

area of the brain, a limited number of cells and fibres. It would not be a serious loss, so far as the awakening of brain areas are concerned, if a child never learned to read. Charlemagne could not read, and he had quite an influence upon the world's history and was a fairly brainy man.

Learning the deaf mute finger language would color about as large an area as learning to read. So would learning to play the piano.

*Writing* is not of great educational value. Its tinting of the brain area would be slight. The learning of short-hand would awaken about five times as much of this area, and be proportionately effective in brain development. Typewriting and telegraphy are also more useful in this regard than writing, and even a system of gesture is as valuable.

In *arithmetic*, the multiplication table has about 842 combinations. Experiments have been tried in having purely senseless combinations memorized, and a child will learn three times as many of these meaningless combinations, and remember them as well, as he will the multiplication table. To memorize two pages of ordinary print is as valuable in brain development as to memorize this table. An entire course of elementary or grammar school arithmetic, in the mechanics thereof, requires but about three times as much mental development as the learning of the multiplication table.

In *geography*, a careful study has been made of the ordinary course in a grammar school, and the entire probable array of facts that will be learned and held in mind, and the hackman who knows half the streets in Boston has as much knowledge and brain development as the child that has taken a course in geography.

There are upwards of 300 trades and industries in which ordinary men and women are engaged, and any one

of these awakens as large an area of the brain and secures as much brain development as an entire course in reading, writing, arithmetic, and geography. Many of these are of much greater value.

It is unaccountable that the Committee of Ten should not have known, or, knowing, should not have recognized, the fact that the great study of educational specialists is the mental complication and consequent relative value of each branch studied in school.

This mechanical learning of the regulation branches was for a long time the chief work of the school, and it affected a slight brain area. When the *objective work* came in its best form the area awakened, strengthened, and developed was increased about three-fold; and with the introduction of *manual* training in all its departments of sloyd, cooking, sewing, and drawing, the *will areas* were reached and five times as much area was awakened as in the mechanical. These areas literally grow so long as there is earnest study that affects them.

Even now, less than one half of the areas of the brain are awakened by those who take a full American university course. The basal, automatic, sympathetic areas are wholly unprovided for in any curriculum.

Religion, directly and indirectly, would influence vast areas that are now wholly fallow. No virtues of a secular school system can atone for the absence of all religious cultivation. We have much to learn from the Catholic church in this regard. I am a Protestant of the Protestants, but I would rather a child of mine should be educated in a nunnery, or in a rigid parochial school, with its catechism and calendar of saints, than to have no religious training. The Catholic church is strong where we are weak; namely, in the worship of the saints. We have allowed our prejudices to deprive us of one of the