SIMULATION TEACHING

Introduction

Simulation technique is a method not new to education or training. This technique was first applied to the classroom in 1968 in England by the ESSO Students Business Game. However the use of simulation techniques spread to secondary and tertiary education, with the initial development taking place in teacher training and social sciences. Most of the early educational developments in the field of simulation were of American origin, mainly for use of in the teaching of social sciences such as geography, international relations and urban development. During the 1970's however, simulation techniques spread to an ever increasing range of other subjects and from about 1970 onwards, they started to be used in the teaching of science. Zukerman and Horn (1970) considered that simulations perhaps are the fastest growing new method of instruction. There is a widespread utilization of simulation technique in the pre-service and in-service preparation of teacher.

Concept of Simulation

Simulate means to obtain the essence of without the reality, i.e., simulations do not have to look like the real life counterparts, but they have to 'act' like the real thing. Guetzkow defined simulations as 'an operating representation of control features of reality'. Thus, simulation has both real life elements and the represented elements of real life. In other words, simulation is a role playing teaching strategy in which learner performs the role in an artificially enacted environment. It can be said that simulation is a caricature in that some of the attributes of real life which are not realistically represented, may make the representation appear as a distortion or magnification or exaggeration.

When students use a model of behaviour to gain a better understanding of that behaviour, they are doing a simulation. For example:

- When students are assigned roles as buyers and sellers of some good and asked to strike deals to exchange the good, they are learning about market behaviour by simulating a market.
- When students take on the roles of party delegates to a political convention and run the model convention, they are learning about the election process by simulating a political convention.
- When students create an electric circuit with an online program, they are learning about physics theory by simulating an actual physical set-up.

Let us take another example to understand the concept better: When the structure of an atom is explained with the help of balls and sticks in a laboratory situation, it is actually a distorted size of an atom but it enables a group of students to examine certain features of an atom without the aid of magnification or special apparatus. The model of an atom may use some balls to represent the nucleus (protons & neutrons) and the electrons in their orbits around the nucleus. The orbits can be shown with the help of wires. In real life, these orbits are invisible and are certainly not composed of wire. In this sense, the represented orbit is a caricature of a real orbit. Keeping this in mind, we may think of simulations as:

Simulation= (real life elements + represented elements of real life)

It is clear that a simulation designer not only chooses what elements of real life to include and what elements to omit, but he also has to decide how task-relevant elements are represented. Therefore, simulations are not accurate physical representations of the real thing but they help to visualize real thing or real situations without containing any of the physical ingredients of these things.

Simulated teaching

Simulated teaching is a training technique used to change the behaviour of the student-teacher. It is also known as simulated social skill of teaching. It is used before the practice of class teaching. It is a role playing technique. The student-teacher plays the role of pupils and teachers. One acts as the teacher and others act as students and some as observers in the class. Small topics are taught as in micro teaching whose teaching duration ranges from 5 to 10 minutes. A discussion on the teaching method and teaching tactics takes place after the teaching span. After this discussion another pupil comes to the blackboard for teaching and the cycle is repeated again. The feedback that the student-teacher receives from his teaching helps him to modify his behaviour. Thus desirable behaviour can be achieved through role playing in the artificial classroom situations. Simulated teaching can best be defined as role playing in which the process of teaching is displayed artificially and an effort is made to practise some important skills of communication through this technique. The student-

teacher simulate particular role of a person or actual life-situation. The whole programme, thus, becomes training in role perception and role playing.

Simulated teaching helps in developing initiative powers and creative thoughts. It helps to reinforce facts and principles after they have been taught. Thus we can say that simulations help to bring about intense motivation, personal involvement and high quality learning into the classroom.

Simulations are instructional scenarios where the learner is placed in a "world" defined by the teacher. They represent a reality within which students interact. The teacher controls the parameters of this "world" and uses it to achieve the desired instructional results. Students experience the reality of the scenario and gather meaning from it.

