Graphic Design for Course Creators

GRAPHIC DESIGN FOR COURSE CREATORS

Digitally accessible, visually appealing courses

Dawn Lee DiPeri

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DEDICATION

A few select photos from the past 10 years at various galas, award shows, brand launches, and gallery exhibits.

This book is dedicated to my business partner at East End Advertising, Inc. – Joanna Pendzick, who believed in me and has always been supportive in my quest to merge our expertise of higher education, corporate training, and graphic design and expand our capabilities as an agency. I am grateful for her support and feedback on this passion project.

This book is also dedicated to the dozens of amazing

clients we have been lucky enough to serve for the past 10 years that we have been in business. Without any of you, this wouldn't have been possible. A list of the clients we have had over the past 10 years is below. Some retired, passed away, changed hands, or had a change in direction since we worked with them but we have valued each and every project and relationship that has come our way. This book has several visual examples of some of the work we have done for these companies and we are excited to show it off. Of course, those instructional design projects protected by an NDA will not be shown but we are equally proud of that work as well. Just like you, we have grown as designers and continue to improve our work and expertise in graphic design and instructional design and have especially improved our chops in improving digital accessibility during recent years. We hope you enjoy this book and find it helpful. Looking forward to seeing what another 10 years brings.

THANK YOU TO THE FOLLOWING PAST AND PRESENT CLIENTS

Aceum Search and Advisors • AJ Sunflower Boutique • American Media Electronics • Author Patrick Keeffe • Author Sharon Shebar • Birth and Beyond Resources • Boardhounds Standup Paddleboard Company • Borghese Vineyard • Brighter Higher Ed • Camp Adventura • Catalina SUP • Catholic Guardian Services – Youth Employment Services Curriculum • Center Moriches Union Free School District • Comfortek • Dedicated Doulas • Delfino Insulation • Diabetes Health and Wellness Academy • Dorset Maple Syrup • DVS Racing • East End Studios and Performing Arts •

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THANK YOU TO MY FAMILY

Thank you to my husband and children who supported

me in my endless nights and weekends writing, editing, designing, and revising this book. Sal DiPeri has been my rock and there to support me when I pursued my Master's and Doctorate and in my business and beyond. I am lucky to have such a stable, unwavering partner that has understood my profound need to create and design meaningful equitable educational experiences. I would like to say I have arrived, but I am just getting started.

FOREWARD

When I fell into the world of instructional design and eLearning, I really had no idea what I was doing. For context, I had been working in retail loss prevention for several years, catching shoplifters, when I was promoted into the role of "Training Coordinator" for the whole Loss Prevention Department for a large, nationwide retailer. I was not responsible for designing online courses and other training content for thousands of other loss prevention professionals throughout the company. At the time, I figured my knowledge of loss prevention would be enough for me to design effective and engaging online course content.

Color me shocked when I quickly realized that wasn't the case.

You see, whether you call yourself an instructional designer, an eLearning developer, a learning experience designer, or just a learning professional, our roles have dramatically evolved over the last decade or so. No longer are we simply designing instructionally-sound training content. Instead, many learning professionals are tasked with creating instructionally-sound and visually engaging multimedia experiences. And this is something most were never prepared for.

You see, when I first fell into this industry and was tasked with designing and developing online courses to help my fellow loss prevention folks catch shoplifters, I thought my job was simply creating and delivering content. In many cases, this resulted in me designing slides full of bullet points, cheezy animations, and ugly

clipart. The thought of putting forth some effort into the visual design of my slides didn't cross my mind.

All this changed for me when a far more experienced coworker challenged me to view my course from the learner's perspective. I recall her challenging me to put myself in the shoes of my learners and consider what they might think about the slides I had designed. At that point, it all clicked for me. I realized the content I was creating was equally as important as the design of how it was being delivered.

I share this story because I don't think it's unique to me. In the 10+ years I've been working as an eLearning designer and developer, I've encountered an endless number of instructional designers, eLearning developers, and other learning professionals who deprioritize or totally ignore the importance of visual design. Too often, investing time in the visual design of their learning content is viewed as a nice-to-have—a task to help make the content "prettier" if there's extra time at the end of the project.

But here's some truth for you: as I mention in my book, *The eLearning Designer's Handbook*, "Humans are visual creatures! We eat with our eyes first, we fall in love with our eyes first, and we learn with our eyes first. It's because of this that graphic design matters!"

Whenever I'm teaching new eLearning designers and instructional designers the importance of visual design, I always like to ask the same question: "If you were to prioritize the importance of instructional design, visual design, and user interface design when creating an online course, how would you order them?" The answer is always the same. Most folks respond with the instructional design first, followed by some

combinations of the other items. But I like to think of it a bit differently.

Whenever I'm designing or evaluating the quality of an online course, especially interactive asynchronous courses, I like to prioritize the visual design first, the user interface design second, and the instructional design third. And to be clear, this is not to say that the instructional design is least important. Not at all! But, if the course is not visually engaging, if it isn't helping me visualize the concepts being explained, and if it's not easy and intuitive to use, then it doesn't matter how good the instructional design is.

My point is when you apply good graphic design techniques, it has the power to help elevate your learning content. And on the other hand, when you apply bad graphic design, it has the power to detract from your learning content.

And this is why the topic of this book, *Graphic Design for Course Designers*, is so important. When I first met with Dawn Lee DiPeri, it was clear that we both shared a strong passion for good course design—not just with the content, but the total experience. And I believe she has written a book that will help you better understand how to apply commonsense graphic design techniques to your online courses.

The techniques presented in this book will not only help you make your courses look better, but they'll help make them more effective and accessible. And that's the power graphic design has when creating an online course—it's not just about making your content prettier.

I hope you enjoy reading this book as much as I've enjoyed writing this foreword.

–Tim Slade

Tim Slade is a speaker, author, award-winning freelance eLearning designer, and creator of The eLearning Designer's Academy. Having spent the last decade working to help others elevate their eLearning and visual communications content, Tim has been recognized and awarded within the eLearning industry multiple times for his creative and innovative design aesthetics. I'm also a regular speaker at international eLearning conferences, a recognized Articulate Super Hero, a LinkedIn Learning instructor, and author of *The eLearning Designer's Handbook.*

INTRODUCTION

Learning how to put together two and three-dimensional artworks were part of the foundational skills of learning graphic design and visual art. Tools like glue guns, Exacto blades, and draft tables were part of the first-year seminar courses.

It was day two of my first graphic design class ever. My first semester studying this topic. I had spent hours gluing natural objects I found to my poster board to create a composition worthy of my professor's love. I scrounged for flowers, sticks, leaves, grass, whatever fit on the page and filled up all the white space with carefully arranged objects. I held it up, squinted, and looked at it from afar. I thought I did a pretty good job. I carried in my poster with confidence.

"Put the posters on the chalkboard with this tape, Prof F said, as he pointed to the ancient tape

dispenser. "And then sit down quietly at your desk."

We all did what we were told. My confidence began shrinking as I watched him peer at the posters, pacing back and forth, contemplating. He finally stopped pacing right in front of the first poster.

"This one sucks," he said and tore it off the board to let it float softly to its death.

Then he walked up to the second poster, mine. My heart raced, my face felt flushed and I held my breath.

"Terrible, cluttered. a mess." He pulled it off the board and let it fall.

I saw one of my classmates, one of those girls with her hair perfectly straight, bangs even, pressed clothes in the latest trends. She smirked. Confident. Shoulders back.

Prof F walked to her poster next. "This one is perfect." He paused. Smiles. "She doesn't stick things all haphazard all over the poster, it is in perfect balance, this giant sunflower contrasts with the seeds in the background. She doesn't select too many objects. No chaos. Everything is carefully assembled with effort."

Prof F continued to walk down the board, ripping 90% of the posters off the wall, and berating everyone's work until only 2 posters remained hanging. We sat agape. Our mouths were wide open. Hurt seeped through our pores. Prof F was weeding us out. Who had the guts to stay in a career with so much criticism? Who had the grit to keep improving? Who had the mental strength

to handle the rejection that would come again and again?

If you tried defending your work, it was a death sentence. He taught us the client was always right and we didn't yet have the vocabulary or the skills to give a convincing explanation of why our design should have been well received. This was industry training and looking back I am grateful I had this experience because pleasing clients can be like this.

What I also began to learn was how to spot bad graphic design, which honestly was about 80% of anything that existed in the world. Learning to self-edit was one of the hardest skills to master. And, even as a business owner, I will often run concepts and designs by my business partner before sending them off to the client. The client should only see your best work. It should be close to flawless when they get it, and the design should exhibit all the graphic design principles in this book. *Graphic Design for Course Creators* will help you to become discerning, and work toward improving your own work.

Spotting the very few designs that were worthy of our attention became the central focus of that first design course. Building that skill helped us to become confident in recognizing the differences between good and bad design in our own work and everything that existed beyond it.

We worked in a variety of media after that first assignment. But no matter what medium we chose, we also learned never to blame our tools. Technologies come and go, but good design is here to stay. You must be able to apply it in any medium with any tool. Whether you are creating a job aid as a poster in an office setting, or a course in Rise or Storyline, or an interactive infographic

in Genially, or a semester-long class in Canvas or Blackboard – a poor artist blames his tools.

Good design can be created with anything. And polishing bad design with a fancy new tool is just as ineffective as a poster full of randomly found leaves and sticks. Applying the principles in this book will elevate your portfolio, wow your clients, and help land your dream job. The power of visual aesthetics can transform courses and help make learning both more enjoyable and inclusive.

Ad Agencies, Publishing Firms, and Entrepreneurship

In undergrad, I was able to secure some highly competitive internships in Manhattan, where I worked on some exciting Fortune 500 accounts. I loved my walk from Penn Station, where I would soak up every inch of billboard, poster, flyer, and storefront. Design is so entrenched in NYC and the pace and excitement are unmatched. One of my favorite accounts was actually an off-Broadway theater called the Vineyard Theater, where the original Avenue Q production started. I was lucky to have read the script before it set the stage and helped to design some of the posters and ads. My first major was a double major in theater and communications before I transferred schools and majored in visual communications.

After undergrad, I got my first full-time position at a local publishing company where I was responsible for laying out four weekly newspapers and designing all the ads as well. It was a fast-paced environment with long hours. The best part of that job was my boss, who later became my father-in-law. He saw talent and a strong

work ethic and up until his untimely death in 2021, we enjoyed talking shop. I didn't always agree with the political views but I loved the intellectual atmosphere of the newspaper industry and when my husband and I moved to Colorado, I continued to work in newspapers and magazines first at an organization called Mile High Newspapers where the first user-generated website in Colorado was born and then later at Colorado Hometown Newspapers.

"Front Range from State Highway 93 Between Boulder and Golden, Colorado" by Ken Lund is licensed under CC BY-SA 2.0

In 2006, I made the decision to go back to school for my Master of Fine Arts in Advertising. I was one of the first online students at the Academy of Art University, so my first experience in online education was as a student. I remember the platform at the time was very simple, and easy to use but there weren't any live webinars at the time. We had a place for a digital portfolio, a discussion

board, and a place to upload assignments but the Learning Management System was quite pared down compared to what we see in an LMS today.

What was great about the program was that it was immersive and experiential. We did tons of project-based work, group work/collaboration and produced projects for our portfolio as our assignments. One of my favorite parts of the program was that the instructors were actual professionals working in the field. We were paired up with people who had jobs we were looking for. After the birth of my first two kids, we decided to move back to New York and so I had the experience of working with some of the top minds (who were also my instructors) in some amazing NYC ad agencies. I got to work at some incredible ad agencies, creatives and some amazing accounts including Brand Buzz, Ammirati, and Amalgamated. This immersive experience allowed me to gain some incredible Fortune 500 account experience and network with some of the most brilliant minds in advertising. I very much enjoyed working in Manhattan but quickly realized the commute and schedules were tough on a new mom and because the MFA is considered a terminal degree, I decided to pursue teaching upon graduation.

Working in Manhattan was a rewarding experience since I was surrounded by some of the most incredible advertising in the world.

The day after I presented/defended my thesis and graduated from the program, I walked straight into the graphic design department head's office at the local community college and handed my resume in. I was first hired as a marketing assistant in the Applied Arts department and one year later, I was teaching my first courses. I taught face-to-face while using the D2L platform as a place to store content, program assessments, and grade and later used the Blackboard platform when the school made the switch.

Since they weren't hiring a full-time instructor, I started teaching at two other universities as an adjunct professor, one fully online and one face-to-face. For the next few years, I taught a number of courses including branding, advertising, new media, technology in education, communications, public speaking, Adobe Creative Suite software, basic graphic design, introduction to computers, time-based media, and digital

design freshman seminar. I often created my own curricular materials, assessments, and interactive experiences, and when possible, I also chose the resources or textbook. It was only in the online university that I had little control of the curriculum, textbook, or assessments and this experience first piqued my passion for instructional design. I knew I couldn't modify the learning management system and I often felt constrained. This haunted me for years and I did my best to read up, even back then, on teaching and learning strategies in the online education space. My thirst for understanding the literature and how I could apply it would prompt me to start my Doctoral journey a few years later.

Since I have always believed that instructors should also have industry experience, I continued to freelance as well. Around this time, I met my business partner Joanna and after realizing our skill sets complimented each other and we saw a need for producing high-end Madison Avenue quality design to the east end of Long Island, we decided to open up shop together. I had education, advertising, and publishing experience and she had pharma, publishing, and packaging experience. I had more experience in writing and account management and she had more in art direction and production. She was a detail person; I was a big picture person. She was laid back and chill, I was high energy. It was a perfect match. In February of 2012, East End Advertising was born.

Dawn DiPeri and Joanna Pendzick of East End Advertising, Inc. before the grand re-opening of the Vanderbilt Museum Gala where our new logo was unveiled.

This launched an exciting time working with some amazing clients and delivering high-quality designs to mission-driven organizations. I gravitated towards non-profit and education/workforce clients and she did a lot of the fun apparel and high-end consumer goods, but in the end, we always collaborated, bounced ideas off each other, and worked together to produce work we could be proud of. Over the years, we hired many different vendors, and subcontractors, and even some former students of mine. I enjoyed mentoring them and helping them build their portfolios and careers.

When I started my doctoral journey, I was looking for a way to marry my love of Education and Design and

the program I selected was a practitioner management degree that was one part change management and one part instructional design. Once again, I chose an online program. I was impressed with the level of support I received, especially during the dissertation phase.

Since I was passionate about improving the experiences of online students and I was at the time teaching public speaking online, I chose a topic that explored how the curriculum could improve the oral communication skills of online learners. At the time, most of the assessments, communication, and correspondence of online students were in written form. I wanted to know what higher education instructors who taught public speaking across the US were doing to improve the oral communication skills of their students.

I completed my program in March of 2020, right at the time the entire world was shutting down from Covid-19. My skill set and expertise in online pedagogy became in high demand and I quickly took on an instructional design client, Brighter Higher Ed, where we helped design online professional development courses and offerings for higher education faculty and administrators. Not only did we design courses, but we also wrote articles, helped rebrand the organization, and designed graphics. One of my favorite things was getting to be one of the first readers of the book *Radical Empathy* and brainstorming how to translate this into a professional development offering.

In September of 2020, I started a contract with Harvard Graduate School of Education as a learning designer working in the Ethnic Racial Identity Lab. This experience helped progress my DEI journey as I was able to help design and build an online version of a

curriculum that equipped educators to have conversations about race and ethnicity in their classrooms. The work was fulfilling, intellectually and creatively challenging, and most important, mission-driven. After I completed my work with the AERID lab, I then finished my contract with the Teaching and Learning Lab, where I got to take a deep dive into digital accessibility and inclusive online pedagogy. I worked hard to improve curricular materials with an eye for revising language, improving accessibility, and including things like diverse image representation.

At the same time, I was working with Harvard, I also had the opportunity to work on a course with ONEHE and Dr. Thomas J. Tom is a faculty developer, professional consultant, author, and international speaker on quality in technology-mediated education. We worked together as an SME-Designer team for his 3-part series on UDL and technology. Learning from Tom, I furthered my knowledge in accessibility. His books on design, tech, and teaching and learning partly inspired me to create this book.

I was looking for a way to help fellow instructional designers, as well as faculty in K-12 and Higher Ed, to design curricular materials that were also visually appealing. There is very little literature on this topic and I hope this book will help to fill the gap in the body of knowledge. See, in this book, I argue that good design is an intentional result of accessibility and visual aesthetics.

Digital Accessibility and Graphic Design Matter

What if I told you that you could design beautiful courses and polished-looking curricular materials while still

being digitally accessible to a wide range of learners? What if I told you that you could learn the basics of graphic design even without ever having taken a course before and quickly be able to apply what you learned to your courses with ease? What if I could assure you that using the simple techniques in this book, you would improve learning, reduce barriers, and decrease cognitive load? You may not believe me, but I am here to tell you that this is in fact, something that you can achieve and in doing so, transform the way your learners consume and engage with your content.

This book partly came about from an observation that I had as a trained graphic designer who also became a learning designer. I found that a large portion of online courses, e-learning, and curricular materials was cluttered with seductive details (graphic elements with no purpose such as wingdings, decorative borders, and cheesy clip art), riddled with confusing navigational cues, and often inaccessible to various populations, particularly the color-impaired and neuro-diverse. My experience as a professor who often designed my own materials gave me quite a bit of insight into the ways my learners consumed and engaged with course content.

See, I wasn't always able to engage my learners. I had to work at it, solving problems, using critical thinking, and most importantly actively listening to them.

I clearly remember my first experience teaching in the college classroom. I was teaching basic graphic design and I was excited, fresh-faced and full of energy. I remember practically dancing while explaining a particular topic I was passionate about and looking out at my students who were mostly energized by the display — well, all but one. I noticed one student slouched in his chair, sitting in the farthest corner of the room, hoodie up, giant earphones on, arms crossed. Since I was a new professor, I wasn't quite sure how to handle his lack of enthusiasm, but I chalked it up to a bad day. Next class, his behavior was worse because he talked back to me, refused to do the project and his actions started to affect the morale of the class. This is when I quietly asked him to meet me after class during office hours. Here is how the conversation went.

"Hey, Josh. I asked you to meet me after class because I noticed that you seem discontent and disengaged in class. Other students have also noticed and I want to continue to provide a good experience for all, so tell me what I can do to make this class better for you."

Josh immediately relaxed his shoulders and uncrossed his arms. He looked apprehensively at me and responded.

"Yeah, I am not really enjoying this class. I already took it at the School of Visual Arts last year and this dumb school is making me repeat it."

A lightbulb went off in my head, as I realized exactly how he was feeling as I was a transfer student back in the day as well and I clearly remember feeling a sort of mourning for the first school.

"First of all, School of Visual Arts is not an easy school to get into so congrats on that feat. I do know it is very expensive though. I was once in your shoes and I transferred from a very selective college into a state school myself. By the time I finished my bachelor's, I had enough credits for three degrees and I remember the maddening articulation agreements between colleges. It always seemed so unfair that some universities didn't accept your credits when you transferred. Even though this is beyond my control, it is worth speaking with your advisor again to reevaluate that decision. I am happy to help in any way I can. If you do decide to stay in my class, I want to make it a better experience for you. Can you tell me how I can do that?"

