



The Latticework:
Ackoff on Education



Russell Ackoff is known as one of the godfathers of systems thinking and [*Ackoff's Best*](#) is a compilation of his most acclaimed work. Given today's situation, it feels like we might be in the early innings of an education revolution – one where parents are increasingly taking their kid's education into their own hands. With that backdrop, we thought the below might resonate and be valuable food for thought.

1. **Educators make little or no effort to relate the bits and pieces of information they dispense. Subject matters are kept apart. A course in one subject seldom uses or even refers to the content of another...Such compartmentalization reinforces the concept that knowledge is made up of many unrelated parts. But it is only by grasping the relationship between these parts that information can be transformed into knowledge, knowledge into understanding, and understanding into wisdom...Emphasis on separateness of subjects was characteristic of the Machine Age. Emphasis on relationships and interactions is characteristic of the Systems Age. Machine Age education is disintegrating; that of the Systems Age should be integrating.**
2. Teachers cheat to stay in the system; students, to get out of it
3. Formal education denies the effectiveness of learning processes that take place out of class or school. Most learning takes place without teaching, but schools are founded on teaching, not learning. **Therefore, the Systems Age education should focus on the learning process, not the teaching process.** In the Systems Age school children should be motivated to learn whatever they ought to learn but never forced to learn what they do not want to. When students want to learn something or the need for learning it becomes apparent to them, they will learn it
4. Industrial Age education is variety-decreasing, but individuality should be preserved at all costs. Uniformity and conformity are anathema to progress
5. **It is artificial and counterproductive to separate play, formal education, and work**
6. Systems Age education should be organized as a continuing, if not a continuous, process.
7. Systems Age education should be carried out by either educational systems that can and do learn and adapt. It should facilitate a student's learning what he wants and needs to learn, enable him to learn more efficiently, and motivate him to want to learn, particularly those things he needs in order to satisfy his own desires and to be socially useful
8. Some subjects are best learned by teaching them to oneself, some subjects are best learned by teaching them to others, some skills are best learned through demonstration



and instruction by one who already has it, awareness of questions that have either not been asked or answered and synthesis of those answers that are available are best attained in seminar discussions guided by one steeped in the relevant area

9. Many students are best motivated to learn and best learn how to do so in attempting to solve real problems under real conditions with the guidance of one who is already so motivated and who knows how to learn
10. A major deficiency in formal education lies in its formality
11. Small groups of 3-5 students can be organized into learning cells in which they teach each other different subjects or different parts of the same subject.
12. Closed-book examinations - the type most frequently used - are poor tests of knowledge or understanding because they are not like real-life situations in which a person's knowledge and understanding are tested and evaluated. They are primarily tests of memory. In real life, we are evaluated by how well we get jobs done.
13. **I believe it is not nearly as important that a student learns any particular subject as it is that he learns how to learn and how to enjoy doing so. Subjects, disciplines, and even professions are convenient ways of labeling and filing knowledge. But the world is not organized in the same way as our knowledge of it is. There are no physical, chemical, biological, psychological, sociological, or other unidisciplinary problems. The disciplines and subjects are not different parts of the world; they are different ways of looking at the world.** Hence, any problem can be looked at from the point of view from any discipline. For example, a doctor may see an elderly woman's lack of good health as a consequence of her weak heart; an architect may see it as deriving from her having to walk up 3 flights of stairs to her inadequate apartment; an economist may see it as due to her lack of income; and a sociologist as a consequence of her family's indifference. Progress comes from creative reorganization of what we already know as from discovery of new things. **Therefore, we should not imbed our current wants of knowledge in students' minds as fixed categories. They should be encouraged to organize their learning in ways that best serve them, not us. Because what one learns is not nearly as important as learning how to learn, and because questions are at least as important as answers, students should be free to design their own curricula**
14. **An ounce of information is worth a pound of data. An ounce of knowledge is worth a pound of information. An ounce of understanding is worth a pound of knowledge**
15. Information is contained in descriptions, answers to questions that begin with such words as who, what, when, where, and how many. Knowledge is conveyed by instructions, answers to how-to questions. Understanding is conveyed by explanations, answers to why questions



16. Effectiveness is evaluated efficiency. It is efficiency multiplied by value, efficiency for a valued outcome. Intelligence is the ability to increase efficiency; wisdom is the ability to increase effectiveness
17. **There are as many realities as there are minds contemplating them. Learning how to determine what points of view will produce the best treatment should be, but seldom is, an essential part of education**
18. Academic departments and curricula do not organize knowledge; they organize teachers and disorganize knowledge. It is important for students to realize that the best place to deal with a problem is not necessarily where the problem appears. For example, we don't try to treat headaches with brain surgery, but by swallowing a pill
19. What's wrong with teaching? Four things are wrong with teaching. 1) More concerned with transmitting than receiving (although talking to others is a good way to find out what we think, it is often a very poor way of learning what they think). 2) it assumes ignorance on the part of the students. 3) it discourages, if not kills, creativity. 4) it normally uses tests and examinations to determine what students have learned, and they do not do so effectively.
20. **The less we expect from others, the less we are likely to get from them**



As the African proverb goes, “If you want to go fast, go alone. If you want to go far, go together.”

[We hope you choose to go together.](#)

