



Improvised Chest Compression Training in a Multicultural Setting: Engaging International Students at a University Fair in Colombia

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ABSTRACT

This manuscript explores the challenges in teaching chest compressions to international students during a university admissions fair. Traditionally conducted in Spanish, the fair saw a notable increase in non-Spanish speaking participants, prompting the Emergency Medicine Interest Group (EMIG) to adapt its teaching methods. By employing non-verbal communication techniques, AI, and improvisational strategies, we effectively engaged a multicultural audience, ensuring comprehension and participation. This experience highlights the significance of flexibility and creativity in first aid education, emphasizing the need for inclusive teaching practices that transcend language barriers and enhance learning outcomes for diverse populations.

Keywords: Chest Compressions; Multicultural teaching; AI; Inclusive Emergency medicine

CONTEXT

It is a common practice for universities to hold admission fairs to introduce newly admitted students to the various

extracurricular groups they can join. For groups, it is usually required to organize a presentation and/or workshop to showcase what they do and engage potential members.

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The Emergency Medicine Interest Group (EMIG) is an extracurricular academic group led by medical students with the support and guidance of physicians. For a fair, it was decided to offer a brief, interactive workshop on chest compressions. Since many of the attendees were not medical students, the workshop aimed to teach a vital first aid skill that anyone could benefit from learning. This decision ensured that all participants, regardless of their academic background, had the chance to engage in a meaningful and practical activity related to emergency medicine and first aid knowledge.

In this context, and in past-years, the fair has been conducted in Spanish, the primary language of Colombia. However, the internazionalization of higher education has increased over time, resulting in students inhabiting university campuses from around the world (Ryan, 2011; de Wit, 2020; 2024), which requires interest groups to adapt educational approaches so that non-native language speakers can benefit from social activities.

HERE'S WHAT WE'RE DOING

Teaching chest compressions to the community is vital because it significantly increases the chances of survival and promotes better neurological recovery in cases of cardiac arrest (Liou et al., 2021; Simmons et al., 2023; Tabata et al., 2024). While fear of taking action is common, it's important to emphasize that quick intervention can mean the difference between life and death. Our workshops typically begin with a clear introduction, explaining what chest compressions are, how they work, and when they should be performed. By equipping people with this knowledge, we help them overcome hesitation and empower them to act confidently during emergencies. For example, we clarify that once a proper assessment of the patient has been made—such as determining if there is agonal breathing within 10 seconds and contacting emergency services - chest compressions should begin. The workshop then transitions into a hands-on session where participants learn proper posture, hand positioning, and anatomical landmarks to guide their actions.

Nevertheless this year's fair presented a unique challenge due to the number of international students.

The EMIG quickly adapted by switching to English, the most spoken second language. The team's flexibility was impressive, as members quickly learned relevant terms in English using modern tools to guarantee exchange students understood the instructions. To assist with identifying key terms for teaching chest compressions, ChatGPT (GPT-4) was utilized (OpenAI, 2024). The prompt provided was "*Necesito aprender los términos más importantes en inglés para enseñar compresiones torácicas.*" The response generated is shown in [Figure 1](#).

As the workshop progressed, it became clear that not everyone spoke either English or Spanish. In these cases, we implemented improvised teaching methods to ensure everyone could still participate. For example, hand gestures were used to emphasize the importance of assessing for vital signs, such as responsiveness and breathing, before initiating compressions.

Hand gestures and facial expressions became essential tools for demonstrating the basics of chest compressions. Commonly used gestures—such as pointing ([Figure 2](#)), showing how to position the hands or indicating the depth and rhythm of compressions—allowed participants to follow along without the need of spoken instructions. Additionally, we employed a method of role-playing with manikins, simplified gestures and commonly understood signs. By physically guiding the students through the process, we could overcome the language barrier and clarify the context in which chest compressions would be appropriate versus when they would not. Facial expressions, mimicking unconscious patients, pinpointing and exaggerated looks of concentration or urgency helped convey the seriousness and focus required we call it the mirroring technique.

The significance of these adaptations goes beyond the university context. In a world where multicultural interactions are common, the ability to teach and perform life-saving skills like chest compressions without relying on verbal language is critical. Whether in an international exchange program or in a real-world emergency, chest compressions can and should be performed by anyone, regardless of language barriers. This universal message is one that must be communicated clearly and effectively, using both verbal and non-verbal methods of instruction.