Josh responded.

"My parents made me transfer because we couldn't afford SVA anymore. I never wanted to come here. I worked on much more challenging projects at my old school and honestly I am just bored having to repeat these topics."

I then realized what most professors would consider a troublesome student was actually my greatest asset. I eagerly proposed an idea…

"Josh, well if you decide to stay, I would love to see if we can take your portfolio to the next level. Let's look at the assignments in this course together and see how we can make them even cooler and deeper. We can find a way to develop your work using the skills you already know and find out how we can push them to accomplish even more. For example, when the class is creating a movie poster, maybe you can create a series, or perhaps a prototype for a corresponding app or a social media campaign. The sky is the limit really…" I said.

"Yeah, that would be cool, thanks." He said.

"And if you finish early and wouldn't mind, I would love to have you help out some students in the class who are struggling to learn the software. I am only one person and it takes a while for me to get around the room to give one-on-one attention. I am happy to have you help me if you would like to."

"Yeah ok. That works." He said, smiling wide.

Sometimes, teaching others helps us reinforce our own learning. I thought. What I didn't know at the time was that I was using universal design for learning strategies to

help engage Josh and the end result was a happy student, who accomplished enormous progress in my class and was a pleasure to have in the course. I showed him I valued what he brought to the table and gave him some choices in his learning and this in turn made for a better experience for everyone in the class.

My early experiences were face-to-face, hybrid, and online, and as the years went on, I became more and more interested in trying to engage each and every student in my classes. This was no small feat, and it's something I still struggle with, but I found if you lead with empathy and put yourself in their shoes, you can create and design transformative, beautifully designed learning experiences.

As I learned more about digital accessibility, I began to apply some of the strategies in this book to improve learning in diverse classrooms. When I taught online and didn't have the ability to change out elements of the course shell, I became frustrated since as a web designer, I was often in charge of creating delightful user experiences where visitors could easily navigate through the pages and consume the content they were looking for. I began my doctoral journey to dive deep into instructional design theory, online pedagogy, and change management practices and finished only a few weeks before the pandemic forced a never been seen rapid migration of online courses, and training across the world.

As I continued to work in this environment, I found that most people who designed courses had little or no training in graphic design. I was often giving support and resources to my peers and network and hopping on lots of zoom calls to do this. I began offering articles, shared

resources, and tutorials online and these experiences helped spawn the starting ideas of this book.

Instructional designers often make mistakes when selecting fonts, images, colors, and layout. When an illegible font is selected due to type choice, color, or size, it can create a barrier to learning. This book provides quick tips on how to make better type selections. When color contrast is not high enough, we exclude people who are color impaired. When we choose animations that move too rapidly or contain distracting background music and sound effects, we exclude some neurodiverse and health impaired populations. When an online course has too many places to click, too many buttons or cluttered, unclear navigation, it can lead to excessive cognitive load. When this occurs, the learner feels frustrated and often experiences barriers to learning.

We must consider the user experience from beginning to end. The learner interacts with courses in the same way they interact with other digital products. The look, the feel, and the useability of the course are the three primary concerns when designing. According to Interaction Design (2021), the look of a product (or in this case the course) is all about creating something with a visual appeal that aligns with their preferences and values while aligning with their expectations of the course. When we apply visual design concepts, we aim to make the courses not only look nice but look right or what we call in the industry "on brand." We want our user's perception to reflect their experience and when we get this "right" we establish trust.

The "feel" of a course is more about developing curricula that are enjoyable. Courses that are pleasurable to interact with will be more likely to be completed.

Courses should not only be functional and easy to navigate but must also be engaging. Usability is the most important part of the user experience. If the course or curricular material is not usable the experience of using it will be poor. We want to create courses and curricular materials that are tailored to learner needs, are functional and enjoyable to engage with.

We must be intentional with our design choices. The ways in which we select and apply graphic elements to a page can greatly affect the experience, functionality, and usability of a course. Using photos or illustrations that do not match the course content will create cognitive dissonance. Careful choices with imagery are essential to the learner experience; when instructional designers inadvertently select images that do not make sense negatively affects the learning experience.

We also must be culturally considerate and select images that are not culturally sensitive in nature, are diverse in terms of representation of race and ethnicity, gender, age, disability, socio-economic class, family type, and more (Costanza-Chock, 2020). It takes time to select images that are inclusive and appropriate as it is a systemic issue where stock photos do not always have the best representation of historically marginalized communities. Although it takes time to find the right image, it is time well spent. Below are some vetted photo and illustration house resources that were available at the time of printing. Some are free, paid subscriptions or can be purchased individually.

nappy.co
iwaria.com/category/people
mochastock.com
pocstock.com

wocintechchat.com
tonl.co
elements.envato.com
tetraimages.com
ukblacktech.com/stock-photos
startupstockphotos.com
blackillustrations.com
unsplash.com
digitalcollections.nypl.org
unsplash.com
picjumbo.com
photos.oliur.com
kaboompics.com/
splitshire.com
pixabay.com
morguefile.com
freeimages.com
openphoto.net
everystockphoto.com
pexels.com
Gratisography
Stockvault
Pikwizard
Rawpixel
Reshot

The goal of this book is to train people how to adjust the graphic elements on the page to account for diverse audiences' abilities. The chapters outline how to apply the principles of alignment, proximity, repetition, color, type, and minimalism. In addition, it relays some of the most important tips to improve digital accessibility in online learning. By making some of these small

modifications to e-learning, we can greatly improve the outcome of our learner's experience.

Graphic Design for Course Creators is directed toward both instructional designers in education and corporate instructional designers. This book is also for educators who teach online, hybrid, or in blended formats. Even face-to-face instructors who create digital and printed curricular materials benefit from the topics and suggestions in this book. The book begins to fill a gap in an instructional designer's (and instructor's) skillset that helps them work toward creating aesthetically pleasing and accessible learning for the purpose of making learning more enjoyable by eliminating barriers such as extraneous information or poor design choices. This book is intended to be a quick guide for designers to create and evaluate e-learning by using the rubric I created called the Graphic Design E-Learning Checklist.

I created the Graphic Design E-Learning Checklist as a simple way to evaluate online learning by using both graphic design and digital accessibility. The framework in its entirety is in the Appendix of the book but each section of the two-part checklist is introduced and displayed with its corresponding chapter.

The book provides several visual examples, and resources to supplement the material in the book in the reference section. With *Graphic Design for Course Creators,* you will be able to create visually stunning courses and curricular materials while creating content that is both inclusive and accessible for all.

1

INTRO TO THE GRAPHIC DESIGN E-LEARNING CHECKLIST

Course design is an iterative process that benefits from taking note of where to improve.

The Graphic Design E-Learning Checklist is intended to help educators design intentionally in a way that is digitally accessible and visually appealing. There are two parts to the Graphic Design E-Learning Checklist. The first part is all about digital accessibility.

This digital accessibility section of the checklist has the following categories:

- Alt Text
- Color Contrast
- Headings
- Links
- Lists
- Video

When course creators aim for accessibility, they should first define their goals, analyze their stakeholder needs,

get organizational buy-in and then start out small, revising, designing, and reiterating with learners of various abilities to beta test the designs. If course creators make strides to improve their practice to consider inclusive opportunities, they can make progress toward a more digitally accessible world. This Graphic Design E-Learning Checklist is not intended for designers to reach 100% accessibility every time, but the checklist contains some major items to consider. If you want to learn more about digital accessibility there are resources provided in each corresponding section of the book. The digital accessibility section comes first because we need to think about how to design learning to be inclusive at the forefront rather than trying to fix everything at the end. In 2021 WebAim conducted an analysis of the top one million web pages and found that 97.4% of the homepages had WCAG 2.0 errors. The areas of concern that are also covered in this book were low contrast text (86.3% failing), missing alternative text for images (60.6% failing), and empty links (51% failing). We can do our part to help improve these percentages. Our goal is to enhance these areas but it is important to note that the digital accessibility section of the checklist does not guarantee 100% compliance with any government or regulatory agencies in any country.

The second part of the Graphic Design E-Learning Checklist is about graphic design theory.
**It contains categories the following categories:**

- Contrast
- Repetition
- Alignment

- Proximity
- Color psychology
- Typography
- Minimalism

The Graphic Design E-Learning Checklist will help course creators to design learning that sticks. When you use graphic-design theory correctly, you reduce cognitive load. This means the user has less friction or fewer barriers as they take the course because they do not have to struggle to decode the content on the page. Some of the above principles are part of the author Robin Williams' core principles from her book Non-Designers Design Book, but written through the lens of e-learning and course design. The goal of this section is twofold. First, it will help you create visually appealing portfolio pieces that will raise the caliber of your designs, help you attract better-paying clients and perhaps even land you your first instructional design job. People who have visual design skills have polished-looking e-learning and courses that show an advanced level of skill and understanding about brands, the learner persona, and how design can help communicate content visually.

White space, easy-to-read typography, intentionally-selected images that help break up the text, and strong color theory aid in cognition and make learning more likely to be remembered over time. Since the digital accessibility section comes first, you will already have an idea of how to design with fewer barriers. But, with the added ideas in the graphic design section, you will be able to create items that are not only accessible but also beautiful. You may be wondering how to get started and how to apply both these concepts at once. Designers work in different ways. You may want to design for both

simultaneously or one at a time. Initially, you may choose to select an accessible default font and black-and-white only in your prototype, just blocking in some of the text and images. So, when you come to the graphic-design section, you can start to be more daring with the choice of color and text, cross-checking back to the digital accessibility section to make sure it works.
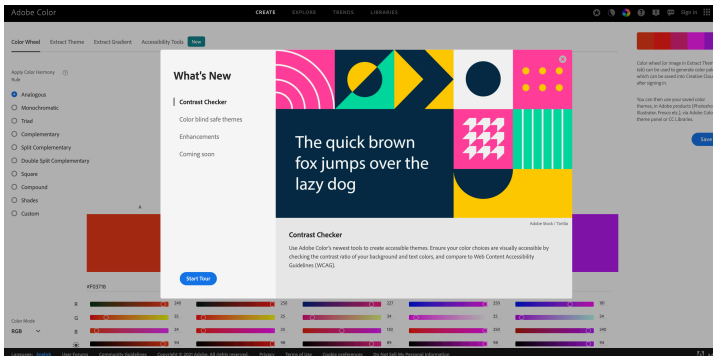
At the time of print Adobe.color released new accessibility features including a contrast checker and color blind safe themes. New updates help with creating accessible prototypes and color exploratories.

When I design, I use prototyping in the form of mockups to ensure that I don't go too deep into a design or concept without client approval. I will sometimes show a portion of a design project and then offer a few versions of only a small section of the course or learning. I often do a font exploratory and a color exploratory before I commit the choices to the entire project. A font exploratory is a sheet of different fonts mocked up in a few words and/or phrases for the purpose of selecting the best ones. The color exploratory works in a few ways, usually I will mock up a design and offer the same design in multiple color combinations – one on each page so that the client can select the color story that resonates the best. I only

offer choices that I can get behind in terms of emotional and digital accessibility. In other words, when I present my ideas, I do so in a way that I back up my choices with sound graphic design theory, color and type psychology, multimedia principles, and digital accessibility standards. This usually helps with client/institution buy-in.

If you work in higher ed, you will find that the field is particularly fond of data-informed, empirically sound decision making which means you may be tapping into some academic journal articles when explaining design rationale. For corporate clients, the decision of "look and feel" may be more nuanced. Branding needs to be considered in more depth and companies may rule out certain decisions if they don't feel it is in line with their positioning or attracts their target audience. Or, maybe they just don't like a specific color or color combination for a personal reason. Offering a few choices and compromising will get you far.

I recall a freelance client I had many years ago. A friend of mine recommended my services to an up-and-coming real estate agent. This client was going out on his own and starting a new agency. He wanted me to help him create a corporate identity system, which included a new logo, signage, and apparel. I clearly remember our conversation like it was yesterday. We were sitting at a coffee shop as we freelancers often do and he began to explain what he was looking for.

> "I want to launch my brand and I want it to be red and yellow. I love the branding of Mcdonald's. It's bright and happy and it stands out from the road. I want my sign to do the same," he said.

> "I understand you want people to see the signs on lawns, the sign on your office, and the like. That

makes sense. We can still create a high-contrast logo even if we don't do red and yellow. Red and yellow psychologically make you hungry, they are often used in tandem in the fast-food industry and they may not be the best choice for a professional-looking real estate firm. Can I convince you to look at any other combinations?"

"No. I love these colors. My mom loved these colors too. I really don't want to budge." His posture grew rigid.

"Ok. Got it." I said.

I then went home and got to work. First, I showed him some black and white images, to nail the concept. Doing this allows the client to stop thinking about color and focus on the design. I then did a font exploratory to look at the logo in different typefaces. It wasn't until the final iteration that I introduced his had-to-have red and yellow combos. We met again at the same coffee shop a few weeks later when I unveiled the color logo choices.

"OK. I did your logo in red and yellow as you asked, but I also did a combination in a slightly different way. I took the red and I deepened it to a maroon, then I made the yellow more of a gold. This made it more regal but still kept the contrast high. The gold is light, the maroon is dark and it's easy to see these as signs from the road. It looks high-end, sophisticated, and professional. Here is the difference between this color combo and the bright red and yellow combination," I said then held my breath while I gauged his response.

He proceeded to flip back and forth between the

two choices. "Hmmm. MMMM Hmmmmm. Huh? Hmmmmm." His brow furrowed.

He finally looked up and said "I like it, sold. I am glad you showed me this and I appreciate you using my suggestion but you took it to a whole new level. Thank you."

I breathed a sigh of relief.

psychologically. Bright yellow caution tape or the yellow arches of a fast-food restaurant can be attention-getting but one must be careful when using it so that the color communicates the right feeling. Dark red and gold are a better choice for a real estate agent versus bright yellow and red.

You see, designers are change agents. They often have to rally for change, stand fast in their opinions, and consider the stakeholders at all times. We must think of emotional and digital accessibility and we have to hold our clients/ SME's hands sometimes when we guide them over the threshold. I find it is easier to convince others to improve their digital accessibility measures than their graphic design skills, but both are important. If you find you

are getting pushback on the digital accessibility efforts, I like to remind clients who don't think that is important that lawsuits could occur. In many industries, there is a legal minimum accessibility requirement, so the failure to meet that could make for dire consequences. For clients who appear to lack empathy, this approach to change management may be needed.

The Graphic Design E-Learning Checklist in two parts

The Graphic Design E-Learning Checklist is located at the end of the book, but you will see portions of it as you make your way through the relevant sections. We want to review the checklist in order but we can always check back at the end to ensure we have met the criteria and form an action plan for revision should we need it. When moving through the items, you would make notations on what needs to be improved. Write a brief description of an action plan to improve if you wish. You can refer to the section of the book to read more about the line item for additional help. This book gives practical advice you can apply right away to improve your instructional design capabilities.

By notating how much change is needed to fulfill the criteria and formulating an action plan, designers can take small actionable steps toward designing better learning by using the theories in the book. It is important to note that this checklist cannot possibly consider all criteria for accessibility, but it is a good start and something more achievable than trying to meet all criteria for full accessibility. In fact, what works for one population is often in direct contradiction with what is accessible for another. The way of the future is

customizable accessibility features so that users can toggle the settings that make learning best for them. I appreciate the full range of customizability that Apple offers, like a dark mode for when I'm writing in the evening, or the ability to enlarge the text on my phone when reading articles online; many other companies are following suit. If you are in charge of technical procurement, make sure software is accessible and customizable.

Why graphic design needs a rubric

Graphic design is part of the visual communication field, but many mistake it for being part of the arts. It is aesthetic in nature, but it seeks to inform and help communicate messages in a commercial setting. Graphic art is not fine art. Designers do not create for the sake of creation or to express themselves. Instead, they work for their client to design in a way that attracts the audience and helps make the company money. The work is for the client and the client is always right. The livelihood of a designer is not based on how many paintings are sold. Although many fine artists do commission work, many of them just create what they feel like creating and then sell their work. Designers work in the commercial or education space and need to appease stakeholders and clients, Whether there are designing courses alongside subject matter experts and learners or designing websites for a commercial audience, the work is created for others, not for oneself. Because of this difference, fine art is far more subjective. Our idea of what makes great fine art varies. If you could be a fly on the wall in five different homes and look at the art on the wall, you would most

likely see five different styles and preferences. Art has some standards to follow in terms of color theory, composition, and balance, but it is far more open to interpretation than graphic design. Graphic design is meant to sell. It is an intentional practice and more of a craft and skill than an art. Its effects are measured in terms of where people look first, second, and third, where people click, how long they stay on a page, and if they struggle with the navigation of a design. There are hundreds of ways we can analyze the effectiveness of graphic design. But, by using a rubric that outlines the major principles and components, we can be sure the outcome of our craft will achieve. Strong graphic design theory aids in instructional design, yet many fail to understand the basic principles or grasp what makes a design range from mediocre to excellent. The principle of contrast is more likely to create a more inclusive design for all . By evaluating one's own work and the work of others through the use of this checklist, one can begin to understand why the visual aesthetics of design work and aid in instruction.
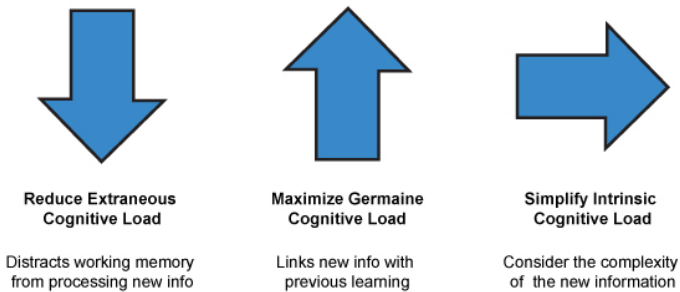
The importance of rubrics in evaluating e-learning

In order to be proficient in design, a rubric should be used to evaluate and create courses that learners enjoy working on. Course designers aim for learner mastery and must make design choices that are more likely for them to achieve it.

Using rubrics in e-learning or distance education isn't new. Rubrics have been around for decades to evaluate the quality of online learning. In Higher Education, organizations such as Quality Matters have popped up to help train designers and instructors on how to evaluate the effectiveness of online education. The Quality Matters rubric and the OSQR (Online SUNY Quality Rubric) have sections that focus on visual design in terms of consistency, but there is very little information or guidance on how to improve the graphic design. For example, the OSQR may alert you to check for inconsistent headers/title fonts. But it may not tell you that your choice in the font is poor, or the color scheme is jarring, or that there is too much clutter on the page.

Contemporary rubrics are highly effective at giving a top-level view of everything, but I felt there needed to be a rubric specifically to evaluate how graphic design affects the digital accessibility of our work. The book and the Graphic Design E-Learning Checklist go hand-in-hand, so you can always refer to the section in the checklist by reading the chapter in the book. The QM and OSQR rubrics are not as focused on the two areas I cover in this book. QM and OSQR give a long list of top-level points of evaluation. This book and the checklist in it are not intended to replace the QM or OSQR, but rather to supplement them. My book seeks to use graphic design theory to improve learning by reducing cognitive load.

