Summary of evaluation methods for Design-Based Learning: 4 options

I Final evaluation 'standard'

II Dance Card evaluation

III Carousel evaluation

- for final evaluation
- for midterm evaluation

IV Exhibition evaluation

I   Final evaluation (standard)

This type of evaluation is the most used form of evaluation in Design-Based Learning and is also the most used form at Eindhoven University, Department of the Built Environment. This type of evaluation is used for almost all projects for the final evaluation as well as midterm evaluation. *For graduation projects this is the standard evaluation method.*

ORGANIZATION

- Presentation in a formal setting, such as an auditorium. Standard presentation (10-20 minutes for most presentations, 30 min. for graduation projects) followed by questions (about 5 minutes for most presentations, 15 min. for graduation projects) from the critics and the rest of the audience. Students use a beamer during their presentation and additional media such as posters and models.
- A number of critics (2 for most presentations, 3-4 for graduation projects) are seated front row.
- Students listen to all presentations and are often invited to join the discussion.
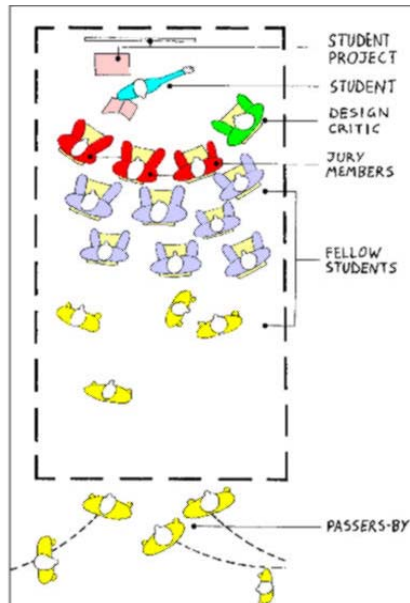
Scheme of "a presentation to rows of seated individuals" (Doidge, Sara, & Parnell, 2000)

CRITICS

- The critics are mainly teachers and professors from the Department. External experts (f.e. as graduation committee members) are invited too. Fellow students can ask questions too.
- Professors and external experts can both have the role of assessor.
- Tutors (often professors and teachers) have a dual role in DBL. During the process they are experts as well as coaches. However, this changes during the evaluation when tutors become assessors of the final product, the development process and the presentation skills (in words, in schemes, drawings and models as well as in reports).
- The pairs of critics can be very divers, depending on the project goals; the pairs of critics are often professors from the same group / field of expertise (however, in a multidisciplinary project the critics are often professors from different groups / fields of expertise).

Left: photo of traditional review in a theatre environment. Right: critics seated in the front rows

PLANNING

- This evaluation method requires a strict time schedule for the presentations. A time schedule is prepared in advance.
- There is a maximum of presentations – about 8-12 – that can be held at a half day, because of the time that is needed for the presentation and asking questions.

EVALUATION TYPE

- Used for midterm as well as final evaluations

LEARNING GOALS

- In DBL it is important to consider details as well as to keep track on the total picture. In daily supervisions the focus of a student is often about detailed problems that need to be solved, while in a presentation a student has to enhance the outline as well as the mutual relations. Also presenting is an important aspect to pass the results of a design.

ASSESSMENT & GRADING

- The jury (tutors) / graduation committee determine the grades.
- During the discussion after each presentation a student receives some feedback. However, the time is often too short to have an in depth elucidation. Grades are usually given afterwards – when all presentations are over and can be compared, and after council between critics. Often critics give an explanation for the grades, but little is received by the students. Because directly after the presentation, when a student is still influenced by the excitement of the presentation, often fatigued by long days to prepare the presentations and also still are in the perception of the mark, this feedback is quite inefficient. Asking students some time later to recall the critics on their work, most students find it difficult to restate a brief yet comprehensive outline of the comments received.
- In some cases grades are given for a midterm evaluation, but many tutors prefer to provide 'formative' feedback at a midterm evaluation.

FEEDBACK

- After the presentation the critics will ask questions. There is discussion 'on the spot'. However since tutors are mostly sitting in the front row, discussing to a presenting student, the audience at the rear receive little of this. The presenter also receives no in depth feedback due to the limited time that is available for discussions.
- Assessment forms – such as rubrics – are used for feedback or grading.
- In some case the feedback is also given afterwards in written form, but this is often a summary of the discussed items.

CONTACT PERSON

- Department of the Built Environment: ir. T.T. (Tom) Veeger, ir. J. (Jan) van der Meulen.

EVALUATION OF THE STANDARD EVALATION

- The department of the Built Environment has conducted many evaluations of this evaluation method.
- Information is available at the educational office (ir. Jan van der Meulen).

II   Dance card evaluation

University of Oregon, School of Architecture and Allied Arts, (Urban Design, Landscape Architecture and Architecture).

