

## **Types of Positive Interdependence Jigsaw**

**Read your assigned material and determine how to teach your section in an interesting way to your home group.**

### **Reading #1**

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#### **1. Positive Goal Interdependence**

Positive goal interdependence exists when students believe that they can achieve their learning goals if and only if all other members of their group also attain their group also attain their goals. Members of learning group have a shared set of goals that they all are want to achieve. Success depends on all members reaching the goal. The goal might be that all group members understand how to do long division with remainders or be able to analyze the plot of Hamlet. Ways of structuring positive goal interdependence include the following:

The teacher can request that one finished product (such as a report, theme, presentation, or answer sheet) from the group be signed by all members. Signatures indicate that each member was active in creating the product, agrees with it, and can defend its content. A variation on this is to make a rule that no group member receives credit for doing homework until all group members have handed in the homework assignment.

The teacher can choose randomly the worksheet, report, or theme of one group member to be evaluated. This means that members are responsible for reading and correcting each other's work to ensure that it is 100 percent correct. Variations include randomly selecting one member to show mastery of a concept, translate a sentence in a foreign language class, or take the test for the group. Since this is a procedure to ensure each individual group member is accountable for learning the assigned material, it shows the close relationship between goal interdependence and individual accountability. Individual accountability is the measurement of whether or not each group member has achieved the group's goal. Individual accountability cannot exist unless goal interdependence has been previously established.

The teacher keeps a group progress chart. Total or average group scores may be marked on a chart. Students are then responsible for raising their own and their groupmates' performances in order to show progress on the group chart.

The teacher establishes individual levels of achievement that each group member must achieve in order for the group as a whole to be successful. The group goal is to ensure that all group members achieve a prescribed level of achievement on the assigned

material. Improvement scores are a good example. The group goal is to ensure that all members do better this week than they did last week.

The teacher establishes a standard that all group members must achieve in order for the group to be successful. The goal is to ensure that all group members completed the assignment. An example is to require each group member to achieve 80 percent on a curriculum unit before any group member receives credit for completing the unit. Another example is for the group to be responsible for writing a newsletter or making a presentation, and they do not receive credit unless all group members contribute an article to the newsletter or make part of the presentation.

## **2. Positive Reward Interdependence**

Positive reward interdependence exists when each group member receives the same reward for completing the assignment. A joint reward is given for successful group work. Everyone is rewarded or no one is rewarded. An example of reward interdependence is when every group member receives 5 bonus points (or 15 extra minutes of free time) when all group members get 90 percent correct on a test. Ways of structuring positive reward interdependence include the following:

Everyone must know the goal -- kinds of rewards.

The teacher gives bonus points that are added to all group members' scores when everyone in the group achieves up to standard.

The teacher gives non-academic rewards (such as extra free time, extra break time, food coupons) when all group members achieve the criteria on an academic task.

The teacher gives teacher praise (i.e. social rewards) to the group as a whole when all group members reach set criteria.

The teacher gives a single group grade for the combined efforts of group members. This should be cautiously done until all students are very familiar with co-operative learning.

The rewards should be attractive to students, inexpensive, and should reflect your philosophy of teaching. Students can brainstorm lists of possible rewards. It is important that groups who do not reach the criteria do not receive the reward anyway. The rewards should be removed as soon as students become motivated on their own because of co-operative learning groups. You will know when this happens when students pressure you to let them work in groups.

### **3. Outside Force Interdependence**

Group competitions – last year’s class – last week’s score...

Positive outside force interdependence exists when groups are placed in competition with each other. Group members then feel interdependent as they strive to beat the other groups and win the competition. Perhaps the best way of managing intergroup competition is the Teams-Games-Tournament procedure developed by David DeVries and Keith Edwards (1973). A good procedure is to have students compete with the score made by last year’s class or the total class score made last week. A teacher might say, “Last year’s class made a total score of 647 on this test. Can you do better? Sure you can.” Such competition reduces the negative behaviour that often accompanies competing against other groups in the same class.

## Reading #2

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### **4. Positive Sequence Interdependence**

Positive sequence interdependence exists when the assigned task is created so that the actions of one group member have to be completed if the next team member is to complete his or her responsibilities. The overall task is divided into parts that must be performed in a set order. This “factory-line” model exists when one student is responsible for obtaining swamp-water, another is responsible for making slides, another is responsible for viewing the slides through a microscope, and the fourth member is responsible for writing down the organisms found in the swamp-water. Another example is a “chain reaction” where one member learns a concept and then is responsible for teaching it to another member and the grade the first member receives is the grade received by the second member. While task interdependence is closely related to resource interdependence, it is used much less frequently as not very many academic tasks lend themselves to such a regulated order of performance.

### **5. Environmental Interdependency**

Environmental interdependency exists when group members are held together by the physical environment in some way. Examples include giving each group a specific area to meet in, putting chairs or desks together, having group members hold hands or put their arms around each other, requiring group members to have their feet touching in a circle as they work, or placing a rope face around the group. A first grade teacher we once worked with made circles on the floor with masking tape and required all group members to be within the circle while they worked together.

