# Synchronizing Difference

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In the 21ˢᵗ century, higher education has embraced the presumed ethical, as well as economic imperatives of accommodating diversity in its constituent populations (US Dept. of Education, 2016). The rise in admission of students from a wider range of backgrounds dovetails with a decades-long evolution in the dominant ethos operating in the academic realm, whereby the value of a critical perspective is emphasized, divergent views are sought, and a bright light is shined on the ambiguities and contradictions that come with whatever supposed truths we might wish to find in a very complex world. Pluralistic multiculturalism is easily and readily defended, while fields of study from physics to philosophy attest to the reality of complexity and paradox; but nurturing and leveraging difference is more challenging, especially given that many of these diverse students nevertheless expect of us black-and-white, definitive knowledge, in addition to the practically valuable, marketable skills we are duty-bound to impart to them. They know, and we who teach must admit, that we have the responsibility to teach solid truths with all of the conviction of our calling.

Design educators today are faced with the task of coaxing a diverse population to conform to standards and commit concept and canon to memory – even as we work to convince them that our answers are not absolute and should be approached critically. We are invited to choreograph a process of *synchronizing difference*, as we seek to implement a program of inculcating authoritative knowledge and skills that also does not fail to nurture unique creative intelligences and identities.

## History

History – the story of humans as constructed and construed by humans – lends itself to an unfolding of the relationship of the objective and universal, to the elusive, subjective and particular. The fact that *history changes* – that our understanding of the story evolves – and yet we expect and even demand that history be 'correct' and 'true', epitomizes this fundamental, paradoxical tension that obtains across many disciplines. Adding *design* to the conversation creates a still more interesting exploration of this theme of complementary opposites, because design necessarily involves a dialogue between the objective and necessary on one hand, and that which arises more from want than need, and perhaps obeys taste, on the other. Design leaders and thinkers have taken up determinism and universalism, but also irrationalism and traditionalism. To fully explore the nature of design, as process and product, and then as history, this duality must be explored, and made meaningful, even useful. Understanding design as a systematic shaper of our world, but also attempting to comprehend it in a systematic way, is an apparent human need, despite the limits of theory and principle.

The teaching of history offers opportunities to encourage students from a variety of backgrounds, including international students, to critically examine and situate their own assumptions and perspectives within unfamiliar contexts or schema. Presenting a view of history which not only examines

different times and places, different cultures and constituent sub-cultures or classes, but does so in a critical way, eschewing the traditional master-narratives and perspectives of privilege, facilitates this process, breaking down simplistic formulations that still dominate in societal discourse. To present history as a collection of overlapping stories which involve objectively identifiable causal sequences, not set against some ideal Hegelian narrative of human progress, but understood on their own terms, opens up possibilities for revaluing diverse ways of living, believing and creating. Here, the pluralistic, progressive vision that is perhaps the single greatest collective project and product of academe can be pursued, even as the more objective facts of history and human behavior are placed into some logical coherence, and made useful as context for student work.

## Today's Students

The current generation of students has characteristic concerns, reflecting the events and conditions that have shaped it. In her recent book *iGen* (*Why Today's Super-Connected Kids Are Growing Up…Unprepared for Adulthood*), Jean Twenge provides evidence of a high level of anxiety among teen-agers today – along with a predilection toward caution, and concern specifically about success (Twenge, 2017) In my own quarter-century of teaching, I have never before seen the degree of anxiety in incoming students that I see today, an anxiety combined with an expectation of a great deal of personal attention and tailored instruction. So in addition to the need to address, and desire to nurture, *difference*, an educator today has to find ways to deal with this anxious, needy generation. An important aspect of what I am here presenting as a methodology for teaching design history is an emphasis, on one hand, on the objective, the universal, the *nomothetic* – that which leads us by observation and analysis of objective phenomena to a *general principle*; and on the other hand, an equal valuation of what could be called the *idiographic*: that which is *unique* and can be described but not made to function as a term in a formula or universal scheme. One role of the *nomothetic* in the study of design history is to reassure anxious students that there is the possibility of positive knowledge, there are territories of clarity, even rough universals – that all is not grey area – and that they have learned an apparently reliable, useful approach to accessing and evaluating such knowledge. *Students need to feel they are learning something solid*. At the same time, they also need to know, perhaps in a different part of their brain, that "history changes", that differences of perspective and position are valuable, according to evaluation processes that they are learning to use.

