

# Tools for Type, Sketching in Motion

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**ABSTRACT** Students expect the education they receive from their institutions to be relevant by the time they graduate and enter their chosen field of practice. In a world that is continually adjusting to emerging technologies, students must develop a framework of understanding and resourcefulness that is transferable despite changing technology or access to preferred software and equipment (Davis, 2017). Using adaptable teaching methods encourages design students of all ages and backgrounds to explore design practice areas that too often seem inaccessible. As educators, we prioritize incorporating accessible tools with low points of entry into our teaching practice. When such tools are readily available and easy to use, students naturally iterate toward discovery rather than refine toward perfection. Students produce surprising results that previously seemed unobtainable due to their limited knowledge or access to complex software. We have found success in a workshop called “Grids in Space”, an activity designed to introduce design students to typography in the third and fourth dimensions. The success of this workshop is two-fold due to its inherently analog qualities and accessibility. Students often have difficulty maintaining access to technology, with lower socioeconomic status and students of color disproportionately experiencing loss of access. These difficulties are directly related to lower grade point averages and lower academic achievement (Gonzales, Calarco, & Lynch, 2020). By incorporating lo-fi ways of making into the curriculum, we hope to address the digital inequalities within universities.

*Keywords: motion design making, kinetic typography, tools for type, low-fidelity, sketching in motion, pedagogy, adaptable teaching methods*

## Introduction; Background and Context

As design educators, we work to provide students with experiences and opportunities for learning that will maintain relevancy, ensuring that the skills they develop have longevity as they enter their chosen field of practice. When it comes to technology, we observe a gap in understanding. Oftentimes, we find that the software and technology used in the classroom quickly become outdated or “out of fashion”. We saw this as a broader systemic issue of inequality, especially for our students of lower socioeconomic status who already experience a disproportionate loss of access to technology, directly correlated with lower grades and academic success (Gonzales, Calarco, & Lynch, 2020). These concerns lead us to develop adaptable teaching methods that provide design students across age ranges and backgrounds to explore practices that may often be inaccessible due to the lack of access to technology, insufficient software fluency, or different learning styles.

In a rapidly advancing world, ever adjusting to new technologies, students should no longer focus on learning a predetermined set of skills, which is still the foundation of many design programs modeled after the Bauhaus School. The Bauhaus was a reaction to the Industrial Revolution and framed the study of design as an “expert” activity reserved primarily for privileged white men (Manzini, 2016). The products emerging from the Bauhaus relied heavily on the affordances of technology and available materials. Design as a field was product-centered, with special attention given to the artifacts made rather than the processes, people, and ways of understanding. Students were selected based on their level of craft, with varying standards for men and women. If the Bauhaus existed today, their pedagogical model would likely have evolved. However, many design programs continue to have a skill-based, material-focused curriculum. If we aim to be radical in our pedagogy, we must shift from skills and software to a knowledge-based dialogical education. Today, students need to develop a framework for understanding and resourcefulness that is transferable, despite changing technology and access to software and equipment (Davis, 2017). This is especially important as we work to close the “digital divide” as some students grapple with unequal access to reliable technology.

## Justification for Research

Students of lower socioeconomic status and students of color disproportionately report academic hardships related to technology. In a survey conducted by Gonzales, Calarco, and Lynch (2020), nearly 20% of students reported difficulties with their respective technologies required for school. Some described broken hardware, connectivity issues, limits on their data usage, and outdated laptops unable to support certain software (Gonzales, Calarco, & Lynch, 2020).

This access issue has become even more pronounced during a global pandemic that required many students to work from their parents' homes, student housing, or apartments. We witnessed student hardships. We taught students calling into class from McDonald's parking lots (using free wifi), "snail-mailing" thumb drives with files and speaking with students over the phone when they ran out of internet data. When students experience difficulties maintaining access to reliable technologies, they also will experience difficulties academically.

In addition to student inequities related to technology, we also observed the many ways in which our students learn differently. While some students prefer to make through the confines of an interface, others demonstrate a need to be more physical in their learning, using their bodies to explore. We see this through analog sketching. Students who are anxious to jump directly into computer work often benefit from analog exploration to sift through their thought processes. We have noticed students engaging in physical sketching to ideate more effectively and creatively, demonstrate more freedom of thought, and work through their hypotheses more organically. When students are freed from the limitations of their laptops and software, they cease to limit themselves to what they know how to do and begin to see new possibilities.

