



# Assessment in Visual Literacy

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In education, assessment is the counterpart of instruction and learning: it answers the question as to how far the intended results of educational efforts have been met. These results can be described and analyzed at the level of an educational program or at the level of an individual learner. In the first case the term 'evaluation' is normally used (i.e. 'program evaluation'), in the second case the term 'assessment' in its strict sense is used (i.e. 'student assessment') (Eisner, 1996, pp. xii-xiii). In this chapter we concentrate on (individual) student assessment.

## Functions of assessment

While the main goal of assessment is to determine if students have reached the intended educational goals, the information gathered by means of an assessment process can be used in several ways. First the information can be used to determine what could be done next to better arrive at the intended goals or to improve the results ('formative assessment'). Teachers can use the information thus gathered to give feedback to students about their progress. They can also use the information to improve or change their own ways of instructing or to adapt the organisation of the educational process. Students can use the feedback to give extra attention to their weak points.

Assessment can also be used to finish instruction or the learning process when the intended results should have been met or when the period of learning comes to an end ('summative assessment'). Most summative assessment covers a longer period of learning during which students have been able to master knowledge or skills that need to be demonstrated at the end of the course.

The third function can be diagnostic in character (diagnostic assessment). This type of assessment is used to determine the actual capacities or limitations of a student, unrelated to the actual learning process. Tests for dyslexia and dyscalculia are examples in place, but also intelligence tests, or tests to determine the actual level of knowledge and skills in order to advice for further schooling (placement tests).

Finally, function of student assessment is to monitor the quality of education at system level (monitoring function). In this case students' results are anonymously collected and used to monitor the quality of instruction at school level, regional level, national or international level. A well-known example of this last level is the so-called PISA research by the OECD, in which the quality of the education systems in some 65 countries is compared over the years (OECD, 2014). A central part of



this research is based on results on written tests by a selection of students that have been selected on the basis of a stratified sample. These tests have no consequences for the students making the tests. They are actually part of the evaluation of the curriculum or education system.

### Assessment as learning

In the four types of assessment discussed so far, the assessment is separated from the immediate learning process. Both teachers and students step back, so to speak, to have a look on what has been learned so far. In Visual Literacy, however, learning and assessment are much more intertwined. More specifically in studio work, practical assignments are a learning tool and an assessment tool at the same time. As a learning tool they guide students in their way to exercise or develop their practical skills in designing and visualising their ideas, feelings, experiences and interpretations. As an assessment tool it generates information about the progress in learning. The difference between formative assessment and summative assessment thus becomes a matter of the moment at which a task is executed (during or at the end of a period or course), and the amount of intervention of the teacher. As in summative assessment students are supposed to demonstrate their knowledge and skills with no help from their teacher. One could even say, that as soon as a student in Visual Literacy is able to perform a practical task without the help of anyone else and arrive at a satisfactory result, this task can be seen as a form of summative assessment.

This aspect of independency is a crucial characteristic of competency-based education. In competency-based education tasks and assignments that are given to students are formative in character, until the student demonstrates competency, which is when the intended goals and/or the intended level (i.e. independent performance) have been met. A task leading to the demonstration of a minimum competency can be regarded as summative assessment.

### Operationalization

As most of the assignments in Visual Literacy serve a double purpose, both as a learning tool and as an assessment tool, the construction and wording of these assignments must be given the highest attention. To arrive at valid and realistic assignments the following steps can be taken.

1. The first step is to define the purpose of the assignment: Is this assignment meant to discover new ways of working or to introduce new techniques (exploration, research, experiment), to visualize a personal view on an issue, to design a practical object, to demonstrate research skills in analysing pictures, or is the assignment used to train specific skills or techniques? Another question is whether the assignment is used to measure progress (formative assessment) or to determine the final level (summative assessment)?



2. The second step is to specify the actual goals: In most curricula educational goals are formulated in broad and generic terms, which might be applicable for different age level or levels of accomplishment. For instance, the goal to make a realistic drawing will be solved in different ways and at different skill levels by students age six or age eighteen. Also 'knowledge of the history of modern art' is too vague for a valid assessment. To make these general educational goals fit for daily practice, it is advised to operationalize these goals in terms of clear and observable outcomes. These outcomes have to relate to a certain level of learning and understanding of students of the age involved, and be in congruence with the curriculum, the character of the school and the background of the students. They should also relate to what has been learned or done by the students so far.