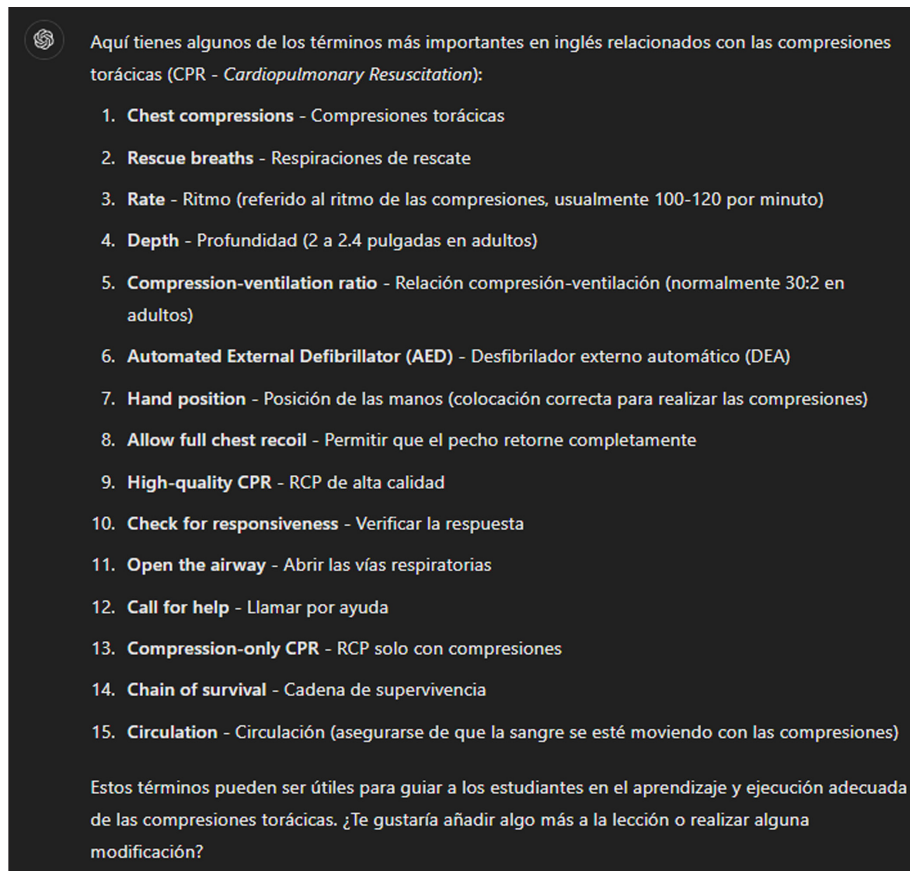


Figure 1: ChatGPT-generated list of terms related to chest compressions in English after a solicited prompt in Spanish.



Figure 2: An instructor detailing chest compressions by pointing to the lower third of the sternum on a mannequin while explaining anatomical landmarks to students at the university fair.

THIS IS WHAT HAPPENED

The language barrier became a unique challenging teaching moment. Students who couldn't communicate verbally still managed to understand and perform chest compressions on the manikins thanks to the improvised teaching methods we implemented. This was a clear indicator of the effectiveness of non-verbal communication. The participants were able to grasp the techniques through gestures and visual cues within role play simulations, and we received positive feedback from the exchange students. Many asked about the EMIG's social media platforms or when the next workshop would take place, demonstrating their engagement and appreciation, despite the initial language barrier.

This experience helped our group realize the importance of flexibility when teaching a diverse audience. Since then, we've become more conscious of ensuring that our content is clear and accessible to everyone, regardless of language. We've learned that relying solely on verbal or written information isn't enough in today's multicultural society. Innovative tools such as artificial intelligence and universally recognizable gestures can play an essential role in making teaching more inclusive and effective. This realization has encouraged us to incorporate more non-verbal tools in our future workshops, ensuring that the message of life-saving skills like chest compressions reaches a broader audience.

Considering whether this approach could benefit more formal first aid learning, such as for certificated courses, this approach serves as an example of how non-verbal communication can significantly enhance understanding in certain contexts. In our study, these methods were particularly useful in overcoming language barriers and ensuring that key concepts were conveyed effectively.

That said, the use of non-verbal cues in formal certification courses could complement traditional instruction, especially in multicultural or multilingual settings. It demonstrates that even when participants are not experts in the language of instruction, they can still grasp critical concepts through visual and physical cues. This could be a valuable consideration for course adaptations where language proficiency might vary among students.

QUESTIONS FOR READERS

How do you adapt your teaching methods when faced with language barriers in First Aid education? Consider the various tools and strategies you might employ, such as using visual aids, gestures, or simplified language. What specific adjustments have you made in your teaching style to ensure that all participants, regardless of their language proficiency, can understand and engage with the material? How might collaboration with bilingual instructors or the use of translation apps enhance your approach?

How can non-verbal communication techniques enhance learning in First Aid training? Reflect on the impact of gestures, facial expressions, and visual demonstrations in conveying critical information. In what ways have you utilized non-verbal cues to clarify instructions or emphasize key concepts? How can these techniques be integrated into your teaching to accommodate diverse learners and create a more inclusive environment?

What strategies have you found effective when communicating important First Aid information to an international audience? Think about the approaches you've used to engage participants from various cultural backgrounds. What methods have you employed to ensure that your message is understood, such as tailoring examples to resonate with different cultures or using relatable scenarios? How might feedback from participants inform your future presentations and help you refine your communication strategies?

Can the strategies you learned in this exercise be applied to other first aid skills?

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COMPETING INTERESTS

The authors have no competing interest to declare.

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