System Approach in Health Education

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INTRODUCTION

The word 'system' is derived from Greek 'synthithemi' meaning to put together / 'synistanai' meaning to bring together or to combine. 'synistanai' or "to bring together or to combine" or rather "System " concept was originally used to manage 'armies', for better functioning. After industrial revolution (19-20th century), optimum, coordinated interaction of innumerable components, processes, concepts & principles became an integral part for "resultant product'. A system is a set of interacting or interdependent component parts forming a complex/intricate whole.

System is an interrelated set of parts and procedures (or components) used within one unit, working together for some common purpose. A system takes input from outside, processes it, and sends the resulting output back to its environment. In modern usage, system refers to an assembly of multiple components / procedures / concepts, which are interactive, interdependent and give rise to an expected result. Health education is a system of systems, operating within still larger systems. Complex interdependencies can lead to unintended consequences and unforeseen complications.

A health system is defined as comprising all the organizations, institutions and resources that are devoted to produce health actions, whether in personal health care, public health services or through inter-sectorial initiatives, whose primary purpose is to improve health.

A 'system' is a set of elements that functions as a whole to achieve a common purpose, like-

– Human body (a system)
– Cardiovascular system (a system)
– Car (a system)

– A moving Car (a system)
– Medical Institution (a system)
– Medical Education system (a system)
-Health Education system (a system)

A system has functional identifiable parts that communicate efficiently and affect each other. System concept can be applied to all fields of science, research, technology, industry, education, management and organizations. **Other ways to define a system-**

●Composed of parts
●All the parts of a system must be related (directly or indirectly)
●System is encapsulated (has a boundary)
●Boundary of a system is a decision made by an observer
●A system can be nested inside another system
●A system can overlap with another system
●A system consists of processes that transform inputs into outputs
●A system is autonomous in fulfilling its purpose

The four elements of a system – input, process, output and feedback – are interdependent in nature of these elements. **The basic elements of a system-**
1. Input- Input is what data the system receives to produce a certain output.
2. Process- The process involved to transform input into output.
3. Output- What goes out from the system after being processed.
4. Feedback- The Output is checked with the desired standards of the output set and the necessary steps are taken for achieving the output as per the standards, this process is called as Feedback. It helps to achieve a much better control in the system.

Characteristics of a Good System-

●Effectiveness
●Efficiency
●Dependability
●Flexibility
●Acceptability

System approach is a systematic attempt to coordinate all aspects of a problem towards specific objectives. In the context of education, system is a unit as a whole incorporating all its aspects and parts, namely, pupils, teachers, curriculum, content and evaluation of instructional objectives. System approach is an approach that entails analysis of problems and come up with blend of solutions, considering the problem as a part of 'a system'. So, "System approach" is nothing but tackling problems in an advanced disciplined manner keeping priorities in mind. System approach in education is a rational, problem solving method of analyzing educational process and making it more effective. This concept was proposed by Ludwig Von Bertalanffy in 1940s.

A part of basic understanding on "System", system is a dynamic network of interrelated parts, each and every part is important in constituting the whole, if one part does not function; there must be problem in the system. System as a whole is much more than sum of its part, System as a whole functions differently than the parts of the system. 'Systems thinking' as a process looks to achieve three objectives: (1) understand a system's dynamics—analysis; (2) understand a system's hierarchy—synthesis; and (3) develop solutions—decision making. These three elements make it possible to apply 'systems thinking' as a function for problem solving.

So, "System approach" is an approach or technique for understanding, analyzing, predicting and controlling the interactions and interdependence of the components of a system in a given situation to achieve specified objectives. "System approach" in laymans term may be – "Problem solving through logical thinking".

Systems approach in education (teaching-learning process)-

1. Determine educational objectives (institutional/departmental/SIOs)

2. Planning for assessment

3. Plan and implement the educational program

4. Evaluate to what extent the stated objectives has been achieved

5. Feedback – modify

A systems approach to health is one that applies scientific insights to understand the elements that influence health outcomes; models the relationships between those elements; and alters design, processes, or policies based on the resultant knowledge in order to produce better health at lower cost. Health education is a complex system & approaching a problem related to this discipline requires a logical stepwise approach starting with the situation analysis and progressing sequentially through input, process, output and feedback elements. There are different reasons for using system approach in health education. These are- rapid advancement in knowledge and technology in every field including the field of medicine. This has led to rapid emergence of newer specialties and super-specialties and the complexities of health education system has increased manifold. The demand for health manpower with different levels of skills is growing day by day. This has extended the scope of health education and training that is to be imparted to health professionals. At the same time, the social and economic situation is fast changing, with substantial variations from country to country and region to region. Thus the health needs of the society and social perception towards medical profession has changed considerably.

Health Education already takes a shape of "Specialty", even may "Super specialty". So, Systems approach became an integral part of this specialty. Rapid advancement in knowledge and technology in the field of medicine developed emergence of newer

specialties. Demand for health manpower with different levels of skills with clarity of goals of the course offered became very important. Appropriate assessment methods to find out whether goals have been achieved or not is also equally important. This compel us to select most appropriate designed curriculum, resources for teaching, assessment process, feedback to modify the system.

Benefits of using System Approach in Health Education-
The following are the benefits of "System approach"-
●Increases the quality of learning, or the degree of mastery
●Decreases the time taken for learners to attain desired learning outcome
●Increase the efficiency
●Reduce costs, without affecting quality
●Increase the independence of learners, and the flexibility of educational provision
●Enhance the development of knowledge, skills & positive attitudes in the learners
●Systems approach helps to identify the suitability of the resource material to achieve the specific goal.
●Technological advance could be used to provide integration of machines, media and people for attaining the defined goal.
●It helps to assess the resource needs, their sources and facilities in relation to quantities, time and other factors.
●It permits an orderly introduction of components demonstrated to be required for systems success in terms of student learning.
●It avoids rigidity in plan of action as continuous evaluation affords desired beneficial changes to be made.
Limitations of system approach-

●Resistance to change. Old ways are difficult to erase. There is always resistance to any new method or approach.
●Involves hard work. Systems approach requires continuous work.
●Lack of understanding. Teachers and administrators are still not familiar with systems approach. Though it has been successfully implemented in industry, it has still to make headway in education.

A system is a functional entity consisting of a number of interdependent and interrelated components. Systems approach indicates that teaching, learning and assessment are parts of an education system. By adopting the systems approach the gap between educational theory and practice can be bridged, and problems in health education can be solved more readily. Application of systems approach in health education helps to set the proper objective, select the inputs, processes and assessment methods. This will enhance the development of knowledge, skills, and positive attitudes in the learners. Eventually, this should result in better trained health care professionals who can provide an even higher level of patient care with improved patient outcomes as well al ensure the society about best delivery of health resources. So, "System Approach" in Health Education must be an integral part to serve the community in a better way.
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