

industry. The tendency of our higher institutions of learning has been to educate away from physical labor, to prepare only for the learned professions; to train the mind to think and the tongue to speak, but not the hand to do. But the world has grown wiser. It is beginning to perceive and recognize the truth that the trained hand is needed to do the trained mind's work, and that the best exponent of the thinking brain is the working hand.

The application of steam and electricity as motive powers, the rapid increase of mechanical contrivances to lessen labor and to increase production, and the subdivision of labor, especially in the mechanical arts, have created a demand for men who possess scientific knowledge combined with mechanical skill, and the want is constantly increasing, first to manufacture machinery and then to run it. Does anyone believe that a mechanic uneducated in scientific principles could build a locomotive and run it? And the more we are able to make the forces of nature take the place of human muscle, so much the more will be the need of educated and skilled labor as directing agents.

This state of things calls for a reorganization of our educational system, and we shall need in the future not alone the scholar to work out and formulate scientific truths, but also men skilled in their application; and as the various branches of productive industry become more and more divided and sub-divided, and competition becomes sharper, success will depend upon concentrating the greatest possible amount of scientific knowledge united with the greatest amount of skill in a single direction, hence the needs of special training. One advantage that will result from this kind of education will be that men will seek to perfect themselves in that kind of knowledge for which they have the most liking, and therefore most in line and harmony with their natural abilities. Among these kinds of schools I will name civil and mechanical engineering, architecture, commercial colleges, telegraphy, schools of agriculture and mining, dentistry, music, drawing, chemistry, navigation, and many more I might name. These schools of special teaching and practical application of scientific knowledge are becoming quite common in this country, especially in our large cities, and they are constantly increasing. Only recently