

## Chapter 2

# Assessment in the Perspective of a Social Semiotic Theory of Multimodal Teaching and Learning

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The world of meaning is multimodal. It always has been and now, for a variety of reasons, that awareness is once again moving onto centre stage. In education, a range of questions arises from this recent recognition. Among these, the two linked questions are becoming insistently urgent: ‘How do we assess learning expressed in multimodal texts, objects and processes?’ and ‘What theories are needed to deal with *assessment* in this environment?’ The framework proposed here is that of a *social semiotic theory of multimodality*. It provides a ‘take’ on *meaning*—and hence by implication on *learning*—and it provides a view on the characteristics and uses of *modes* in representation. It asserts that *modes* have different *affordances*; potentials, capacities as well as limitations for making meaning: a result jointly of the *materiality* of modes—sound, for instance, being different *materially* to movement or to colour—and often long histories of the shaping of these materials in specific societies. *Multimodality* asserts that societies use many means of making meaning beyond those of *speech* and *writing* and insists that they all be taken into consideration in domains in which *meaning, learning, knowing* and the ‘(e)valuations’/assessments of these are the issue.

Multimodality, as such, is not a theory. It describes the field in which meaning is made; hence, the need for the social semiotic theory. However, the two together enable an account of communication, of meaning, of learning and, with that, of assessment, in which these issues can be treated as distinct and yet remain connected, in theory and in practice.

Dealing with learning and assessment invokes theories of communication and meaning. Teaching is communication, as is learning; they are reciprocal aspects of one relation. Learning is the obverse of making meaning; they are two sides of one sheet of paper, as Ferdinand de Saussure (1983) might have said. Learning is the result of a semiotic/conceptual/meaning-making engagement with an aspect of the world, as the result of which the learner’s semiotic/conceptual resources for

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making meaning and therefore for acting in the world are changed—they are augmented. Learning happens in specific environments; environments of learning make available specific semiotic/conceptual resources in particular configurations. The characteristics of these environments and the shape of the configurations have large effects on possibilities of learning.

Assessment deals with a relationship between that which was to be learned—a curriculum—and that which has been learned. Two major issues for assessment are how to ‘recognise’ learning, say, when it appears in a mode not expected or legitimated and what might constitute data of that which has been learned. A common means is to ‘ask’ someone, in some way or the other: what they (thought that they) might have learned or how they felt that they had learned. I use the notion of signs of learning (Jewitt & Kress, 2001). These indicate changes in resources and capacities as a result of the processes of learning in the modes used by the learner in the assessment task.

There is then the issue of assessment itself, and differences such as those between (e)valuation and assessment. These have been the substance of a vast academic endeavour, captured in shorthand by the two terms of formative and summative assessment. Given that valuation happens in all environments in respect to all our actions, always, a theory of assessment ideally applies to all such environments and all forms of evaluation. At that point, questions focus on those metrics that can or might be used in different instances of (e)valuation.

## Communication

A minimal sketch of a theory of communication may serve as a basis for much of the discussion that follows. I develop this sketch around three entirely different examples: one is that of the operating theatre (see Fig. 2.1), the second comes from a ‘visitor study’ in a museum (see Fig. 2.3a and b) and the third is the BBC website for children (see Fig. 2.2). All three examples also function as *sites of learning*; each in significantly different ways, and so the question in each case is: ‘How would we assess what has been learned?’

Assume that we take the situation in Fig. 2.1 as the normal condition of communication—rather than notions of communication based on versions of diadic interaction, versions of which, in many modified forms, have haunted, and still haunt, mainstream conceptions of communication, even if by negation.

Figure 2.1 shows an operating theatre. An operation is in its very early stage. In the forefront of the image stands the scrub nurse; behind her, to the right, is the lead surgeon, and on the left is the trainee-surgeon—a qualified medical doctor training to be a surgeon; behind them, separated by a screen, is the anaesthetist; at the very back, barely visible on the right, is an operating theatre technician. In other words, there are representatives of four related, entirely integrated, yet distinct, professions. First and foremost, the situation is one of (communication in) a situation of professional practice. It is also an environment of learning, and so the questions posed here are ‘What has been learned?’ and ‘How can we assess that learning?’



Fig. 2.1 Operating theatre (Source: Roger Kneebone)



Fig. 2.2 The CBBC homepage

Communication here is multimodal: by speech at times, by gaze and by actions—passing an instrument, reaching out for an instrument and by touching. At all times, communication is ‘prompted’: a gaze produces a spoken comment, which produces an action; a look at the screen by both surgeons produces a guiding touch by the one of the other’s hand and an outstretched hand is met by an instrument being passed. Communication has happened when attention by one or more of the participants has focused on a prompt of some kind and that prompt has been interpreted by that participant.

This (rudimentary sketch of a) theory of communication is based on two assumptions: communication happens as a response to a prompt; and communication has happened when there has been an interpretation. Both, together, are fundamental. First, it means that interpretation is central, and so therefore is the interpreter. Without interpretation there is no communication. Secondly, it recognises that the characteristics and the ‘shape’ of the prompt constitute the ‘ground’ on which the interpretation happens. The prompt engages the attention of one or more of the participants; the participant’s attention is shaped by their interest (where, by interest, I mean the momentary ‘condensation’ of a social history, a sense of who I am in this social situation, as well as a clear sense of the social environment in which the prompt occurred).

To restate this in the frame of learning and assessment: learning happens in a complex social environment; with distinct social groupings present; they need to communicate across the boundaries of their differences; individuals’ interest frames their attention to what thereby becomes the prompt for their learning. It is the interpretation of that curricular prompt that can be called learning.

Communicational environments are complex. They consist of a plethora of phenomena that can, potentially, act as prompts; whether they are or not depends on the interest of a participant; her or his interest directs their attention to the prompt; this ‘interested attention’ frames an aspect of the communicational environment as a prompt; the characteristics and the ‘shape’ of the prompt provide the ground on which the interpretation proceeds; the participant engages with features of the prompt and forms their interpretation.

The action that follows the prompt is based on the interpretation. It is a sign of, and based on, that interpretation. If we switch our view from communication to one of (communication-as-) learning, then this is a sign of learning. In this perspective, meaningful assessment can only ever be based on that interpretation.

## Reading as Design

The rudimentary theory sketched here takes the new communicational world as given, rather than tinkering with older models based on different (social) givens in order to patch them up for contemporary uses. It re-centres attention in communication upon the *interpreter* of a *message-prompt*, rather than on the initial maker of the message. Through the lens of *learning*, the effect is a corresponding shift in focus from the teacher and teaching to the *learner* and learning.