A simulation is a form of experiential learning. It is a strategy that fits well with the principles of student-centred and constructivist learning and teaching. Simulations are characterised by their non-linear nature and by then controlled ambiguity within which students must make decisions. The inventiveness and commitment of the participants usually determines the success of a simulation. Simulations promote the use of critical and evaluative thinking. Because they are ambiguous or open-ended, they encourage students to contemplate the implications of a scenario. The situation feels real and thus leads to more engaging interaction by learners.

Simulations promote concept attainment through experiential practice. They help students understand the nuances of a concept. Students often find them more deeply engaging than other activities, as they experience the activity first-hand, rather than hearing about it or seeing it.

Simulations help students appreciate more deeply the management of the environment, politics, community and culture. For example, by participating in a resource distribution activity, students might gain an understanding of inequity in society. Simulations can reinforce other skills indirectly

So we can sum up as follows:

-teacher training technique

- role- playing

-teach ,discuss and feedback cycle

-helps in behaviour modification

-its experimental learning

- is motivational and enhance confidence and creative thinking

-helps to reinforce other social skills

Basic assumptions of simulated teaching

The general idea of simulation is to place a person in a situation which provides spontaneous interaction to see if he can practice producing certain patterns of behaviour. If this situation happens to be 'teaching' then simulation is called simulated teaching. The basic assumptions underlying simulated teaching are:

    i) Teaching behaviours can be identified
    ii) Behaviour of pupil teacher can be modified by two methods
           - By the use of role perception
           - By use of actual role playing
    iii) The behaviour essential for effective teaching can be drilled.
    iv) Feedback mechanism works in the modification of pupil teacher's behaviour.
    v) Social skills can be communicated.

Simulated teaching and teacher education

In simulated teaching student teachers are put in the classroom situation to learn to teach on their own instead of lecturing them about the classroom teaching. One of the student-teachers acts as the teacher and others act as students belonging to some class at school stage. There should be minimum 5to 7 student-teachers who are to practice a social skill. The one who teaches is called an actor. Two students act as observers and the trainees (two to four) who play the role of students are called foils. It can be diagrammatically represented as :
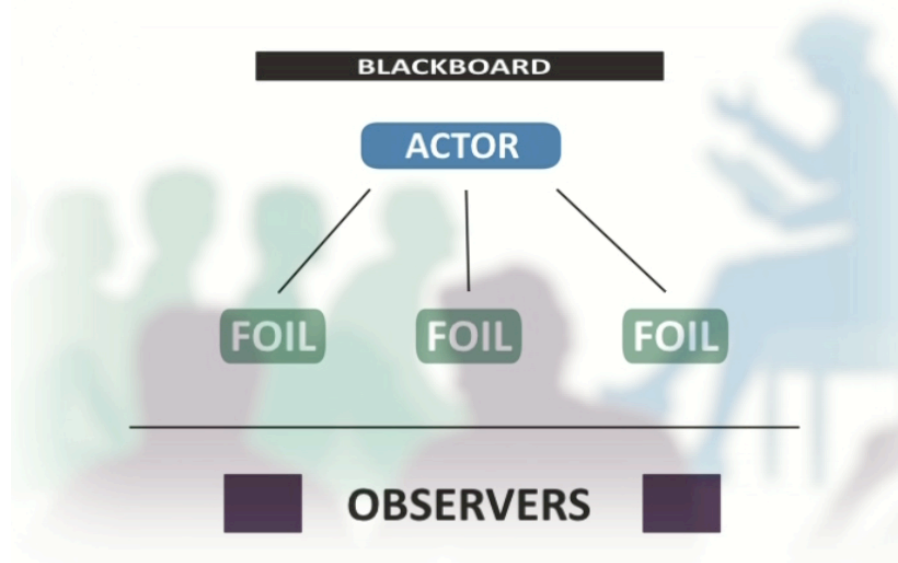
Procedure

Flanders has recommended six steps for using simulated teaching exercise. They are:

1. Assignments
2. Selection of the skill and topic
3. Pre-determine syntax of the drama
4. Deciding the procedure of evaluation
5. Conduct practice session
6. To appraise and redesign the simulation

Lets us now elaborate up the 6 steps in detail:

Step 1: Assignments: Each student-teacher in the group is assigned a number or letter. A system is built up to rotate the roles so that each individual gets a chance to be an actor, foil and observer.

