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The Jigsaw Method: Seeing the Whole Puzzle

Introduction

Any language teacher with a sense of adventure can bring a teaching technique such as Jigsaw into her classroom, implement it effectively and evaluate the success of the endeavor without knowing anything of the origins of the technique. Jigsaw activities are no exception; when accompanied by clear instructions, they can be readily introduced into any teaching/learning situation.

Yet it is often much to the teacher's benefit to possess some background knowledge prior to trying new approaches. Knowledge of the results of trial stages of experimental techniques will provide the teacher with valuable insight and help her to avoid some of the typical pitfalls associated with trial-and-error classroom teaching. Research into available resources may unearth ready-made materials that can be used in class, thus avoiding the danger of "reinventing the wheel" or spending endless hours devising learning activities which can already be found in published material.

Perhaps the best argument for researching a new teaching technique is that familiarity with its background can help a teacher see how it fits into the larger picture of teaching methodology. In this way, a teacher can decide how the technique corresponds to her own teaching philosophy; she can then make it an integral part of a well-rounded pedagogical approach.

In this paper, I would like to place the Jigsaw teaching technique into the larger context of language teaching methodology, particularly cooperative or collaborative language learning.⁴ I will show how the Jigsaw technique evolved by examining the research and theories of linguists, pedagogues and researchers of the past few decades, and by highlighting facets of their philosophies that have had some bearing on the place of cooperative learning methods like Jigsaw in the teaching of foreign languages. I will also show that renewed interest in cooperative language learning techniques has brought Jigsaw—as well as many other related group methods—back into favor.

⁴ In this paper, for the sake of simplicity, I will consider the terms "collaborative language learning" and "cooperative language learning" to be interchangeable. As the Oxford English Dictionary defines collaboration as "united labour, co-operation" and cooperation as "the action of co-operating, *i.e.* of working together towards the same end, purpose, or effect; joint operation", I feel that the two terms are compatible in the present context. Furthermore, David Nunan uses the two terms interchangeably throughout his introductory chapter to *Collaborative Language Learning and Teaching*.

Language teaching methodology

Retrospective

Structural linguistics

In the earlier part of the twentieth century, thinking about language teaching stemmed mainly from a desire to pin down a language, to demystify, define and concretize an abstract system. Even as recently as thirty years ago, teaching methods were based on the findings of structural linguists like Bloomfield (1930's and 40's), whose immediate constituent analysis method allowed teachers and students to classify and order language elements without taking into account the meaning of each element. Language laboratory exercises based on this method, in a manner reminiscent of that of the behaviorist Skinner, encouraged learners to memorize and repeat words and phrases, thus enabling them to acquire automatic reflexes necessary for the later production of original language. Many textbooks still include sentence-building paradigms or substitution tables, whose goal is mainly to help students learn the correct place and function of each word in a given sentence.

Transformational generative grammar

In 1957, with the publication of *Syntactic Structures*, Noam Chomsky added consideration of the component of meaning to the mechanical analysis of language. While acknowledging the value of immediate constituent analysis, he criticized the superficiality of structural linguistics and the fact that it failed to take into account the linguistic competence of the language learner. He believed that one must consider the underlying, deeper meanings of language, meanings which can only be described through a set of ordered rules which permit the production and the interpretation of speech.

Chomsky's distinction between the two levels of language, the surface—or performance—level and the deeper—or competence—level had a direct effect on language teaching. Not only is it important to consider what people do with language, but also how they learn to do it⁵.

Sociolinguistics

During the 1960's and early 1970's, American sociolinguist Dell Hymes maintained that speech, far from being the product of an ordered system, is a product of a community of speakers and as such is influenced by the myriad emotions, needs and intentions of the members of that community. Hymes' concept of "communicative competence" refers to the extent to which a sentence

⁵ Hutchinson & Waters, 1987.

is appropriate in relation to the context in which it is uttered⁶. Not only must a speaker possess knowledge of a language's superficial structure and the ability to apply rules to the production and interpretation of language, he must also know what to say and when. This further distinction added a new facet to the teaching of a foreign language: the need to identify purpose, intent, topic and relationships between speakers.

Functional/notional approach

In the 1970's, the functional/notional approach to grammar and syllabus development classified language in two ways: functions which reflect social behavior (agreeing, disagreeing, requesting, apologizing, etc.) and notions, or "categories into which the mind and thereby language divides reality"⁷ (money, time, frequency, duration, etc.).