There is a homologous situation in relation to reading. The ‘old’ page of writing embodied notions of authority and authorship, in which the author had assembled (knowledge-as-) text on behalf of readers, displayed on the lines of the printed page. Readers engaged with that knowledge/text in the order laid down by the author—an order of syntax, of lines, of pages and chapters. The reader’s task was to decode and acquire the knowledge as it had been produced and set out by an author. Contemporary sites of display—whether of information books (published by, for example, Dorling & Kindersley), of the screens of computer games or of websites, such as the children’s BBC homepage (CBBC) in Fig. 2.2, assume and act on the basis of a quite different engagement.

Unlike the traditional page, designed with a (pre-)given order of engagement/reading encoded in a ‘reading path’ (Kress & van Leeuwen, 2006), this website requires the reader’s *ordering-as-design*. It is the reader’s interest that determines how they engage with the page and the order in which its elements are encountered: the reader’s interest shapes the design of this page.

With this site, too, the question of modes of representation is in the foreground. On a first traverse of the site, it is not at all clear that content conveyed lexically through the mode of writing will be the first point of engagement; nor is the order of reading determined by the spatial order of placement of the elements on the site. ‘Reading’ conforms to the theory of communication outlined. However, if ‘reading’ follows the route of prompt, interest, attention, framing and engagement, it becomes ever more difficult to imagine and to maintain that for such readers learning does not follow the same route as reading. Readers who read according to a design of their interest—even though on the ground of someone else’s prompt—are likely to take much the same attitude in relation to their semiotic engagement with (all) other domains in their world.

It might be objected that reading for pleasure is one thing and that reading/engagement for learning in any institutional site of learning is another; there is, after all, the issue of power. But before I pass on: ‘How would we assess what learning there had been as a result of the engagement with this site?’ and ‘What would constitute materials to be assessed?’

My third example comes from a research project on visitor studies, ‘The museum, the exhibition and the visitor’. The research (funded by the Swedish Research Council) was conducted in Sweden and England. The visitor studies were conducted at the Museum of National Antiquities in Stockholm, on an exhibition on Swedish pre-history, and at the Museum of London, based on two exhibitions, ‘London before London’ and ‘Roman London’. Museums cannot, usually, exercise power directly in relation to either communication or learning of their visitors. In both the Stockholm and the London components of the study, visitors were invited to participate as couples (grandparent and child, friends, married couples, etc.) in order to understand how and what sense they made of a specific exhibition in a museum.

Those who accepted were filmed on video as they made their way through the exhibition. They were given a camera to take images of objects or ensembles that took their interest, and at the conclusion of their visit they were asked to ‘draw a

map' that represented their sense of the exhibition. They were also asked to participate in a brief interview. The aim was to obtain signs of learning. So each of these four 'takes' was seen as possible data for 'signs of learning'. Below, as an example, are two maps drawn by a member of two couples.

When an exhibition is designed, its designer(s) have specific aims: to show objects, images or reconstructions, or to tell stories of the pre-history of a community or place—and they also have specific social purposes in mind. These are rarely overtly stated in the exhibition, though in interviews with curators or curatorial teams it is clear that much discussion precedes, framed by policies of the museum. Semiotically speaking, an exhibition is a message; it is meant as a prompt to the visitors who come to engage with it. Pedagogically speaking, an exhibition (re)presents a curriculum for the visitor seen as a learner. In that context, the maps are indications of how aspects of the overall design message have engaged the visitor's interest; they are signs of learning.

Whether from the perspective of *communication* or of *learning*, the maps are of equal interest. They are not, of course, a full account of the meanings made by either of the visitors (a woman and a man). Nevertheless, they give a clear sense of a difference in interest, of a consequent difference in attention and framing and of distinctly different *interpretations* of the same *prompt*.

Most immediately, they show a different sense of what a 'map' is or does based on different conceptions of what is to be mapped. In one case, the notion of the map is very much a spatial one—the exhibition was arranged as a sequence of 'rooms' as distinctly separate spaces. The question posed, seemingly, was: 'What was the space that I traversed and what interesting objects did I encounter?' In the other case, the notion of the map is 'conceptual': the question posed, seemingly, was 'What are (the) significant elements of this exhibition, and in what order shall I present them?' For the first mapmaker, 'space' and sequence of spaces, a sense of 'movement through', with specific objects of interest included, define 'map' and the exhibition overall; for the second visitor, a map is defined as a spatially ordered representation, as a classification of salient elements.

From the same prompt, with a seemingly clear 'reading path'—the fixed succession of 'rooms'—each of the two visitors has fashioned their own design and a distinct interpretation. Whose interest has been dominant here: the curator's or the visitor's? Has the curator succeeded more in one case and less so in the other? Has one visitor couple 'failed' in their experience of the exhibition?

These are questions for the curator—and they are the motivation for engaging in 'visitor studies'. Looking with the lens of learning and assessment, these are *the* questions. 'Failure' or 'success' is a concept curators use in relation to either exhibition or visitor; for the pedagogue/assessor, they very much are *the* notions, though most often used in relation to the learner/student. This goes directly to conceptions of learning and to the social conditions in which learning happens. 'Has what I have provided as the curricular issue been learned?' is the teacher's/assessor's question. Would the teacher/assessor recognise these 'maps' as signs of learning, willing to accept them as indications of learning, either because of their modal expression as image and not as writing or speech—generically as report or story—or in terms of

their divergence from the curriculum: ‘these are nothing like a map’? Recognition or refusal/inability to recognise signs of learning has effects directly on possibilities and forms of assessment.

These aspects are dealt with by a social semiotic theory of communication/sign-making/meaning-making/learning in the way I have indicated. The first criterion is the visitor’s or learner’s interest. ‘What principles did each of the visitors/learners apply in their engagement with the curriculum of the exhibition?’ ‘What consequences follow for the pedagogue?’ Then come considerations of the path that the (curator as) teacher might have wanted the (visitor/) learner to take.

The curator might wish to understand the reasons for the differences in interpretation. One is provided by the notion of interest. As it happened, one of the visitors was an archaeologist and her interest is expressed in her map, but that is the case equally in all the maps. The teacher ought perhaps to be just as interested in these differences and in their origins; though that is not the usual path taken in forms of assessment in schools.

The matter of modes arises with the question of rhetoric and design; that is, it goes to the initial conception of the exhibition and from there to the overall ‘shaping’ of the exhibition, in the selection of its objects, in the salience given to particular themes and to the modes chosen in representing specific meanings: for instance, in its layout, in its lighting, in the use of written text and of image. Are three-dimensional objects more salient, more ‘attractive’, more noticeable than written captions? Is movement more salient than longer written accounts/explanations? Are painted scenes more engaging than three-dimensional tableaux? What effect does lighting have in creating affect and mood? Is the distance at which visitors are able to engage with objects, or whether they are able to touch an object, a significant matter? The question of affect has to be addressed in the case of the exhibition: the wrong affect will ‘turn off’ potential visitors. But affect is equally significant in all sites of learning, institutional or not.