Cognitive Load Theory

Reduce Extraneous Cognitive Load

Distracts working memory from processing new info

Maximize Germaine Cognitive Load

Links new info with previous learning

Simplify Intrinsic Cognitive Load

Consider the complexity of the new information

Cognitive load theory was developed by John Sweller to explain the phenomena of how learners process information from working memory into long-term memory. A cluttered e-learning design is harder for students to grasp the task at hand. With graphic design and instructional design, the focus should be on minimalism.

Cognitive load theory is an instructional philosophy based on some aspects of human cognition. The theory focuses on something called secondary knowledge, which is cultural knowledge humans have acquired more

recently, rather than over many generations. Secondary knowledge is attained by a processing system in our brains in which the primary aim of instruction is to assist learners in the acquisition of that knowledge. Cognitive load theory as it relates to instructional design revolves around two things: working memory and long-term memory. Short-term memory is limited and used to process new information (Atkinson & Shiffrin, 1971).

Tip: Long-term memory is used to store knowledge that has been acquired for later use. Instruction aims to store information in long-term memory.

Information acquired during instruction consists of everything that has been learned, including rote memorization of facts all the way up to the synthesis of concepts and procedures. As instructional designers, we want our learners to store the information they are learning in long-term memory so that it can be recalled again later and used as a scaffold on which to add increasingly more challenging material if needed. If learners cannot commit information to long-term memory, they will merely regurgitate information and then forget it. This can be problematic when they try to recall information in the future. We want to optimize intellectual performance by processing information that does not overload the working memory. There are three types of cognitive load. While this book refers mostly to the part called Extraneous Cognitive Load and Intrinsic Cognitive Load, it is important to explain all three. Extraneous cognitive load refers to the way information or tasks are presented to a learner; this is often under the control of an instructional designer. It can distract

memory from processing new information. We want to reduce extraneous cognitive load whenever possible.

The second type of cognitive load is called Germane Cognitive Load. Germane Cognitive Load is the deep processing of new information by integrating it with previous learning. This means the work put into creating a permanent store of knowledge. We want to maximize this. Germane load is there when the course is designed and the curriculum materials are delivered to facilitate learning. Some courses have more germane load than others. For example, if you deliver the materials in an engaging and accessible format, you free up the germane load to maximize the resources of the working memory.

Scenario-based learning is a great example of a task that maximizes germane load by helping learners work through solving a problem, versus having them read a giant bulleted list of items to memorize, which is mostly extraneous working memory load. If you were to test a group of students after engaging in scenario-based learning and then test a group of students who are were asked to memorize a long list, you would find the group that did the module about hands-on scenario-based learning scored higher. Cognitive load affects learning and the way we design our courses contributes to the success of our students in the course.

This third type of cognitive load is called Intrinsic Cognitive Load. This deals with the complexity of new information. Instructors may not be able to change the inherent difficulty of the learning, but the work can be broken up into smaller sections. We want to simplify the Intrinsic Cognitive Load. Intrinsic cognitive load should be reduced by simplifying and chunking information and

distributing it in a sequence. Smaller chunks are taught first before being explained together as a whole.

By simplifying content into bite-size pieces, we avoid overwhelming the learner. In doing so, we can assure they are more able to grasp new materials when they are presented to them. If we were to present walls and walls of text on a complex subject with no pictures or icons, no space between paragraphs, all content on one page of the course, our learners wouldn't even be able to look at the page, never mind read it or learn it. We have to break it up, distribute, and explain it in sections. Much like this book. If I didn't separate the parts and the chapters into sections, the reader would probably lose interest, drift off, and stop reading altogether. We should simplify intrinsic cognitive load, maximize germane cognitive load, and reduce extraneous cognitive load.

In this book, we talk about how to reduce the extraneous working memory load so that we can help facilitate the acquisition of knowledge into long-term memory. As we become more technologically advanced, we need to be aware of how our choices of graphics, animations, fonts, colors, and moving text can create an excess burden on the learner. They have to decode what is happening, which takes up significant brain power that otherwise could have been used to acquire the knowledge in the course and commit it to long-term memory.

Working memory cannot handle that much information. Most people can store and retain only seven items at a time (Miller, 1956). And if the working memory is overloaded, it cannot do its job of acquiring long-term information because the learner can become frustrated, and their decision-making process can become compromised (Baddeley & Hitch, 1974). When a

course has confusing navigation or a hard-to-read font, the user has to struggle to find the information they are seeking. Learners can easily become frustrated with the course. This could lead to them doing poorly on their assessment, especially if they cannot find everything, they need to learn to be successful.

When we add visual elements to decorate the page rather than to help inform the material, we create extraneous cognitive load in the form of what Sweller (2011) has termed "seductive details." Seductive details can also take the form of distracting animations that do not serve a purpose. There are several ways cognitive load can become an issue, but this book tries to address some of the most repeat offenders and offers solutions for improvement. Recent research suggests that designs with a lower perceptual load are less likely to cause the learner to be distracted by any present seductive details. In other words, if your page has only one graphic as a focal point, even if it's not aiding in instruction, it will not affect learning as much as if you have multiple graphic elements. For this reason, designing with a minimalist approach is best.

Ask yourself what you must include and omit what is unnecessary. If there is an image or element that helps break up the page, or aids in instruction, or explains the activity somehow, you should include it. If not, it's competing with several other equally distributed or equally sized graphics. Research has shown us that white space is our friend and leaving more of it intact is the goal (Rimmer, n.d.). Since cognitive load theory has to do with the way we process and retain information when we are designing a learning experience, we want our participants to first hold the information in their

working memory so that it can be processed sufficiently, and then store it in their long-term memory. To make this happen, we need to reduce barriers and friction by developing material that is easily digested, bite-size, and free from extraneous clutter.

Think about swimming a triathlon, where you know the route by heart and what to expect to get to the finish line. You can focus on the goal and you can push through the challenge with the right amount of desirable difficulty. You know the race will be hard, but you signed up for this, you feel proud of yourself, and you know the reward when you finish will be great. You are enjoying the ride, struggling a little bit as you go, pushing your limits, and feeling proud of yourself.

Swimming in a race is more successful when there are no barriers in the way. Course design should also be free of barriers.Now picture this instead. You are about to start your triathlon. But, as you hop in the water, a bird lands on your head, and you get kicked in the face, and can't see where you are going, but you flail along anyway.

You finally finish your leg, you get out of the water, and you go to look for your bike. You can't find it and must hunt for it in a large open field where bikes are fallen over haphazardly from the wind, are randomly placed, and scattered on the grass. You finally get to your bike but you feel like giving up. During your run, the signs confuse you as they aren't clear and you get lost along the way, you trip as you run because there are too many rocks and roots along the trail. By now, you feel defeated. You are in pain, you are disoriented, you don't know if you even care about the goal of finishing at this point.

I just described two different scenarios. One, where the race had a good degree of desirable difficulty and where there were clear markers on where to go and less friction along the path to the finish line. The second scenario describes a scene in which the path was not clearly marked and was filled with debris and disorder. The second scenario describes what it is like when poor graphic design choices are used in an e-learning experience. The confusing signs are like a poor navbar in a website, or when there are too many places to click. The debris in the road is like having graphic elements that are hard to read. They slow you down. For example, a font set in script with a small point size takes some time to wade through it. The random placement of bikes is like the experience of a learner who is searching for a resource but cannot find it and has to click on multiple places until it's uncovered. The goal of this book is to show you how we can remove barriers to learning by using visual design theory and digital accessibility best practices. We want all our learners to have access to learning experiences – regardless of how able-bodied they are. Creating good visual design helps us to fulfill the mission of universal

design for learning. By creating more access and fewer barriers through technology and design, we can create learning that is beneficial to all.

2

DIGITAL ACCESSIBILITY

Before we begin talking about how to improve graphic design, we have to focus on designing inclusively. This means going through the first part of the checklist that focuses on Digital Accessibility, then planning your process for designing your course and e-learning, using the parameters in that section. If you would prefer, select a font that is a standard default accessible font at first.

Unfortunately, there is conflicting literature on accessible fonts. In the typography section, I go over several nuances related to this topic, but the most important thing to keep in mind is to design in context and with and alongside your learners. Test your choices with learners of varying abilities including those that have low vision, color impairment, and dyslexia.

On the U.S. Web Design Standards (USWDS) webpage

there are a recommended set of legible [open source typeface recommendations](#) which includes Source Sans Pro, Merriweather, Public Sans, and Roboto Mono. Later in the book, I will discuss what makes a font legible and reflect on how to tell if a font is performing well at varying sizes. I will also dive into the ways some fonts have certain letterforms that can be confused with others and discuss how mirroring comes into play as well. Different sources say different things about fonts and accessibility. For example, the website Siteimprove (which is a company that helps identify accessibility errors on websites) claims that Tahoma, Calibri, Helvetica, Arial, Verdana, and Times New Roman are accessible body copy fonts to use and that Arvo, Museo Slab, and Rockwell are good choices for headings.

Tahoma
Calibri
Helvetica
Arial
Verdana
Times New Roman

Arvo
Museo Slab
Rockwell

This list is not exhaustive, but it is a start. As you comp up your design, select one of these fonts as you focus on putting all the pieces together. As you learn more about

typography later on in this book, you may change your selection. For example, there is conflicting research on what font is best for dyslexic students so making sure to design with your learners is key. You can choose to use black-and-white first on all your designs before making decisions about color. When you have your course mapped out and prototyped in this way, and know it is fully accessible to all, then you can read the chapters on graphic design theory and start to be more daring, and bold (but on brand) with your choices. It is easier to make minor changes after we know the content is accessible versus designing for aesthetics first and then going back to make sure we checked all the accessibility boxes. That being said, if you are designing with strong visual theory, it will be more accessible than if you were not, however, there may still be changes to consider.

Typography is a complex topic because to truly understand its magic one must embark on a journey of learning not only the anatomy of type, but also how to identify different font categories, how to combine fonts, the psychology of fonts, kerning, tracking, line length, leadings and more. It may take multiple iterations to get the type right. Just know that graphic designers everywhere sit and tweak and adjust their designs ad nauseam. It's understandable to be a bit of a perfectionist when it comes to fonts and design in general. You may want to prototype a variety of accessible options to show your client or SME before committing to the typography choices for the rest of the course. Before we begin the next chapter, take a look at the first part of the checklist below. After the first part of the checklist is displayed, you will be able to read more in-depth about the details

of each line item below it, which ensures that you become more familiar with the terms and tasks.

Throughout this book, we talk about how to create aesthetically pleasing online courses that reduce cognitive load by using both instructional design and graphic design theory. Part of the reason I became so passionate about instructional design was the need to help improve learning. And I was curious as a professor how I could re-design or develop my online courses so that all my learners became more engaged. There were times I felt that, because of the way the course was designed, the user experience was poor and the user would struggle to get through the materials. When I had a student with disabilities, this phenomenon became more pronounced. I found myself recording extra screencasts and tutorials to help students navigate the classroom and to understand the assignments. The content wasn't always accessible and I didn't always know when my students had a disability. Or, if I did, I didn't know what it was. It made it difficult to reach everyone and I felt the stress and pressure of retention in a system over which I had little control.

When I began adding instructional design capabilities to our business, I was able to apply learning theory, graphic-design theory, and digital accessibility research. That helped me to design courses that were inclusive right up at the front, vs trying to make workarounds within a poorly designed module. Digital accessibility must be at the core of how we design learning experiences for our students. The work we do to make learning accessible is not only good for one: it is good for all.

WebAIM, W3 & A11y
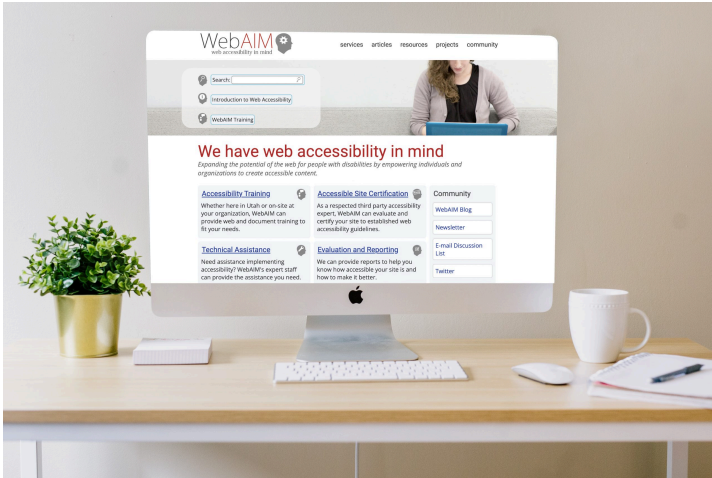
According to the World Wide Web Consortium's Web content Accessibility Guidelines (WCAG), digital accessibility refers to the inclusive practice of removing barriers that prevent interaction with, or access to websites, digital tools, and technologies, by people with disabilities. The W3C, or World Wide Web Consortium is an international group that sets guidelines to make digital content accessible to everyone of all abilities and disabilities. They produce a technical standard of Web content-accessibility guidelines that help improve accessibility and reduce barriers. According to the World Bank (2021), more than a billion website users are affected by impairments that prevent them from fully gaining access to crucial information posted online – including in the very courses you may be tasked with creating.

Fifteen percent of the world's population has experienced a disability (World Bank, 2021). This is partly why there are design standards to keep in mind the

many ways disability can present itself including vision, hearing, and cognitive disabilities, plus the full spectrum of neurodiversity. Remote learning benefits students with disabilities. Students who are hard of hearing can get captions and transcripts for videos which are preferred over an in-person lecture experience. With online learning, students can get access to all the educational materials they need from the comfort of their home which reduces the hassle for mobile-impaired students. As we design courses, we can make choices that enhance learning and reduce barriers.

WebAIM (Web Accessibility in Mind) is another useful website to take a deep dive into digital accessibility. WebAIM is a non-profit organization based in Utah that has provided web accessibility solutions since 1999. WebAIM's mission is to expand the potential of the web for people with disabilities by providing the knowledge, technical skills, tools, organizational leadership strategies, and vision that empower organizations to make their own content accessible to people with disabilities. One of the most helpful tools that WebAIM provides is the Wave Accessibility Tool. This free, online tool provides visual feedback of a page's accessibility so that if you are analyzing the digital accessibility of a browser-based course or online curricular material, you can do so quickly and effectively.

A third important online resource to look closer at is the A11y website. The A11Y Project is a community-driven effort to make digital accessibility easier. The website explains the various levels of WCAG compliance A, AA, AAA and includes its own detailed checklist to verify compliance and explains in-depth the main areas of accessibility. The A11y website is dynamic, continually

adding resources and information on digital accessibility and a great resource while looking to improve access to your courses and materials. The digital accessibility section of the checklist in this book takes some of the most important key items from WebAIM, W3.org, A11Y, and other resources to compile a simple list that relates to graphic design and e-learning specifically. Automated checkers that scan for accessibility issues are available in many programs but they aren't perfect.

I would say overreliance on automated checkers and tools that scan for accessibility errors. While they are good – and getting better – they should not be considered a failsafe. They help inform and guide the developer, but only proper training will ensure the content truly meets minimum accessibility standards. Moreover, the error mitigation process may require more than casual proficiency.

-Rob Gibson, EdD, Director, Learning Technologies, Emporia State University

Be sure to test your content with your learners and don't be afraid to iterate as you receive feedback. Beta testing is a great tool and way to find out how learners are experiencing your online course. Be sure to include a diverse group of learners in your beta test. What can be good for one group may not be good for another. For example, a font that is better for the visually impaired may be detrimental to people with dyslexia. There is extensive and sometimes conflicting advice about digital accessibility found online so the best advice is to take it slow, consider context, and remember it is near impossible to be 100% accessible to the entire population. Instead, you want to aim to improve accessibility and

always design for a wide variety of learners. Later on, in this chapter, I give you some possible learner profiles that could potentially be in your classroom so that you can consider these varying diverse needs when you plan your designs.

Come up with some possible diverse learner profiles to brainstorm ways in which you can improve the lives of all your students. Writing down a list of the types of students you have had in your class could be helpful and speaking with faculty about the types of students they have had will aid in the formation of this list.

You can also consider the range of learners and potential populations in your classroom when you design by analyzing the statistics of adults that live with a disability. The following stats are US-centric but similar data is available in many countries around the globe. The following statistics are taken from the CDC.

61 million adults in the United States live with a disability

- 26 percent (one in 4) of adults in the United States have some type of disability.
- The percentage of people living with disabilities is highest in the South.

Percentage of adults with functional disability types:

- 13.7 percent of people with a disability have a mobility disability with serious difficulty walking or climbing stairs.
- 10.8 percent of people with a disability have a cognition disability with serious difficulty concentrating, remembering, or

making decisions.
- 6.8 percent of people with a disability have an independent living disability with difficulty doing errands alone.
- 5.9 percent of people with a disability are deaf or have serious difficulty hearing
- 4.6 percent of people with a disability have a vision disability with blindness or serious difficulty seeing even when wearing glasses.
- 3.6 percent of people with a disability have a self-care disability with difficulty dressing or bathing.

Disability and communities

- 2 in 5 adults age 65 years and older have a disability
- 1 in 4 women has a disability.
- 2 in 5 non-Hispanic American Indians/ Alaska Natives have a disability.

One way to build inclusive designs is to research, implement and revise as you go. I am also a fan of building products and tools with full customization options, allowing the user to select what they need to gain access. Things like captions and dark mode and large font settings should be able to be toggled on and off for a fully customizable experience. No matter what your role is currently, if you are new to digital accessibility, start small and slowly build your knowledge and skillset as you go. The next few chapters will offer some guidance and a place to start but it is by no means a comprehensive list of ways to improve the course content. The good news

is that even small changes can "cultivate a more inclusive, accessible, and equitable community for everyone" (Accessible U., n.d.).

What are your recommendations for people who are just starting out in their quest to improve digital accessibility?

Whether you are new to accessibility or a seasoned practitioner, you likely already know one of the most powerful tools at your disposal: default states. There has been a lot of research recently about the use of "dark patterns" in web and interface design: subtle cues that frame user choices in order to push them toward desired outcomes. The more positive counterparts to dark patterns are what we can call "virtuous requirements."Most people—learners, instructors, designers, organizational leaders—are uncomfortable with complete freedom in their systems and interactions. Say "here is a completely empty learning-management-system (LMS) shell," and instructors will turn to frameworks, patterns, and ways of interacting with which they are already familiar. In your work with "empty" spaces like learning management systems, communication software, productivity tools, and the like, make time to create a default structure that is inclusive and accessible. For instance, in your LMS, populate each empty shell with a regular folder-sub-folder-file/tool structure that includes progression indicators, and requires alternative text for image and media elements. Adjust the "normal" template in word-processing software to require a title and heading structure in files. Defaults are subtle cues. Anyone can turn off or modify the defaults you set as a designer, but most people will follow your accessible design choices. "Oh, alt text is required? I'd better put some in."