To arrive at an effective operationalization, the designing of the intended instruction and learning program might be helpful. For instance:

- what specific techniques, elements and principles, issues and information will be presented to students in the class room as elaboration of what is indicated in more general terms in the curriculum?
- in what order will they be presented?
- what themes will be addressed in the assignments?
- what type of knowledge, insights and ways to apply these in critical studies are expected?
- to what domains, periods, movements and artists does this apply?

3. The third step is to actually construct written assignments: Based on this design, concrete assignments and activities can be constructed that give students the possibility to learn or to demonstrate what they have learned. Any assignment should be formulated in such a way, that the intended goals are described in understandable and observable outcomes, being these working processes, material products, or both. Students have the right to know what is expected from them and how their working process and/or products will be assessed. For this latter the use of criteria is needed. When the wording of an assignment or the criteria is too unspecific or general, a mismatch between the goals of the teacher and the expectations of the individual learners might occur.

This avoid a mismatch the following aspects might be addressed:

- the goal of the assignment: what is the central issue in this assignment? How does the assignment relate to tasks students have done before?
- the type of effects or the qualities of the process or the product that are expected. For example: is the student expected to express opinions or feelings in her work, to address aesthetic issues, to make comparisons between periods in art history?
- the instruction with regard to the use of material, techniques, elements and principles. What skills and insights in the use of the artistic means must be demonstrated?



- the use of documentation and arguments. What type of verification is needed?
- the criteria by which the results of the work will be assessed. When is the result according to expectations?

Although it goes without saying that the criteria for assessment should match with the instruction, in practice this is not always the case. Sometimes the instruction given to the student might address aspects that in the end will not be assessed. It is also possible that in the assessment process characteristics of the work are taken into consideration that had not been indicated in the instruction. It is also of great importance to have the assignment formulated - in oral or written form - in such a way that the students have the same understanding of the concepts and criteria as the teacher. The correct wording is even more critical with younger students who might have a different, incorrect or no understanding of words or concepts used in the assignment.

Depending on the function of the assessment, the assessment instruments to be developed or used make different demands with regard to their validity, efficiency and reliability. For summative assessment and for monitoring purposes, the construction of assessment instruments is a demanding activity, as issues of reliability and efficiency are of the utmost importance. Depending on the characteristics of what is assessed, the format of these tests and tasks do not always reflect the way students have mastered the learning objectives. This is most visible in written tests, in which students have to answer questions showing their knowledge, understanding and skill to solve problems. In formative assessment the same types of instruments can be used, but due to a direct relationship with the learning process there is little time to develop high quality instruments. As a consequence the reliability of such instruments is generally low. On the other hand the feedback given by the teacher in formative assessment is directly related to what a student has done or learned just before. Students can thus directly relate this feedback to their own learning. The assessment is then an integral part of the learning process.

### Operationalization of competencies

When a curriculum is described and organized in terms of competencies, the need to operationalize what is meant in an assignment and what behaviour and products are expected from a student becomes inevitable. The concurrency of knowledge, skills and attitudes in a competency-based assignment makes it necessary to be specific about what knowledge, skills and attitudes are at stake. When related to the competency model as developed by the project, the following specifications and elements should be taken into account.

First, to what competency domain is the assignment related: production or reception, or both? Then one should clarify which sub-competencies the assignment is concentrating on: experiment, make, appreciate, present, etc. (see the inner figure of the structural model, chapter A.2). As these



sub-competencies are formulated as verbs, their meaning must be made more specific by relating them to the objective of the assignment (as exemplified in a 'situation'), to the means (knowledge, skills, materials and techniques) and the attitudes (like taking into consideration the point of view of the beholder or the maker, or the willingness to enter the working process, etc.) that all define the content of the competency.