In the map of Fig. 2.3, a three-dimensional space is represented in the mode of two-dimensional image; spaces that were rounded, irregularly shaped and of different sizes are shown as square, as regular in shape and uniform in size. Selection by the mapmaker has changed rooms with many objects into rooms with few or none. The maps, in other words, are representations shaped by principles of selection; by transduction, the change from one mode to another mode with deep changes in meaning; and by transformation, changes in ordering and configurations of elements within one mode also with changes in meaning.

Curators might see themselves first and foremost as communicators, and their response to these representations might be shaped by a wish for better, more ‘effective’ communication. Yet, museums are increasingly seen as educational environments, particularly by governments that fund them. Whether as communicators or educators, they are likely to be interested in those characteristics of their audience that seem to have an effect on both.

Seen from the perspective of teaching, effectiveness is judged in terms of assessment of some form or other. What has been learned is now the centre of attention. The question appears in several ways, each dependent on a different kind of

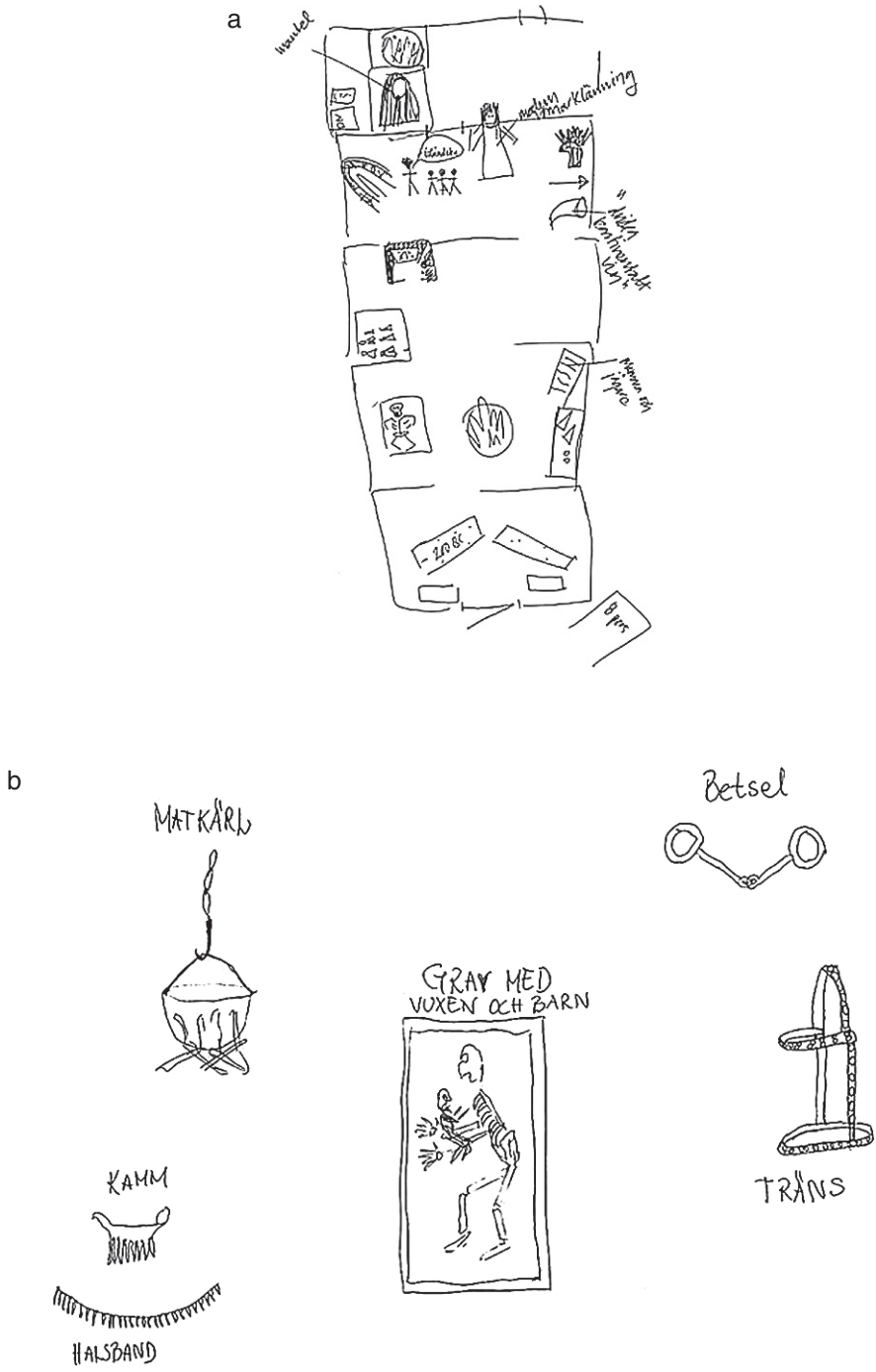


Fig. 2.3 (a) Map of a museum exhibition; (b) map of a museum exhibition



recognition such as: ‘Whose interests count in terms of curriculum and learning: those of the authority or those of the learner?’ ‘How can we assess learning expressed in modes other than those that are dominant in formal educational settings?’ ‘What theoretical and practical means do we have to assess learning in different modes; how do we assess multimodally?’ ‘What knowledge about mode and meaning, and therefore about multimodal assessment, do we actually have?’

While the first question is one about recognition of ‘authority’: ‘How can we recognise learning when it does not conform to our expectations of what was to be learned?’ the second question is about the ‘means’: ‘How was the curriculum expressed modally and how is what has been learned now represented modally?’ ‘What is actually recognised as means of representation of learning, as means of knowing?’ It is a question of ‘visibility’: ‘what is visible to the ‘eye of assessment’?’ ‘What is it possible, actually, for the assessor to see?’ The questions of recognition and of visibility are addressed by a social semiotic theory as it deals with meaning in all social relations and semiotic forms, and they are dealt with by a multimodal approach, with its insistence that meaning is made in all modes. One might say that most of the issues in assessment of a traditional kind boil down to the single question: Whose interests rule?

