

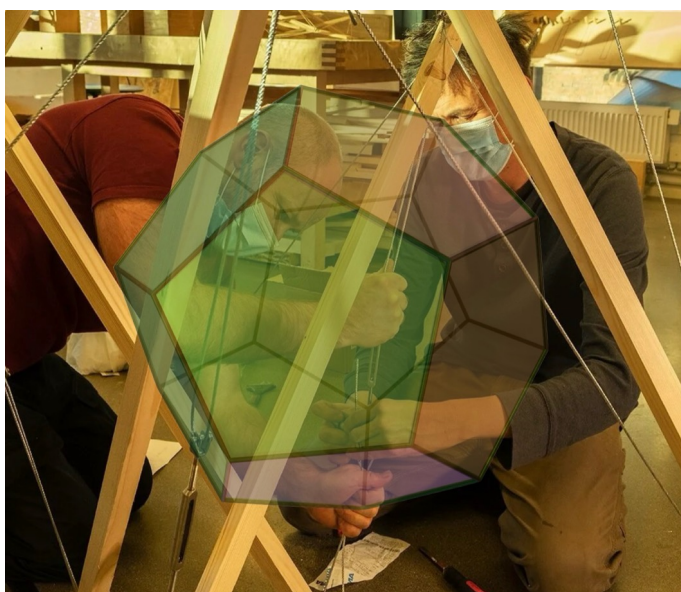


**Box 1**—After having engaged with various designs of polyhedral foldouts—as models of ordered sequence but also as maps—I was reminded by KHIO’s rector Marianne Skjulhaug (an urbanist) on the similarity between what I was doing and Buckminster Fullers project with the Dymaxion map: a world map featuring the land-masses of planet Earth as a *single mountain-range*, dissolving the cardinal directions N-S-E-W and replacing with them with the geodesic grid of the map itself, that mounts into an icosahedron (12 faced polyhedron). *Above*: one particular foldout of a dodecahedron (12 faces) models 5 work-days in a week (Morning and Afternoon)—as a *single chain*—w/a premise and a conclusion.

In machine learning (ML) there is particularly one app that resonates with the ideas that I am in wont of developing and discussing here: [Co-Pilot](#) (Microsoft). It resonates with the usership that I attempted to define and since have implemented in ML after I wrote an *editorial last year*, about the uses of such technology in the design education we offer at the MA-programme, at Oslo National Academy of the Arts (KHIO). One certainly consistent with Buckminster Fuller’s *trim tab*: a model that becomes active as it becomes integrated as part of the work of learning, as a hinged asset.

No, we are *not* talking about chipping humans here, *nor* considering ML as an alien form of intelligence. What a model does is to *edit* learning processes that we want to engage hands-on with tasks, occasions and encounters. A kind of learning where going to class takes on partaking of a public forum: which is the idea of the *learning theatre* (whether learning is left to its own means or takes place in context with specialised training). This idea of ML-usership runs clear of the domains of authoring and concluding, and remains committed to a experimental & critical reflective practice.

Opening the exploration into an anthropology of *possibility*, is one way of describing what our MA programme in design is up to, on its mission of developing reflective practitioners. That is, in the [meantime](#): in the process between the *start* and the *end* of a project, in a time-zone between the *short-* and *long* term. A time-zone of learning through *feedback*, with the objective of reaching the point where the MA-students have reached a clarity on the kinds of feedback that they *need*: and at this hour, ready for a hyper-dimensional rotation from surface- to executive understandings.



**Box 2**—The same polyhedron (**Box 1**) but mounted: on the backdrop Trond Mikkelsen and Nicolai Fontain working on an X-mas “tree”—made from a system of 5 tensors and compressors, during the Pandemic (2020). It is used as a backdrop here to make the following point: when a dodecahedron is mounted from the above foldout, 19 new connections (trim tabs) are added to the 11 already existing that hinge the foldout. This teaches a model-understanding of a hyper-dimensional rotation in passing from 2D to 3D and from theory to practice.