In Visual Literacy the objectives of the subject is not limited to subject specific competencies only. As one can see in the structural model (chapter A.2), more generic competencies also play a role. So in a task one might also specify the role of 'self competency' (developing an opinion with regard to a theme or issue, developing openness to new situations, etc.), social competencies (collaboration, communication, etc.) and methodical competencies, like learning to learn and organizing one's work. It will have become clear from this description that the use of competencies in Visual Literacy generates the need to be very specific about the meaning, content and expected outcome of any assignment. This observation holds true for all good assignments, of course, but in competency-based education the interrelatedness of knowledge, skills, attitudes and the context in which these must be applied demand for a specific type of instruction for the student to work with and require clear criteria to be used in assessing the result.

With regard to the need for specificity in the instruction given to the students three observations must be added. First, in any assignment much can be left out of the assessment. Not every element in the instruction has to come back in the assessment process. For instance, in studio work it is inevitable that students have to make use of a technique or material to make a product, but it is quite well possible to leave out technical skills as part of the assessment and concentrate, for instance, on aspects like composition or dynamic effects only. In writing an essay on an issue in Visual Literacy, the linguistic quality and correctness of the language used can be left out of the assessment. Students should know about these choices beforehand, of course.

Secondly, students should also be given time and opportunities to exercise skills. Like in music, one cannot expect students to master a technique or material immediately. The need to develop skills and feel comfortable about them needs time. This can vary between students, both in the time needed, but also in the interest for specific techniques. So no formal external assessment is needed when students are improving their technical skills. Students can indicate that they have done enough exercises and that they are ready to move forward or use their skill in a new assignment.

Finally, during learning and as a result of learning, things will happen that are not part of the task, but which are most relevant for the students' understanding, learning or motivation. It is up to the teachers to keep an eye on what happens when students are working on an assignment and re-direct a students' working process or intentions when helpful.

Learning processes in classrooms are not taking place in silence, contrary to most assessment processes. As in studio work learning and assessment are intertwined, the interactivity between teacher and students, and among students is an essential aspect of the learning process, but this also



influences the assessment process. It is not an easy task for a teacher to keep a clear distinction between what has been the result of his or her didactic support or feedback to the student during the working process, and what is presented as proof of authentic student learning. From an assessment point of view, this mixing of support and assessment is undesirable. But in Visual Literacy, like in all art subjects, the product of a practical assignment will in most cases be the result of the student's practical skills on the one hand and the support of the teacher on the other hand. It is important that in the end the student has made the work and the teacher has not taken over, - an intervention that in some cases, however, can be very instructive to students.

### Ways of assessment and judging

To arrive at a valid assessment it is needed to formulate the criteria on which the learning of students will be assessed. Depending on the criteria an instrument can be developed. The most common format used in educational assessment is the written test. This can follow the format of a selected-response test (multiple-choice questions), a constructed response test (open ended questions), essay questions or a paper. The type chosen depends on the type of cognitive skills or competencies addressed, and the needs for objectivity and efficiency. The use of written test in Visual Literacy will not be discussed here.

In Visual Literacy the majority of assignments are related to studio work. In some cases all students are expected to make the same work and arrive at comparable if not identical results. In other cases the students are expected to generate their own ideas with regard to content, composition, use of colour, material, etc. Especially when students are expected to show individuality or an original approach to the work to be made, or to take a personal position with regard to the issue at stake, it becomes more difficult to assess students' work in a transparent way. Comparing results becomes also difficult, as there is little commonality. What is common can only be formulated in abstract terms, like 'expressive quality', 'originality', 'use of colours', 'composition', etc. There are, however, no perfect visual examples demonstrating the meaning of all these terms and concepts. So what is the point of reference to be taken to assess studio work? In assessment theory this question can be answered in three ways.

The first approach is to define external criteria that describe the minimum level all students should demonstrate in order to pass the test or exam. These external criteria consist of two parts: the correct responses, according to a predefined answer model, and the minimum score needed to pass the test. Both parts are normally set before the test is taken, and not negotiable. This is the so-called 'criterion referenced' way of assessment. This type of assessment is common in tests that have a highly critical relevance, like final examinations, but also in getting a driver's license, or in medical assessment. The second approach is 'norm-referenced' assessment. The main difference is, that the decision to pass a test is not based on an externally defined minimum score or result, but on the results of all



students (peers) involved. In daily educational practice this is the most common approach in classroom assessment. This will prevent the possibility that all students will fail the test, but it also introduces arbitrariness with regard to the minimum level to pass the test. It also generates the difficulty that the results cannot be compared to the results of students on the same test or task in another group.