## **Semiosis, Meaning and Learning**

*Learning* is not a term that belongs in semiotics. So, can there be a *social semiotic* theory of learning? And what might we mean by *learning*? Notions of *learning* are products of the theories in which they are developed. Theories are historical, social and, hence, ideological products of the manifold social and political forces of the time of their making and use; theories of *learning* are no exception. *Learning* in institutional settings is a political matter, and as such subject to power in the service of ideology. Beyond that, there is the question of disciplinary difference: psychological, linguistic, social and anthropological, never mind the pedagogical theories of learning, which will each produce distinctly different understandings of *learning*.

In addition, can one ever talk about learning-as-such, or can we only ever talk of learning in specific contexts? Contemporary theorising favours the latter view. These questions point in two directions: one asks: ‘Is learning always shaped in essential respects by the structures, resources, participants and environments of the occasions of learning?’ The other asks: ‘Is there learning as such, irrespective of the circumstances in which it takes place?’

Both questions are central to multimodal social semiotics, because they focus on the role of the social and the material resources in and through which meaning is made and by which learning therefore takes place. One cannot have a theory of learning without a theory of meaning, however implicit that may be; a theory of learning always entails a theory of meaning. Meaning is the stuff of semiotics; hence, semiotics is inevitably and centrally implicated in any theory of learning.

Semiotically, sign-making is meaning-making, and learning is the result of these processes.

The term ‘learning’ has tended to be used when these processes happen in specific institutions with particular purposes and forms of power, which provide institutionally organised sets of entities as a curriculum and with which learners are required to engage. Usually, there are associated metrics for assessment in the environment of a pedagogy, whose aim is the making of social subjects according to purposes of the social group standing behind the educational institution.

While the core concept of learning is the concept, the core concept of semiotics is the sign, an entity in which meaning and form are fused (Kress, 1996, in-press/2009). In conventional (Saussurian-derived) semiotics, the relation of form and meaning is taken to be an arbitrary one, sustained by convention; in social semiotics, that relation is seen as ‘motivated’: form is apt for expressing meaning in the sign. This is crucial, as the concept of arbitrariness goes directly against the core notion of sign-making (rather than sign-use) in social semiotics, and against the sign- and (concept-)maker’s agentive and ‘interested’ role in the making of meaning, sign and concept.

This approach has a direct effect on assessment. If the sign in its form—say, either one of the two maps—is the result of its makers’ interest and is an apt reflection of that interest, then the form gives an indication of what has been learned. The maker of the sign has made the form of the sign to be an apt expression of the meaning to be represented. For the recipient of the sign, therefore, the shape, the form of the sign, is a means of forming a hypothesis about the maker’s interest and about the principles that they brought to their engagement with the prompt that led to the making of the sign—whether the experience of the visit to the museum exhibition or the experience of a series of lessons in the classroom. When the ‘recipient of the sign’ is an assessor, the question is: ‘What metric will be applied?’ Will it be a metric oriented to authority—a metric that indicates the distance from what ought to have been learned, whether in terms of modes used or in terms of conformity to the authority of the teacher/assessor; or will it be a metric oriented to the learner’s interest and that evaluates the principles the learner brought to the engagement with the curriculum?

The makers of the maps have made signs. In neither case was there any such prior sign to be used. In the making of these map signs, one or more of what are regarded by the mapmakers as criterial features of the exhibition are selected. The signs were made for reasons that were entirely motivated by the interest of the maker in the circumstances at the time of their making.

Sign-making, meaning-making and learning are, in this case as in all others, distinguishable only on the basis of different disciplinary perspectives on what is essentially the same phenomenon. In the case of the two maps, the prompt was the same; what differed were the map-makers’ interests.

If we take the museum examples as instances of learning, then the question of how to assess what was to be learned can only be done by recourse to multi-modal means. Modally, what was to be learned is distinct from the representations

of which document was learned. As I mentioned, three-dimensional objects have been transduced into two-dimensional images; ‘spaces’ have become images; the transformational process of selection has led to the deletion in the maps of most of what was there in the ‘curriculum’ of the exhibition.

## Interest

Before further exploring the issue of multimodal assessment, I want to re-emphasise two notions: that of *interest* and that of the *principles* used in the engagement with an aspect of the world shaped by interest. I use examples from two primary schools in (north) London. The children are 7 years old. The topic of the (biology) lesson was ‘Frog’s spawn’. Here are two *signs of learning*, each from a child in one of the two classes.

The examples illustrate *sign-making as learning*. The *interest* of the sign-maker selects what is criterial for them about an entity at the moment of its representation. What the sign-maker takes as *criterial* determines what they will represent about that entity; only what is *criterial* is represented. Representation is always partial.

The maker of the text of Fig. 2.4a decided to ‘spread’ the meaning he wished to represent across two modes: image and writing. While the maker of Fig. 2.4b uses writing to represent ‘the most interesting thing, namely ‘that the tadpoal are the blak spots’, the maker of Fig. 2.4a uses image to show the black spots in his carefully drawn image of frog spawn. Is the teacher likely to see this as a very nice picture or as a careful visual account of a scientific fact?

Both sign-makers took the black spots to be criterial, though they chose to represent them in different modes. In Fig. 2.4a, the drawing precedes the writing, and in this way it frames the writing in significant ways. In Fig. 2.4b, the ‘same’ fact is embedded in the written judgment: ‘the most interesting thing . . .’ Again, the question posed for the teacher is whether to accord embedding of fact to written evaluation higher status than the embedding/framing by the drawing, or the other way around—that is, accord to the child’s presentation of empirical reality as prior a higher status or to treat them as alternative accounts, both of which are worth exploring with the class.

I am not, here, so much interested in a detailed analysis of the two texts—for instance, that the maker of Fig. 2.4(a) foregrounds the explanation of the (for him new) concept ‘when frogs are born there called frogs born’, while the maker of Fig. 2.4(b) foregrounds her knowledge ‘I already knew that frogs have Baby’s’. I am interested in the principle of recognition as a heuristic device for the teacher. For me, that includes the recognition of both makers’ interest in precision, which appears, among other things, in their transcription of the language they hear.