### **6. Positive Role Interdependence**

Positive role interdependence exists when each member is assigned different yet interconnected roles that the group needs to do in order to complete a joint task. Usually the roles are rotated daily so that each student obtains considerable experience in each role.

Roles are assigned to students in order to create positive interdependence and to teach students new skills. There are two types of roles to assign: working roles (like Reader, Recorder, and Materials Handler) and social skill roles (like Encourager, and Checker) Both are working on a social skill role to help the group function and help students learn to be valuable group members. Students will learn new roles if the roles are carefully defined, observed for, and rewarded. The following are possible definitions of some roles to get you started.

**Reader:** Reads the group's material out loud to the group, carefully and clearly, so that group members can understand and remember it.

**Writer/Recorder:** Carefully records the best answers of the group on the worksheet or paper, edits what the group has written, gets the group members to check and sign the paper, then hands it in to the teacher.

**Materials Handler:** Gets any materials or equipment needed by the group, keeps track of them, and puts them carefully away.

**Encourager:** Watches to make certain that everyone is participating, and invites reluctant or silent members to contribute. Sample statements: "Tanya, what do you think?" "Tomas, do you have anything to add?" "Eckhart, help us out." "Birgit, what are your ideas on this?"

**Checker:** Checks on the understanding or learning of group members by asking them to explain or summarize material learned or discussed. Sample statements: "Terry, why did we decide on this answer for number two?" "James, explain how we got this answer?" "Anne, summarize for us what we've decided here."

**Praiser:** Helps members feel good about their contributions to the group by telling them how helpful they are. This is a good role to assign to help combat "Put-downs." Sample statements: "That's a good idea, Al." "Sharon, you're very helpful." "Karen, I like the way you've helped us." "Good job, John."

**Prober:** In a pleasant way, keeps the group from shallow answers by not allowing the members to agree too quickly. He agrees when satisfied that the group has explored all the possibilities. Sample statements: "What other possibilities are there for this problem or question?" "What else could we put here?" "Let's double-check this answer."

Some other role possibilities include: **Noise Monitor** (uses a non-verbal signal to remind group members to quiet down), **Energizer** (energizes the group when it starts lagging), **Summarizer** (summarizes the material so that group members can check it again), **Observer** (to keep track of how well the team members are collaborating), **Asker** for Help, **Time Keeper**, **Question Asker**, and **Paraphraser**. Come up with roles that fit the task and you students.

## Reading #3

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### **7. Identity Interdependence**

Positive identity interdependence exists when the group establishes a mutual identity through a name, flag, motto, or song. English teachers may wish to give poets' names to groups (The Whitman's, Frost's, Cummings' and Hughes'). A science teacher can give famous scientists' names to groups. Teachers may let students think up their own group names, make a flag for their group, establish a group motto, or create some other symbol of their joint identity.

### **8. Simulation Interdependence**

Positive simulation interdependence exists when a task is given that requires members to imagine that they are in a life or death situation and must work together in order to survive. Such exercises as Survival on the Moon, Desert Survival and Winter Survival are examples. A less complicated form is giving students a simulation role to carry out. A teacher may say, "You are the world's leading computer programmers. Your challenge is to save the world from the Y2K shutdown by finding the answers to these difficult and mysterious equations! We like to tell students that they are word detectives who must look for a certain word in a reading assignment and describe how it is used by the author. Students may also be character detectives who analyze a character in a story or play.

### **9. Positive Resource Interdependence**

Positive Resource Interdependence exists when each member has only a portion of the information, resources, or materials necessary for the task to be completed and members' resources have to be combined in order for the group to achieve its goal. Thus, the resources of each group member are needed if the task is to be completed. Ways of structuring positive resource interdependence include the following:

The teacher limits the resources given to the group. Only one pencil, for example, may be given to a group of three students. Other resources that can be limited include textbooks, answer sheets, scissors, dictionaries, maps, typewriters, computers, and periodic charts of elements.

The teacher divides the materials so that each member has part of a set of materials. For example, each member of a group may be given one sentence of a paragraph and the group is given the task of sequencing the sentences. The assignment could be to write an essay on Gerhard Schroeder and information on Schroeder's childhood given to one member, information on Schroeder as Prime Minister given to a third. A different type of

jigsaw is created when the assignment is to make a collage and one member has the paste, another has the scissors, and a third has the magazines.

Materials that can be jigsawed include vocabulary words, lines of a poem, letters of a word, sentences of a paragraph to be sequenced, words for a sentence, pictures, definitions, puzzle pieces, problems, parts of directions, resource materials, lab equipment, parts of a map, art supplies, ingredients for cooking, and sections of a report. The teacher gives students a writing assignment with the rule that each member must offer a sentence in each paragraph, contribute an article to a newsletter, write a paragraph or an essay, or do a chapter in a “book”.