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Research Views: Literacy and Thinking

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# Research Views

## Literacy and thinking

JOHN T. GUTHRIE

In the early 1930s, a young Russian psychologist ventured into the upper reaches of Asia to test some ideas about education. At that time, Alexander Luria was a promising student with Lev Vygotsky, a scholar who introduced thinking to Russian psychology. Prior to Vygotsky, psychology had been dominated by Pavlovian reflex conditioning. But Vygotsky and Luria were convinced that between the stimulus and the response falls a thought, a mediation of complex mental acts.

Luria believed that processes of thinking could be improved by cultural and educational programs. The ability to think, like the ability to language, was an outgrowth of social, cultural, and educational institutions. The perfectability of man and the potential for improving mental processes in children were not questioned.

### **A culture in transition**

In Russia of the 1930s, political change was turbulent. Collectivization was taking place universally. Agricultural practices were being modernized, and industrial revolution was occurring. Luria saw these enormous changes as an opportunity for the study of mental growth. In North Central Asia, he caught a culture in transition from uneducated, traditional, and agrarian life to industrialized, literate society. During this age of transformation, Luria studied how literacy and the decision-making needed for industrialization related to the thinking, problem-solving, perception, imagination, and self-awareness of a people.

Luria trekked to remote villages of Uzbekistan and the mountainous area of Kirghizia. For centuries these had been feudal societies, the people remaining illiterate and living in villages subservient to wealthy feudal lords. Women could not leave their quarters unless covered by a veil and were permitted to speak only to a few other women and children. In this location, he found four groups whom he compared to one another: 1) Ichkari women who were non-literate and not involved in any social or decision-making activities; 2) peasants in remote villages who were illiterate farmers; 3) women who had been given a small amount of education for purposes of teaching kindergarten; 4) collective farm workers who had taken short courses in planning production and distributing labor, and were at least barely literate.

Luria did not drive a mobile laboratory unit into these villages and sit his subjects before computer-controlled consoles. His approach was more sophisticated. He established friendly relations by working with villagers, talked to them in the relaxed atmosphere of a teahouse, the fields, or mountain pastures. Around the evening campfire, he introduced “riddles” which we might today call experimental tasks. His informants responded by listening attentively, offering remarks, and exchanging their opinions about the best answers to the riddles. An accomplice to Luria sat nearby taking notes as unobtrusively as possible, capturing the answers to experimental questions and the free-flowing interchange.

One interview between Luria and an informant, Rakmat, was as follows. Rakmat was a 39 year old illiterate peasant from an outlying district. He was shown drawings of a hammer, a saw, a log, and a hatchet. Luria queried him. “Which one of these does not belong with the others?”

Answer: “They’re all alike. I think all of them have to be here. See, if you’re going to saw, you need a saw, and if you have to split something, you need a hatchet. So they’re all needed here.”

Question: “Which of these could you call by one word?”

Answer: “How’s that? If you call all three of them a hammer, that won’t be right either.”

Question: “Well, one fellow picked three things—the hammer, saw, and the hatchet—and said they were alike.”

Answer: “A saw, hammer, and a hatchet all have to work together. But the log has to be here, too!”

Question: “Why do you think he picked these three things and not the log?”

Answer: “Probably he’s got a lot of firewood, but if we’ll be left without firewood, we won’t be able to do anything.”

Question: “True. But a hammer, a saw, and a hatchet are all tools.”

Answer: “Yes, but even if we have tools, we still need wood—otherwise, we can’t build anything.”

### **Limited ability to classify**

This particular informant was limited to situational thinking. For him, all objects had functions in a practical situation. He could not picture an axe outside the context of chopping wood. He could not accept the classification of three items into the generic category of tools. A large proportion (80%) of illiterate peasants from remote villages classified objects from a variety of riddles in a manner like Rakmat. But young people with one to two years’ schooling all classified and generalized in a way we might expect.

The thinking processes of deduction and inference were studied by simple syllogisms. For example, Luria gave this syllogism to his informants. “In the far North where there is snow, all bears are white. Novaya Zemlya is in the far North. What color are bears there?” The reply of one informant, Rustam, a 47 year old illiterate peasant from a remote village, was as follows.

Answer: “If there was someone who had a great deal of experience and had been everywhere, he would do well to answer the question.”

Question: “But can you answer the question on the basis of my words?”

Answer: “A person who had traveled a lot and had been in cold countries and seen everything could answer, if he would know what color the bears were.”

Question: “Now, in the North, in Siberia, there is always snow. I told you that where there is snow, the bears are white. What kind of bears are there in the North, in Siberia?”

Answer: "I never traveled through Siberia. Tadzhibai-aka, who died last year, was there. He said that there were white bears there, but he didn't say what kind."

These subjects often refused to discuss any topics that went beyond their own personal experience. They often refused to accept premises of syllogisms that were not agreeable to them. But even if the premises were sensible and consistent with their own personal history, these subjects could not, or did not wish to, make deductions, draw conclusions, and go beyond the information that was concretely presented to them.

Luria recounts that illiterate peasants from remote villages had more difficulty with the syllogisms not associated with experience than those with which they were more familiar. Only 15% could solve syllogisms that were based on information that was outside of their own personal experience. About 60% could solve syllogisms that were within the framework of their daily lives. On the other hand, persons who had been given short-term education, some literacy training, and farm management skills were able to solve both categories of syllogisms with near perfect accuracy.

### **Beyond personal experience**

Luria is persuasive on the point that demands of an industrialized society, literacy, and higher orders of thought go hand-in-hand. Under complex educational and economic constraints, people learn to transcend the immediate physical sensory experience. New forms of abstract categorical relationships come to mind. The ability to make a logical inference, a deduction, appears and gains a compelling power, a force as strong as direct personal experience. From these flow imagination, an act of mind that can create the new. Inner search also becomes possible, the removal of oneself from oneself, which opens up the possibilities of freedom.

It was not until 1974 that the findings were published in the Soviet Union, about 40 years after they were brought to Moscow from the field. Before that, the study was eschewed as reflecting poorly on native workers and was not permitted an outlet.

Children who enter first grade in the United States these days are like the peasants of Uzbekistan in the 1930s—nonliterate. Although recent research shows our children may be slightly better thinkers, most of them having grown up with literate parents, it is school where children receive the tools of literacy. Teachers and other practitioners in schools who supply children with these tools purvey the essence of humanization, the movement from sensory dependence to liberated reason.

From A. R. Luria. *Cognitive Development: Its Cultural and Social Formulation*. Cambridge, Mass.: Harvard University Press, 1976.

### **Help for teachers of ESL children**

If you have children in your classroom or school for whom English is a second language, the Center for Applied Linguistics may be able to supply you with needed instructional and teacher-oriented materials not available through commercial sources. The Center for Applied Linguistics, 1611 North Kent Street, Arlington, Virginia 22209, U.S.A. Toll free telephone "hot line" within the U.S.: (800) 336-3040.