‘. . . so they cont do nofing . . .’ where the transcription of the north London vowel in ‘cont’ as /o/ and of the ‘standard language’ consonant /th/ in ‘nofing’ as /f/ are signs of acute hearing and accuracy in transcription; as are the /ay/ in ‘thay’, and the

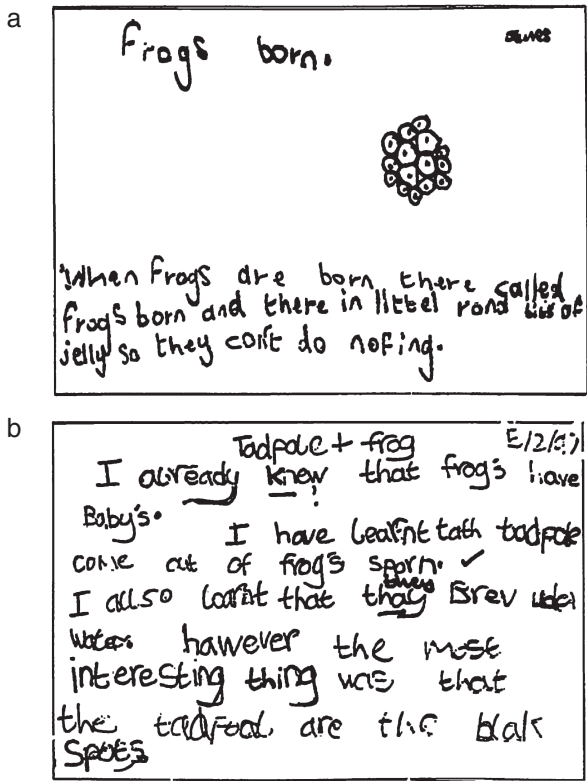


Fig. 2.4 (a) Frogs born; (b) frog's sporn

(voiced) /v/ as a transcription of the 'standard language' voiced /th/ in 'Brev'; as is the loss through nasalisation of the /n/ in 'uder water'.

And not least, of course, precision appears in their 'transcription' of the unknown term 'frog spawn'—semantically transcribed as 'frogs born' and syntactically transcribed as 'frogs sporn'—that is, 'frog's sporn', a nonsense term lexically, yet syntactically well motivated.

All signs are metaphors that embody the interest of the maker of the sign, whether the sign of a letter as transcript of a sound; of a concept, such as the black spots in frog spawn, as image or as word; or of an unknown word/concept, as in 'frogs born' or 'frogs sporn'. Given the principle that signs function as concepts, we can say that concepts are the result of the work of the sign-maker and represent their interest in relation to the world that is in focus. As a consequence, the semiotic, as much as the conceptual resources of the individual, is the result of their work in their engagement with their (social and cultural) world.

This can be translated into a view of learning in two ways. One is to say: what the sign-maker does, settles—if only for this moment—the world of signs and the state of his inner world. In this case, it has settled his understanding of what frogs born/frogs sporn is. With that, it has for a moment changed his capacities for making

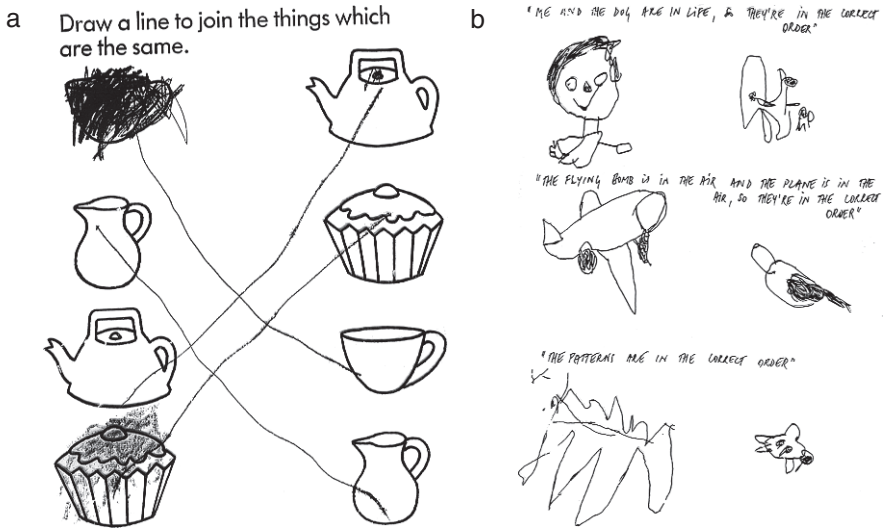


Fig. 2.5 (a) Benjamin: classification 1; (b) Benjamin: classification 2

(new) meanings and for future meaningful action in and on the world. It has changed the intellectual/conceptual potential of the meaning-maker, and in this it has changed this individual. That is a result of learning. The second would be to say, interest and partiality operate in quite the same way in learning as they do in representation.

How should principles/practices of assessment deal with that? What is to be assessed? Is it learning or is it conformity to authority? The question of multimodality is, in principle, neutral in this respect, though it does sharply pose the question, 'What is recognised as a sign of learning?' At this point it might be useful to propose a definition of learning:

Learning is the result of the transformative engagement with an aspect of the world that is the focus of attention by an individual, on the basis of principles brought by them to that engagement; leading to a transformation of the individual's semiotic/conceptual resources.

This provides a general view of *meaning* and *learning*. A (social semiotic) multimodal approach adds an insistence that meaning is made in a *multiplicity of modes*, always in *ensembles of modes*.

Figure 2.5a and b exemplifies a number of points of an approach to learning and assessment: the role of 'the school', the ceaselessly ongoing nature of semiosis—of meaning-making—and the role of transduction in that.

Figure 2.5b is a page made up (by me) of six small square pieces of paper from a phone notepad. One summer weekend day, the then five-year-old Benjamin had been drawing these images, unbeknown to his parents, who were entertaining friends in the garden. Seeing him laying them out in pairs on the floor in the hallway of the house, his father asked what he was doing. The five-year old said of the first pair, 'The plane is in the air and the bomb is in the air/so they're in the correct order'. Of the second pair he said, 'The boy is in life and the dog is in life/so they're in the correct order'. Of the third pair he said, 'The patterns are in the correct order'.

Some few weeks later, on the ending of the school year, he brought home all his school books. Looking through these, somewhat aimlessly, his father discovered the page, shown in Fig. 2.5a, a page from a school exercise book. The date on the page reveals that this exercise was done some four weeks before the images in Fig. 2.5b.

Figure 2.5a is an exercise in classification—‘linking like with like’, and when that was completed, spending time left in the lesson in colouring in the shapes—an exercise in control of the pens. My question is about the relation between the two events, separated by several weeks, one done in school as ‘work’, the other done out of the child’s interest, unbidden. Classification connects the two, though in the interval that concept has moved on significantly: ‘like’ is still connected with ‘like’, though the notion of ‘like’ has become more abstract, much more general.

Learning, around the concept of classification, had clearly continued, silently and invisibly, so to speak. At a particular point, ‘inner’ semiosis ceased momentarily and became external. The conception of ‘like’ was ‘framed’ and modally ‘fixed’ (in the sense of the ‘fixing of light’ in older forms of photography) in the shape of the six images and in laying them out as pairs on the floor. In Fig. 2.5a, the act of linking ‘like’ with ‘like’ was done manually; the manner of holding the pen and of drawing the lines typical of a five-year old is visible in the lines. The act was physical/manual and semiotic/conceptual—as indeed it was in the later instance, though now with a much more general sense of ‘like’.