Most of this information is given by dr.ir. G.I. (Irene) Curulli (Assistant Professor of TU/e, Department of the Built Environment, Section Architectural Urban Design and Engineering), who visited the University of Oregon from Sept 2012 - March 2013.
Prof.ir. J (Jan) Westra (TU/e, Department of the Built Environment) was visiting professor at University of Oregon from 1985. Jan Westra was inspired by the Dance card evaluation when he developed the Carousel evaluation method at TU/e.

The Dance card evaluation is a flexible evaluation method for design projects with an important role for feedback.

ORGANIZATION

- Market principle: Every student presents 20 minutes from a 'permanent' spot. Critics can visit all or part of the presentations on their own or in pairs of two.
- The presentations are held simultaneously in one open room.
- Students get at least two reviews.
- The students can pay a visit to their fellow student's presentations during their break.
- The students make only use of presentation panels.

CRITICS

- The critics are mainly professors from the University. External experts are invited too.
- Professors and external experts can both have the role of assessor.
- Depending on the subject of each project and on the number of students several critics are invited.
- Fellow students can ask questions too.

PLANNING

- Flexible system: Critics and external experts can sign up for all or part of the presentations.
- Planning is very crucial. Each department has it's own schedule during the assessment week.

PROJECT

- An Architecture project runs over 9 weeks and covers basically the phase of idea formulation.
- The students are Bachelor and Master students.
- The total amount of students per evaluation is 12 maximum.

EVALUATION TYPE

The Dance Card evaluations can be applied for midterm evaluations as well as final evaluations.

LEARNING GOALS

Providing students with feedback on the content of their project and on their verbal presentation is the main goal of the Dance Card Evaluation.

ASSESSMENT & GRADING

- No grades are given by the critics: only 'pass' or 'no pass'.
- The grades are never given in public.
- The marking form allows the indication of both different grades and written assessment on the specific topic.
- If they are failing, students can get a warning twice during the project.

FEEDBACK

- The feedback of the midterm consists of individual feedback after the presentation and of notes.
- The feedback of the final evaluation is organized as oral feedback 'on the spot' and it concerns the general activities of the class, and also in written form (individual) afterwards.
- The feedback has to be constructive and of good quality.
- The teacher gives the feedback both to each student and to the faculty administration that collects it in the personal file -as record- of each student.
- A week after the final presentation, a half hour meeting takes place where student and critics can discuss the (written) feedback.

CONTACT PERSON

- Contact person is dr. ir. G.I. (Irene) Curulli
- As far as our literature research and information goes, the Dance Card evaluation method is not used at other universities.

III   Carousel evaluation

Eindhoven University of Technology, Department of the Built Environment

The Carousel evaluation method is used for more than 15 years at TU/e for a) final evaluation for the Pre-Master's programs for higher vocational education graduates (HBO), and also for b) midterm evaluation for the multidisciplinary project (called "Multi") in the Bachelor Architecture Urbanism and Building Sciences.

Most of this information is given by ir T.T. (Tom) Veeger, organiser of (b) midterm evaluation of the Multidisciplinary project and has experience with (a) final evaluation of the Pre-Master's programs for higher vocational education graduates (HBO)

ORGANIZATION

- Evaluations using a carousel principle: Every student or students' team presents their project results multiple times. Critics visit all presentations in a strict organized way, so at the end of the day every student group has presented for all critics.
- Presentations of carousel evaluations are often 15-20 minutes (10-15 minutes presentation, 5-10 minutes discussion).
- Critics often work individually or in pairs of two, however, many forms are possible.
- Preferably, the presentations of both a) and b) are held in one open room. However, in case of a large number of presentations these can be divided over multiple rooms
- Students may visit presentations of fellow students in the time that they don't present one selves. However they are free to select a presentation and also to skip presentations. The program is made in a way that a presenter always has a time-out after the presentation to reflect, to make notes, and to make changes for the next presentation.
- Students can make use of a variety of media to present; often presentation panels are used in combination with models, but also beamers, PowerPoint, video could be used.
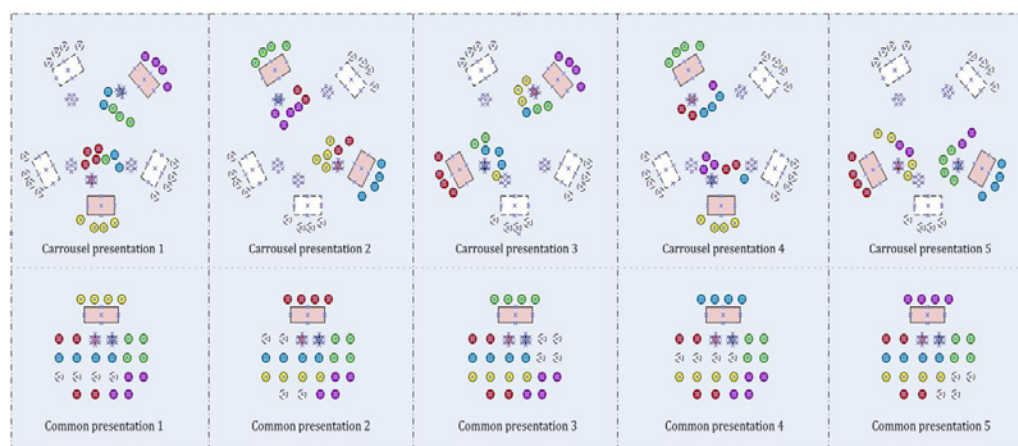
Scheme of Evaluation Assessment Carousel (top row) compared to a traditional setup (bottom row) in an example with 5 groups of 4 students to present. All teams present to 2 jurors. This scheme in the top row and bottom row makes clear that the total time needed to assess all 5 teams is equally long (both 5 timeslots for presenting).