### Adaptable Teaching Methods

When considering student access to technology and the value of sketching, we began developing adaptable teaching methods. How can we encourage students of all levels and experiences to engage in design practices and outcomes that are often inaccessible? Our adaptable teaching methods included pedagogical approaches utilizing widely accessible tools with low points of entry. We sought tools which offered flexibility, did not require students to develop expert techniques, were readily available and open-sourced, thus eliminating financial gatekeeping. We also prioritize tools that exhibit versatile characteristics applicable to varying contexts, outcomes, and artifacts. We aim for the student experience to be adaptable, focused on the design process rather than the technology associated with the outcomes. In doing this, our students naturally iterated toward discovery rather than refining toward perfection, producing surprising results that previously may have seemed unobtainable. We consider and incorporate several open-source and adaptable programs, including Panoform, Artivate, SketchFab, WeirdType, and Bitmock. We also pay special attention to pre-installed software such as Keynote, GoogleDocs, and QuickTime as tools to introduce students to emerging technology.

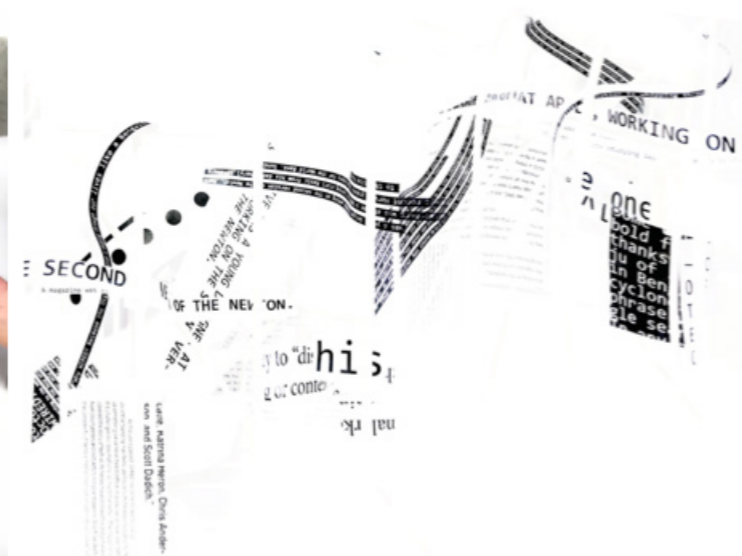
### Sketching in Motion

Because we encourage our students to sketch before they design, we began to wonder how our students might sketch in motion. The act of sketching in two-dimensional space is clear, but what about three-dimensional space? Can students sketch in four dimensions, including time-based iterations? We have observed the value of analog sketching related to students' ideation, creativity, and final artifacts. We assumed there must be similar benefits in applying sketching practices to motion design. We imagined a possibility beyond storyboarding, which is a 2D sketch for 3D and 4D media. We wanted to give students an opportunity and method for sketching across time and space. This opportunity could also be an adaptable method for teaching motion regardless of student access and experience with technology and tools. As cell phones become ubiquitous in the classroom, students could experiment with motion simply with their devices and paper.

### Grids in Space

We developed and successfully ran a workshop called "Grids in Space," introducing design students to typography in the third and fourth dimensions. Based on pedagogy developed by Denise Gonzales Crisp (North Carolina State University), participants are presented with "tools for type"—in this case, a 3D grid for hands-on application of text material. We provide students with art straws during this workshop, an affordable paper material often used in engineering practice to create 3D structures. Students experiment and build forms that will become their typographic grids. Following a set of improvisational prompts, students use printed typographic material, often in the form of articles, printed publications, and other ephemera, to construct type within their three-dimensional grid space. This process reflects the practice of Dada designers of the past, encouraging students to embrace the workshop's absurdity and outrageousness. The low-stakes environment allows students to explore the many characteristics of typography, hierarchy, grid formation, composition, and white space related to motion graphics and dynamic media. During and after the construction process, participants use their cell phones to record low-fidelity, analog, "DIY" videos to explore the typographic matter, context, and meaning. We encourage students to "guide the reader's eye" within the Z-axis. The results are experimental "motion sketches", bringing something as accessible as the sketchbook to the motion design realm. In some instances, we subsequently ask students to use their motion sketches as a first draft or a model for refining digitally. After the analog discovery phase, students animate using software. We demonstrate using Keynote as an accessible tool for digital animation, but we encourage students to explore any software they like.