I assume that language was not involved in this at all, at least not overtly, audibly. Language as speech appeared only when the father asked the child what he was doing and the child needed to formulate a response. Learning had obviously continued over the weeks, though where before there would have been the teacher’s instruction to link ‘like’ entities/images by a line, a physical, a visual as well as a semiotic act, now the conceptual work, drawing entities that were ‘like’ at some remove in abstraction, and ordering them in a layout that showed their conceptual order, was done without speech or writing.

How is learning about generalisation and abstraction to be assessed here? Is it only when speech appears that assessment of the semiotic/conceptual work is possible? My answer is that work produces change and that that change is meaningful. Semiotic work is no exception. Any principles of recognition for assessment will need to include the realisation that wherever work has been done, semiotic work included, meaning has been made, regardless of the mode or the modes in which that happened.

If we were to assess only the linguistic account of the images, the spoken commentary, would we have the ‘same’ entities available for assessment as the images themselves? The images are actually much ‘fuller’ and much more precise as indications of just what the child considered as ‘like’. In my view, the linguistic account is hugely general compared to the precise and specific images. That means that the verbal account is a reduction of what was available to be assessed and understood in the visual representation.

Again, there is the central issue of recognition: of semiotic and conceptual work in modes other than language, and of learning that takes the school’s prompt as the starting point but goes well beyond it.

Sign focuses on issues and resources of representation; concept focuses on inner entities and resources. The individual who has produced new, additional or more potent semiotic resources has achieved an augmentation of capacities for representation; the individual who has produced new conceptual resources has achieved an augmentation of intellectual capacities. In the social semiotic theory that I have sketched here, I take the ‘frog spawn’ example (but also that of the maps and the classifications) as characteristic of all sign-making, in any mode. I assume that the principles that I have drawn out here apply in all sign-making: signs are always newly made, on the basis of the interest of the maker. A sign newly made is a concept newly made. A concept newly made is a sign of learning.

## Recognition, Metrics and Principles of Assessment

From the perspective of a semiotic theory of learning, the following might be said: the *concept/sign* the child has made gives us an insight into his ‘stance’ in the world, with respect to this specific entity. As a general principle we can take all *concepts/signs* to be precisely that: an indication of the *interest* of the sign-maker in their relation to the specific bit of the world that is at issue; an indication of their experience of the world. Both *concept* and *sign* are shaped by that and give us a sense of the criteria, the principles, the *interest* that led the child to the representations he made. It is a point where we need to think about apt *metrics* for assessing/evaluating what learning had occurred.

Is our interest in learning? This is a strange question to put, though other questions suggest themselves, which makes it somewhat less strange. For instance, is our interest in producing conformity to authority around ‘knowledge’, or is our interest actually in environments and conditions of learning?

However strange the questions, they shape theories, policies and practices of assessment. The first of the alternative questions goes to the politics of teaching and assessment, to the political and social purposes of education and the second points to a misrecognition in debates about learning. Terms such as ‘e-learning’, ‘mobile learning’, ‘online learning’, ‘ubiquitous learning’ or life-wide, life-long, formal, informal learning seem to be concerned with environments and conditions of learning rather than with learning itself.

This is not, by any means, to question the significance of these concerns. Quite to the contrary, they point to central issues in relation to potentials for learning. We do need to ask and understand the characteristics of these already taken-for-granted worlds.

From the perspective of multimodality, we need to ask, in regard to something as commonplace now as the BBC website (see Fig. 2.2), what semiotic resources they offer; what social and affective resources are needed to engage with them, whether in everyday communication or as a learner? Rhetorically speaking: what are the characteristics of modal ensembles that most invite, that provide best access to such sites? What is the effect of colour, of images, of genres of image and genres of written elements; what are the effects of layout? What

considerations need to be paid to the culturally, intensely diverse environments in which the sites find—or do not find—their audience? In the London component of the museum study that I referred to earlier, it is beginning to become clear that the different composition of the audience—‘tourists’ broadly speaking, as much as the diverse local population—has real effects on ‘reading’. Do ‘visitors’ have the means for full access and form their own production in response? Questions of modes and the affordances of modes lie very close here. What semi-otic/modal resources are needed to be productive in these sites? What ‘navigational aids’ are needed? In relation to the BBC website, what are the semiotic characteristic of this world? Who prompts this learning? How do we describe what goes on here?

Do we have the theory and the terms to deal with contemporary social environments as communicational environments, never mind as sites of learning? In environments that are intensely multicultural (and multilingual), what rhetorical, communicational and representational responses are apt or adequate?

At this point I wish to introduce the concept of aesthetics. In contemporary market-dominated societies, choice dominates practices, at least ideologically/mythically. Choice is socially shaped as a social process. But choice, being socially shaped, is subject to power in different ways. In that context, style can be seen as the politics of choice. The social valuations of styles are equally and differently shaped by power, so that aesthetics can be seen as the politics of style. If we want to maintain the possibilities of ethical practices of behaviour, we need to recognise that ethics, too, is subject to power, and hence ethics needs to be seen as the politics of value and evaluation.

At this point I have returned to evaluation and assessment. My point is that in societies dominated by the forces of the market in conditions of intense diversity, we cannot attempt to construct a plausible approach to assessment without the consideration of the different aesthetics—the politics of choice and the politics of evaluation—that govern contemporary social life.

## Signs of Learning

In a social semiotic theory, signs made outwardly are seen as the best evidence that we can get for understanding the ‘inner’ processes of learning. The *visitors’ maps*, the *frog spawn examples*, the *classification examples*, are all *signs of learning*.

Here is my final example. It comes from a science classroom; the sign-makers are 13-year-old girls. They have been studying plant cells over four lessons; now their teacher has asked them to prepare a slide of an onion’s epidermis and then view it under the microscope. The teacher instructed them to report on what they had done: ‘Write what you did’ and ‘Draw what you have seen’. He gave two further instructions: that they should put the written report at the top of the page, and place the drawing underneath and not to use colour pencils in their drawing. Groups of four girls were working together, each around one microscope, having previously made the one slide. Here are two of their texts:



Apart from the fact that Fig. 2.6 does have the drawing at the top of the page, there are startling differences, especially if we remember that the young women had sat through the same lessons and had prepared and looked at the same slide under the microscope. I have discussed the differences and their significance elsewhere (Kress, 2001, 2003).