CRITICS

- The critics are mainly teachers and professors from the University. External experts are invited too. A pair of critics consist of professors/experts from similar groups/fields of expertise such as Urbanism, Real Estate, Structure
- Regarding the providing of feedback, the tutors/professors have the same role as external critics / experts. Regarding the grading the external critics/experts may give recommendations to the tutors / professors, but are not directly involved in the grading.
- Fellow students can ask questions too.

PLANNING

- Planning is very crucial.
- The planning can be fixed beforehand final evaluations as is in the case of b) midterm evaluations multi. Here some days before the evaluation a time-and location plan is provided to all students and tutors/professors/guests.
- However the agenda can also be flexible developed during the day depending on the students available and teachers/guests available, as is the case in a) the Pre-Master's programs for higher vocational education graduates (HBO). Here a schedule by picking tokens from a plate. Every student puts a token with his number in the plate (to control the presenters present) and a teacher / guest picks a random token from this plate te determine the student to visit.
- In the flexible setup, critics – which include the external experts - can choose to join only part of the presentations, but the specific way to make the time schedule makes sure that there always are pairs of critics from similar fields.

Evaluation Assessment Carousel in an informal setting of b) midterm evaluations of Multi. This student team has pinned up posters and drawings and placed models on a table. Two jurors sitting at the middle of the table listen; other students are free to watch a presentation.

PROJECT

- a) Often a PBL project runs over 9 weeks and covers basically the phase of idea formulation. The total amount of students per studio was about 12-16 where students make individual designs regarding a general theme.
- b) the multidisciplinary project is about cooperation of students with different disciplinary background.

LEARNING GOALS

- a) Learning goals of the carousel evaluation method in the final evaluations of the Pre-Master's programs for higher vocational education graduates (HBO), are mainly to providing students with feedback on the content of their project and on their verbal presentation. The large quantity of feedback by many professions (from industry as well as academia) supports them to decide on to start a Master or not.
- b) Learning goals of the carousel evaluation method in the midterm evaluations of the Multi assignment are mainly to providing students with feedback on their project, to help them to improve the design in the next phase and to improve their verbal presentation by multiple presentations and by experiencing the effect of small changes in the different presentations.

ASSESSMENT & GRADING

- For the final presentations grades are given. In some case, grades are given for the midterm evaluation, but in general 'formative' feedback is given.
- Grades are given afterwards, after council between critics.
- The grading is based on rubrics.

FEEDBACK

- FINAL presentations: a grade is given and feedback will be given on the spot. Sometimes a small written summary is provided afterwards.
- MIDTERM presentations: Feedback on the spot. Students make summaries of the feedback and discuss the feedback the following week with their tutors.
- A presenter always has a time-out after each presentation (in final as well as midterm presentations). This allows reflection, making notes, and making changes for the next presentation. The time-out is often used by students to discuss experiences of the preceding presentation and also to discuss improvements for the next presentation.

CONTACT PERSON

- ir. T.T, (Tom) Veeger, dr.ir. S.P.G. (Faas) Moonen
- As the literature review showed, the assessment evaluation carousel is not used elsewhere than TU/e, Department of the Built Environment.

EVALUATION OF THE ASSESSMENT EVALUATION CAROUSEL

- Several projects have been evaluated on a semester basis
- Information is available at the educational office. ir. J. (Jan) van der Meulen.

IV   Demo-day: The Exhibition evaluation

Eindhoven University of Technology, Department of Industrial Design

The Demo-day is a returning aspect of the assessment procedure within ID and simultaneously a returning midterm evaluation moment for each project. ID students are trained to work independently and taking responsibility. Besides the continuous, more informal feedback during the project, the feedback during those evaluation moments is an important aspect of the learning process, which is documented in a portfolio.