   -Thomas J. Tobin, Ph.D., Teaching, Learning, & Technology Specialist II, University of Wisconsin-Madison

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Suggested guided questions/projects to assess your understanding of Diverse Student Profiles:

- Eric Moore, Ph.D., Director of Learning

Technology at Kennedy Krieger Institute created a set of diverse learner student profiles and a list of questions and activities to ponder. Take a look at these below and consider this a very important topic and how your design could affect their potential learner journeys.

- Review the various created learner profiles. Read and review the following personas: Elaine the English Language Learner, Irma the Independent Worker (Introverted), Hannah who is Hard of Hearing, George the Gifted, Larry, the Late Bloomer (Gen Ed Courses), Darrin the Disengaged (Gen Ed Courses), Clara who is Culturally/ Linguistically Diverse and Dennis who has Dyslexia.

Scenario One: Starring Hannah with a Hearing Impairment

Hannah is bright and sociable in situations in which she is comfortable, but is self-conscious of her own hearing impairment, and this often causes

her to pull back from oral discussions, even though she has good things to say. Though she has transcribers provided from the office of disability services to help her follow along, the reality is that it's sometimes difficult to connect the text on her screen with whois speaking and she's always at least 10-20 seconds behind, which means she misses opportunities to speak out and share when prompts are given. This week, to prepare for an assessment, the instructor typically has students work in small groups during class to develop ideas for their group's topic. If the instructor maintains the status quo, Hannah is obviously going to need some support.
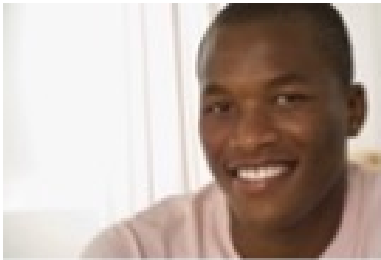
Scenario Two: Starring George the Gifted

George is an exceptionally fast learner. His intellectual giftedness in many settings is equally likely to help him succeed or get him into trouble. Because he finishes work faster than most of his peers, he is often bored or impatient waiting for the instructor to develop the understanding of his classmates. In these times, he is prone to disengagement and thus misses learning opportunities. As a result, ironically, he often underperforms. George is in a medium-sized (30 student)

English Literature general education course outside his major. He may not be a lit major, but he understands the concepts well and is able to apply them sometimes days ahead of his peers. He is becoming bored and frustrated.

Scenario Three: Starring Elaine the English Language Learner

Elaine is an English Language Learner who has achieved "intermediate English proficiency." She can understand most conversational English and with little hesitation can also produce conversational English, and has become moderately sophisticated in her vocabulary, comprehension, and production of academic English. However, coming into an online, asynchronous class, there is a good deal of jargon and subject-specific vocabulary that most of her peers are assumed to know, but which she has not yet had a chance to learn. Writing in English is often cramped for her, as she can—with substantial effort—write what she factually means in proper grammar, she struggles with nuance, ideal word choice, and expressiveness. The instructor of the course has traditionally included long "lectures" in a podcast and/or written essay format. The weekly assessment for the course is usually a text-based

discussion board in which students respond to a prompt and then respond to two peers. As is, Elaine is going to need support to have access to learning and fair opportunities to demonstrate her growth.

Scenario Four: Starring Darrin the Disengaged

Darrin is taking this entry statistics class because, in his mind, it's the "least bad" of bad general education options. He doesn't have any interest in the subject matter and is thus will struggle to stay focused in lessons and is likely to de-prioritize the class when other things come up. The professor believes in starting off the course by jumping right into the content because there's so much to cover in so little time. Unfortunately, for Darrin, the first-class only confirms his disengagement as the professor prattles on with formulas and terms that have little or nothing to do with his interest in zoology (or so he thinks). Without support, Darrin is at high risk to underperform in this course.

1. Intentionally select students who are similar to those you are expecting in a given course. When thinking about which student you will select consider what kinds of students have

you had in the past? Is the course an intro-level freshman class where you are more likely to encounter If you are more likely to encounter students on probationary acceptance? Are you teaching doctoral students with decades of experience brought to the classroom? It would be wise to consider designing for dyslexic students. According to Yale Center for Dyslexia and Creativity (2021), Dyslexia affects 20% of the population and is the most common neuro-cognitive disorder. Select a couple of learner profiles from the list to start.

2. Read over their profiles and keep them active in mind when designing/evaluating all aspects of the course from syllabus to final assessment. Pretend that you know for a fact that these students will be in the class.

3. Empathetically consider how having a student like Denise and/or Larry and/or George would benefit if a course element (syllabus, material, lesson delivery, assessment…) could be enhanced to better serve them. Also, consider third-party tools (e.g. Read & Write) that could be used to supplement, and consider how these are explicated for students. For evaluation, consider if the way these elements are designed is sufficient or needs more flexibility. This is a great time to draw from the UDL guidelines.

4. Consider if such an enhancement would end up benefiting more or all of your students.

You may not have had a student who is hard of hearing but captions benefit all students and should be implemented. When thinking about what enhancement to make consider the time it will take to implement it and if you will make the change now or in a future iteration of the course.

3

ALT TEXT

Alt Text Checklist

- Succinct 1-2 sentences of clear alt text are provided for all images and explain the function of the image, the audience, context, and intent. If there is text within an image, it is included in the alt text.
- A description is provided for all tables, graphs, charts, and infographics, and text in graphics is avoided when possible

Alt-text is otherwise known as alternative text. Any content on your course or materials that isn't text needs to be supplemented with a text alternative otherwise called Alt Text. According to *A Practical Handbook on Accessible Graphic Design* (2010), Alt Text can be converted by assistive technologies into whatever format the reader needs, including Braille or speech. Non-text content is

any images, animations, video, audio, illustrations, charts, or graphs included in your course or materials. When possible, there should be an alternative provided so that all learners can access the content equally.

A common example of using alternatives is PowerPoint. In a face-to-face class, PowerPoints are accompanied by lectures. When PowerPoints are uploaded online, they are of little help. To help improve the use of PowerPoints, audio narrations can be added and a screencasting technology can be used to create a video to mimic the in-person experience. To further expand access, audio transcripts and captions can be added. If a PowerPoint is provided without additions at least the images in each slide should have Alt Text.

Alt Text needs to be added in charts, graphs, and infographics that have text that cannot be read by screen readers. This is a common problem as many infographics and the like are turned into PNG or JPG which are considered flat raster files and cannot be read. In PowerPoint, a better alternative would be to input the data using the chart tools. Using JPG, GIF and PNG file types for images are O.K. to use, but when an extended amount of text is embedded in a chart or graph either add a description that lists all the test or design with HTML editable text. Software often has an HTML editor or a way to insert screen readable data for this purpose.

Although it is done, it is not advised to use non-HTML text inside a flat raster image. A raster image is an image created with pixels vs a vector which is mathematically created. Raster image file types are .png, .jpg, .gif and vector image file types are .svg and .ai. Generally, you want to avoid images with text unless the text is HTML text, meaning that it can be read and picked up by screen

readers. When text within an image can't be read by screen readers, you should supply that text as Alt Text, especially if the text is relevant to the image. Always use your best judgment and let context be your guide, but in most cases, the text should be available for all learners to access.

Always use your discretion and context when deciding on how much text is required to communicate the necessary message in the image. Like a Twitter Tweet, the Alt Text should be short. One or two sentences are all that is needed in most cases. If you need to explain more, you can include a longer description as a link below the image. Always include the most important, concise information first. The learner then has the choice to read further or skip ahead, knowing they got the gist of what they needed.

One thing to consider when writing Alt Text is to avoid opinions and write only obvious information. It is not ethical to try to use Alt Text to persuade someone of your subjective opinion, report only on the facts.

Seductive details

Seductive details are often used in curricular materials and courses and are sometimes added to fill in white space or in the hope of making the content more interesting to look at or read. Seductive details can be any number of things such as text, animations, photos, music, or sound effects that aren't directly helping learners obtain the objectives of a lesson. Illustrations can enhance comprehension but if they are not relevant it can lead to poor learning outcomes.
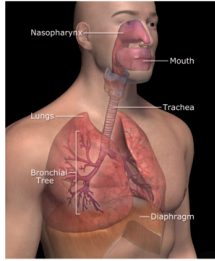
The illustration on the left contains a labeled illustration as a diagram to help learners remember the parts of the pulmonary system where the photo on the right, although eye-catching, does not aid in instruction and merely serves to draw the eye in. When selecting graphics for courses, images that help convey meaning are best because not all non-text content is needed or useful. Designers should be discreet when selecting non-text in their course because if it doesn't aid in instruction or help the user understand the material, it is probably not necessary. Decorative elements should be marked as such so the screen reader technology ignores them. If it doesn't have meaning, it shouldn't have Alt Text. Adding in random clip art or a decorative wingding is considered a seductive detail and can increase the cognitive load of not only the visually impaired but all learners.

If you do not provide Alt Text for your image, the screen reader will read it as the file name of the image.

Take the image above. If you were to read the code, it may say:

petparrot-8a.jpg

That is the name of the file, but it is possible to change the Alt Text to say parrot sitting on a steering wheel instead. This gives better context to the visually impaired.

In code, it would read something like this:

<img src="petparrot8a.jpg" alt="parrot sitting on a steering wheel">

Alt Text can be applied in most software and learning management systems and tutorials on how to do it are usually available online. Writing effective alt-text is more challenging to master because one must consider context and meaning. There are lots of great resources that allow you to practice writing alt-text and compare your answer with an ideal one to see how you measured up.

For some general tips on writing Alt Text, you can take a deep dive into WebAim. Overall, a good recommendation is to write with clarity in a succinct and structured way. Think about the most important

elements of the image, what needs to be communicated to the learner and why.

Tip: Remember the goal of the non-text element is to aid in instruction, not decorate the page.

If the image helps the learner make sense of the material with a visual example, explain what that image is within the context of the material. What is the purpose of the image and what is it supposed to be communicating? Tell the learner the most important part of the image and leave out the rest. Sometimes a literal description is needed while other times it is not.

Consider the following text alternative for an image.

   Tree-lined highway with a yellow speed limit sign indicating that up ahead the speed limit changes to 50 miles per hour.

A description like this is very detailed and considered an ideal one. If you wanted to make it more succinct, however, and you are sure that your learners are familiar with this symbol already, you could use the following Alt Text description instead.

   Warning: Speed limit sign ahead

Avoid redundancy

When writing Alt Text, avoid repeating information

already given. Remember if you have to say it again, perhaps you should consider omitting the non-text element. Captions and Alt Text are not the same. If you have a caption for an image, do not duplicate the Alt Text word for word. The alternative text explains information in images for screen reader users. Captions describe images to help users relate them to the surrounding text.

Words to omit

Screen readers announce when the user has come across an image. So, the best practice is to not use the words "link to" "image of" "photo of" or "picture of" in the description. The exception to this rule is if the type of media is relevant to the course. If you are designing an art course, for example, and the image is a photograph or a painting, you would want to indicate that. Always consider context; in an art course, learners need to know the medium of the image because it is relevant to the course content. In a course about gender identity, you want to include text that indicates the gender of students in a photo. Inclusive text may include terms of gender like *non-binary* if the context calls for it, but if describing an image of pre-school students in music class your description may just say *students, children,* or *learners.* Context matters.

   Another example of how to write Alt Text with context is by analyzing the learning outcomes of the course or lesson. In the painting below the Alt Text can describe the medium, size, painter, and title, if it is placed in an art history course and the details were important to communicate. Alternatively, the Alt Text can be more

succinct with title and artist for a more general context or overview.

Edgar Degas, The Dancing Class, 1870, Oil on Wood, 7 3/4 X 10 5/8 In.

vs

"The Dancing Class" by Edgar Degas.

Lastly, remember to use proper punctuation and end sentences with a period so screen readers will pause between them. Alt Text is an integral part of both graphic design and digital accessibility and should be included in not only courses but any material your learners or stakeholders have access to.

Suggested guided questions/projects to assess your understanding of Alt Text:

- Search for "image description practice form" online and practice writing Alt Text with the images the website gives you. Compare your answer with the model answer. What could have been improved? How did you do? What did you learn in this chapter about alt text and how can you apply it to your work?

4

COLOR
CONTRAST

Color Contrast Checklist

- Color contrast ratio has been assessed with a contrast checker
- Color has been chosen to reflect the needs of the visually impaired, color impaired, and the neurodiverse when possible.

The first time I learned about color contrast, I was about 5 years old. I was in my dad's car, the top was down, and it was a beautiful summer day in Massachusetts. We stopped at a light and had a conversation that went something like this:

"Blow out the red for me because this is stop is too long" dad said.

"O.K., Dad. Ahhh phooooo ahhhh phooooo ahhhh phooooo phooooo"

"Great – look you did it! You turned it green for me! Thanks for being my helper. Did you know I can't even see the difference between green and red?"

"How do you tell when to go then?" I asked.

"I was taught in drivers ed class that the red is on top, the yellow in the middle and the green on the bottom. I know when the middle light is bright and lit up, I have to slow down because the red is coming. And when the top light goes on, I stop, and when the bottom light goes on, I go."

Every time after that conversation, when I would again blow out the red color to turn it green, I thought I was helping my dad navigate the world a little bit better. Even then, I was concerned with the abilities of others. Contrasting color is a matter of both aesthetics and accessibility. We can check if two colors have enough contrast on the web by using some websites and digital tools like the chroma palette helper.

In undergrad, I was trained to see contrast by eye. You can master eye training, but it takes several years, so until then, it's best to rely on the available resources. I tell my students that one way to visually check their color scheme is to take these two colors and convert them to grayscale and see what happens. If both colors appear close in value, then you will know they do not contrast effectively. Both colors will be grey, but if one is very dark and one is light, you are probably OK. If they are too close, it is not a good solution. Red and green are the

same value on the color wheel. Value is the degree of how light or dark a color is. So, while they are complementary colors (opposite on the color wheel), they are not a good match. In the image on the left, the red ornaments are hard to see against the green tree because the value is too close. The full-color image is also problematic for those with color impairment.

When possible try turning an image into greyscale to check the values.

There are several types of color impairment, most notably Protanopia, Protanomaly, and Deuteranopia. Red-green color impairment, in which individuals have trouble seeing the differences between red and green, is the most common. An example of how people perceive color, according to what type of color impairment they have, is provided below.

Normal	
Deuteranomaly	
Protanomaly	
Protanopia	
Deuteranopia	
Tritanopia	
Tritanomaly	
Achromatopia	
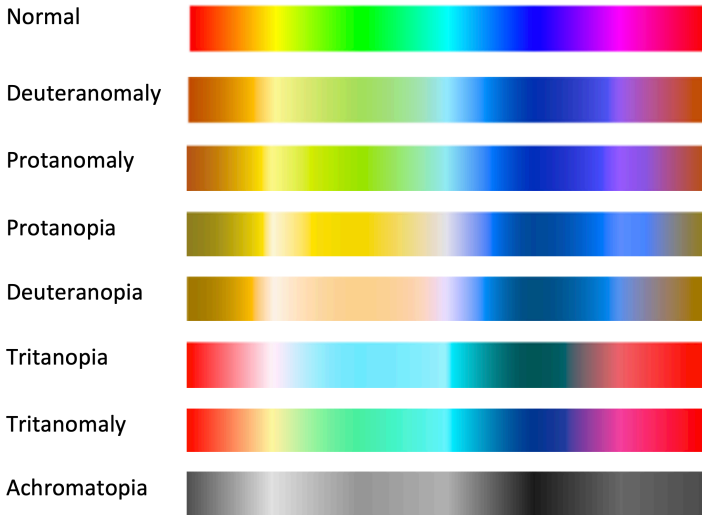
Selecting color can be challenging since what works for one population may not work for another. Color combinations that cause vibrations to occur can trigger migraines and seizures for instance. If customization can be built-in use it to attend to the varying needs of your learners. Adjusting the lightness and darkness on a monitor is one way to adjust color for individual needs. Photosensitive epilepsy, although uncommon can leave learners feeling disoriented, uncomfortable, or unwell. Be careful with patterned effects like white repetitive bars on a black background or red and blue patterns. Excessive use of red and blue light can cause headaches while green is least likely to cause them.

How to decide on what colors to use

How can a course designer make informed decisions on color when there are conflicting needs? How does one prioritize what colors to select to meet the needs of the learners? For one, have a conversation with your subject

matter expert and your learners if possible. Test your choices with them and take note of the feedback. Speak with other course designers and read more about the topic. If you are both the subject matter expert and designer and you can't meet your learners ahead of time, make sure to send a survey on the first day of class as well as the last day of class to gauge the experience of the user. Surveying students is a solid practice in general because it allows us to constantly improve and reiterate while keeping on top of the needs of our learners.

Displaying data

One way instructional designers and data visualization professionals use contrast in color is in the use of charts, graphs, and infographics. We may use different colors to call out a trend we see in some data or to represent a sample in a study. Color contrast in data vis will enable your viewer to differentiate the variability and be able to grasp the concept faster. In the two figures below, you can see the difference between the bars with high contrast versus low contrast. The grey and blue are too close in value, yet the orange is much brighter and can be seen in comparison with the blue or grey which are darker. The second chart uses color and pattern which helps differentiate data and makes it more accessible to the color impaired. The solid-colored bars in the first chart only use color to differentiate data. Color is commonly used in data visualization, but it needs to be used correctly

Real Estate Sales Agent Average
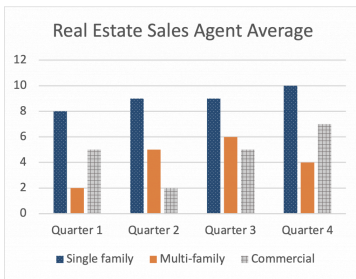
Using a chart with patterns and colors will help learners differentiate the different data points.

Real Estate Sales Agent Average
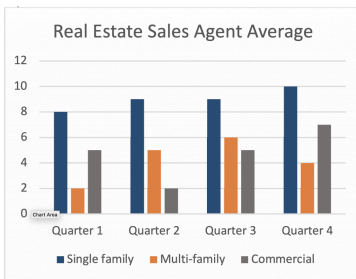
It is not recommended to use only color to communicate data.

Hue

The perception of color uses three parameters including hue, chroma/saturation, and tonal value/lightness. Hue is the true color on the color wheel with no tints or shades. Hue is the degree to which a color can be described as red, orange, yellow, green, blue, indigo, or any combination thereof. Hue is the way we describe color in qualitative terms.

Hue can be adjusted to increase contrast. So, in the case of red and green, I always advise never to put red text on a green background. But, if this absolutely must occur, and your client insists you use this terrible combo, you would want to make the green a very dark shade and the red a very light and bright one. Otherwise, the Protan color-impaired person cannot detect the difference in color and cannot read what you typeset.