J. L. Austin, in his book entitled *How to Do Things with Words*, claimed that all utterances simultaneously perform three kinds of acts: a locutionary act (the propositional content), an illocutionary act (speech act, the conventional force of an utterance, e.g. statement, offer, promise) and a perlocutionary act (the effect of the utterance on the listener). Austin further classified speech acts into 5 categories: exercitives (warn, order, advise); verdictives (describe, analyze, evaluate); commissives (agree, disagree, intend, promise); expositives (affirm, define, state, conclude) and behabitives (thank, apologize, request).

The concept that speech is equivalent to action formed the basis of the functional-notional syllabus. Austin's classifications of speech acts found an immediate application in the authoring of material for teaching and learning foreign languages. Even today, many new textbooks are structured around a functional-notional syllabus.

Process approach

In the early 1980's, Michael Breen and Christopher Candlin rejected the functional aspect of communicative teaching. They asserted that to learn a language is not to learn *what* to communicate, but *how* to communicate within a particular sociocultural group. According to them, language learning "may be seen as a process which grows out of the interaction between learners, teachers, texts and activities"⁸.

The process approach promotes the consideration of the classroom as a resource or a meeting-place of all other resources—texts, materials, equipment, teacher—at the learners' disposal. The teacher is a facilitator, helping students to function within an environment which is, at best, artificial: the classroom.

Communicative approach

⁶ Melrose, 1991.

⁷ Hutchinson & Waters, 1987, p. 31.

⁸ in Melrose, 1991, p. 9.

It is, in essence, the artificiality of the typical classroom which can be viewed as the one barrier to true communication between learners. Without an authentic need to communicate, learners do little more than simulate communication.

The communicative approach emerged as a way to make communication the goal of an activity rather than the tool. Brumfit, Johnson and Littlewood were instrumental in defining and promoting the communicative curriculum, whose content is selected for its ability to provide opportunities for true communication between the learner and another person. The focus of such an approach is not the process of learning; on the contrary, all awareness of process must be relegated to the subconscious if the learner is to become a true participant in the communicative experience.

Authenticity is one of the key concepts of the communicative curriculum. Not only the communicative experience itself but also the materials used in the classroom must be authentic. Texts should be taken from current newspapers and magazines, and whenever possible presented in their original form. The term *realia* refers to the authentic documents and objects (airplane tickets, restaurant menus, bills and receipts, etc.) which are frequently used in a communicative classroom.

Another integral part of a communicative curriculum is task work. Candlin and others offer guidelines to the use of problem-solving tasks and strategy activities which place the learner in the position of wanting and needing to communicate with his fellow learners.

A learning/learner-centered curriculum

A shift occurred during the late 1970's from a focus on how the *teacher should best teach* to how the *learner might best learn*. This new perspective on language learning, which led first to the development of the communicative approach, soon evolved into the learner-centered approach promoted by Hutchinson and Waters⁹.

According to Hutchinson and Waters, the term "communicative" is quite imprecise. What teaching approach would term itself "uncommunicative"? They assert that the term "has come, in effect, to mean simply a good, modern approach to language teaching, rather than indicating what that approach might consist of¹⁰."

Their definition of a learner-centered approach is somewhat more concise. A learner-centered curriculum takes the learner into account at every stage of its progression: needs analysis, syllabus design, the choice and creation of materials, coursework and evaluation.

⁹ Hutchinson and Waters prefer the term learning-centered to learner-centered, as the learner is but one of the many elements involved in the process of learning.

¹⁰ Hutchinson & Waters, 1987, p. 23.

While one could argue that all approaches claim to take the learner into account, in reality many focus much more on the content or the skills to be acquired than on the processes that the learner uses to acquire them. Like a communicative approach, a learner-centered approach involves providing the learner with situations in which he or she can put learning strategies, decision-making mechanisms and communicative skills into play at every stage of his/her learning experience. But according to Nunan, "(...) the key difference between learner-centred and traditional curriculum development is that, in the former, the curriculum is a collaborative effort between teachers and learners"¹¹. In essence, the learner-centered approach keeps the learner at the center of every step of the learning process, from needs analysis through final evaluation.

Where next?

Throughout the 1980's the preoccupation with the functional/notional curriculum and the teaching of English for special purposes (ESP) meant that the energies of many researchers and teachers were focused on materials design and creation. Old text- and resource-books no longer provided adequate variety for the teaching of "general" English. The rising demand for language training for the industrial and technological sectors sent authors scrambling to produce materials for an ever-widening market.