The Demo-day is a midterm evaluation moment on which the student presents his or her prototype, is questioned by the assessor and obtains feedback. During the Demo-day students can get acquainted with each other's work.

ORGANIZATION

- Market principle: Every student pitches his or her project from a 'permanent' spot, which is chosen by the student.
- A pitch starts spontaneously when the assessor or client arrives or when interested fellow students arrive. Several students are designated to one assessor. Students have to do their pitches and be available for questions for the set period of time designated to the particular theme. A student can attend pitches of fellow students related to other themes before or after his presentation.
- Projects are divided in several themes. Per theme, the presentations are held in one open space.
- Students should be able to demonstrate a prototype and are free to choose whatever presentation method that contributes best to the experience of the prototype (beamer, panel, etc.).
- There are no strict time limits, but a pitch takes in general maximum 5 minutes.

CRITICS

- The critics are teachers and professors from the University and coaches, which have the formal role of assessor or coach and are selected based on several criteria. The Demo-day is publicly accessible. In some cases coaches invite their contacts: the external experts and clients. An external expert or client never has a formal role, is never the owner of a project and has no say in the final verdict.
- A teacher could have different roles, for he or she could be the assessor of one project and be the coach of another project. By questioning, the assessor investigates the design process and gives the student feedback.
- The critics (coaches and assessor) do generally not work in pairs.

PLANNING

- Flexible system: each theme has its own planning, which is, depending on the number of students and critics, more or less strict. The organization matches several assessors to each theme. Students do their pitches and must be available for questions during the period of time set for the theme. Students make arrangements with their assessors about attending the pitch. These themes are bound to a certain time set, depending on the amount of students assigned to this theme, but

overall there is no strict time schedule. If time schedules are used, they are made by the responsible teacher/coordinator of a theme. The assessors visit the presentations on their own.
- The spots are numbered and the assessors can choose their own 'path', but must attend within the period of time set for the theme all pitches assigned to them.
- Clients or external experts can visit whenever they want, but only within the specific time schedule.

PROJECT

- At the start of the project work a project market is planned. On this day, the coaches have to sell their projects to the students. De students try to gain as much information as possible about the different projects.
- The Demo-day is a returning evaluation moment in the project work and assessment procedure, during the whole course of the study.
- Depending on the phase and semester, the project will be a design and/or a research project.
- Approximately 5 to 6 themes are addressed. The number of students per theme hugely differs per theme.

EVALUATION TYPE

The Demo-day is always part of the assessment procedure. During the project it is held as a midterm evaluation.

LEARNING GOALS

- Students determine their own learning goals at the start of their projects, after consulting their coaches. If necessary, the coaches can add additional goals or extra conditions.
- Students should be able to demonstrate a prototype.
- Presenting ones project is one of the learning goals/competencies to be acquired as a part of the professional skills.

ASSESSMENT & GRADING & FEEDBACK

Assessment and feedback are interwoven.

- The pitch (and project work itself) will not be graded. Only formative feedback on the midterm evaluation is given. Students receive oral feedback 'on the spot', directly after the pitch from their assessors and coaches. This has the form of an interview. If the student would like to have more (written) feedback, he/she has to request the assessor / coach specifically for additional feedback.
- Several feedback moments are planned in the project work: oral feedback is provided continuously and written feedback at some fixed points during the project or when requested.
- To finalize the project, the student collects all material in a showcase. The student illustrates – by images and text - his or her development as an industrial designer and supports this development with evidence. An assessor examines the showcase. When requested written feedback is given. After submission of the showcase, in an assessment meeting (the assessor-meets-student meeting) the coach, the assessor and the student gather to further discuss the project and the development of the student, regarding the learning goals.

- The assessor-meets-student meeting takes in some phases the form of a student-meets-panel discussion for instance the finalization Bachelor B3.2 and Master M2.2.
- After the project is done, the students work is collected in a showcase, which will be evaluated by an assessor. The assessor discusses his judgment (pass/hold) with the coach; the final decision is made at a plenary assessment meeting.

CONTACT PERSON

- Assessment coordinator: dr.ir. M.J. (Mark) de Graaf
- Educational developer and quality assurance employee: dr. M.R. (Migchiel) van Diggelen
- Demo-day is a form of exhibition evaluation which is used expectedly at other faculties/in other educational programs.

EVALUATION OF ID EVALUATION

- This evaluation form matches the education system of Industrial Design very well and is regarded as transparent, personally, but also quiet labor-intensively by students as well as by teachers. The faculty tries to find efficient ways of teaching that match the education system.
- In the beginning of their study some students find it difficult to set their own goals, and to deal with the feedback from different teachers, but gradually the students get used to and learn to appreciate this self-steering way of working.