The program Adobe Color has an interactive color wheel with all the hues, tints, and shades. You can move the handles and create selections with high contrast by selecting a color that is perhaps complementary (opposite

sides of the color wheel) or by using the tint or shade of a chosen color. Contrast is our goal, and the greater the contrast, the more accessible it is.

Chroma/Saturation

The second parameter for describing color is chroma/saturation. A photo with no saturation would be in greyscale. Fully saturated images are the most vivid. We can pull out the saturation in one part of the image to contrast it with another. The image below can be seen by everyone and the vividness of the character in the foreground allows the learner to zero in on the scene without being distracted by what is going on in the background.

When developing instructional materials it is best to edit images in a way that communicates the right idea. Otherwise, the image will not aid in instruction but rather add clutter or confusion to the page.

If the context suggests for one character in a scene to stand out in some way, use photo editing to call attention to that character or crop the image to avoid unnecessary details.

The image on top feels cluttered and the user doesn't know where to look first. The hand is placed in a way that leads you in but you can't help but rest on the other characters after viewing the woman in the foreground. This image on the right highlights the character who is speaking and allows the viewer to peer into a slice of life of the main character who is clearly shown using contrast.

Tonal Value/Lightness

Tonal value/lightness is the third parameter for how we describe color. We can adjust the tone or lightness to add more contrast. I always tell my students that if they are unsure if a color-blind person can see their image, turn it into greyscale and analyze the values. Do you see a big difference in the image between the darker areas and the lighter ones? Or do they seem like a muddy arrangement of similar greys? If it's the latter, I have them adjust the brightness contrast in the image so that the highlights are lighter and the low lights are darker, thereby creating more contrast. If you look at the same image in full color and then at the one I created with color and black and white, you will see that the reason the chairs are a dark grey (almost black) and the table is almost white in the black-and-white version is because the tonal value/ lightness was at the correct level for sufficient contrast.

Tonal value can range from 100% black to 100% white, and everything in between. Complementary color combinations are often the best choices, except for red and green, which have a similar tonal value. Purple and yellow are an excellent combination because the two colors have very different values. The yellow is obviously brighter and lighter than the purple and it is a great combination for a variety of reasons, the most important being contrast.

Digital Color Contrast Checkers

Several color contrast checkers are available online. This section outlines some of the most popular checkers at the time of publication.

A11y color contrast checker

- Free color contrast analysis tool for webpages
- Contrast checker to test color pairs

WebAim contrast checker

- Foreground and background color checker
- Normal & Large Text checker
- Graphical Objects and User Interface checker
- Link contrast checker

tpgi

- Compliance indicators for Web Content Accessibility Guidelines 2.1 (WCAG 2.1)
- Multiple ways to select colors: you can manually enter CSS color formats, use an RGB Slider, or opt for the color picker tool

- Color Blindness Simulator
- Support for alpha transparency on foreground colors

WAVE

- Firefox and Chrome extensions are available
- Identifies accessibility and WCAG errors
- Facilitates human evaluation of web content
- Pope Tech accessibility tool for large scale

According to A11y, there should be a minimum ratio of 4.5:1 for any visuals that contain both text and images or text against a background color. Additionally, large text that is 18pt or higher (or bold text that is 14pt text or higher) only requires a contrast ratio of 3:1. According to W3.org, the visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following:

- **Large Text:** Large-scale text and images of large-scale text have a contrast ratio of at least 3:1;
- **Incidental:** Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content have no contrast requirement.
- **Logotypes:** Text that is part of a logo or brand name has no contrast requirement.

Contrast vs Luminance

There is a difference between high contrast and high luminance. Read the below text and visual examples taken from the W3C website and think about how companies can offer choices and customization to provide access to all learners. Some people cannot read the text if there is not sufficient contrast between the text and background: for example, light gray text on a light background. For others, bright colors (high luminance) are not readable; they need low luminance. High contrast (for example, dark text on a light background or bright text on dark background) is required by some people with visual impairments, including many older people who lose contrast sensitivity from aging.

Light grey on white

Yellow on black

Black on white

Beige on black

Black on beige

Light grey on black

While some people need high contrast, for others — including some people with reading disabilities such as dyslexia — bright colors (high luminance) are not readable. They need low luminance.

A word about software

Color contrast can be adjusted in most software programs and Learning Management systems. Below is a shortlist of resources where you can find out more about doing general accessibility checks using, organized by category. This is not a comprehensive list, but a beginner companion to your digital accessibility journey.

Learning Management Systems

- [Canvas accessibility checker](#)
- [Blackboard ally resource](#)
- [Brightspace D2L resources](#)
- [Moodle Accessibility Info](#)

Content Management Systems

- [WordPress accessibility](#)
- [Drupal accessibility](#)

Word Processing Documents

- [Microsoft Word Accessibility](#)
- [Google Docs Accessibility Resource](#)
- [More Google Resources](#)
- [Google Sheets Resource](#)

Spreadsheet documents

- [Google Sheets Resource](#)
- [Microsoft Excel Accessibility](#)

Presentation documents

- [Google Slides resources](#)
- [Prezi Accessibility Resources](#)
- [Microsoft Accessibility Checker](#)

Suggested guided questions/projects to assess your understanding of color contrast:

Selecting colors based on contrast alone isn't always the best strategy. What may be considered high contrast and effective for people with visual impairments may be detrimental to people with cognitive impairments.

- Review the section on selecting colors and come up with a palette that makes sense for your next course and talk to a peer or student about your ideas.

Color can affect learners psychologically. Consider how our choices can negatively impact students. Researchers discovered that subjects performed 5-10% better on pattern recognition tests when implemented in color. The study suggested that the use of color improves learning and memory over time but only when it was considered "realistic" versus "random". When the objects in the pattern recognition test were designed in randomly selected colors there was no improvement of pattern recognition or memory.

- Design a chart or graph in color and use patterns to differentiate data points while keeping away from patterns and color combinations that have the potential to cause headaches.

5

HEADINGS

Headings Checklist

- The layout is both logical and consistent
- The content is easy to navigate with clearly written titles and headers
- Headings are descriptive and used in size order

According to W3.org, HTML defines six levels of headings. A heading element implies all the font changes, paragraph breaks before and after, and any white space necessary to render the heading. The heading elements are H1, H2, H3, H4, H5, and H6, with H1 being the highest (or most important) level and H6 the least. Screen readers read headings to the visually impaired to help them differentiate between sections of the document, webpage, or course.

Headings create a structural hierarchy of information, which benefits all learners. They help chunk material that is long or complex with a semantic order. Headings will help assistive technology chunk long passages of text into more bite-size pieces. Headings and subheads can act as navigation and signposts for the visually impaired. Using formatted HTML Headings can benefit the neuro-diverse who may struggle with confusing walls of text or unorganized page structures. Using headings can in fact benefit all learners.

How to use headings

Using style sheets or built-in headings is better than creating subheads from scratch because just visually changing the look and feel of a subhead doesn't mean it will be picked up by a screen reader unless a heading level is properly selected. When a heading level is selected, it is tagged, which will trigger a visually different look and feel. If you don't like the heading styles, they can usually be adjusted in the headings panel, depending on the software.

If you do decide to change the fonts in the headings, make sure you are using a font that has several attributes available versus force bolding or force italicizing it. Open sans, for example, is one of the most downloaded web fonts because it has multiple versions of the font including roman, bold, italic, light italic, semi-bold, extra bold, and more. The images below display the Microsoft Word and Canvas heading drop downs so you know what to look for when selecting appropriate headings. Microsoft Word Heading Style Ribbon above and the Canvas Rich Content Editor on the bottom.
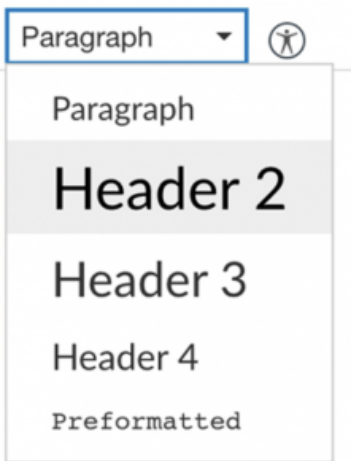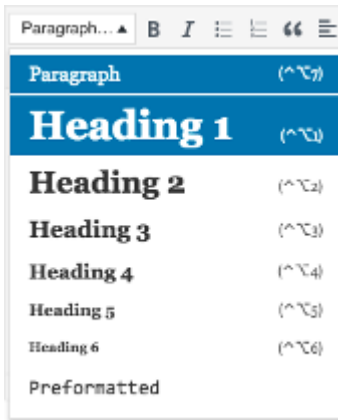
Best practices in applying headings in your documents

It is a good idea to use short headings of seven words or less since lengthy headings are harder to read and listen to. Always group related paragraphs and clearly label and describe the sections. Think of headings as a way to provide an outline of the content. A rule of thumb is if the paragraph is longer than three to four sentences, it should contain a subhead to break up the information and help learners jump to certain sections of

the page. A page should be organized into sections, and further subdivided with semantic headings (W3.org, n.d).

These headings should describe the relevant topic or purpose of each subsection. By using headings, you help to chunk material into smaller pieces with semantic and ordered hierarchal heading styles. Using headings to group information also reduces cognitive load by creating consistency across the course.

Headings are one way to create and improve the accessibility of curricular materials. Headings, when done correctly, help the organization, navigation, and order of anything from Microsoft PowerPoint files to Canvas courses and more. Below are three examples of using headers in e-learning. The top option is considered to have a strong graphic design because it has a consistent, cohesive look with solid contrast.
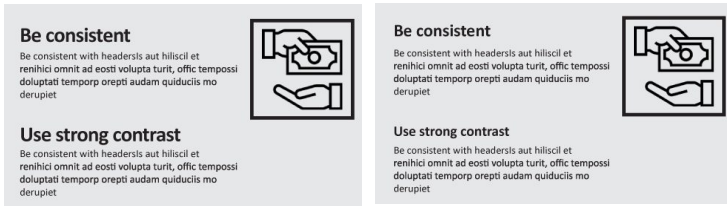
The above example uses strong contrast and is consistent. This is the goal.

The above example does not use consistent headings making the hierarchy unclear and cluttered looking.
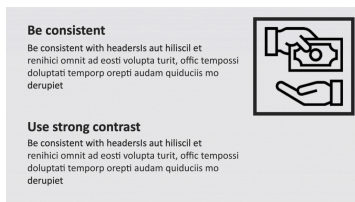
The above example uses consistent headers but they do not "pop" enough. There is not enough contrast between the Headings and the body copy.

Suggested guided questions/projects to assess your understanding of color Headings:

- Think about the size of headings and how you can use them in a curricular artifact as a cascading style sheet to be more accessible and also visually appealing. How large do you think an H1 header should be compared to the body copy/paragraph copy? How many levels of subheads are needed for your material?

6

LINKS

Links are one of the most common elements in any course, email, or webpage on the internet. Microsoft Word documents and offline software sometimes have links in the form of URLs or page bookmarks, popping users from one area of a document to another. Learning how to create and write links will improve the digital experience for all learners and help with usability and accessibility. Screen readers need to be able to recognize

and read links to users that make sense and improve navigation.

We need to write concise but descriptive text to help users make meaning. The visually impaired can hear a list of all the links on a page at once, so proper wording is imperative. Well-written links are crucial but it is also important to know where to place links. Making sure links are easy to find on the page and using the right color and stylization can help every learner find them.

Best practices in creating links

Write as you normally would, then highlight the text you want to make into a link and insert the link. The link should say where the destination should be in a logical way. If you are directing someone to email, you just type out the email and link the email address. For long websites, it would be frustrating for visually impaired learners to have to listen to every character of the website called aloud. Although there is no maximum character limit, keeping things concise while providing just enough information to know what you are clicking on is best.

### What are the biggest design blunders you see in the ID/LXD/L&D field?

Personally, the design blunder that annoys me the most is seeing underlined text on a screen that is NOT a link. That is so confusing for students. They will either think a link is broken or become conditioned not to expect a link. Also, online "courses" that are really information repositories. I've seen this approach in different LMSs over the years, where you log in and the home page is a long list of links to PowerPoints, PDFs, videos, etc. in a completely online course, this is an approach that has a big (negative) impact on the learning experience.
   -Parm Gill, Learning Designer, University of British Columbia

Make sure your link phrases have meaning and can exist inside and outside of the context of the material on your document. For example, avoid link phrases like "click here," "hear more," or "read more." One of the biggest mistakes I see is writing "click here" next to the link. As a sighted person, I am wary of clicking on undescriptive links; most visually impaired learners would be frustrated due to the way the screen reader reads the link. Another reason not to write "click here" is because touch screens do not click.

Instead of saying "click here to listen to the podcast," consider saying "The Graphic Design for the Course Designer Podcast" and just linking that phrase. Describe clearly and succinctly where the link leads, or what its function is on the page. It can be more descriptively clear to use nouns within link text. Think carefully about the relationship between the link and its context and try to prioritize using specific nouns in link names. In other words, be descriptive and clearly communicate where you will take users.

Poor link labels hurt your search engine ranking (McCloskey, 2014). Search engines use the anchored text (what you write as a link description) to give the web clues as to what the article is about. Writing clear but concise descriptions will help usability, accessibility, and SEO.
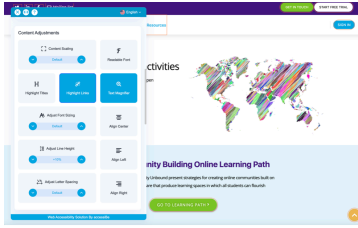
Use customization features while designing and look for customization when procuring an ed-tech vendor.

A good example of well-written link descriptions is on the ONEHE webpage. The links are clear and descriptive and the organization uses a web accessibility solution (accessibe.com) to create customized settings on their website. Another mistake I see frequently is when instructors and designers leave broken links in courses. Make sure to update your course materials and be sure all links are live. The web is a fluid construct where pages can change, move, or go down completely. It is wise to make sure everything is still relevant, live and working. Several LMS and software programs have accessibility checkers that will check for broken links but a manual review is never a bad idea.
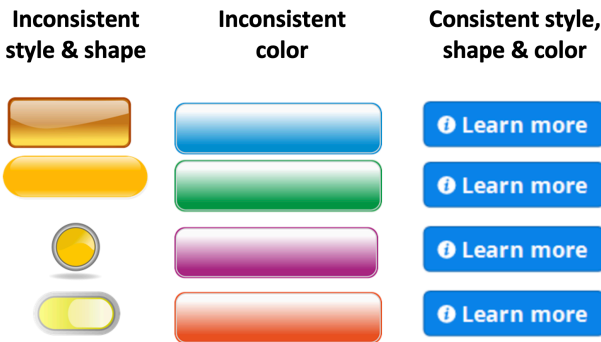
Link Styling

There should never be blue text on the web unless it is a link. Users may get frustrated if they try to click on textual phrases or graphics that look like links but are not. With link styling, as with many aspects of web-interface design, you can aid comprehension by

capitalizing on convention. By default, browsers style unvisited links with a #0000EE blue and visited links with a #551A8B purple (Harvard University Digital Accessibility, n.d.). These colors will be the easiest identifiers at your disposal.

Guideline 1.4.1 "Use of Color" from WCAG 2.1 Color is not used as the sole method of conveying content or distinguishing visual elements. In other words, color alone is not used to distinguish links from surrounding text unless the contrast ratio between the link and the surrounding text is at least 3:1 and an additional distinction (e.g., it becomes underlined) is provided when the link is hovered over and receives focus.

Buttons, shapes, icons, or images as links

Inconsistent style & shape	Inconsistent color	Consistent style, shape & color
		i Learn more
		i Learn more
		i Learn more
		i Learn more

Placing design elements like screen titles, text boxes, and buttons in the same location on each slide will help with usability, but consistent placement is especially important when those elements are a link. When buttons have the same visual states and are in the same place on every slide, it decreases the cognitive load of the learner. When you don't have to expend brainpower trying to

decipher and decode graphic elements and their purpose, you can concentrate more effectively on the learning. If you were to put the "continue" button in a different color in a different part of the page on every slide, it would cause confusion and frustration. Remember to also include consistent states (all buttons look the same way when hovered over, and selected for example), consistent fonts, and naming styles.

Suggested guided questions/projects to assess your understanding of links:

- Go online and find a website that you think uses accessible link styling. Now copy that URL and test it on this site: https://wave.webaim.org/ Enter the URL in the search field and note any link errors that pop up. What did you find?

7

LISTS

Lists Checklist

- Built-in features were used when creating ordered and unordered lists, page breaks, columns, headers, footers, and more.
- Ordered and unordered lists are consistent throughout the course

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Lists are a way to break up text into more bite-size pieces by chunking information. We can use short phrases or words itemized by either ordered or unordered lists. A wall of text can be overwhelming for any learner, especially the neurodiverse and visually impaired.

The benefit of lists is to make textual information shorter and more accessible. Whether you are creating a Word document, a PowerPoint, or a page in a Canvas

course, it is best to present key concepts as a list as much as possible. Busy students do not have time to read paragraphs of information on PowerPoint. Simple, short bullets get the meaning across. According to WebAIM, there are three kinds of lists including unordered lists, ordered lists, and description lists. Knowing when to apply them is helpful and setting them up properly in HTML can make a world of difference to learners who need adaptive technology to assist them.

Lists show you care

Learners can become fatigued, especially when trying to get through lots of dense material. Lists aid in comprehension and help create focal points for learners, giving them subtle clues to the most important information on the document. Want them to pay particular attention to something? Put it in a list. Are you assessing them for some information on their next test? Put it in a list. Think about the last time you went grocery shopping. Did you bring your grocery list in paragraph form? Chances are, you listed out the items by short words or phrases using dashes, bullets, or numbers. This is because it takes more time to find information within a paragraph versus a list.

When to use lists

1. We want to highlight key terms
2. We want to chunk the curriculum into meaningful, bite-size pieces
3. We want to convey a sequence or a set of steps, processes, or procedures
4. We want to create a list of links or resources for

more information or a deep dive into the topic area

5. We want our readers to scan the material and quickly find what they are looking for

How to apply lists

We can organize lists using numbers, letters, roman numerals, or bullets. When we create lists, we should use parallel lists, meaning that we use the same tense (e.g. all past, all present, or all future tense). Parallel lists also start with the same part of speech. In the list I just described, I listed everything by starting with the number and the word "when:"

1. When we want to highlight key terms.
2. When we want to chunk curriculum etc.

Parallel lists also use the same sentence structure. If you are asking a question in the first bullet, you should ask a question in all the bullets in the list. We can apply lists using the styles in our document and use the HTML editor in our preferred Learning Management System. Always select the bulleted options in your formatting ribbon as opposed to stylizing them yourself. If you do not format these lists correctly, screen readers will not be able to identify the text as a list. Be sure to use numbered lists to show steps in a process. Bulleted lists can be used to show a general list of related items without hierarchy. Another best practice is to space lists out and add some white space around the list so it doesn't appear cluttered or overwhelming to the reader.

Version 1

Our vacation package includes three nights of accommodation, two 45-minute spa treatments of choice, breakfast in bed for two, and a bottle of wine upon arrival.