Step 2: Selection of the skill and topic: the group decides and discusses the skill to be practised and lists down topics of conversation which suit that skill. Each actor can select a topic from this list that makes him comfortable in his role.

Step 3: Pre-determine syntax of the drama: Here, the sequence of activities in the drama is determined. Decide who will start the conversation, who will stop the interaction and when will it be stopped.

Step 4: Deciding the procedure of evaluation: In this step, it is decided that what kind of data the observers have to record and how the recording is to be done.

Step 5: Conduct practice session: the first practice session is conducted and feedback is provided to the actor. If necessary, the procedure may be altered for the next session in order to improve training. When practice session start working smoothly and each person has had an opportunity to be an actor, increase the task difficulty by conducting the foils in confidence or by restricting actor's role.

Step 6: To appraise and redesign the simulation: Move on to the next skill so as to present a significant challenge to each actor and to keep the interest as high as possible.

Activities in simulation

Some of the activities involved in simulation are as under:

Role playing: The role, false or actual, is performed in an artificial environment. This may give the pupil an understanding of a situation or relationship among real life

participants of a social process. He will gain some perceptions of the action, attitudes and insight of persons or situations.

Socio-drama: It seeks to utilize role-playing as a means of finding out the solution to a problem situation to the role players. The problem may be false or based on real life situation, and the actor is required to find out an acceptable solution of the situation.

Gaming: Here the situations employed involve outcomes affected by decisions made by one or more decisions. The game may be designed in a manner which enables chance to affect the outcome.

Advantages

1. It helps to develop relationship between theory and practice.
2. Opportunities are provided to student-teacher to study and analyse teaching problems.
3. It helps student-teacher to acquire classroom manners.
4. It helps student-teacher to understand behavioural problems of the classroom and develop teaching skills and avoid the risk of actual classroom encounter.
5. It helps to develop confidence in teaching among student-teachers.
6. Simulations permit control in the sense that rather than putting the students into laboratory settings, students can be placed in carefully selected situations.
7. Simulation training is a successful device to motivate and involve students and change the student-teacher's behaviour.
8. It provides insight into common individual and group problems and reveals different attitudes and tests various ideas in a practical situation.
9. It facilitates a more objective observation and analysis of student behaviour since situation is simulated and not as emotionally strained as real life circumstances might be.
10. It is a technique oriented towards activity in the classroom and in such activity both teachers and pupils participate. It represents an informal and corporate approach to the understanding of the situation.
11. It is a technique which is fundamentally dynamic. It deals with situations that change and which demand flexibility in thinking and responses adaptation to changing circumstances.

Limitations

1. Awareness of classroom problems is not developed through classroom simulator experience.

2. Classroom simulation especially the media-ascendant simulation requires special facility and expensive equipments,.
3. It cannot be used for the curricula of all the subjects. It has more importance in sciences than it has in the social sciences.
4. Experience gained in artificial training situations may not transfer to the actual teaching experience.
5. It is a time consuming technique in terms of planning, preparation, organization, presentation and evaluation.
6. Mockery or misguided humour by fellow student-teacher could disrupt the experiences unless the simulation technique is handled well.
7. The trainees are expected to modify their teaching behaviour to a pre-determined acceptable pattern. But it is very difficult to decide about this predetermined acceptable behaviour since each teacher will make a different response for one classroom event.
8. It needs to be carefully appraised in relation to distinct educational value.

Conclusion

In conclusion, we can say that simulated teaching is one of the techniques used in India and other countries for the modification of teacher's behaviour. The main reason is that simulations constitute a highly versatile and flexible medium whereby a wide range of educational aims and objectives may be achieved. It does provide funny, interesting and meaningful learning experiences. A well designed simulation can help to achieve positive transfer of learning. At the end I would like to wrap up the topic by saying that simulations helps to foster content related cognitive outcomes, non-cognitive skills (such as decision making, communication and interpersonal skills) and desirable attitudinal traits (such as willingness to listen to other people's point of view) or appreciate that most problems can be viewed in a number of different ways. Thus, it may be said that simulations help to bring intense motivation, personal involvement and high quality learning into the classroom.