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JIGSAW

TRAINING PATTERN 1

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TITLE

Jigsaw

GENERAL DESCRIPTION

The Jigsaw Classroom is a cooperative learning technique in which students depend on each other to succeed. The class is divided into many small groups and the teacher breaks the assignments into pieces that the group assembles to complete the “jigsaw puzzles”. As a matter of fact, just as in a jigsaw puzzle, each piece (each student's part) is essential for the completion and full understanding of the final product. Thus, each student is essential and this is precisely what makes this strategy so effective.

WHEN IS IT USEFUL?

The jigsaw approach is usually chosen to deal with **multifaceted problems**, which need to be decomposed into different parts in order to be mastered more easily. It is suitable when the subject matter is particularly **complex but can be easily fragmented** or analysed from different perspectives.

It is not particularly suitable for managing big groups of students, due to the complexity of the approach.

HOW TO IMPLEMENT IT? - SUGGESTED PHASES AND TASKS

The Jigsaw approach consists in segmenting the content into a number (4-6) of complementary aspects. Once the problem content is split into different segments, each one is assigned to a group of learners (“group of experts”) that will analyze it under every aspect, becoming competent on that specific matter. Once the first phase is concluded, different “jigsaw groups” containing at least one representative from each of the original expert groups will be formed. The aim of the second phase is to share the different approaches and reflect all the different facets of the problem previously studied.

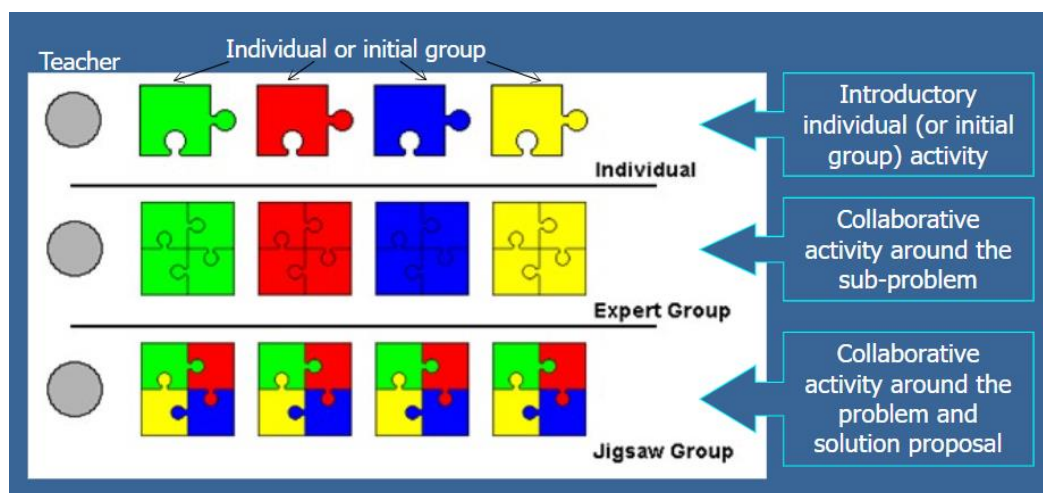


Figure 1: Graphical representation of the groups involved in a Jigsaw technique (Hernández-Leo et al, 2005)

Some practical steps can be identified in each phase.

In the **preparation phase** the trainer should:

- ✓ divide the content into 4-6 segments
- ✓ collect useful information (documents, links, etc) to analyse the content

Then, in PHASE 1 the trainer should:

- ✓ Divide students in the same number of groups, creating the so-called “*expert groups*”;



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- ✓ Assign each “expert group” a segment and provide them with the needed documents and information to be analysed and studied;
- ✓ Invite members of the groups to analyse individually the documents; they can also be invited to discuss the topic. The task of each expert group will be to study in depth a different aspect of a topic (or case or problem).

Finally, in PHASE 2 the trainer should:

- ✓ Create new “*jigsaw groups*” made of at least one member from each “expert group”;
- ✓ Invite them to perform a task, which could be to produce, for example, written or oral presentations or other types of products, reflecting all the different facets of the problem studied in the first phase. Each jigsaw expert will bring to the group the competence acquired in the first phase and his/her contribution will be essential to produce a comprehensive result.