Version 2

Our vacation package includes:

- Three nights of accommodation
- Two 45-minute spa treatments of choice
- Breakfast in bed for two
- A bottle of wine upon arrival

Version 2 is the better choice. Your audience will generally not mind the extra vertical space if it means it is easier to read.

Write list items to have approximately similar line lengths.

Bulleted lists work best when they include related items. The items should share a similar level of importance. When possible, write bullet items to be approximately the same length, so that one doesn't overpower another. Keeping a uniform shape is eye-pleasing and makes the list appear less busy.

Version 1

Do not send the following items to kindergarten:

- Rolling backpack

- Toys
- Food that may contain peanuts or made in a factory where nuts are made.

Version 2

Do not send the following items to kindergarten:

- Rolling backpack
- Toys of any kind
- Nut products

Version 1 above looks inconsistent and cluttered because of the differences in line length. Version 2 is more consistent.

Be sure not to add extra space between the bullets, however, as this will add extra code and appear as if there are multiple lists that are unrelated to each other. When you have a structured long list, try to break them down into several shorter lists with headings. Avoid using the same bullet type in nested lists. You want to visually indicate a sub-list within a major list. The main list can be black circular bullets, for example, while the nested list has open circle bullets that are indented. As you format these lists, use indentation while in the style sheet and it will naturally create nested lists that are accessible to adaptive technology. Never use cute or fancy bullet icons that aren't included in the formatting ribbon. Always use the bullets given to you in the style sheet to avoid the screen reader trying to allocate alt text, as it could mistake these as a decorative image of some sort. For lists, always go with the choices provided in the software. Bulleted lists make it easier for screen-reader users to navigate the document.

Don't do This (manually format a bulleted list)

- Books- Audio books

– Hardcover books
  – Softcover books
  – E-books
  – A long sentence that wraps and takes up two lines on the page
but is not indented properly so it doesn't read or look like a real bullet.

This is wrong because even though a sighted user can see that this content is a list, the visually impaired cannot. A screen reader will announce each item as "bullet! Dash! Dash!" If it's not formatted by the style ribbon, it won't be read as a list.

Do This (programmatically formatted bulleted list)

- Books
- Audiobooks
- Hardcover books
- E-Books
- A long sentence that is going to continue to the second line with the indent preserved which reinforces its position within the list

This is right because this bulleted list will be read aloud via a screen reader as a list of three items and will identify the sublists as a nested list of three items.

The design of bullets

It is important not to overwhelm learners with giant

bullets. Small, discreet bullets look better than large ones. You can adjust the size of the bullets while using the styling pane. Microsoft Word, for example, allows you to create your own bullet style within the style pane so that the screen reader still picks it up correctly.

Another mistake I see is the over-reliance on center-aligned lists. Ordered or unordered lists should be left-aligned. Center-aligned lists have an odd negative shape on either side of the list. In version 2 below the left-aligned list is more aligned and easier to read.

Version 1

- Bring a number 2 pencil to the exam
- Get enough sleep the night before
- Eat a balanced breakfast

Version 2

- Bring a number 2 pencil to the exam
- Get enough sleep the night before
- Eat a balanced breakfast

Lists are great because they break text into smaller pieces and itemize content for quick reading. There are times we want to avoid lists, however. Avoid using bullets when you are trying to implement storytelling in e-learning. The flow of words and ideas wouldn't be communicated as clearly in a list. Lists work best when there is information the learner absolutely has to know to pass the course or training (Gutierrez, n.d.).

**Other reasons to use lists:**

- To sum up critical information
- To present the most important information
- To break up complex information
- To give an ordered set of instructions

Make lists short

Lists with 20 bullets are hard to read. When all your slides have bullets, it can get boring and repetitive, and worst of all, your learner will not understand that these items are the most important elements to learn; when you call out a few items, they grab your attention, but when you call out 10 items, nothing stands out anymore. Make each bullet short and succinct. Use a few words, a short phrase, or one sentence maximum. According to the Decision Lab (2020), you should put the most important items at the beginning and end of the list since learners often read the beginning and end of a list first.

Consistency is key

Whatever size, font, color, and style you select for your bullets make sure they are consistent. If you use short phrases in one list, use the same approach in other lists. Consistent e-learning looks more professional and is easier to navigate. Pay attention to the spacing between lines and between groups of text and consistently apply those same spaces.

Types of pets	Types of pets
• dogs • cats • fish	🐶 🐱 🐟 dogs cats fish
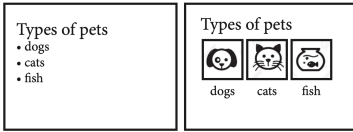
Use a more creative way to display information

Consider eliminating bullets. If you don't need to list something in an ordered or unordered list, consider distributing the information in a more visually appealing way. Below is one example of how to transform boring bullets into an appealing page layout. The image on the left contains only text while the image on the right has icons and an interesting layout along with the text.

For more general information on lists and accessibility search on WebAIM.org for semantic structure lists.

Suggested guided questions/projects to assess your understanding of lists:

- Think about a written resource you want students to read. How can you chunk the material down into bite-size pieces? What can you pull out in a list to highlight? How can you display this content and what medium would make the most sense? Will it be an ordered list or an unordered list? Practice creating your bulleted list and see if the screen reader lists the information correctly. If not, adjust.

8

VIDEOS

Video Checklist

- Flashing and blinking text and animations are avoided.
- Videos have accurate captions and a transcript is provided for both video and audio. Videos, animation, and audio does not play automatically.
- Videos are not overly cluttered with special effects, animations, or distracting images.

Most are probably familiar with using videos to supplement and support instruction and if you aren't, you are certainly missing out. Videos can be simple, sustainable, accessible and when created correctly, help provide additional context and clarity to the course. Videos can be watched asynchronously before or after class. Asynchronous videos are beneficial because they

can be stopped, paused, and re-watched to help students learn at their own pace. In all cases, videos should be accessible to accommodate all types of learners. Video content should include text-based alternatives so that all users can access the information. Video captions provide access to the hearing impaired as well as English language learners, and those with cognitive and learning impairments.

Tip: Captions help all learners. According to an article on Quality Matters in a survey of television viewers, it was found that 80% of the people who used captions did not have a hearing impairment (Crawford, 2021).

In higher ed, the majority of students use captions even if they are not hearing impaired (Edelberg, 2019). Learners watch videos with captions in environments where they cannot play the sound at full capacity or in noisy rooms. They also watch it to learn vocabulary, decipher thick accents, and compensate for poor audio quality. Captions also help learners keep track of the narration, which can motivate them to watch the video in its entirety. Most importantly, video captions lower cognitive load (Kim & Kim, 2020). For the student who prefers not to use captions, they can easily toggle them off.

Most video editing programs allow you to add captions. Photo by Jakob Owens on Unsplash

Dos and Don'ts of video creation

Captions are text blocks in a video that display all the audio information. This information includes spoken words, sounds, and music. Subtitles are similar to captions, but they only display the spoken words and can be turned off. They usually display a language that is different than the one spoken. In captions, the text always displays either two or three lines at a time, depending on the timing of the speakers. The captions appear as the people in the video are talking and are timed appropriately. Captions are usually formatted at the bottom of the screen since it is less obtrusive to the visuals.

Some programs will allow you to change the formatting of the position, the font, the size, and the color of captions. Most importantly, captions can be edited for accuracy. When I review captions for accuracy, I listen to the audio while reading the captions paying close

attention to punctuation, spelling, and grammar. If there is more than one person speaking, I review to make sure the speaker is labeled correctly if it is not apparent in the audio. If you used an accurate captioning service for your video, you can upload SRT (SubRip Subtitle) or VTT (Video Web Text Tracks) file. SRT is the most common text-based subtitle/caption file format. You can upload both file types to YouTube and Vimeo, among other places, to ensure accurate captions. Other file types are used in varying capacities include SBV, MPSUB, LRC, CAP, SAMI, RT, and TTML. Some video creation software allows you to order and create captions as part of the program, but it is important to check and edit for accuracy. Also, now several programs like Google Meet and Zoom use live transcription, which is extremely helpful, although not entirely accurate.

Yes, many people who aren't deaf/HoH (hard of hearing) use captions. Still, they don't depend on them as deaf/HoH folks do. Deaf/HoH folks watch hours of captioned videos. By comparison, testers only spend a few minutes. They won't be tortured if the readability isn't as good as it could be.

– Meryl Evans, A11y expert, Speaker, Author, Digital marketer

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Hiring a service to produce accurate captions can benefit your institution and learners. Obviously, the more accurate they are, the better. You also want to consider the experience for the hearing impaired. They want to know who is speaking, pausing, laughing, and sighing. We want to include these elements for a full-range multi-media experience with captions.

Captioning Services

- [3playmedia](#)
- [Rev](#)
- [Empire Caption Solutions](#)
- [GoTranscript](#)
- [Temi](#)
- [Scribie](#)

Live (human) captioning is an active and engaging two-way communication process. I become a trusted partner in the clients'/students' learning process. They are entrusting me with their content to transcribe what I hear and convey it to them with utmost accuracy and integrity. Part of my role includes being as prepared as possible and familiarizing myself with terms and concepts in advance of the class or event. This stage may include requesting prep material, asking questions about the class or event ahead of time, and updating my PAL (personal abbreviation list), something that only humans can do at this point. On the technical side, human transcription provides proper grammar and punctuation, speaker identifiers, and environmental and background sounds such as [Laughing] [Music] [Crosstalk]. Correct grammar and punctuation cannot be overemphasized enough, especially for emerging readers. Viewing accurate language conventions should reinforce proper usage for the learners in their own writing. ASR (automatic speech recognition) is certainly improving in capturing words, but it has a long way to go to indicate if something is a question, quote, or exclamation. I've seen students grow tremendously as a result of having captions. They become more interested, focused, participatory, and confident. They no longer experience FOMO (fear of missing out) because they know they have access to the same information as their classmates or peers. With a human transcriber on the other side, learners can interact as needed, ask for clarification, and receive a transcript which they can use as a study guide or learning tool.

-Diana Lerner, M.S, Co-founder & Chief Communications Officer Empire Caption Solutions

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While WCAG (The Web Content Accessibility Guidelines) does not yet dictate legal requirements for making online video accessible in the United States, their guidance is often followed by educational institutions and businesses as a best practice and has been referenced by laws in several European countries. WCAG 2.0 generally asks that online content meet principles that improve accessibility for people with disabilities and also adhere to a certain level of compliance.

Online videos with a WCAG level AA compliance level are the following:

- **Level A:** Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such.
- **Level AA:** In addition to Level A compliance, captions are provided for all live audio content in synchronized media.

You can read more about creating accessible video captions online by searching on W3.org for media captions

Blinking text and animations

The <blink> HTML element is a non-standard element which causes the enclosed text to flash. (MDN Web Docs, n.d.). Blinking text and animations can cause problems for people with seizures. In HTML, the blink tag no longer works many cases because it is considered harmful. It is not recommended and has been removed from most web standards.

According to the Centers for Disease Control and Prevention (2020), 4.3 million American adults have epilepsy, which is a brain disorder that can cause seizures. Seizures can be triggered by photic or pattern-sensitive design and it occurs when epileptic patients see a series of images or videos that fall into a certain range of color patterns and frequencies (Centers for Disease Control and Prevention, 2020). When possible, use a seizure safe profile that can eliminate flashing while reducing color in general. A seizure-safe profile setting enables epileptic learners to view courses with less risk of seizures from blinking text and unsafe color combinations.

In 1997, a group of children was reported to have seizures after watching a particular episode of Pokémon where an animated explosion was designed in a way that had red and blue flashing lights. This episode has been permanently removed. The incident has been coined the Pokémon phenomenon. WCAG Level A success criteria suggest three flashes or below is suitable to prevent seizures. In other words, there should not be anything that contains flashing more than three times in a one-second period of time. Not only do learners with photosensitive seizure disorders become at risk if the frequency of the flashing is too high, but many are particularly triggered by the color red when flashing. You can learn more about flashing animation success criteria by searching on W3.org for "seizure does not violate".

Don't overload the video with too much stimulation

Allow learners to focus on the content instead of bombarding them with too many bells and whistles. Photo by Ron Lach from Pexels

Minimize cognitive load. Videos should not be overly

cluttered with special effects, animations, or distracting images. According to (Halarewich, 2016) viewers can only process a limited amount of information at once. Sensory overload can cause barriers to learning and should be avoided.

Do not present dense information through narration at the same time as an energetic music cue. Mayer's Coherence Principle suggests that people learn better when the design takes a minimalist approach and avoids any extraneous images, graphic elements, videos, or sounds. A common mistake instructional designers make is to so add non-related background music, sound effects, and graphics. Even if you think these elements are interesting, and they may be, if they don't support the learning or help with knowledge creation, extraneous components actually hinder learning. We have all been on a website trying to read an article when we are bombarded by randomly placed advertisements in the form of blinking web banners, intrusive pop-ups, and flashing videos. It can be so annoying to engage in this kind of reading that we often leave the website before we finish the article. Flashing extraneous material and sound effects can erect serious barriers for learners, especially the neurodiverse. We must pay careful attention to how we craft our materials. We should not have sound effects, loud music, and speaking all at once. Sound effects when done well can help learners understand if they accomplished a goal. For example, they may give a correct answer in a quiz, but sound effects during an animation may cause too much stimulation and turn learners off.

Be sure to set the timing on slower settings. Animated gifs are notorious for moving too quickly. When using

video allow users to control the pace of the video to one that works best for them. Allow videos to be sped up, slowed down, or skipped entirely. Avoid the bells and whistles for the sake of showing off your special effect skills. Just because you can use Adobe Premiere, After Effects, or whatever new video editing program is out there, that doesn't mean that you should add multiple animated text titles flying in and out of the page. Also, be sure to be consistent, use fonts that are readable, and avoid overlapping text unless there is a strong contrast. Images should complement the text and help to process the material, not distract from it. Basic, simple, and easy to understand text will help learners. Long winding sentences and flowery language will inhibit learning.

In the typography section, we will talk about font choice, but readability is key. When a video, website, or page is too cluttered, it overloads the user and makes it difficult for them to navigate the content. Take a ride on the [way back machine](#) to look up what websites looked like 20 years ago. You will find web 1.0 was jarring on the eyes, hard to read, and overloaded with content. With decades of research on cognitive load, there is no choice but to continue to improve our designs, accessibility, and usability for our students and stakeholders.

Suggested guided questions/projects to assess your understanding of video:

- Come up with 3 learning personas that would want or need captions in their videos. Think about some of the questions you will ask them when they test your captions. Besides being accurate, what other items should you consider when creating captions? Why is this important?
- Create a short 1-minute video of your choice and design some captions to go with it. Research how to do this and document your process. What was the end result? What could be better?

9

GRAPHIC DESIGN

In the previous chapters, we discussed digital accessibility and thought about the elements to consider at the forefront when designing needs to be more inclusive. Now we can move on to the second section of the Checklist, which seeks to help instructional designers create with strong visual aesthetics. I want you to think about the things you can do first before you dive in too deeply. When I design for my clients or an institution, I always prototype a small section of my project in multiple versions before I commit the design choices to the entire course. This ensures I am working my creative muscles and investigating all the possible options, and it also ensures my client will be happy with at least one of the options presented.

I also work in greyscale (shades of black and white) first

so that I can hammer down the design and typography before we do a color exploratory. Every designer will work in slightly different ways, but I share this in case you are feeling overwhelmed with where to start. Just being aware of the principles of graphic design is a major step toward improving and surrounding yourself with high-end polished graphic design will help you learn to recognize and implement the concepts in this book.

Before we dive into how to spot and improve your work as it relates to graphic design, I want you to look at various designs in your world. What do you gravitate toward? Why? What could be better? What isn't working? You may not have the industry vocabulary at this time to formulate a response, but it is important to start looking at design early and often.

I think one of the reasons that instructional designers struggle with visual design is because many of them come from education. We know a lot about how to design and develop learning experiences, but we don't necessarily know about what elements of visual design make something easy for our learners. I think that a basic understanding of graphic design principles can go a long way. The more you look at good examples of graphic design and visual design, the better you will be at being able to look at your own work and make necessary adjustments.
-Heidi Kirby, Learning & Development Leader, Host of the BLOC Podcast, Customer Education Manager, Pantheon Platform

Over a thousand products may compete for our attention In a single aisle of a grocery store

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Tip: Good graphic design exists in the background; if done well you don't even realize it is there.

Take a trip to the local grocery store or a big box store, or even pay attention to the billboards on the side of the road next time you take the highway. Be aware of all the ways in which design infiltrates our lives. You may have not noticed it before because we are bombarded with thousands of messages and images a day; we tune out most of them because they are ugly, uninteresting, poorly designed, or just not targeting the right person. Those designs that stand out to you are ones you want to pay attention to and ask yourself why they "speak" to you. The purpose of graphic design is to help the page communicate visually.

Graphic design helps to visually communicate writers' ideas without upstaging them or distracting the viewer with shiny cluttered objects. It is an intentional, meticulously practiced art that even non-designers can master if they decide to do so. So, as you make your way through this section of the book, you will become better at communicating why a design works or doesn't.

Sometimes our clients are attracted to what looks good, even if they aren't formally trained in graphic design – still, they can spot bad design from afar. This book will teach you how to communicate why some designs are better than others and how some aspects can be improved.

Good graphic design helps improve focus

Have you ever started a self-directed online course and found the urge to check your phone, email, read the news, watch a video, listen to music, make a snack, run a load of laundry… anything but sit through the class? I can recall a time I reviewed a course for a client and what I found was just a series of embedded videos and PDFs scattered between walls of text. Now, besides this being overwhelming and boring, I noticed small visual discrepancies that had a compound effect on my ability to absorb the information. Fonts for body copy and headlines were inconsistent, colors didn't always look good together, and some typography made it hard to read. I wasn't always sure what I was supposed to do next until I searched for the instructions. In another experience, I evaluated a course using the OSQR rubric. When I came to section 3 – Design and Layout I – I found 63-line items to fix. Sixty-three. This means that every time a participant went through the learner journey, they encountered 63 instances where they found inconsistent elements in the course.

Some examples were: a header that wasn't aligned properly, was the wrong color or font, or was set in caps instead of title case; an icon existed in only some of the headers but not all, headers that were not all left-aligned,

the font size of the header wasn't correctly set as an H1 in all instances, body copy was set inconsistently, video thumbnails weren't always the same size, assessments looked inconsistent, images were varying sizes… you get the picture. What this means is that the participants' brains must pause to adjust and acclimate themselves to the new learning environment every time they click on a new module. Their brain has to ask itself, "am I in the right place? Is this intended for me? What do I do? Where do I go?" If everything was consistent across the board, the user would experience less friction, fewer barriers, and more access to the material. Good graphic design improves learning. Bad graphic design erects barriers to learning – because of cognitive load.

