

35

Morphological Connections

Description

Morphological Connections breaks down a complex problem into its component parts, then generates possible solutions by combining alternatives to the original components.

Situations

This activity can be used to generate large numbers of potential and creative solutions which can then be further evaluated. It will prevent groups and individuals becoming locked into only considering previously known options. It is also useful as an icebreaker when used with a given problem.

Objective

- To generate a large number of potential solutions to a problem or situation.

Trainer guidance

This technique can be applied to a number of situations where there is a requirement to break down the barriers to creative thinking about alternatives. It relies on a forced association between alternative components as defined and generated by the group.

With complex problems, a large number of components and alternatives may be generated, making the information handling difficult (four components with five alternatives each will give 625 different combinations), so access to a computer would be helpful to process the information from steps 2 and 3 for analysis by the group. The activity would therefore be best conducted over at least two sessions, and with a corresponding increase in time needed.

To demonstrate the process, limit the group to considering no more than three or four alternatives for a maximum of three main components.

Time

Forty-five minutes.

Materials

1. Flipchart or black-/whiteboard
2. Markers.

Method

1. Choose a problem to be worked on (for example, develop a new form of transportation).
2. List the parameters of the problem (for example, means of supporting traveller, method of propulsion, etc.). Limit the final choice to the three or four of greatest importance.
3. List alternative possibilities for each of the parameters, (for example, seat, bed, sling, standing; steam, electricity, gas, internal combustion engine, magnetism, gravity, nuclear, wind, water).
4. Combine the alternatives into possible alternatives. If a full analysis of a large number of alternatives is being considered, a matrix might be drawn up to ensure that each combination is assessed, or use made of a computer to complete a listing of possibilities.
5. Assess each possibility. Some will of course already be in existence (seated/internal combustion engine—a motor car/bus; standing/water—a surfboard), others will not. Of these latter possibilities, some will be feasible and some absurd. The list created by “Morphological Connections” needs to be assessed and the feasible and interesting alternatives identified for further analysis.

Summary

Of the alternatives produced by “Morphological Connections,” only one may be a creative solution to the problem. Most will not be feasible or will be absurd. Many people feel that this is a particularly mechanical and lengthy process to produce such a small end-result. It is therefore worth finding out if this feeling exists within the group and if so, point out that alternatives had been generated and considered that would not otherwise have been identified.

Related activities

Activity 2—*Attributes*