It can be managed both in presence (F2F) and online, with the support of the proper technologies.

If the Jigsaw activity is performed F2F, the classroom should be organized so that the different groups (both expert and jigsaw ones) can interact properly. Thus, chairs and desks should be movable. Participants should be provided with the documents on the content they have to focus on (e.g. printouts) and groups should rely on devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications.

The strength of F2F setting is the possibility to have an actual discussion involving the whole group, beyond the limits of mediated communication. To convey the energy encapsulated in the F2F class to the online modalities, a sense of community needs to be emphasized, so that students can discuss topics in a socially informed way. The anatomy of the F2F course should be emulated online by creating small groups and controlling the students’ level of competence.

Online interaction may be **synchronous or asynchronous**.

A web-conferencing system could effectively support a synchronous Jigsaw activity if equipped with *break-out rooms*¹ where students can work collaboratively in smaller groups. Break-out rooms’ functions can be designed to encompass jigsaw activities and thus offer opportunities for active online learning. For example, Google Meet, MS Teams, Zoom, Webex and Discord can be used to create jigsaw break-out rooms to conduct online classes with synchronous delivery mode. The tools/resources to be used in the activity, such as text documents, videos, webpages, etc., should be identified and shared beforehand.

A Jigsaw activity can also be performed asynchronously through the interaction in forums. Asynchronous discussion and collaboration need more time (3-10 days per phase depending on the theme) than “real time” ones. A forum should be created for each group, both in the first phase and in the second one, so that a person could access a forum for “experts” in the first phase and a “jigsaw” forum in the second. As in synchronous activities, the tools/resources to be employed in the activity have to be identified and shared beforehand, maybe in a repository outside the forum or in the forum itself as an “annex” to the launching message.

Time	Two Phases	
	Phase 1	Phase 2
Task	Individual study of the theme to cover one aspect of it	Collaborative production of an artefact (e.g. written or oral presentations or other types of products, reflecting all the different facets of the problem studied in the first phase)

¹ a small meeting room or a separate part of an internet meeting where a small group can discuss a particular issue before returning to the main meeting (<https://dictionary.cambridge.org/>)



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	Collaborative production of a synthesis/presentation	
Team	Expert groups (e.g. 4 small groups of 5 members)	Jigsaw groups (e.g. 5 groups containing one member for each expert group)
Classroom organization (F2F)	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications
Needed technologies (online)	Digital resources focusing on the content Web-conferencing – using “break out rooms” (synchronous) or forums for online interaction (asynchronous)	Digital resources focusing on the content Web-conferencing – using “break out rooms” (synchronous) or forums for online interaction (asynchronous) Text editors or software for presentations to produce the synthesis/presentation

ADDITIONAL HINTS AND COMMENTS

The two phases of the process imply that each participant plays different roles in different situations: at the expert group level, everyone is equally responsible, while at a jigsaw level, each person is responsible for a specific segment, which requires a high degree of individual accountability. At this stage, it is essential that learners share their knowledge with their peers and this makes them understand how the individual contribution is unique and vital for the group to succeed.

An activity based on the Jigsaw technique is time-consuming: both phases need time.

If it is implemented online, it should not be the first activity of a course: people need a good degree of familiarization with their peers, the learning environment and mediated communication.

Although the group assignment can be graded or ungraded, it can be used to evaluate understanding and reward group members. This method is most likely to improve learning when used as a reward.

Examples in NECTAR context

The Jigsaw technique can be used to deal with multifaceted problems, which need to be decomposed into different parts in order to be mastered more easily, such as:

- Define the quality criteria of suppliers
- Detect clients' satisfaction and impressions after the food consumption experience in collaboration with the interdisciplinary team
- Create or compile recipes targeted for the general population taking into account cultural or religious choices and include them in a balanced and tasteful menu
- Adapt food consistency, fortification and taste according to the needs of the client
- Work in a person-centred interprofessional healthcare team and collaborate with other professionals or stakeholders.



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