## The System
The strategy I am here advancing aims to develop an effective means of delivering the apparently objective, and the nomothetic or axiomatic, in content, while simultaneously communicating the irreducible presence and value of the unique and individual, the idiographic – and training students to develop their own voice and positions within classroom colloquies and societal discourses. The set of variable types of exercises and attendant circumstances shown in Figure 1 describes this system of teaching developed for large, survey history of design course given as part of the first-year curriculum required for students of all design disciplines in our design school. The system is a work in progress (of course), but has been substantially, if not consistently and methodically, tested.

Design history as taught using this system asks students to appreciate difference in diverse and unique phenomena across time, class and culture; and also to synchronize divergent histories in order to

systematically relate them according to more objective dimensions such as chronology. History is here presented as the story of adaptation of human needs and aspirations to the particular historical circumstances within which it is situated (environmental conditions, social/cultural history and conditions, available technology, etc.); the unique story of each such episode or situation must ultimately be synchronized to create a larger, coherent history, replete with themes, patterns and even phenomena that lend themselves to axiomatic formulations. From the particular to the general, a kind of synchronization, a subjugation of the particular to the norm, occurs in order to produce coherent, usable knowledge.

| space | group size | time | activity | content/materials | learning experience |
|---|---|---|---|---|---|
| classroom | whole class | 12 min. modules | lecture/presentation with images/video included; 'Socratic' lecture/discussion; story-telling/recitation | subject matter images, info.; nomothetic/axiomatic material; idiographic/descriptive mater.; key terms/concepts overview; | overview of subject area, concept / information mapping & learning goals; acquisition of axiomatic and descriptive information |
| | whole class | 8 min. modules | 'Socratic' lecture/discussion; live visual analysis exercise; enact or create an activity such as a game or debate | key subject matter images/ visual analysis; design relational visual sequences; activity instructions/support | visual analysis skill-building (via teacher/peer modeling process); focused visual learning, axiomatic & descriptive material; presenting/ articulating thinking to class |
| | large groups | 40 min. | live visual analysis exercise; enact or create an activity such as a game or debate; active, collaborative exercise | key subject matter images/ visual analysis; exercise instructions/support material | visual learning, applying axiomatic & descriptive material, concepts; presenting/articulating thinking to class; social stimulation, pressure to negotiate & norm re: responses |
| | small groups /pairs | 30 - 40 min. | visual analysis +/or question-based group discussion & written exercise | key subject matter images/ visual analysis; activity instructions/support material | visual learning, applying axiomatic & descriptive material, concepts; presenting/articulating thinking to class; social stimulation, pressure to negotiate & norm re: responses |
| | individuals | 30 min. | visual analysis +/or question-based written exercise | key subject matter images/ visual analysis; activity instructions/support material | focused visual learning, axiomatic & descriptive material (applied); |
| breakout space | large groups | 40 min. | question-based discussion & written exercise; enact or create an activity such as a game or debate | key subject matter images/ visual analysis; activity instructions/support material | rehearse key information, practice applying key concepts, model/ practice creative/critical thinking, develop individual voice/opinions in dialogue with peers |
| | small groups /pairs | 30 - 40 min. | visual analysis +/or question-based group discussion & written exercise | key subject matter images/ visual analysis; activity instructions/support material | rehearse key information, practice applying key concepts, model/ practice creative/critical thinking, develop individual voice/opinions in dialogue with peers |
| | individuals | 30 min. | visual analysis +/or question-based written exercise | key subject matter images/ visual analysis; activity instructions/support material | rehearse key information, practice application of key concepts, practice creative/critical thinking, develop individual voice/opinions |
| 'home' | small groups | 1-2 hrs. | read, research, or review; answer questions, create presentations or essays | readings, images/conceptual & contextual information; lecture outlines, notes; questions/assignments | learn key information, key concepts, practice critical thinking, develop/ model individual voice/ opinions in negotiation with peers |

