undoubtedly exist, students and teachers can easily take minor steps toward reducing the power of these obstacles. These include selecting several available choices to tackle cooperative learning challenges we have discussed earlier. To conclude, perhaps the simplest actions anyone can take toward achieving the kind of EE via cooperation envisioned in the article is to be the change that we hope to see by cooperating with colleagues, family members, and students, and by taking action for the environment, both individual actions, such as eating a sustainable, plant-based diet, and large-scale actions, such as campaigning for governments to promote alternative energy.



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