unconsciously used in all after life in reference to all objects of investigation, to the great advantage of its possessor.

When invention and composition in drawing, or simple designing, are taught, as they may be in our schools, they become powerful aids in the cultivation of the taste, reason, and imagination. When by simple and progressive exercises, children discover that they have the power to re-arrange lines and forms already learned, and even to create new forms and designs, the imagination becomes active, and the whole mind is aroused to greater activity in the pursuit of abstract knowledge.

Closely allied to this is the power of conception. Children should be taught to remember forms, and, by re-arranging them in their minds, encouraged to form mental pictures different from what they may have seen. From the formation of concepts of this kind it is only an easy step to the formation of concepts in other departments of thought.

It is this power of conception that enables a mechanic or artisan to see the form he would produce in the rude material in which he works. It enables the wagon-maker to see the axle-tree and other parts of a wagon in the wood from which he makes them. By this power the potter sees the beautiful vase in the clay before him, the stone-cutter sees the chaste form of the Ionic or Corinthian capital in a stone, and the sculptor sees the statue in the unshapely block of marble.

The higher exercise of this power is beautifully illustrated by an anecdote told of Michael Angelo. As he was one day rambling, in his holiday attire, with some friends, in an out-of-the-way street in Florence, he suddenly turned aside to what proved to be a block of marble, nearly covered with dirt and rubbish, and began to work upon it to remove the mire in which it lay. His friends seeing nothing but a worthless piece of rock, asked him is astonishment what he was going to do with it. "Oh! there's an angel in the stone," was his answer, "and I must get it out. He had it taken to his studio, where with much patience and labor with the mallet and chisel, "*he let the angel out.*" "What to others was but a rude unsightly mass of stone, to his educated eye was the buried glory of art, and he discovered at a glance what might be made of it. A mason would have put it into a stone wall; a cartman would have used it in filling in, or to grade the streets; but he transformed it into a creation of genius, and gave it a value for ages to come."

Teachers sometimes urge against the introduction of drawing that there is no time. We wish it distinctly understood, however, that drawing does not seek admission into our schools for the purpose of diminishing attainments in other branches of useful study, but as a handmaid to all of them, and as a relief from over-study. Parents sometimes complain that we as superintendents and teachers, have been driving their children through the mazes of reading, word method, phonic method, writing, spelling, mental arithmetic, written arithmetic, geography, object lessons, botany lessons, physiology lessons, physics, compositions, language lessons, grammar lessons, etc., etc., with a speed little, if any, less than dangerous to their health and constitutions. Drawing comes in not to increase this speed but to moderate it, by relaxing the mind and improving and enlivening our methods of instruction; by furnishing more for the hands to do while the excited brain is comparatively at rest. We plead then for the introduction of drawing in behalf of the children in our schools who are in danger of being overworked.

Having attempted to show that the study of drawing more than pays for its time and cost, in its favorable influence on the studies already in our schools, we shall now attempt to show that it is not only valuable *inside* of the school room, but that, *outside* of it, it has a practical bearing on most of the professions and vocations of life, and eminently deserves the name of "bread winner."

We cannot introduce shoemaking, tailoring, nor any other mechanical trade into our schools, but in the absence of these occupations, we can teach facility in the use of pencil, ruler, square, and compass, which we believe to be an excellent preparation for the handling of the various tools used in these vocations. It is estimated that nine-tenths of all the occupations into which labor is divided require a knowledge of drawing, and that the remaining one-tenth receives the lowest wages. Every thing that is well made,—"from a toy house to a cathedral, from a stovepipe to a locomotive engine—is made from a drawing."

It is generally supposed that not much skill is required to dig a ditch or throw up an embankment for a rail road track. Let us for a moment see what effect drawing will have upon the work of the ditch digger or railroad hand. If his eye and judgment have been trained by drawing, he can dig a straighter and better ditch and do it in less time than if he has had no instruction of this kind. Why? Because his trained eye sees at a glance just what is to be done at each particular stage of the work. He knows when he is digging too deep or not deep enough, and wastes no time in making mistakes to be corrected afterward. Such a man soon shows his superiority, while his fellow workmen, with stronger muscles it may be, but with less skill, must be content with lower wages.

The carpenter, bridge-builder, or ship-builder, who understands drawing, is not only able to read and understand the drawings made by others for his direction, but he can make them for himself, or for others, and thus lift himself above the mere drudgery of his trade. He will be called upon to do the work that requires the most skill, and consequently that commands the best wages. The way is open before him for becoming a skilled architect and superintendent of building construction, while his ignorant companions continue to plod through life without any prospect of advancement.

The blacksmith who can draw can also work more skilfully than he could without such knowledge. If any ornamental work is to be done, or work requiring knowledge rather than strength, he gets it, while the man who works by "rule of thumb" does the drudgery of his trade and receives lower wages. He has the elements of becoming, with practice and perseverance, a skilful machinist or artificer in iron, while the great mass of his co-laborers who neglect this means of training will go on pounding iron as they were taught by their ignorant masters, without once suspecting the reason why they are not advanced.

The stone-mason, or marble-cutter, who has been trained to draw, may become something more than a day laborer who lays down his zinc pattern, made by another, and, after marking around it, clips away the stone until it is the right shape. He becomes an expert carver, he originates designs and patterns of his own, and finds the field of sculpture open before him, inviting him to partake of the pleasures and honors of the plastic arts.

The wagon maker, the cabinet maker, the plasterer, wood-carver, cooper, jeweller, milliner, dressmaker, the machinist, and every kind of mechanic, each and all, daily and hourly, use the same kind of power in judging of forms, lines, and curves, that a proper training in drawing gives.

To sum up the whole in a few words, we live in a