It is clear that each student has made different selections from the masses of material the teacher had offered during the lessons, and from the discussions between the girls during their joint work. Each had transformed the material in specific ways. Further, they had not simply ‘selected out’ and transformed elements, they had also ‘moved’ material from one semiotic mode (writing or speech) to another (image) in the process of transduction. So, for instance, what had appeared in the mode of writing on a handout sheet (‘The cells will look like bricks in a brick-wall’) appears in one of the two texts in the mode of image; what had appeared in the mode of speech by one of the girls, in talk around the microscope (‘It looks like a wavy weave’), has been transduced to the mode of image (Fig. 2.7).

If we want to get further with the notion of signs of learning, we need to ask more closely about the principles of selection, transformation and transduction that emerge here, arising from their differing interest.

The teacher’s instruction to ‘Write what you did’ is transformed differently: once as the genre of recount (events in chronological order) and once as the genre of procedure (instructions for producing actions in sequence). In these two examples the operation of transformation is clear: material presented by the teacher across the

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Looking at Cells

What I did ✓

At first Amanda and I collect all the equipment. Amanda peeled the skin off the onion, while I got the microscope. Amanda put the onion skin on the slide then I put a drop of iodine on. the onion then we put a cover slip on top of it. We then sorted the microscope out there.

We put the slide under reath, on the stage. We then looked in the ey piece. It was an interesting inter to look at and draw. ✓ draw.

Good. but make sure you copy. ✓  
 ✓ unused work ✓

Fig. 2.6 Onion cell/theory

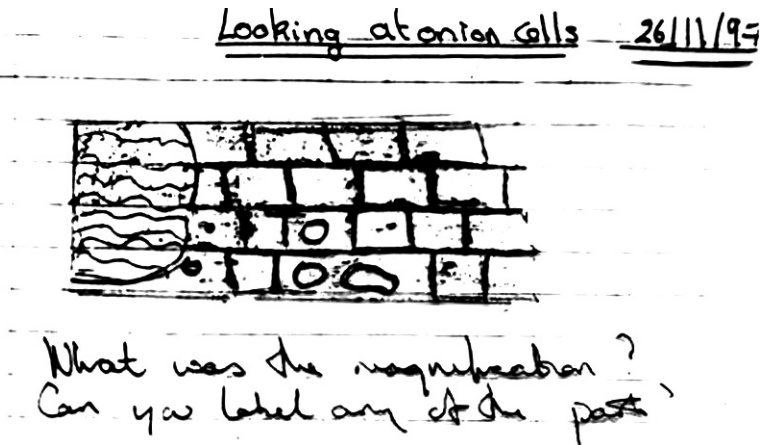


Fig. 2.7 Onion cell/eye-piece

four lessons is taken up and re-presented in relation to each sign-maker's interest. For one girl 'Write what you did' meant 'Report accurately what you actually did'; for the other it meant 'Present a regularised account of what should happen'. Each indicates their sense of what 'being scientific' might mean: in the recount it rests on accurate recounting of all relevant events and actions in the chronological order in which they took place; in the procedure it rests on careful specification of actions in sequence to ensure the replicability of actions.

The images show an interesting difference: the writer of the recount stays close to the handout's statement: 'The cells will look like bricks in a brick-wall'. She treats this as a theoretical statement, and transforms what she saw into a depiction 'predicted' by the theory—'theory tells us that it ought to look like this'. The writer of the procedure stays close to accurate observation, treating that as being essentially 'scientific'. Both drawings are signs of learning: they are precise accounts of the interest of each of the two young women, though resting on different principles. Each has led to distinct notions of 'being scientific'. Each is a sign of the result of the girls' engagement with the lessons and the teacher's demands; from each we get a real sense—I would say *the* real sense—of their learning.

The texts overall—the combination of written genre and image—are precise and complex records of just that. In the one text, the written part suggests that being scientific is to adhere to strictly prescribed practices, while the image suggests that being scientific is to be as accurate as possible in the visual recording of the empirical world. In the other text, the writing suggests that being scientific is about recording as accurately as can be what actions were performed in what sequence, while the image suggests that being scientific is to discover the truth of theory in the messiness of the empirical world. Both are signs of learning of what being scientific is about. In each case we can ask what an apt assessment of learning might consist in—conformity to the authority of the curriculum, or an understanding of the principles that emerge in these signs.

In the ‘cells examples’ just discussed, writing and image are used to do specific tasks. Writing is used to represent ‘what happened—actions and events in sequence, once in the genre of recount and once in the genre of procedure—and image is used to represent what was visually observed in the world. The two modes were used for differential engagement with the world. This might seem obvious, except that on the teacher’s handout the look of the cells had been represented using writing, and in the girls’ discussion around the microscope what was observed was represented in speech. In other words, there is a choice of what mode to use, and therefore there is a question as to which mode might be better and for what reasons; and further, what the effect of these choices might be on potentials for learning. Choices have been made by each of the young women; and in each case the choices have significant effect on what has been learned—and on what ought to be assessed.

### **Assessment in a Multimodal, Social Semiotic Theory of Learning: Metrics of Conformity versus Signs of (Principles of) Learning**

I have attempted to draw out two strands in an approach to assessment: the need to be clear about a theory of learning as the underpinning of forms of assessment and related to that the need for *principles of recognition of learning*. Here, I briefly restate them.

1. Work produces change; change is meaningful; semiotic work is work and produces meaning.
2. Meaning is made in all modes; learning takes place in all modes.
3. Signs are made in response to *prompts* on the basis of the sign-maker’s *interest* in transformative engagement with characteristics of the prompt.
4. The sign made in response to a *prompt* points to the *principles* at work in the sign-maker’s engagement with the prompt.
5. Learning is best seen in the frame of a learner’s principled transformative engagement with the characteristics of a prior prompt in terms of the learner’s interest.
6. Signs of learning constitute apt data for any form of assessment.
7. The question of assessment then becomes a question *either* of attention to *metrics of conformity* or to *principles of semiotic engagement*. As a slogan we can speak of an opposition between *metrics of learning* and *signs of (principles of) learning*.
8. In contemporary environments of communication, as of learning, it is implausible to restrict notions of effective communication to the mode of language alone. Assessment is no exception.

## Principles of Recognition of Learning and Forms of Assessment

Multimodality by itself is not a theory of learning, though it does focus on the need to attend to all the modes through which meaning is made and learning happens. Adequate forms of assessment need to address these givens. In systems of assessment that have hitherto focused on the pre-eminence of the linguistic modes of speech and writing as the secure route to understanding of meaning and learning (or of specific canonical modes in other disciplines—numbers, chemical formulae, etc.), this demands a conscious attempt at recognition of meaning-making and learning in all modes involved, in which signs of learning are evident. A theory of learning that aims to be adequate to contemporary forms of communication and engagement with the world, with contemporary views of power and authority by those who are (seen as) learners, and in fact, that wants to be adequate to the facts of human communication, needs to pay close attention to the actions of learners in all environments of learning. These are prerequisites for any serious attempt at assessment of learning. Only what is recognised and accorded full recognition as means and modes for learning can be assessed. What is not recognised will not and cannot be assessed. That leads to severe misrecognition of learners' capacities and actions.