The course evaluation of *Theory 2* (theory course in the Spring term of the first year of the MA) this year, lead me to believe that the *modelling* of the course—through the design of the evaluation—would help the students to a achieve a *hyper-dimensional rotation*: that is, passing onward from *receiving* feedback in an early unsegmented territory of a design-MA, to enable at discerning the kind of feedback they *need*: and use the arena of logbook presentation (that they have kept on a weekly basis for a school year) to articulate that need, so that the arena of the *learning theatre* can work for them to that end.

There are *two* levels of learning at game here: the first is to hatch the *need*, along the lines above, the second is to understand *feedback*—what it is and what it does. Not by stating that it is this or that, *nor* by making its praises, but finding a personal way of making it evident through a creative use of the

course curriculum. The writing exercises, book and media presentations, interviews, design comments, essay and logbook presentation: using what they have done, with a “twist” (or, a *trim*).

Which is how and why we get to discuss the role of *modelling*—of model-building repurposed—as the 3<sup>rd</sup> *element* between the *path* and the *goal*, that holds a potential for improved *navigation* in a creative education (through triangulation). That is, an activity tied to the MA-logbook (as a subcategory of *map-making*) that runs throughout the term. This idea was articulated for the first time in Heidi Haraldsen’s education forum 24.04.24 by me, in an intervention titled: [Blind-spots, rhythm and integration](#). Featuring rhythm as an actively articulated element in the new plan.

Harvesting, as it were, a structural element in the *old* course plan (based on weekly sessions) and making it an element of the *new* plan (3 full weeks distributed at 3 weeks intervals through the term): that is, transforming it from a *passive* to an *active* asset. However, the idea of the model as a *triangulating element* working in the mode of Buckminster Fuller’s *trim tab*, is an idea which has hatched through a discussions of the Dymaxion map of late, and the geodesic triangulating grids. It is on this point that modelling *takes off* from mapping, and moves unto triangulation and *navigation*.

Obviously, Buckminster Fuller made a point out of making mapping and modelling correspond in a single item. That was a specificity of the Dymaxion project. We do *not* have to do that: or, the MA students do *not* have to come out with a merged map and model. And, in the beginning, it might even be *crucial* that it is not: that is, to incorporate modelling as a regular activity, rather than at irregular points making summaries/overview of the logbook contents. Our first experiment in the autumn of 2024, will be to articulate feedback in a system of *tabs* so that they hatch [feed-forward](#).

Feedforward is notion developed in *neural networks* (ML): it is based on the principle that a tab passes from being defined as an element (the *tab*) to defining a *pathway*, by redirecting an external signal—such as regularly received by students in feedback session—to load it *elsewhere* in the external environment (e.g. upon reception of a command signal from a teacher or a colleague). It appears that feed-forward is implicitly assumed in the DASart method of feedback: since it is based on the practitioner’s not responding to feedback *till* s/he crosses a certain threshold in the process.

I venture to *trim* this aspect a bit in the learning theatre—the design we use for theory development in the MA—on account of a specific observation made during a session where Ass. Prof. Ida Falck Øien joined the theory class, to conduct a reflective roundup on a studio course run by her (Studio 2 *Short Stories*), surrounded by the larger class of the Theory 2 course: a group reflection with a larger audience. The session demonstrated quite clearly that *what* the students know and *how*, in a

practical education, is tied to *context* and dependent on the presence/absence of that context. I observed skill-sets the students do not have in the theory class, and I noted the absence of skill sets tied to the theory class: puzzling observation!

By adopting the practice of *posting tabs*—elements that hatch *new paths*—a step is taken in the direction of assisting the students in editing their knowledge from the theory and studio courses. I will, of course, have the same anticipated effect *within* the theory courses themselves. The mounting of the polyhedron (here the twelve-faced dodecahedron) features a model understanding of a *hyper-dimensional rotation*: moving from 2D in the *theory* room, to 3D in work-shops/*maker-spaces*, or the emergent practices of making, at KHIO design.



**Box 3**—an example which with a maximum of simplicity displays the elements of a rudder in which the trim-tab **a**) is a miniature model of the rudder; **b**) is integrated into the rudder, greatly facilitating the operation of the large rudder; **c**) featuring the the principle of a *hyper-dimensional rotation*, whereby the large becomes a held by the small [as the smaller element articulates in the dimensional interstice]. In the present application **S<sub>1</sub>** determines logbook entries, while **S<sub>2</sub>** model-understanding.