|  | individuals | 1-5 hrs. | read, research, or review; answer questions, create presentations or essays | readings, images/conceptual & contextual information; lecture outlines, notes; questions/assignments | learn key information, develop understanding of key concepts, practice critical thinking, develop individual voice/opinions |
|---|---|---|---|---|---|
| community | whole class (guided) | 1-2 hrs. | community-based topical lecture; community-based empirical research & related discussion & exercise | lecture support materials; exercise instructions, questions, notes, & guide to 'real world' sources; | recognition & analysis of design in local social/environmental context; direct research & synthesis skills |
|  | small groups/ pairs | 1-2 hrs. | community-based empirical research & related exercise | exercise instructions, questions, notes, & guide to 'real world' sources; | recognition & analysis of design, & negotiation of social logistics in local social/environmental context; direct research & synthesis skills; |

*Figure 1: Class Activities Scheme*

Students today struggle to be fully present in a shared learning space; beyond the perennial challenge for youth to focus on learning in what is fundamentally a social setting, this particular generation has been conditioned since early childhood to seek immediate stimulation and gratification in digital interface experiences (Twenge, 2017). Attention spans and listening skills have suffered, unquestionably (and not just among students). For teachers, the age-old difficulty of addressing a generation different from one's own in particular and significant ways now takes a form unique to the present, highly technologized and kaleidoscopically curated moment. Moreover, for a population that resides in the immediate and the imminent, the importance of history is a 'hard sell'. To attempt to become part of their daily diet of digital dialogue, invading their phones and laptops with faux-face-time and clever, entertaining video, is not the answer. Even given the value of strategically using current technologies (internet in the classroom, on-line discussion fora, etc.), a thoughtfully orchestrated system of shared (real) space, real time, appropriately contextualized learning experiences is needed.

The use of carefully delineated and organized content, delivered through a range of organic, temporal and socio-environmental structures – careful modulations of differentiated intellectual and social activity and modes of learning, responsive to students' sense of time and attuned to the value of their differences – can cause them to engage more fully, and differently. Such modulations involve, first, differentiating and packaging types of content to be imparted, according to the role of each type of content in the teaching scheme; second, offering a range of learning activity type or mode; third, varying the time scale and physical setting for learning activities; and fourth, attuning the size of the group and the guidelines for interaction to the other variables, and to the rhythms of student energy and performance that obtain in a given instance of modulation. This last variable is the most demanding of faculty; to effectively sense the level of engagement and comprehension and spontaneously tune the system accordingly is difficult. This does not make the approach unfeasible, however; it offers a higher level, or richer depth of learning experience in any given instance as a goal and possibility, without predicating the value of the entire system on a teacher's ability to adjust the exercise expertly and in real time in this way.

Knowledge is in a sense normative: it requires definition in terms that can be communicated, discussed, understood, evaluated, determined. It's a game requiring more than one player, and the application of defined processes, principles, etc. is fundamental to producing answers. This normative aspect of accessing or producing knowledge is what the shared, social, interactive, structured experience of the classroom is needed for. It is normative through its social dimension, in the student's experience of performing in the shared social space, subject to the operating norms of the classroom culture as it has been defined and understood, and conditioned by the wider society within which it is situated (Paris & Paris, 2001). Diversity of thought and experience must be recognized and encouraged, but answers must be produced, and this is where the temporal structure of this system is crucial. The *synchronization of diverse thinking* is forced by the time frame within which classroom learning activities must be accomplished; the operative social frames condition social dynamics; and by the demand, embedded in well-designed assignments, for validity according to the terms of the course material . It is students' motivation to effectively complete an exercise within the allotted time, and get it right, that synchronizes the very kind of difference that in other settings (especially outside the classroom) is allowed and even nurtured. Homework assignments are given the most time for completion, the greatest freedom from social imperatives, and the most latitude with respect to the material, and so they invite the most divergence of approach and perspective.

