

# Graphicacy and Art Education

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The ability to think and structure thought in visual/spatial terms, in order to communicate ideas and concepts to others, was given the name of Graphicacy by Professor W.G.V. Balchin and Miss A.M. Coleman in an article that they wrote for the Times Education Supplement in 1965. In isolating this skill and comparing it with other modes of thought and communication, namely literacy and numeracy, they suggested that there was a case to consider Graphicacy as one of the essential underpinnings within education.

Professor Balchin's and Miss Coleman's conviction emerged through a recognition of a need in geography and it was from this that they applied their theory to a wide field of visual thinking and notation. It is interesting that the naming of this objective skill should come from this source instead of from those engaged as teachers of the visual arts, but then, perhaps, this is not so surprising after all as art has been concerned with making its major contribution to learning in schools in more subjective ways.

The Schools Council Art Committee has been very active, however, and proposals by Dr. Michael Twyman, of the Typography Unit, Reading University and myself have been under consideration. A conference on this subject was also held at York University. This proved to be a valuable meeting ground and a most useful set of papers were gathered together as a result.

The need for a major contribution from art teachers, as those who should be mainly responsible for teaching visual language, cannot be emphasised better than by quoting Bertrand Russell in the *Analysis of Mind* (London 1921), pp. 212. He wrote: "Those who have a relatively direct vision of facts are often incapable of translating their visions into words, while those who possess the words have usually lost the vision. It is partly for this reason that the highest philosophical capacity is so rare; it requires a combination of vision with abstract words

which is hard to achieve and too quickly lost in the few who have, for a moment, achieved it.

Society has changed a great deal since 1921 and the most important of these changes has occurred through the development of new media. It is now just as easy to transmit a direct vision of facts as it is to convey information about the same subject through words. Photography, film, television and high speed offset lithography and photogravure are readily available and the costs involved for the production of the visual image compare very favourably with the purely verbal one. With television both image and sound are an integrated part of the same electronic device and inseparable as a means of communication. There is no doubt that a much more integrated mode of thinking has resulted with, sometimes, the words acting as mere pointers to the content of a visual image, or with the vision giving a more personal and dimensional quality to the words. The two modes work together and which ever carries the content, is given the greatest emphasis. Why, therefore, does not a greater philosophical capacity result? The answer to this question, I would think, is to do with the one way nature of these communications, and the division of society into active and passive participants. In consequence, the passive ones only rarely achieve the words and much more rarely have the vision. Too many people are content to receive, without analysis, and not take part in the activity of understanding their thoughts through a process of actively recording them in visual or verbal terms.

It is generally accepted that an ability to write, stems from a capability to converse — literacy follows articulation. The ability to convey meaning visually, I believe, results through the development of a capability to draw. For it is only through this means that it is possible to achieve a direct vision of facts.

Drawing is not only a means of recording what we see, it is also an experience of

thinking directly into visual terms without the intermediate stage of thinking into words. When we make a drawing, the marks that we make onto paper are a form of notation and through these marks become a language for recording what we see and how we think about it in the terms of the medium that we have chosen to use. Drawing is also an experience over time, and the lines that are made successfully refer to all the lines that have been previously put down. It becomes a record of a thought process over a period of time that relates both to the subject and to the construction of this thought process in two dimensional terms.

The artist builds his drawing over a period of time, and yet he is able to show it to you as a thought that can be comprehended instantly as a completed whole. This is one of the major differences between a visual and written language. In the latter, thought is built up in time and is read and understood in the same sequence and within a similar period of time. Writing is a sequential language that is written and read along horizontal lines. The build up of the thoughts thus transferred to the reader are in the same order as they were written down by the author. When we read a drawing on the other hand, we see the whole expanse of it instantly and at the same time, and then follow this by examining it further in a sequence of our own deciding. Understanding, therefore, is made through a process of scanning and the order in which the parts of it are seen depends upon the individuality of the looker.

To take a simple example of what I mean, we can use the drawing of the triangle. We can say that it is composed of three lines, and yet we can also say that it exists as a completed shape of its own right and that it simply communicates 'triangle'. Nothing is said in the drawing about the sequence of events that went to its making.

The drawing of the figure could have

been started at the top and a succession of three lines could have been made through following a clockwise direction, or it could have been made by going back to the top again and starting the second line from that point again. It would be difficult to remember because the achievement of the shape was our overriding aim and the process of building it was thought about in drawing terms.

It is possible to build a triangle in quite another way. For instance, we can cut out a triangular shape of black paper and cut out a triangle of white paper that is fractionally smaller in dimension, and then we can paste this into the black shape to give the familiar line image. The difference here is that we have considered the contained white shape as an entity in itself, and because of this, have made a further appreciation of the image 'triangle'. Can you imagine the triangle as the side view of a cone, and can you, in your mind, then turn the apex towards you until you see it from the top as a circle with a dot in the middle? Can you draw it through the series of stages from the first view to the last?