In the 1990's, partially as a result of the huge increase in available published resources, language teachers have begun to re-evaluate their use of ready-made materials in the classroom. Faced with an overwhelming array of exercise books, progressive methods and resource materials of all types, a teacher may often find herself in a position where she must redefine her personal teaching philosophy in order to make more effective choices when selecting materials.

One of the basic elements of a sound teaching philosophy is its goal structure. We have seen three: individual, competitive and cooperative. Jigsaw activities belong mainly to the third category.

Cooperation is a skill which must be mastered by any individual who hopes to play a productive role in the modern world. The rapid development of telecommunications and information sciences permits communication at levels and in situations which, only a few years ago, seemed impossible. This development brings with it a sort of forced intimacy, as it throws together individuals who had previously enjoyed more spatial and intellectual maneuverability, especially in their professional life.

Paradoxically, the very technological advances which pull people together have also created an unprecedented level of professional mobility. More and

¹¹ Nunan, 1991, p. 3.

more professionals choose to work from their homes, thus causing a decentralization of information resources.

The ability to negotiate the sharing of information is essential to survival in such an environment. Jigsaw activities help develop this skill. Thus, they are of indisputable value both in a classroom situation and for the further education of adults. The recent renewal of interest in the Jigsaw approach is a logical reflection of the demands that modern life places on every individual.

Collaborative language learning

Types of group learning

It would be false to assume that any learning situation involving group work can automatically be considered to be collaborative. Students are frequently asked to work in groups for reasons of expediency—as a classroom management technique for large classes, for example. While small-group work which is not intrinsically cooperative can certainly be advantageous, most of the benefits of collaborative work are lost without a certain degree of interdependence among group members. In choosing activities for cooperative learning, the teacher must first give adequate thought to the relationship of each group member to the task at hand as well as his relationship to members of his own and other groups.

Schiffler provides us with classifications of group learning. He outlines three different groupings, in which:

- all groups in a class work toward a common goal,
- tasks within each group are mixed, or
- each group in a class works toward a different goal¹².

Only the first and third groupings can truly be classified as being "cooperative". In the first, the entire class shares a common goal, and the learners are divided into smaller groups while working toward that goal. In the third, learners in each group collaborate on one task.

In the second grouping, however, in which each group member works toward a goal that is different from that of his group-mates, the element of collaboration is absent. Learners are organized into smaller groups mainly in order to improve the learner-teacher ratio and to make the learner more responsible for his or her own learning.

Thus, Schiffler provides us with evidence that not all group learning can be considered to be collaborative or cooperative.

¹² Schiffler, 1984.

Goals and intents of collaborative learning

One of the main arguments for the implementation of Jigsaw activities into a curriculum is that they increase learners' self-esteem¹³. This is, in part, due to the sense of accomplishment that a student gains from having been instrumental in his classmates' successful completion of a task.

This increase in self-esteem can also be attributed to the absence of the traditional teacher-student relationship, which is replaced in collaborative activities by a more satisfying peer-peer negotiation. While this is particularly true for children, even adult learners can benefit from the knowledge that they are responsible for ensuring the effectiveness of the information exchange. Often unconsciously, adult learners quite frequently re-create the adult-child relationship they experienced while in school. Collaborative activities can help make language learning a relevant, even professional activity for these learners.

Another of the goals of cooperative learning methods is the reduction of student isolation, which can help reverse the potentially negative effects of a competitive learning environment.

In examining the following three types of goal structures for classroom activities, it is clear how the element of cooperation can not only make a learner feel more capable of learning, but also add the incentive for him to make more of a personal investment in the learning process.

- An individualized goal structure implies that one student's goal attainment has no effect on and is not affected by other students' goal attainment.
- In a competitive goal structure, a student's chance of reaching a goal increases as other students fall farther from the goal.
- In a cooperative goal structure, the student's possibility of achieving a goal increases as other students are successful at achieving the goal¹⁴.

Forming groups for cooperative learning activities

Making appropriate choices when establishing groups for cooperative learning activities is essential to their success. Schiffler provides us with a description of several options for group formation:

- The teacher can choose the groups arbitrarily (which, according to Schiffler, may create potential for dissension and tension).
- The teacher can form groups according to learners' grades or ability level.
- Groups can be formed according to a theme or a subject to be studied.

¹³ Slavin, 1981.

¹⁴ Long & Richards, eds., 1987.