The variable of space taken by itself is interesting: for a given group size, the more relaxed environment of available work spaces outside of the classroom (generally inhabited by significantly less than an entire class of students at one time) allows the students to negotiate their social structure more freely and fully. Groups who undertake exercises outside of the classroom take slightly longer to complete the same amount of work, and are somewhat less effective according to the stated objectives of the assignment; but they are often more imaginative and free-thinking in their responses than those who remain in the classroom (how much that might be a function of the spatial-setting preferences of a certain type of student influential in their group or not is unclear). There is apparently less synchronization, or at least a certain kind of norming, happening outside of the classroom than in it.

There are several patterns that obtain with respect to the different conditioning factors that lead the student toward one end or another of a spectrum of experience associated with learning. The first concerns the students' tendency toward either a more active or a more passive learning process. The classroom setting, with an entire class of students engaged simultaneously in one common, whole-class, learning activity, is the situation most conducive to passivity – the threat of embarrassment is greatest, and the individual student can usually hide out, or opt out, or otherwise only minimally engage in a common activity such as discussion or answering questions verbally in a "Socratic lecture" situation. A teacher can call upon any individual, and this may be necessary, but it doesn't much change the fundamental conditions that obtain.

At the other end of the spectrum, the out-of-classroom homework assignment, assigned to the individual student, both requires and invites the most engagement with the assignment, since no one else will do the work. In this latter case, the nature of the assignment must ask the student to actively research or review relevant information and synthesize it to the extent that they can have an informed and coherent response to the questions asked or the activity assigned. Usually, the student is asked to discuss the material using terms and concepts, and processes, from class, but to formulate explanations

in their own words, bringing together disparate items of information together into larger relational narratives of causality and principle, but also of difference and specifically contextual meaning. In addition to the differing nature of a homework assignment for which there is plenty of time, versus a more tightly timed in-class exercise, the varied conditions under which students work on homework introduces yet more chance of differing responses. Thus the spatial and social differences in this comparison modulate the degree of, and manner of addressing difference vs. synchronicity in the responses of various students.

Varying group size within the classroom setting, reinforces students' associations or assumptions regarding the 'normal and formal' – those most stereotypical of expected classroom learning experiences. If we treat those expectations as a given, in looking at different-sized groups undertaking activities within the classroom space, the typical social dynamics of groups emerges. Large groups are more powerfully socially normative, raising the emotional stakes and discouraging any but the most stereotypically "normal" (or "cool") behavior, inhibiting those unsure of their social standing or social skills (Paris & Paris, 2010). Large groups simultaneously invite students with sufficient confidence or leadership ability to emerge from the group and dominate. Here emerges a kind of difference sometimes problematic, but which must be accepted and leveraged toward good outcomes by intervening in discussions in constructive ways. By contrast, an exercise assigned to a very small group or a pair of students necessarily effects a more equal relationship, a more uniform invitation or imperative to speak, and invokes expectations of equitable contributions from each student – while at the same time inviting students to explore and negotiate the optimal use of the different abilities among the small number of students as they discover them. In the smallest of such groups, someone tends to lead, but all tend to make a more-or-less concomitant effort, sometimes in quite different ways.