The third approach is called 'ipsative' assessment. Here the results of a student are compared by earlier results of this same student on a task or test taken earlier. The assessment can support the student to concentrate on the improvement of the results (or the lack of it) and on whatever aspects that is deemed relevant. It will be clear that in this type of assessment it will be even more difficult to arrive at a qualification of the student's learning in comparison with that of all other students. This is particularly relevant when decision must be taken on the minimum level a student has to pass in order to go to the next class, or to get a grade.

A fourth type of assessment is 'peer assessment'. In this case the classmates of a student who have themselves made the same or a comparable task, will comment on the result of a student's work. The comments can be either formative or summative in character, although the latter option is less probable, as it is the teacher who is responsible for the final assessment. The type of feedback in peer assessment is often idiosyncratic and unstructured, but it can be highly effective, as the peers are facing comparable problems and can discuss the issues in ways that are much nearer to the student than when the assessment is done by the teacher.

In Visual Literacy, a fifth approach is also used in some cases: 'jury assessment'. This is common practice when a student wishes to enter an art academy. As this type of assessment is normally not used in regular education, it is not further discussed here. The different formats for assessment can also be used in combination.

## Criteria

Each type or way of assessment has its advantages and disadvantages. But whatever approach is taken, in all cases students should know beforehand the criteria on which they will be judged. For a written test the criteria will be based on the description of the domain to be assessed, and preferably the minimum score needed to pass the test is communicated as well. For studio work and practical assignments criteria for assessment need to also be formulated beforehand. These criteria have to be as unequivocal and precise as possible. It is also important to check whether students have a correct understanding of the criteria. It has also to be clear to the students what weight is given to each criterion, or to groups of criteria (e.g. proportion of process versus product related criteria). As criteria tend to be rather general in character (e.g. 'using perspective properly'), more specific indicators can be formulated that indicate to the most relevant aspects of the criterion (e.g. 'use of a horizon', 'all lines end in one vanishing point', 'lighter colours in the suggested distance', etc.).



The amount of criteria should be limited, to prevent all parties from becoming bookkeepers, ticking off a long series of criteria and indicators. Normally it is the teacher who decides on the criteria for assessment, but it is also possible to give students the opportunity to decide by what criteria products must be assessed. This will also help students to generate a better and more active understanding of the criteria and their indicators that best illustrate their ambitions. From what has been said so far, it will be apparent, that the role of criteria in studio work is very important, whether they are related to subject specific competencies or to generic competencies. To make students learn to understand and also formulate criteria and indicators should be part of studio work in Visual Literacy.

## Grading

The need in education to express results of learning in quantified terms (scores, final marks, grades) is complicating assessment in Visual Literacy. There are several ways to approach this issue.

First, it is advised to only use scores when it is possible to make a clear distinction between correct and incorrect answers, or when distinct levels of accomplishment can be clearly distinguished. This distinction should not allow in-between scores like a half. It is then better to extend the scale with extra points. Secondly, one has to be careful not to attribute mathematical properties to scores on a scale too rapidly. Actually, most grading scales used in education are not mathematical in character.

Although a grade (like 'A') might represent an interval in percentages (90-100%), this does not mean that grade 'A' is twice as good as the grade that represents a percentage between 45 - 50% - which in most countries is a failure. One should also keep in mind that the way these percentages have been calculated is not always based on interval or ratio scales either. Some grading systems that use a numerical scale (1 to 10, for instance) are ordinal scales, representing a series of level that are qualitatively defined (like 'insufficient', 'passable', or 'good'). So the urge for quantification in grading in many cases results in procedures and scales that are still qualitative and mathematically unsound or useless. For Visual Literacy (and all art subjects, for that matter) it is helpful not to concentrate on the need to generate data that can be processed mathematically, but to concentrate on levels that represent qualitative descriptions or differences in performance. The use of quantities is only helpful when (officially) needed for communication or for a decision. In the end it will always be possible to translate any qualitative appraisal into a number or grade that has a highly informative and even decisive character.

## References

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