- Designated group leaders can choose groups.
- Students can be free to choose their own groupings.
- Groups can be formed in function of the seating arrangement (a solution frequently adopted because of its ease of implementation).
- Or groups can be formed in function of sociopsychological and sociotherapeutic issues (Schiffler's choice for most efficient grouping system). This implies taking into account the wishes, personalities, strengths and weaknesses of learners¹⁵.

While any of the above groupings can be acceptable, depending on factors governing the choice, the most effective collaborative groups are deliberately heterogeneous. In this way, stronger learners can help weaker ones, making the group more able to work independently and freeing the teacher to spend time consulting with the various groups or observing them. Changing the groupings from one activity to another will provide students with variety and the opportunity to use different skills in different social situations.

Jigsaw

Description

Developed by Aronson in 1978 and described in his book *The Jigsaw Classroom*, Jigsaw is a cooperative learning technique in which a class is divided into teams, each of which becomes "expert" in a given area. Once each team has mastered its material, the class is divided into a second set of teams, each one composed of one member from each of the first set of teams. In this new arrangement, each student is responsible for teaching his area of expertise to the others in his new group.

The writings of Johnson & Johnson are mainly responsible for the popularity of Jigsaw. Slavin also adopted the technique, and developed a variation of it called Jigsaw II. For an in-depth discussion of Jigsaw, Jigsaw II and the issues surrounding their use in classrooms, I refer the reader to Stephen Gaies' article in this publication.

Jigsaw's universality

Jigsaw defies all attempts at fixing it within a well-defined taxonomy of language-teaching techniques. It shares many characteristics with other techniques, and can be a part of many different kinds of syllabuses. This very

¹⁵ Schiffler, 1984.

quality of polyvalence explains the past popularity of—and the renewed interest in—Jigsaw.

Jigsaw is at once a many-faceted and a very simple tool for language learning. The fact that it is concerned solely with the sharing of learned items between team members who each have a stake in the success of his teammates makes it, in essence, a more sophisticated version of a very primitive ritual: the sharing of collective knowledge, collective wisdom.

In the following paragraphs, I discuss the possible applications of Jigsaw within the context of the methodological approaches already presented.

Structural approach

While it is usually considered a communicative activity, Jigsaw can also be useful in a structural approach to language learning. Although relatively few modern curricula integrate purely structural activities, some language courses, particularly those concerned with language for special purposes, rely heavily on memorization of lexis and structures. Teamwork and collaboration can add creativity and variety to these activities, thereby alleviating some of the boredom that learners often experience when attempting to master new language.

A technical reading course may require learners to analyze the form and function of words and sentences, in order that they might more effectively infer the meaning of new words in future reading texts. This modern application of Bloomfield's immediate constituent analysis can certainly take the form of a Jigsaw activity, by making students "experts" on different types of words or expressions, on different sections of the document or on different paragraphs within a given section.

Functional-notional approach

Jigsaw can be a part of a functional-notional syllabus. By its very nature, it develops the functions of requesting and giving information. It also strengthens the skill of negotiation, in the sense that all communication is negotiation; in addition, students must negotiate the manner and the quality of the exchange of information within teams, as the teacher may well choose neither to arbitrate nor to provide guidance during the activity itself.

All five of Austin's categories of speech acts can be present in a Jigsaw activity, from the more common behabitives like requesting and thanking to more complex expositives like defining and concluding.

The process approach

Remembering that Melrose defines language learning as being a process which results directly from the interaction of resources (learners, teachers, material), Jigsaw appears to be perfectly suited to a process approach to language teaching. It corresponds to the two defining parameters of the process

approach: the existence of learning resources and the interaction which the students' intervention causes to take place between them.

In Jigsaw the learner is encouraged to avail herself of the resources at her disposal, in this case other learners who are experts in areas where she is less knowledgeable. The interaction required of learners in a successful Jigsaw activity will result not only in the sharing and assimilation of material, but also in the increased ability of each learner to optimize her learning mechanisms in future activities.

Communicative approach

Jigsaw is communicative, and therefore a logical part of a communicative syllabus. It places learners in a position where they have an authentic need to communicate with other learners: the desire—or, indeed, the obligation—to master the material about which other members of their team are already experts. Furthermore, by using Jigsaw for test revision and for preparation of group projects, the authentic need to collaborate provides learners with an authentic communication experience.