Examples of student work, still photos & screen grabs from motion sketches:





## Student Outcomes and Reflection

We consider this workshop a success, demonstrated by the striking student outcomes and the inherent analog qualities and accessibility that create an equitable environment for all participants. This method of sketching in motion is disruptive, which allows students to shift their focus away from outcomes. In doing so, students naturally generated unexpected artifacts, which resulted in more meaningful reflections. We believe that our students became more iterative and vulnerable in response to the open-ended and uncertain project prompt. Additionally, using analog tools means that students work at the same level, with the same skills and abilities.

This workshop was not without its limitations. We observed initial resistance from the students. They demonstrated an unwillingness to “buy-in” to the project and the unfamiliarity of the medium. Additionally, the project does require access to a printer, various paper materials, and a personal recording device such as a mobile phone. Still, by incorporating lo-fi ways of making into the curriculum, we hope to continue addressing universities’ digital inequalities.

We continue to be excited at the idea of putting power back into the hands of students. We see the potential for this workshop to be adapted further to address power structures in the classroom and incorporate more radical pedagogical practices. We want to explore more physical modes of sketching beyond typography and kinetic type. While researching methods unique to architecture, Dr. Philip Plowright criticizes the culture of design which aims to keep design unknowable (Plowright, personal communication, October 24, 2018). The conceptual foundations of design practice claim to be indescribable and personal, with designers clinging to assertions that methods are idiosyncratic, steeped in personal genius. We have observed this within our classrooms and workplaces, with designers clamoring to be the smartest person in the room or outsmarting the competition. Students and colleagues are often reluctant to share ideas, fearful that their solutions and methods will be “stolen” or “ripped off”. When it is a student’s goal to be the best, their ego takes over. They may hoard and hide their ideas, which discourages collaboration. Thus, creativity dwindles, and conversations are stifled. Not only do we wish to encourage students to be more thoughtful designers, but we also aim to discourage the genius instructor trope. A genius instructor, fearful of sharing knowable and repeatable methods, must indeed produce students who further promote a broken egotistical design culture. Introducing adaptable and equitable teaching methods into the classroom provides an opportunity for future culture shifts where students leverage more power and ethical behavior, reconcile differing perspectives, and are motivated to become more active participants.

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## AUTHOR(S) BIOGRAPHYS

**Bree A. McMahon** is an Assistant Professor of Graphic Design at the University of Arkansas. Her research explores methods for disrupting traditional approaches to design pedagogy. Working with various collaborators, she develops and facilitates workshops for design students that examine complex topics through dialogical project prompts while incorporating opportunities for student conversations that encourage critical perspective and learning. Concerned with how design can be used to both solve and discover problems, Bree has presented, participated, and had work featured at conferences (nationally and abroad) and in various publications on design research. Bree attended Carthage College in Kenosha, Wisconsin, where she received both a BA in Art History and a BA in Graphic Design. Curious about the intersection between design, history, and culture, she began her career in print journalism, which facilitated an interest in designing for community engagement. She earned her MGD from North Carolina State University's College of Design. There, she established a research agenda exploring designing conditions for collaborative conversations within professional and student studio settings.



**Rachael L. Paine** is an Adjunct Professor of Graphic Design for North Carolina State University. Her work explores how stress impacts people's interactive information seeking and searching behaviors, specifically as it pertains to searching for health information online. She sees graphic design research as a means to develop frameworks that guide IT developers and designers to improve the efficacy of assistive information search tools and user interfaces that can be customized according to a user's cognitive state. Various design research publications have featured Rachael's work and she has presented and participated at conferences both nationally and abroad. Rachael completed her BA in Graphic Design from NC State University followed by a successful business career in marketing and branding. She returned to her alma mater and received an MGD before starting her Ph.D. in Design from NCSU College of Design, which she plans on completing this Fall.