Selective Attention

Imagine you are in a room and someone is talking to you in your left ear, and someone else into your right at the same time. It would be impossible to absorb the information of both people speaking to you. You would have to purposely select only one message and even when you do that you may strain to hear it, understand it, and commit it to memory because there is friction. Visuals work the same way. Say you are in an e-learning module and suddenly two sets of instructions in text boxes pop onto the screen. Both ask for very different tasks and both set the same importance and weight (same hierarchy). Your brain

would have to filter the attention and follow only one. The researcher Broadbent (year of publication) focused his work on selective attention and how it relates to situations in which learners are bombarded with too many messages, and how they can filter the one that is supposed to be the most important.

Bad graphic design makes learning harder, while good graphic design greatly improves it. When there is less friction in learning, it is more enjoyable and therefore more likely to stick. Learning design needs to be intentional and if you are reading this book, you probably already know this. But maybe you haven't yet realized how you can be intentional in the graphic design choices you make to help learners reduce cognitive load and to remove barriers to learning.

Game Accessibility Guidelines

Game Accessibility Guidelines

A collaborative effort between a group of studios, specialists, and academics, to produce a straightforward developer-friendly reference for ways to avoid unnecessarily excluding players, and ensure that games are just as fun for as wide a range of people as possible.

Includification

Includification

The AbleGamers Foundation's Game Accessibility Guidelines, written by developers, and gamers with disabilities.

National Center on Universal Design for Learning

UDL Center

Includes universal design articles, links, presentations, videos, and more

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How can we improve the visual look and feel of gamification in e-learning?

High contrast interface with an intuitive user experience. Depending on the learners and their context, character illustrations, animations, VFX, photographs or simulations can be used to make the gasified experience more engaging. **– Sonia Tiwari, Learning Experience Designer, Ph.D. Candidate | Learning Design and Technology**

When we have to decode the text and search through confusing navigation, we may struggle to find meaning in the activity. Our brain needs order. In most languages, people read left to right. They scan the page starting on the top left. Therefore, the home page nav or logo is often in this spot on a website. We scan top left-to-right, then we "Z" down to the left scattered across the page, and finally look at the bottom and then bottom right. Therefore, in a Canvas module, you see the "next" button on the bottom right.

Tip: Omit words and phrases that aren't needed. Communication should be succinct and clear.

One thing I see frequently in online course design is the addition of extraneous words. The words 'click next' aren't necessary." If the course is designed well, the user will know what a hyperlink is and what they are

supposed to do when they finish the work on the page. A simple button labeled "next" is all you need. Good design exists in the background because of cognitive load theory. It allows for a superior user experience and makes learning more enjoyable. Think about the time you last enjoyed a novel. You kicked back, feet propped up, and breezed along without having to stop and decipher what was expected of you. This is because the font in your novel was carefully chosen, the leading, line spacing, and point size were selected purposefully and wide margins were measured carefully. You didn't have to struggle to read, and I would make a bet you were reading a font designed for long stretches of text. If you were reading or listening to your book from a screen reader, the designer most likely made sure there were no images with text in them and all text was able to be read properly.

I like to consume books in multiple ways, and I have found when I listen to audiobooks, sometimes the text refers to images in the book that I cannot see. It makes me realize how people who rely on screen readers struggle to grasp concepts when there is missing alt text for images. The choices we make as instructional designers impact learners in big ways.

Tip: When we design intentionally for inclusion, we send a message that we care about the outcome of students' learning.

The devil is in the details

If you work for an institution, you don't want to sacrifice the brand reputation by making a careless error. A small grammatical error, spelling mistake, or poor graphic

choice could not only ruin the organization's reputation but also your own. There were a few times in my career when an error I made caused a bad impression. I remember years ago applying for a job and I was asked to complete a full-on marketing plan that was pages long. In this report, I did a spell and grammar check using digital tools. But I failed to read over the whole document and relied on the program's built-in functionality. To make a long story short, the interviewer spotted a homonym. I had spelled a word incorrectly. I used "their" instead of "there," an embarrassing rookie mistake. It wasn't that I didn't know the difference, but it was a matter of not checking my work well.

I was up against another candidate. They said it was so hard to figure out who to hire because it was THAT close, and they made their decision based on my misspelling. They saw it as a red flag. Perhaps if I worked for them, I would make another error like that, not realize I did it, and a huge typo would go out into the world that would affect their reputation. That is how important reputation is. The interesting thing is that research supports the idea that the more embarrassing the mistake you made, the more you learn – especially if you get feedback for the error (Willis, 2009).

I am proud to say that the embarrassing mistakes I have made along the way have stuck with me and taught me the lesson that "the devil is in the details." Design may look easy, but it takes a carefully trained eye and an appreciation for details. When we design with our users in mind, we remember to put in that extra effort to prevent barriers and to make learning more accessible, including tiny details that could trip them up or cause them to have a bad impression of our course.

Part two of the Graphic Design E-Learning Checklist

The graphic design portion of the Checklist ensures that you consider contrast, repetition, alignment, and proximity along with color, typography, and minimalism when designing. Our goal is to attract and engage the learner, aim for accessibility, and use the various components to promote learning and reduce cognitive load. The checklist allows us not only to check our designs for accessibility using the resources in the book, but also utilize best practices on how to use graphic design theory to design visually appealing content, courses, and curricular materials.

Suggested guided questions/projects to assess your understanding of cognitive load theory and how it relates to design:

- Record audio, animation, or video file using your own voice as a voiceover and make an explainer video/podcast about cognitive load theory. Explain what it is, why we need to know it and how we can reduce cognitive load using graphic design and digital accessibility measures. Show your creation to someone and see if they can explain it back to you after they have seen it/heard it/read it.

10

DESIGN CONTRAST

Design Contrast Checklist

- Design contrast is used to create a focal point and establish a strong hierarchy with the most important items having the most emphasis
- Contrast is achieved through color, shape, size, alignment, direction, and/or font

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In the digital accessibility section of this book, I wrote about color contrast but in graphic design theory, contrast expands beyond just color. In graphic design, contrast is defined as two or more elements that are visually different from each other in a composition. The more difference detected, the greater the contrast

between the elements. Contrast is useful for creating a focal point that visually draws your eyes to it first. Contrast helps establish hierarchy and can be used to visually balance elements on a page by giving weight, size, color, shape, or direction. Contrast creates better visual design and it also helps promote accessibility. Poor contrast means low accessibility.

I'll never forget the night that I really understood the importance of contrast. It was one of those nights, dark with heavy rain that randomly fell in buckets. I was having a hard time seeing. It was Mother's Day. I was 19 and driving home from my grandmother's house. I was turning at an intersection and although I had been down that road many times before, it was one of the first times I was driving and not a passenger. I had to watch for the signs to make sure I didn't get lost. Well, that night I got into a car accident, partly because I hadn't seen the car coming head-on. Thank goodness we were both O.K., but it's odd the things that flash through your mind in an accident. As the car skidded in the night, I thought about graphic design. I saw the green street sign as I pulled to the side and it made me realize how much thought and intention went into designing street signs, and how the contrast of green background with white text that you see on so many road signs are such a good combination.

The road conditions were poor that night, but the one thing I saw clearly was the street signs. It made me want to do more research. I later found out who designed the signs, why they were designed that way, and all about the accessibility of certain fonts and colors. Don Meeker is a famous sign designer who developed the font Clearview, often found on highway signs across the country. He did extensive research on the legibility of this font and the

contrast it makes with the green background. His designs are also found at several National Parks across the United States. Sign designers are often called environmental designers because they help wayfinding.

Airports are notorious for having signs with very a very high contrast ratio.

Environmental designers create signage for parks, highways, museums, office buildings, hospitals, airports. Think about the last time you were at an airport. The design of airport signs both inside and outside the buildings must quickly direct traffic by foot, car, and plane by keeping accessibility in mind. Designers use font, color, and icons to communicate clearly to a diverse audience. Most importantly, they design with very high contrast.

Signs need to be read and understood from far away and up close. Another place you see high-contrast signs is at National Parks. In order to follow trailhead signs and internal markers, visitors need high-contrast visual cues so they can stay on the path. Without wayfinding, we would be constantly lost. Our GPS apps are not useful if we can't see the street signs or the highway marker to make the turn. Contrast shows up frequently in the environment: the bright, large sign that alerts you of the gap between the platform and the train; the dark elevator buttons lit up with bright lights that also contain braille for the visually impaired. Instructional designers can learn a great deal about contrast, accessibility, and usability from environmental designers.

How to use contrast in e-learning

Contrasting elements in an e-learning course can differentiate between elements such as headers, subheads, body copy, images, icons, and buttons. The greater the difference between elements, the greater the contrast. The author of the book *The Non-Designers Design Book* Robin Williams coined the term "Don't be a Wimp" because when it comes to contrast, the greater the difference, the greater the contrast. You cannot contrast text that is 14-points with text that is 18 points. You cannot contrast dark red with red. You cannot contrast a 1-inch photo with a 1.5-inch photo.

This is **CONTRAST** This is not.

One solution to increase contrast is to make the headline H1 header much larger and bolder, as you can see in the example above. The word "contrast" is probably the first thing you looked at when you turned the page. Contrasting size is an easy way to add difference and help draw the reader in.

Contrast size

The student and chalkboard are larger and more prominent than the background scene and seated students in the picture

We can contrast the size of two elements on a page to add interest and use hierarchy to establish order, balance, and a strong composition. Choose to contrast two characters in a scene by using size and depth to demonstrate importance. Try having more of a dramatic scene played out just from contrasting the size of the characters. If we contrast the size of the character, we know we are going to be focused on the larger one versus the one set in the background.

Contrast Weight

Contrasting weight can add drama to the objects we see on the screen. Objects that are larger, thicker, bolder, or darker appear heavier compared to other elements on a page. Adding visual weight makes graphic elements look heavier than others on a page. Your job as a learning

designer with graphic design skills is to make people notice the things that matter most and avoid distracting the user with anything that could make them stray from the goal of finishing the course. When you add visual weight to parts of your layout, you increase the chance that the learner will see those parts in order of their importance.

When designing a page, prioritize key elements by giving them heavier visual weight. Some things you might consider giving heavier visual weights to may include a call-to-action button or photo, illustration, or catchy headline/header. You can even manually adjust a photo to highlight a subject in the image. There are several ways to give a graphic element more visual weight and I outlined just a few below.

Change color to make it visually heavier in weight. Even a darker grey over a lighter grey makes a difference.

Move an object away from the group to make it visually heavier and makes us focus on it.

Make it look different by varying the stroke, fill, or pattern of the element. You can also apply an effect or style to the element to make it pop.

Making the key element larger will give it more weight.

Contrast type

When we contrast type, we choose fonts that look very different from each other. Remember, the rule, in contrast, is "don't be a wimp." We want to make a big difference between our headings and our body copy and we can do that in several ways. For example, a font that is extra bold condensed can be contrasted with a font that is set in a lighter version of the same font and much smaller.

When we contrast a large, heavy rule on the top of a course as a knockout – (meaning the black background is contrasting with the white text overlay) with the body

copy set in roman/regular type, we are contrasting effectively. You can contrast with various font combinations as well as contrasting boldness, size, and color.

Typography can appear heavier in weight than the other items on the page based on the weight of the letterforms in the chosen font. For example, if you look at Helvetica condensed bold, the lowercase 'e' is distinctive enough to make it identifiable by the eye. The terminal is perfectly horizontal and the weight is equally distributed in the letter.

If you look at Times New Roman up closely, you will see a variation between the thickness and thinness of the letterform. Look at the lowercase "e," for example, and you will see there are thicker and thinner parts of this letter, making the overall impression of the Times New Roman font lighter and the Helvetica font heavier. We can further contrast this, of course, with size and by adding bold attributes to the bulkier font Helvetica.

Helvetica	Times New Roman
e -horizontal terminal -equal thickness in stroke - no serifs	e -angled terminal -moderate difference in thickness - serifs

Helvetica has a horizontal stroke and Times New Roman has an angled one whereas Helvetica has equal stroke thickness with no serifs and Times New Roman has a moderate difference in stroke with the presence of serifs.

Contrast Shape

One example of contrasting shapes is to create a grid of photo squares and then create a focal point within the grid by making one photo circular in nature. If you want the reader to focus on that photo first, you can change its picture box shape. Another way to do the same thing is to take a group photo of characters and

then create a circular halo around the one character you would like to focus on.

Another trick designers use is to create a grid of text on the page but have a text wrap around an image that takes up the central focus. The image boundary can be organic in nature, meaning it doesn't have clean straight lines that would break up the super aligned copy. By formatting a clipping path around an object in the image, it will become the element that stands out the most. The image will be the only object in the composition that breaks from the grid so your eye will go there first.

Look at the four grids to the left. In grid A, there is minimum contrast. Not very dynamic. In grid B there are too many different colors the user doesn't know which is the most important and there is zero hierarchy. In grid C the center shape takes precedence, the user knows what the most important part of the layout is as not only is it a different color but also a different shape. Grid D is also a good choice but not as strong as C. Contrasting weight, shape, and color is a good way to add a dynamic look and feel to your page.

Suggested guided questions/projects to assess your understanding of contrast:

- Visit your top 5 websites and jot down the first thing you look at in each one. Write down what drew you to this focal point and why you think it had enough contrast to draw you in. What was being contrasted? Which of the 5 websites had the best contrast and why?

11

ALIGNMENT

Alignment Checklist

- Flush left rag right is used in most cases
- Fully justified text should be avoided in browsers and only used in documents when columns are narrow
- Centered body copy text should be avoided when possible
- A strong alignment is used to create order within a grid.

Alignment has to do with how things line up in a grid. In any piece of visual communication, there are margins, gutters, columns, baselines, and hanglines that make up the grid. Below are some visual examples of these terms.

Margins are important to all designs. They create a bumper around your content to visually craft the space. Margins are specific to the medium. Print designers need margins for projects that are not full-bleed (artwork that extends to the edges). Print design is rigid while the screen is responsive and fluid. Digital design sizes are determined using percentages or ems/rems.
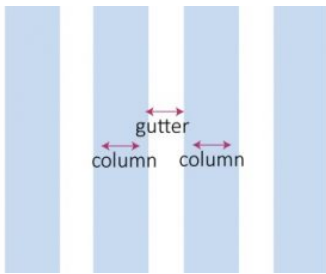
Columns are present on-screen whether you see them or not; the trick is to space content out with enough breathing room and align all objects along these invisible lines. The space between columns (the gutter) is equally as important as the columns themselves as they provide a less cluttered environment.

Hanglines and Baselines are horizontal guides used to create an edge for aligning images and text. These lines actually create the grid where content can be segmented

and placed on the page. We want to keep the lines even and spaced uniformly because one little off-center object will create visual tension. Snap your objects to a grid to allow for a cleaner look and feel. A baseline grid is a consistent set of horizontal lines that are useful when designing both print and digital content. Want to know the true way to tell a novice from an expert graphic designer? When all the items on the page are center-aligned and a giant logo sits right on top, you can be sure the person that made this decision is not an expert graphic designer. This is boring. It is predictable and harder to read than left-aligned text.

English speakers read left to right, so the jagged edges on the left and right of a center-aligned block of text frustrate us. It works for a wedding invite since there isn't a ton of text, but we would never want to read a book set in center-aligned copy. Also, we want to avoid too many alignments on the page. We can do all left, and one item right for contrast, but we don't want a left, a right, and a center alignment. Using too many alignments causes excessive cognitive load since the learner needs to decipher, decode, and organize items on the page. It is better to design courses with a strong alignment because using a grid helps organize information and brings clarity to the course.

When we left align, we reduce cognitive load as learners don't have to look at those jagged edges that appear in a center-aligned block of text. The more visual tension there is, the greater the cognitive load and the harder it is to learn something. If we align to the grid, we can produce clean, crisp designs that our learners enjoy engaging with. Left alignment looks more inviting to read and more professional. We are most likely to be

naturally attracted to designs with a strong alignment. Since we are bombarded with thousands of messages a day, we want to produce one that stands out from the crowd and clutter. Strong alignment can help to achieve that.
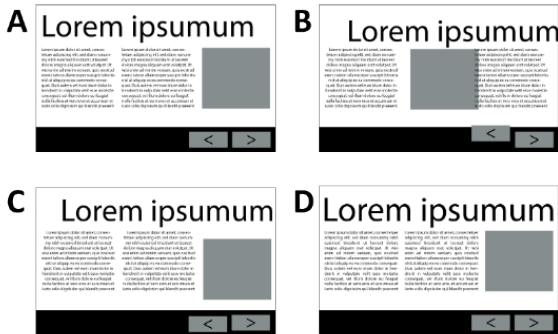
In example A, the left align text allows for a strong line on the left and a ragged line on the right, making it easier for the eye to go line to line. The image, text, headline, and forward and back buttons also have a strong alignment and align close to a grid. Option A is a strong choice. In option B, you can see that the two groups of text are aligned differently, which causes a messy look and feel. Additionally, there is overlapping text on an image which creates visual tension and too much cognitive load. In option C the text is aligned horizontally and both blocks of text are center-aligned. This creates nice repetition, but as you can see, it is harder to read center-aligned text compared to left-aligned. We would never read extended body copy that is center aligned, which is why most articles, books, and publications are left-aligned.

On a rare occasion, center alignment can look good, but that usually is in circumstances where there are short

bursts of text, such as invitations, a flyer, or perhaps a simple job aid or infographic. In option D above, the two text blocks are justified, which creates a horizontal and vertical alignment. It works in this case because the font size is small enough to not cause rivers or widows and the column width is the right length in relation to the font size.

A widow is a single word alone on a line all by itself. It should be avoided because it causes visual tension. Always make sure there are at least two words on the last line in a paragraph. **This is a widow.**

The giant spaces in this paragraph are called rivers.

You want to avoid those spaces because they cause visual tension as well. Rivers can occur when you force justify text and may need to be adjusted if your client insists on full justified columns. Adjusting the tracking can help.

The heading in option D expands across the left and right column as well, which creates a nice grid-like appearance. The typography chapter of this book goes into more detail on the nuances of type alignment but generally left alignment is best in e-learning.

How our eye views a page

Our eyes generally read in a Z fashion. If we don't design our e-learning course in the z fashion, we have to use alignment to draw the viewer in and get their eyes to go directly where we want. We can even use eye-tracking software to check where viewers look on a course, webpage, or app and even in order and how long. In the

article free eye-tracking software on the imotions blog, you can read about 10 eye-tracking software tools to try. The knowledge you gain from these tools can help you modify the design to guide your learners to focus on the most important content.

Tip: I used to tell my college students that when you apply graphic design theory to your work, you can start to control people's behavior and essentially persuade them to buy the product or service. You can make them look at what you designed, create an emotion, and then act.

When we create connections with a brand, it's usually one that has a great graphic design. We love falling in love with design and are instantly repelled by ugly designs. See if you can find a local newspaper and you will see what I mean. Look for an ad for a small business. Most likely it will be ugly, and you will immediately want to close the paper or at least let your eyes drift away. Ask yourself why that is. You may only have the vocabulary to talk about a couple of the concepts so far, but you can probably start to point out bad design. Chances are, the ad you are looking at in the newspaper is cluttered and doesn't have a strong alignment. This comes from the mentality that if a client is paying for that small space, they had better fill it with as many things as they possibly can think of to tell the audience. This is a bad idea, however.