Learner-centered approach

Jigsaw is learner- and learning-centered. While a purely learner-centered approach—such as that at Summerhill school in England, where students are permitted to define their entire curriculum on their own—would probably be unrealistic in most contexts, one could argue that Jigsaw is more learner-centered than many classroom techniques.

The teacher may determine the main parameters of the activity, such as the pedagogical support, team assignments and time limits, but a Jigsaw activity will be most efficient if those parameters are chosen in function of the strengths, weaknesses and interests of the learners. In addition, once a class has prior experience with Jigsaw, it can be very profitable to encourage the learners to define the parameters of their own projects.

Jigsaw is *learning*-centered in that it promotes the acquisition and perfecting of skills which are essential to the learning process.

Basic characteristics of Jigsaw

As was said earlier, Jigsaw is a many-faceted activity. Following are some of the characteristics of Jigsaw which enable it to be integrated into such a wide variety of learning situations:

- Jigsaw is cooperative and collaborative, by definition.
- Jigsaw is a problem-solving technique.

- Jigsaw implies an information gap. In order for a learner to have a desire/need to communicate, she must desire to possess information which she lacks but which is possessed by another learner.
- Jigsaw is task-based.
- Jigsaw can be used in project work.
- Jigsaw is useful in "mixed-ability" classes. In choosing teams for activities in "mixed-ability" classes (classes in which age, language or education level or skills are unequal) attention to sociopsychological and sociotherapeutic criteria can ensure the success of a collaborative activity.
- Jigsaw activities can be designed, and therefore viewed, as games.
- Jigsaw can be competitive as well as cooperative. In order to foster "team spirit", a teacher can assign different tasks to each team. Within the team, cooperation and collaboration are *de rigueur*, but teams compete to be the first/best/most...
- Alternatively, Jigsaw activities can follow a sort of "wheel within a wheel" pattern, an echo of the pyramid decision-making process¹⁶: each group completes a Jigsaw project which then becomes a part of a larger project accomplished by two or three groups together, which in turn becomes a part of a "master" project produced by the entire class.

Other methods of collaborative and group learning

The Jigsaw technique is just one part of the larger arena of cooperative and group-learning methodologies. It is difficult to establish a precise taxonomy of cooperative language learning methods, as so many characteristics of group learning overlap; role plays and simulations, for example, can be considered to be dramatic, while not all drama activities involve true role-play. Writing, rehearsing and performing a play does not place the learner in a situation where spontaneous language production is elicited; the value of such activities is rather that they encourage learners to generate and then to memorize language elements, with the goal of adding them to an internal repertoire.

Role plays and simulations can involve information gap, brainstorming, pair work, problem solving. The combinations and permutations of cooperative language learning activities are endless. Like Jigsaw, most of these activities can be easily integrated into any kind of syllabus.

Following is an overview of many different kinds of group-learning situations:

¹⁶ In the pyramid decision-making process, learners are given a problem or situation to discuss. They begin by working together in pairs or in very small groups. Within a given length of time, members of each group must reach a consensus. The smaller groups are then paired to form larger groups, which must equally reach a common decision. Groups are combined in the same way until the class as a whole has been able to agree on one solution to the problem.

- role plays/simulations;
- group or pair homework checking;
- games;
- drama - learning, writing or performing a play together;
- projects - group writing, research, group reports;
- brainstorming - pooling collective knowledge;
- pair work - information gap, drill partners, reading buddies (for younger learners);
- information gap - Jigsaw (both I [Aronson] and II [Slavin]); interviews, charts to fill out with information which must be obtained from another learner;
- problem-solving/decision-making activities - moral issues, debates;
- opinion exchange;
- pyramid work - used for decision-making;
- using Cuisenaire rods¹⁷ or Legos to build according to someone else's instructions:
- team drawing¹⁸ - members of a team collaborate on a drawing which carries visual meaning for each member of the team (this artwork serves as a visual summary of material they have learned in class and is more effective as a mnemonic device than any illustration chosen and distributed by a teacher);
- photo reporting/collaborative report writing or creating;
- the "jigsaw puzzle" technique¹⁹ - an activity in which learners are required to piece together previously cut-apart elements of a linguistic whole (paragraphs of an article, titles separated from stories, words of a sentence, etc.).

Following are several, more formalized group-learning methods:

- Community Language Learning (CLL)
- Student Team Learning (Slavin):
 - 1) Student Teams-Achievement Divisions (STAD)
 - 2) Teams-Games-Tournament (TGT)
 - 3) Jigsaw II
 - 4) Team Accelerated Instruction
 - 5) Cooperative Integrated Reading and Composition.