**Acknowledgments** I wish to thank Roger Kneebone for allowing me to use his image of the operating theatre, and I wish to thank Eva Insulander (2008) for allowing me to use the images of the museum visitor's maps, as well as for her insights on them. I wish to thank Staffan Selander (2008), the Director of the Museum Visitors' Study, for inviting me to participate in that project.

## Glossary

**Affordance** The semiotic potentials and limitations for representation of a mode

**Apt, aptness** The idea of 'best fit' between what is the meaning to be represented and the form to represent it. An example is a three-year-old child's use of a circle to represent a wheel or the use of the past-tense form—distance in time—to represent social distance, as in 'I wanted to ask you for a small loan'

**Attention** The focus directed by a participant in a social/semiotic interaction to a specific aspect of the environment of communication

**Criterial** The factors/features of an object, event or other phenomena that embody the interest of the sign-maker and which, at the moment of representation, capture the essence of that which is to be represented for the sign-maker

**Design** The arrangement of the means for representation as a text-to-be, which aptly translates the rhetor's interest in the message in a specific communicational event

**Engagement** The meaning-maker's 'interested', energetic and sustained involvement with a framed segment of the world, which is at issue in an interaction

**Environment of learning** The (ordered) ensemble of social and semiotic characteristics that constitutes the relevant features of the framed world in which learning takes place

**Interpretation** The (semiotic) outcome of an engagement with the framed part of the world at issue, as the result of the transformation of the framed world in terms of the meaning-maker's interest and the integration of the resulting sign into the meaning-maker's existent semiotic resources

**Interest** The 'condensation' at the moment of representation of an individual's (social) history, a sense of who they are in the social environment of communication as well as a sense of the salient features of the environment in which the prompt occurred. These lead to the selection of that aspect of the phenomenon treated as 'critical' for the purposes of representation

**Materiality of mode** The recognition that modes are, usually, material/physical and that the materiality is an integral aspect both of affordance and of its semiotic and physiological effects

**Metrics of assessment** The set of features, based on specific criteria, used to measure the extent to which a response to an evaluation meets the evaluator's expectations

**Mode** The socially shaped, culturally available material for representation, which exhibits regularities of use as understood by a group

**Motivation** The assumption that the relation of form and meaning in any sign is not arbitrary but is a motivated expression of the sign-maker's interest in making a transparent sign in which form is apt for the expression of meaning

**Multimodality, multimodal** The phenomenon of the cultural availability of multiple resources for representation

**Navigation** The principles used by a reader/visitor for orientation within a (complex) semiotic entity/text in order to both locate material and design, establish and order within the material conforming to the 'navigator's' purposes and interests

**Principles of assessment** The principles that are brought to bear explicitly or implicitly in the evaluation of a semiotic process, event or object

**Principles of recognition of learning** The principles that are available or not and/or brought to bear in recognising what learning is, how and where it might happen and how and where it might be represented

**Prompt** The social and semiotic event, object or other phenomenon that becomes the focus of the attention of a participant in a social event or interaction and leads that participant to a response

**Recognition** The process whereby some semiotic entity or part of an entity becomes salient, visible and significant in some way to a participant in a social group and its interaction

**Rhetoric** A view of communication that frames a communicational event to include the initial maker of a representation as a text/message; the resources available for that; the phenomenon that constitutes the thing to be communicated and a sense of the environment of communication in which salient characteristics of the imagined audience are particularly significant

**Salience** Some feature of a text/message that lends particular prominence to an element of the text/message, whether by positioning or the inherent interest of the element or by intensity of colour, etc.

**Semiosis** The ceaseless process of meaning-making, usually ‘silent’, that is, not audible nor visible or sensible in some other way, though occasionally apparent in social interaction

**Signs of learning** Outwardly made material—visible, tangible, audible—signs, produced in some way as the outcome of an engagement with the world overtly constructed as ‘the world to be engaged with in learning’ or not constructed in that way but still the object of ‘interested attention’

**Site of display** The material space where a text-as-message is displayed. As such, it functions (also) as the ‘medium’ whereby a message is disseminated. The site has specific (spatial, temporal or other) aspects that have regularities of meaning that are understood by a social group and have semiotic effects on the message and its audience, for example, a screen, the homepage of a website, an advertising hoarding, the screen of a mobile phone

**Sites of learning** The actual, material or immaterial social/cultural, site in which learning is to take place, is taking or has taken place, together with the features that have a shaping effect on how learning might take place, such as power, affect, interest as well as physical material conditions of many kinds

**Social semiotics** A theory of meaning-making and communication that posits that signs are always newly made, that all sign-making is based on the interest of the maker of the sign, who makes signs as the motivated relation of a form which aptly expresses the meaning to be realised

**Transduction** The process in which meaning expressed in a sign-complex in one mode is ‘drawn across’ into another mode. In transduction, the entities of the original mode are not present in the ‘new’ mode, so that meaning has to be newly configured in relation to the affordances of the ‘new’ mode

**Transformation** A process of re-ordering the arrangement of entities of a sign-complex into a different sign-complex

## References

- de Saussure, F. (1983). *Course in general linguistics* (Trans. R. Harris). London: Duckworth.  
 Insulander, E. (2008). The museum as a semi-formal site for learning. In *Medien Journal, Lernen: Ein zentraler Begriff für die Kommunikationswissenschaft*, 32, Jahr-gang Nr 1/2008.

- Jewitt, C., & Kress, G. R. (2001). *Multimodal learning and teaching: The rhetorics of the science classroom*. London: Continuum.
- Kress, G. R. (1996). *Before writing: Rethinking the paths to literacy*. London: Routledge.
- Kress, G. R. (2001). *Early spelling: Between creativity and convention*. London: Routledge.
- Kress, G. R. (2003). *Literacy in the new media age*. London: Routledge/Falmer.
- Kress, G. R. (in-press/2009). *Multimodality: A social semiotic approach to communication*. London: Routledge/Falmer.
- Kress, G. R., & van Leeuwen, T. (2006). *Reading images: The grammar of graphic design*. London: Routledge Falmer.
- Selander, S. (2008). Designs for learning—a theoretical perspective. *Designs for Learning*, 1(1), 6–9.