To go back to Bertrand Russell, he said, "Those who have a direct vision of facts are often incapable of translating their vision into words while those who possess the words have usually lost the vision". What he does not say, although I think he could imply it, is that those who possess the words are incapable of translating the words into a visual form. Henry R. Cassirer said, in his address to the ICOGRADA (International Council of Graphic Design Associations) Conference on 'Visual Communication and Education' in 1971, "There is an old argument whether Latin or Mathematics are more meaningful in training a logical mind. I would suggest that translation into visualisation is on a par with both of them, and that a generation trained in this manner would be able to master more effectively not only the modern language, but get an understanding of natural as well as social phenomena."

The implication in this second statement, as it stands, is that translation can take place, and this is true when, for instance, an idea has been expressed first of all in words or number and is then transformed into visual language. However, there is also the thought that it is perceived through the eyes and is then directly expressed in the language of seeing, and perhaps, this is more our concern at this time.

Herbert Read writes in *A Concise History of Modern Painting* (1959) "Art is an ever-living question, asked of the visual world by the visual sense, and the artist is simply the man who has the ability and desire to transform his visual perception into a material form. The first part of his action is perceptive, the second is expressive, but it is not possible in practice to separate these two processes: the artist expresses what he perceives; he perceives what he expresses." He goes on to write: "The whole history of art is a history of modes of visual perception: of the various ways in which man has seen the world — the way it is presented to his own immediate vision. But this is not true — we see what we learn to see, and vision becomes a habit, a convention, a partial selection of all there is to see, and a distorted summary of the rest. We see what we want to see, and what we want to see is determined, not only by inevitable laws of optics, or even (as may be the case in wild animals) by an instinct for survival, but by the desire to discover or construct a credible world. What we see must be made real. Art in that way becomes the construction of reality."

If the construction of reality is the aim of art, I would suggest that this is also true of education as a whole, and that within this aim there is a special need to construct reality in visible forms. In discussing teaching and learning in this wider sense, therefore, the question is how can the visual be a language for thought and expression in areas

outside art, and in what ways can children be helped to construct their thinking within the different subjects that make up the whole curriculum? Henry Cassirer suggests that visualization can help as a logical tool for understanding natural and social phenomena. From this distinction it should be possible, therefore, to group subjects into those that are concerned with the natural sciences on the one hand, and those that are involved with areas of human interaction on the other. However, there are dangers here through thinking that while one is concerned with objective thought, the other can only be subjective. This would be a mistake, for both, objective or subjective, are part of a logical way of understanding within the double need for direct and considered expression.

The graph is defined as a symbolic diagram expressing systems of mathematical connection, and in this way is central to mathematics. Perspective, on the other hand, although a form of symbolic diagram, depends on the position of the eye in relationship to the objects seen and is, therefore, also a subjective action of perception by the perceiver in terms of position. In this sense it is even possible to consider it as the personal delight of being above, below or at the side of a set of objects and in expressing this situation in drawing terms.

Architectural and engineering drawings are, by comparison, almost always objective in their approach, and I would think that the forms that they take, through orthographic and other forms of drawn projection, are more suited to the communication of factual information.

Word communications, oracy, literacy and the study of English has a visual form as well. What is said is accompanied by gesture, by the recognition of movement in the eyes and with the mouth and by the general appearance and position of the speaker. The written word is communicated through agreed symbols which have visual form and

which have been designed to combine with each other to make up shapes that can be recognised as words. Letter shapes, in thousands of different typefaces, have been formed to give subtle emphasis of meaning to the text, and add an extra quality for understanding that can be conveyed only through this means. And word and image can combine as well to signify meaning that can only exist within the combination of the two. In this way the image and the symbol can integrate in a form that makes graphicacy and literacy into a single language and a single means of communication.

Geography and History, which orientate the child in space and time, have obvious visual forms.

Geographers, as we have seen, understand their discipline in visual/spatial terms, and find it essential to use this means for conceiving and communicating factors about the earth's surface in terms of area, space, scale and magnitude.

In history it is obvious to say that the study of the history of art is also the study of mankind. Appreciation in Art History is not enough, however, and there is a need for an active response through drawing in order to observe what is seen with more accuracy and understanding. The museums are important as a source for study as well. Charity James writes in 'The Museums and the School Curriculum': "Today, when education is freeing itself from traditional didactic techniques, when our concern is to help children to acquire habits of investigation, to perceive a relationship between facts and objects, the museum has a unique contribution to make. It is the perfect open-ended learning situation, and schools and colleges should look at it as the ideal library, laboratory or art centre. The object, with its many facets of interest, can be a focal point for comparison, personal investigations and creative activity."

The non-sequential ability to think visually in all these subjects areas, to exter-

nalise ones thinking in this way and to hold visual/spatial images in the mind, is surely an essential way of knowing as well as communicating. It has little to do with aesthetics except through the fact that a good and direct expression of an idea has an aesthetic value in its own right.

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