¹⁷ Small, light, colored sticks of wood, or rods, of different lengths. Cuisenaire rods were originally developed for use as part of the Silent Way technique.

¹⁸ Schiffler, 1984.

¹⁹ The term "jigsaw" can occasionally lead to confusion. In the context of language teaching, "jigsaw" can mean two different things: the Jigsaw group-learning technique, and the cut-and-match technique described above. The jigsaw puzzle technique can easily be transformed into a collaborative Jigsaw activity.

Some cooperative techniques described by Manarino-Leggett & Salomon as being particularly appropriate to reading²⁰:

- *CIRC* (Cooperative Integrated Reading and Composition)
Students are divided into heterogeneous learning teams. Students study together, reading to one another, writing responses and practicing vocabulary; they are tested when each teammate decides that the group is ready.
- *Dyads* (Pairs)
Students study in pairs. First they read a text silently; next, one student, the "recaller", summarizes the text orally while the other listens. The role of the listener is to correct, clarify and elaborate. The two students switch roles until the entire text has been read.
- *Group retellings*
Each student in a group reads a different piece of literature on the same subject, then recounts to the group what they have read in their own words. Others from the group can intervene to add additional information when needed.

Conclusion

Teaching methodology has changed a great deal throughout the twentieth century. From a purely analytical approach to a very humanistic, personalized approach, teachers, linguists and researchers have touched upon every possible aspect of language acquisition.

The test of time seems to indicate that the communicative approach to language learning is the most effective; it has certainly been the most popular approach over the past two decades. Indeed, one might even consider the term "communicative language teaching" to be a tautology. As language is a vehicle for communicating ideas, any effective method of teaching language should therefore consider communication to be both the means and the end.

A communicative teaching approach can involve an astoundingly large variety of activities. Among these, collaborative learning situations have proven to be effective not only in terms of language acquisition, but also in terms of a student's self-esteem and the degree to which he is willing to assume responsibility for his own learning process.

Jigsaw, initially developed in the late 1970's, is a collaborative approach which is currently enjoying renewed popularity. Jigsaw activities present the benefits of any collaborative learning activity; they have the added advantage of conferring expert status on learners, along with the responsibility of ensuring

²⁰ Manarino-Leggett & Salomon, 1990; many other methods are described as well.

that teammates rise to a similar level of expertise on different aspects of a given subject. In addition, the universality of Jigsaw activities makes them quite simple to integrate into any teaching/learning situation.

Until recently, Jigsaw activities were most frequently used in teaching social studies and mathematics in the United States. Jigsaw is well-suited to the discussion-oriented, problem-solving nature of these areas. However, a cursory examination of any catalog of ESL teaching materials will show that authors tend more and more to include Jigsaw activities in their publications. This renewed interest may be due in part to the increasing sophistication of communications technology, as the need for negotiation and information-sharing skills increases.

The Jigsaw method is, obviously, appropriate for use in a modern language-teaching and -learning environment. Nonetheless, the Jigsaw method has yet to find its ideal place in language teaching. One of the main advantages of Jigsaw is its ability to place learners in an authentic communication situation, and to give them a real need to negotiate. However there remains one essential aspect of "real life" that has been largely ignored by Jigsaw materials developers: information technology.

Currently, most Jigsaw activities involve reading, listening, watching films, and/or discussion. Perhaps because teachers are most comfortable using traditional tools like cassette players and video recorders or, perhaps, because institutions are unable to make the necessary financial investment, very few activities have been developed which involve computers.

In "real life", negotiation includes information exchanges with people one has never met, whether by post, electronic mail, telephone, video conferencing, or the Internet. Jigsaw activities should include research and communication which utilize these resources, both in the first stage of a Jigsaw activity, in which learners become experts in their subject, and in the second stage, which involves the transmission of learners' expertise to other learners.

Such technological resources have the potential to render a well-conceived Jigsaw activity virtually indistinguishable from a "real-life" situation. The activity thus attains a high degree of authenticity, which a communicative methodology must strive to achieve. In addition, learners are exposed to a large number of linguistic and social variables, which enhance the learning experience and stimulate and challenge students.

With the help of these new forms of technology, the versatility that has enabled Jigsaw to endure through the past two decades and to gain popularity in recent years will ensure that it remains at the core of language teaching methodologies for decades to come.

Bonnie Woolley
Enseignante

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