Finally, the variables of exercise type and content in a given instance in this system plays a significant role in creating intended learning experiences. The in-class, whole-class experiences are more passive, at least potentially; information is being fed to them in the standard lecture segments, or being drawn out of them step by painful step in the case of the Socratic lecture sessions, inviting but not absolutely or uniformly requiring participation across the class. These learning modes are necessary for communicating key information that the students don't yet know and are likely not going to be able to get satisfactorily in any other way. Assigning reading is not a comparable device for imparting much of the type of material entailed in these experiences. The lecture segments are the ideal means for introducing both subject matter and context – either *idiographic*, or nomothetic. It is in this mode that students get the basic building blocks of the subject matter at hand – the visual, contextual and conceptual information that will be foregrounded as the course proceeds through other modes of learning about the same general course material. The lectures, while harkening back to a stereotypical and in some respects problematic traditional teaching mode, have the virtue of being able to impart the very kind of definitive, objective and apparently effectual information many of the students seem to be demanding, and in an authoritative and forceful way. The manner of delivery, in human and technical terms, the level of student participation, and the character of the particular subject matter being examined are all variable and can be tuned to the circumstances of student response to some degree; but uniformity and authority can be valuable in delivering the needed information and even reassuring anxious students. Here the key variable is time and how the rough modularity and number of lecture

segments is orchestrated. The short duration of the modules for the two lecture types is intended to allow for a more dynamic rhythm for students with difficulty staying present and focused. The two types are best used together in an integrated lecture sequence that modulates student participation, including questions as well as answers or comments, in balance with authoritative and well-crafted pieces of information, dynamically communicated verbally and visually in a clear scheme of organization.

Exercises for large groups in the classroom space are intended to encourage student engagement and generate positive energy, while making larger points about the information given in lectures and readings or research. In-class exercises can generate energy from the drama of presenting on short notice to the entire class, which the relative formality of the (large, auditorium-type) classroom can augment. Games, competitions, debates or other active, cooperative exercises open up the atmosphere, and put dynamic demands on the participants, introducing an element of the spontaneous and unexpected. The content in play in these more performance-based classroom activities is most often the clearest, most objective, formalized material, rather than nuanced and thought-provoking, abstract ideas. Review of key themes, terms and concepts works well in this setting.

Smaller groups can take up the discussion of, and negotiation of different perspectives on, more difficult material, in question-based exercises; whereas large groups are attempting to commit clearly outlined, discrete and major pieces of the puzzle to memory – *synchronizing diverse intelligences* – smaller groups are confronting difference and contradiction on multiple levels, calmly comparing and assessing those differences to come to some acceptable consensus. Questions for such activity types will often ask about individual or group interpretation, or invite some speculation, giving multiple members of groups ample opportunity to try out their different approaches and model difference as well as capability for each other.

## Conclusion

What is the nature and import of *difference*, as discussed in this recitation of perspective and method? What is synchronization, exactly, in terms of what it does and what it means? What is the value of each, for the study of design or for design history, and what does a methodology designed to modulate the two in symbiotic ways accomplish for a design curriculum? My understanding of the value of this choreographed dance of complementary opposites comes from my exploration of design history itself. I see – and so I teach – that, for example, the exomorphic and functional in design, seems to evolve inevitably toward the paramorphic and rhetorical (automobiles, radios, phones); that cyclical and mathematical patterns in time and form are everywhere (from fashions to the fibonacci series); but that there is no one way to see these phenomena. There are patterns that can be seen and interpreted in the story of human culture and of design, patterns that recur and resonate and ramify over decades and over centuries; there are principles that can be constructed or induced to describe clearly observed phenomena, principles that obtain beyond local situations and single historical moments – and that the use of these as analytical tools is of great value to designers. But these somewhat orderly, or at least interpretable phenomena are seen and given meaning through a lens particular to a time and place, a society and perhaps even an individual. The patterns, the phenomena, the apparent facts we see in a history are the ingredients in a design process out of which order and significance are created according to a cultural, social or personal 'design brief', one seeking solutions for the twin problems of

power and meaning. We want to know (and teach) in order to do and be. Difference is what we are given, a situation, a topography of open-ended possibility; to synchronize difference is to use the power, the technology of commonality among us, to make what is beautiful by its apparent coherence – its truth in the world. This truth, made up but real, is something we absolutely need, and need to teach.

## References

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