

expenses. The special tax may be used to buy building sites, build houses, repair, furnish, rent, etc., but still another section says that the school board shall furnish, repair, etc., and where no special tax has been levied they could only do so out of the appropriation. The first object, however, is the important one. They should pay teachers and pay them well, as it is the only way of being sure of having good, efficient educators. This should be thoroughly understood and advocated. No tax will be more willingly paid.

Q.—What is required in the way of certificates from graduates of normal schools?

A.—The certificate which such graduate receives entitles the holder to teach for five years in the grade specified without renewal of certificate, but in one grade only.

Q.—Who has the right to grade the public schools?

A.—Sec. 63 expressly says that the teacher shall grade the schools, but it should be under the direction of the superintendent.

Q.—Should the election for school trustees be held at the same time as other elections?

A.—Yes, the same day, except in one or two of our largest cities. They are not held at the same poll, nor under the same authority.

Q.—Can a teacher collect pay for time when his school is not in session?

A.—I think not, but he should; it would be perfectly proper to insist that such a statement be made in the contract. When school is dismissed because of epidemic or other such cause the teacher should not lose his pay.

Q.—Should a third grade teacher be employed over those holding grade certificates?

A.—That is entirely in the hands of the superintendent.

Q.—Why should age debar a competent teacher?

A.—There must be some limitation placed, as there is in the case of voting, and the law has seen fit to fix it as it is.

Q.—If a trustee has given teachers positions before said teachers have passed an examination, should they be allowed to continue the school, having failed to obtain certificates?

A.—They should not have been given the schools. A teacher not holding a certificate has no claim on the public fund, and cannot collect pay by law. It is just possible that the trustee who employed them could be held responsible.

Q.—How should percentages be determined?

A.—That is left entirely to the examining board.

Q.—Can parents be held accountable to the law for non-attendance of their children at school, there being no room in school? Would you approve its strict enforcement?

A.—They cannot be held accountable. I would advise that it be thoroughly understood and in time enforced: I wish every teacher would procure a copy of the school law and read it.

Dr. Karl G. Maeser held a session for the benefit of Church school teachers, in which he went into details of work as it had been and as it should be done; the necessity of having the full set of Church school papers as

published in the *Juvenile Instructor*; the manner of procuring certificates, and the way in which the reports should be made out. Notification of examination of applicants was given. There were forty teachers present.

Prof. Whitely a graduate of the University of Oxford, England, was presented to the assembled students as the lecturer for the evening. He spoke of the singular and unique gathering and its objects, and commended all. The subject of the lecture was the "Science of Life." The gentleman has been engaged to teach at the B. Y. A. this winter.

On Wednesday, at Provo Summer School's exercises, Prof. Bach gave a music lesson. He wrote a melody and the class, under his direction, sang the piece after one trial. Prof. Giles pronounces it progressive in every respect.

Prof. Wm. M. Stewart, in the course of his address, said: In the study of number, principle, a clear understanding of basic facts is absolutely essential. We must be thorough in this understanding before we can arouse the understandings of children. I went through the high school, learned algebra and geometry, and all these high and mighty sciences; but when I tried to teach a class of little ones, I found out I yet had to learn number. In the study of number, I make no educator my idol, I do not tie myself down to any one method; I hold myself at liberty to adopt any means of arousing the understanding.

The teacher cannot give ideas nor convey principles. He can only stimulate the mind to think and discover facts. This is what we need to do for children, and the teacher needs to be free to arrive at the end by whatever he thinks the best way. Superintendents should not say teach it this way or that way. I believe I would call it presumption to do so. If the superintendent knows better how to guide a certain little class than their own teacher, there is something wrong; perhaps it is a poor teacher, but I am inclined to think it is a mistake.

Here is a true guide to method. Thought should always precede expression, and ideas should stand before symbols. I once heard a teacher say: "I fill them so full of the multiplication table that it runs out at ears and eyes." He meant rote multiplication, drilled in rhythmically, without regard to understand the combinations. Well, I believe in drill, but not until after objective knowledge has been acquired.

Most teachers teach books rather than ideas. They think they must transfer to the minds of their pupils the ideas and forms contained in the books in use. But too many books are illogical—constructed on wrong plans. For instance, most arithmetics consider percentage an entirely different matter from—we will say—reduction, and addition is treated as a subject entirely different from multiplication. This is wholly wrong. Number is a whole, and all its processes should go on together. The youngest child in school uses all is only bewildered and stunted by this unnatural process of isolation of subjects.

The teacher is hampered by the book in another way when he is required to impart to his students a given

quantity of its contents in a given time. How can anybody know beforehand just how much arithmetic a certain class can assimilate? We cannot quite part with the book, it is a useful guide and help especially to the teacher, but many times it should not be in the hands of the children.

The primary object in the study of number, as in all other studies, is mental growth—the bringing of the powers of mind into usable conditions; and this is done through original investigation. I am bitterly opposed to imitation, but the case before mentioned of one who improves on anything already in existence is not imitation; it is growth, original activity.

Children should be aided to acquire accuracy in their methods of computation, and be able to apply their knowledge to the ordinary affairs of life; otherwise their arithmetical work is mere tricks with numbers.

There is no more mental growth in a case of reaching results by cancellation only, than in the reiteration of 12 contains 3 four times. Nine-tenths of all the work cut out in the arithmetics is only tricks with numbers and no more food for the mind than tricks with cards.

Think of the absurd statements which make algebra a mystery and a fear to students, and discourage them on the threshold. I boldly say there is in algebra no such thing as transpositions, teachers and text book to the contrary notwithstanding. Shall we call such jugglery cultivating the mind? Can the mind be cultivated if we know nothing but the contents of books?

Some teachers and students find great difficulty in understanding decimals; but they are so simple. They are a class of common fractions whose denominator is ten or some power of ten. They are so symmetrical, or conventional, if you prefer that term, that we do not need to write the denominator.

Do read the rules in percentage; bear how you must handle base rate and percentage; but can the student comprehend which is base, which is rate and which is percentage? Most likely not.

I am bitterly opposed to formal rules given before the principle is well understood. But a rule formulated by the class, as an outgrowth of their understanding of the principle involved, that is very good.

Let us learn this one fact—figures are not numbers, but only symbols of numbers; and it is sad, not to say disastrous, to mistake symbols for the realities which they represent.

There are only two classes of arithmetical operations—building up and tearing down; otherwise, addition and division. Addition has two phases—addition proper and multiplication. Division has three phases, division proper, partition and subtraction.

In high class work we often fail to look beyond the symbols because we trust in our skill in using them; but if we really teach a primary class we must look beyond, or over, or around them, and see the actual fact. No shams for children, they must have living realities.

I learned more in mathematics by teaching a class of small children than