One thought/idea per page is ideal. When you clutter the page up with too many text boxes and images, learning is harder. Your audience uses their brainpower wondering where they should look first. The excess information you crammed in there is not only overwhelming but not very interesting. When learners

encounter the same problems with clutter in a course, they will likely not be very interested in finishing the work, they may get distracted, and the cluttered, randomly aligned module could prohibit their learning. Strong alignment reduces cognitive load because we don't have to think about where to look next. Bad alignment looks unprofessional, messy, and like it was thrown together without care. Do you want to convey this in your portfolio? No. You want to apply intentionality to your learning design.
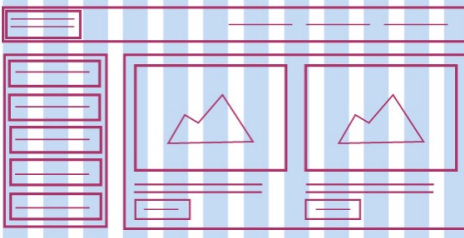
Grids are a way to neatly arrange graphic elements for a better user experience

In the example you can see how a strong alignment and grid system leads to a less cluttered look and feel and allows the learner to navigate through the course more easily. If we want our learners to take our course and complete our modules, we need to have empathy for them while doing so. Think about how you would feel slogging through a training that was visually cluttered with an absence of alignment. You could forget what you learned and the entire training would leave an unfavorable impression.

More on Text Alignment Options
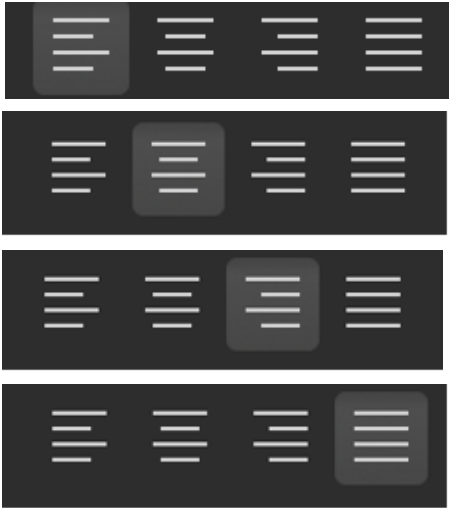
Alignment options can be accessed through most program style ribbons. In the image above, you can see universal icons for left-aligned, center-aligned, right-aligned, and justified text. I avoid justified unless setting text in a newspaper or magazine where the columns are narrow. Left align is my favorite and the alignment most common in the portfolios of people who have worked with Fortune 500 clients. This doesn't mean it's the right choice every time, but whatever alignment you choose, you want to be consistent and use the principle of repetition to do so. If one page in your module uses left alignment, the next few pages shouldn't have text boxes thrown around randomly. Not only does it look unprofessional and messy, but it also increases cognitive load and creates a barrier to learning. The user must wade through it all to discover meaning. If you are using intentional learning design, you can mix alignments within a page to add contrast. For example, if your

headline is left-aligned, your body copy, image, or photo caption is right-aligned.
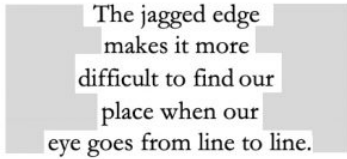
Left-align is usually the way text is set in a novel, on a video game, in an app, and on a website. We read left to right and our unconscious brain prefers a strong left alignment versus a ragged one that occurs in a center alignment or a right alignment.

The jagged edge makes it more difficult to find our place when our eye goes from line to line.

As with most rules in typography, you can break this rule for very short bursts of text. Titles and headers are where you can have some fun with type and play it up with alignment, color, font, and style. Shorter bursts of text mean it is easier to get through and read. But, as a reminder, be sure to make the contrast high enough so that it can be seen.

Be aware of kerning

Kerning is the space between letters. When kerning is too tight, it can make it hard to read and it is especially problematic for the neurodiverse or dyslexic learner. Kerning can be challenging to learn. There are combinations of letters that are more likely to be problematically called kerning pairs. Practice kerning these pairs and you will be an expert in kerning before you know it. According to Striver (n.d.), most fonts have between two hundred and five hundred built-in kern pairs. When I taught typography in my graphic design classes, I used a digital hands-on game called Kernme. This helped my students learn experientially and it gave

them real-time feedback as they worked through a series of kerning pairs adjusting the space between letters. In the figure below the V is too far from the A and the E is too close to the V. Go to type.method.ac to try it for yourself.

Before kerning

WAVE

After kerning

WAVE

Most programs will allow kerning, but the way you adjust kerning depends on the software. In Adobe Illustrator, PhotoShop or InDesign, you can adjust kerning with a Mac by clicking "option left arrow" or "option right arrow" while you have your cursor between two letters. In the Kernme game, you can just drag the letters to the left or right. If you want to kern letters on a web-based program, you can use lettering.js which is a jQuery plugin that enables selectable HTML text on the web to be kerned and controlled in many ways.

Aligning Visual Assets

When aligning visual assets, the same rule applies to text alignment. Always try to align assets with other assets. You want to make sure you are lining up items on your page to make it easier for your learner to read and view them. All the assets on your page are connected by an invisible line. Even when you have elements that are far away from each other, say a header and a footer on a website, you still need to align them. I use the digital rulers in my software to align items up to the exact pixel. I have been trained by eye to see grids within my work. Even if I don't have the digital ruler or smart guides set up, I can still align things perfectly.

TIP: You want to zoom in to make sure your work is perfectly aligned. There are usually key commands to zoom in, even in a program that exists in a browser. I often use "command +" on a Mac and "control +" on a PC if I don't see a magnifying glass tool or something similar.

Most software includes smart guides, where you see visual cues on the screen when things are aligned. In addition, many software programs also include the ability to "snap to grid" which will automatically align items on an invisible line when moving objects in incremental ways. The key to appearing like an expert and not a novice is to put in the time for details. Once you have identified how these invisible lines connect everything on the page, you can see how the arrangement of those items leads to a much cleaner, polished-looking portfolio piece.

TIP: By intentionally aligning to a grid, you are allowing learners to use their brains to focus on learning instead of trying to decipher what they are looking at. This reduces cognitive load and improves learning while capturing and retaining the attention of the learner.

A grid makes everything look much cleaner and more organized. It is not about making things pretty, but having things make sense. We never want to throw objects at a page as if we are throwing darts and watching them land randomly. You can create all sorts of dynamic compositions using a grid that reduces cognitive load, increases the professionalism of your work, and raises the caliber of the pieces in your portfolio.

Suggested guided questions/projects to assess your understanding of alignment:

- Sign up for a free Coursera course. Log in with your laptop and also your mobile device. If you have a tablet too, that's a bonus.
- Jot down the differences in the interface as the mobile responsive course is viewed on different devices. What do you prefer and why? Which has the best interface and navigational structure? Hold up a ruler against the invisible lines of the grid and see how aligned the graphic elements are. Now think about a course you created. Were your elements as precise?

12

REPETITION

Repetition Checklist

- The principle of repetition is used to create a consistent cohesive design including consistent headers, subheads, and body copy styling.
- Icon sets, illustrations, and photos have a consistent look and feel
- Colors are consistently applied and the same color breakdown (RGB, HEX Code etc.) across the course

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Did you ever take an online training where when you clicked inside one of the dropdowns in the navigation bar and it took you to a page that looks nothing like the rest? Perhaps the font was different, or the colors and placement. You may have gotten disoriented, especially if you couldn't find where to get to the home page again. This makes people feel uneasy and unsafe online, and

they will likely leave the site altogether. Think about the experience of shopping online, for example. Shoppers need to feel secure and they look for signs that the site is safe. If they go to add in their credit card information and the page design suddenly changes its look and feel, it can be jarring. I know I prefer to pay with PayPal whenever possible and when I select it, I know this opens a new trusted site away from the e-commerce one where I'm shopping. This is different from entering your credit card on a website you are unfamiliar with and which appears shady due to its inconsistent nature. Repetition makes us feel safe.

What is repetition anyway? Repetition is the act of taking a single graphic element (line, color, shape, bullet-style, margin, font) and replicating it in the design. Our brain likes order and it likes repetition. Think about how many repeated behaviors you do in a day. You probably drink your coffee at the same time every day, and if you have a small child, you may go through a bedtime routine the same way every night. If you are on a website, you probably want the same navigation bar to look the same way no matter what page you hop onto. Repetition calms us, brings us order, and helps us feel safe.

Repetition is great, but it is important to note that it can be overdone. A bulleted list of 10 items looks worse than a bulleted list of 5. Too many bullets are monotonous and cluttered. We want to be careful to strike a balance in the amount of repetition we use. Too much and our learner becomes bored and complacent. Too little and our learner becomes disoriented, confused, or apathetic. Instead of placing all the text on one slide, we can place each category on its own slide. Slides are free; use as many as you need. One thought/idea per

slide. Use the white space. It is much easier to get through the content when there are different slides versus one with 15 bullet points.

When we see a repetition of elements in our e-learning, we are calmed, our memory is jogged, and we have fewer barriers to our success – because we know repeating elements tie together our designs in a cohesive way, helping learners to focus on what they do best: learn. Repetition is an important concept whether we are talking about the distribution of learning activities or the design of a presentation.

I recently designed an online professional development course meant to train high school educators to implement a specific curriculum in their own courses. The training used workshopping to demonstrate the kinds of activities that would be delivered to their face-to-face students so we had to reimagine how that would look in an online environment. One module was designed to go through a series of narrated stories. In the face-to-face version of the training, there were videos, people talking, and conversations taking place that broke up the stories.

In the online course, I animated and did voiceover work for several videos in an asynchronous environment. When we beta-tested this module using the Community Based Participatory Research Method (CBPR) participants found the sheer number of videos was too much. They were overwhelming, and although they were short, participants felt there was too much to wade through. The repetition was overkill. We needed to offer some variety in the way these stories were presented. We redesigned the module to incorporate

both written text, video, and audio to mix it up and to be more in line with universal design for learning principles.

Repetition of images – Image sets

We can repeat many things in our courses, including images. This doesn't mean we want to repeat the same exact image. That would be boring. Instead, we want to repeat image sets so they look like they are of a similar genre or like they were taken on the same day by the same photographer. We can't always find that, but the lighting should be similar and if it isn't we can use software to adjust it. You can use digital tools to adjust the lighting, brightness, contrast, and color – making it warmer or cooler, to create a cohesive set of images.

Another option is to make them all black and white, so you can avoid having images with drastically different color schemes. Another mistake I see often in e-learning is using photos of people that are made at different sizes and cropped differently, on the same page. If you do this intentionally to add contrast, that is one thing. But if you have one giant cropped head, and another full-body, and another cropped to shoulders on the same page, the result looks inconsistent and doesn't make sense in terms of depth.

In a course I helped design and develop for ONEHE on UDL and Technology with Dr. Thomas J. Tobin, I tried to use photographs from the same source. I looked for photos taken by the same photographer from the same photoshoot in which the lighting is the same. When I couldn't find that, I at least used images that were all taken indoors in an office setting to achieve a sense of consistency.

On my walls in my home, I have a series of photos along my hall and they have a consistent look and feel. You can see a select few below. They were taken outside at the same time of day at the same location, and the people in the photo are wearing the same colors. This brings a sense of order and professionalism. These photos were taken with a simple iPhone. But because of this attention to detail, they appear as if a professional took them.

They were all taken at the local beach at sundown, so they have a similar look and feel. Ideally, when designing, you want your photos to have something that ties them together. When images appear cluttered and random, they become confusing and, according to the Mayers principle of coherence, we know extraneous graphic elements add to the cognitive load (Walsh, 2021). If the image doesn't support the learning it becomes an eyesore, visual tension is created and the learner cannot focus effectively on the material.

When selecting icons, I use icon sets, versus just randomly finding icons, because chances are, they differ stylistically. Using icon sets will ensure the weight, color, effects, and other attributes look more cohesive. When you download an icon set it means all the icons in the variety pack are designed by the same artist. Stylistically, this will achieve a sense of repetition and consistency. I often download icon sets and if there the set has no icons

I need, I can modify one of those in the set to contain the attributes I want. That at least allows me to achieve a sense of consistency in terms of style.

I also design my own icons when needed, so I can control a variety of factors. There are several websites where you can find free or inexpensive icon sets. It may be worth looking into a subscription for photos, illustrations, and icon sets since this is often the least expensive and less time-consuming way to find assets. The figure on the left shows two columns. The column on the top has icons taken from different places online, designed by different artists and they appear like they don't belong together. The column on the bottom has several icons from Microsoft Word. Because they came from the same place, they have the same stroke width, the same heaviness, color, and style.

Font Repetition

Repeating fonts is a good practice. In fact, the rule is to limit your font choices. If you have more than three, the page becomes too cluttered and hard for the reader to get through. If the page looks unpolished or unprofessional, it will turn off your clients, employers, and your learners. Too many different fonts create excess cognitive load because the act of deciphering text, styles, and headings takes significant processing power, which becomes a barrier to learning. It is important to pay close attention to the nuances of repeating text.

Most importantly, make sure the headline H1 header

is the same throughout the module. The line spacing, the word spacing, and the spacing between where the headline is located and the edge of the frame should be consistent when possible. We also want to repeat the same body copy fonts throughout and the same subheads. This doesn't mean we make every bit of text the same font and the same font treatment. If everything was set in Times New Roman 12-point text and double-spaced, the course would feel more like an essay. Images and headers act as visual signposts to break up walls of text.

Differentiating headers need to be present to break up and chunk text. A course needs to be broken into bite-sized pieces so that the reader can absorb the content more easily. A best practice in course design is to use contrasting fonts to draw in the reader and then to repeat those stylized headers throughout. An example would be to use Helvetica Neu Bold Condensed H1 – 32pt for headings and Helvetica Neu Roman 12pt for body copy and repeat those options throughout.

To be more accessible, you should always use the HTML headers in courses. (H1, H2 etc.) If you just randomly decide how to style it, the content becomes less accessible. If you want to adjust the set style guides, you can use CSS (cascading style sheets) in your program to edit the chosen headers and body copy. Then you can apply the new font choices in a consistent way that will be picked up correctly with screen readers.
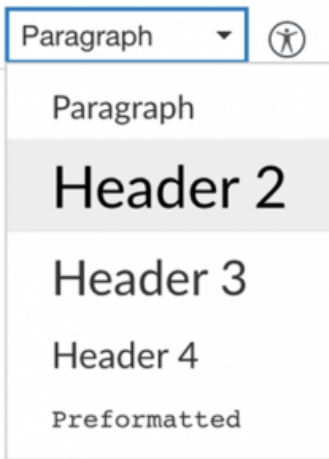
In the images above there is a screenshot of the Canvas HTML editor. When changing the font sizes select the paragraph dropdown menu and select Header 2 through Header 4. The Title input field is Header 1, so all pages already have a Header 1 tag. Structure your Canvas content, starting with Header 2, making sure to properly nest any additional headers. You can customize the font size, style, and color after you apply the proper header.

It is critical that people seek to use built-in formatting tools. Use header styles, template slides in PowerPoint.

– Eric Moore, PhD, Director of Learning Technology at Kennedy Krieger Institute

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Repeating color

Color can communicate feelings and reinforce the brand or client. I have been working in advertising and graphic design since the 2000s and anytime I worked on a Fortune 500 company project, we would have to use brand and design style guides. I became highly interested in these style guides and would pour over them to study the color swatches, font choices, logo lockup instructions, general tone of voice, and composition suggestions for ads, websites, and the like.

When I started my own company, I took on corporate identity projects and often created branding/design style guides for them. We became known for launching and rebranding companies with a highly polished look and feel, along with helping them to design future projects with a design-standards document that gave them a set of instructions for keeping consistent with what we created.

In a design-standard guide, we create a set of swatches set in RGB, Hexadecimal, CMYK, and Pantone. RGB stands for Red, Green, Blue which are the three hues that can be mixed together to get a variety of colors intended for the screen. RGB is considered an additive model versus a subtractive one meaning when 100% of red, green, and blue are mixed together you get white. When 0% of R, G, B is added together you get black. This is the opposite of the CMYK model.

R 0, G 75, B 133

Above is an example of a color breakdown for the blue swatch in RGB.

Hexadecimal color or otherwise known as the Hex code is a 6 digit combination of colors that when combined create a digital color just for the screen. The values of a hexadecimal digit can be 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F.

The same color in a hex breakdown is as follows: **Hex# 004b85**

CMYK stands for Cyan, Magenta, Yellow, and Black. They are the four ink colors that are mixed together to get a particular color for print application only. CMYK is considered subtractive. In other words, when mixing them together the colors get darker. When blending 100% of each, you get black. **C 100, M 56, Y 0, K 4**

We usually select 2-3 primary colors and 2-3 secondary colors for most of our clients. Too many colors and it looks like a circus or a kindergarten classroom. You will notice most logos are set in no more than 2-3 colors.

BUSINESS CARD AND BROCHURE

Business Card

Brochures

GENERAL INFORMATION

MEMORIAL GARDEN

VOLUNTEER SERVICES

VNSHS COLOR SCHEME

Main Color Palette

The logo colors are used in marketing materials. Do not use other shades of blue or red except for the full saturated versions or lighter tints of the blue.

Logo Color
Blue Red
C22 M100 Y51 K5
Pantone 7425C
Hex# bb2057

Logo Color Blue
Pantone 295
Hex# 004b85

Logo Color
Medium Blue
At 20% tint
Hex# 004b85

Logo Color
Light Blue
At 7% tint
Hex# 004b85

Accent Color

The green is an accent color meant to be used in small areas to call attention to particular areas of the marketing piece. It adds a bit of freshness to the red and blue and complements the main colors.

The light gray can be used as an alternative to the light blue for color blocking. The Accent dark gray is an alternative to blue for body text. In web/screen you can substitute this color for 80% black.

Accent Green
C71 M4 Y100 K0
Hex# 4db048
Pantone 7738 C

Accent Light Grey
for color blocking
C17 M12 Y15 K10
Hex# bfc1bf

Accent Dark Grey
for text
Pantone 5395 U
Hex# 474b59

VNSHS PHOTOGRAPHY

Main photos should be soft, warm and inviting. Not somber or dark. A filter should be applied to lighten and blur complex backgrounds.

The images above include screenshots taken from the design standards guide we designed for Visiting Nurse Service and Hospice of Suffolk. For our client, we used a neutral Wedgewood blue and a pink/magenta-toned red for an accent color. This choice was determined by the location of the center; it needed to fit in with the historic colonial look within an upscale town. Their original logo had a bright color scheme, the excess lines were overkill, and the fonts were forcibly stretched. Our small changes made a big impact, especially the color tweaks.

The extra lines in the old logo cause visual clutter and confusion. The minimalist logo is streamlined and simplified while keeping the brand equity of the original.

The colors are also subdued and reflect a warmer, less alarming feel.

We also included dark grey (for all body copy vs. black) and an accent color of green. This style guide set up the client to produce designs that were consistent. We created several job aids for the nurses and home health care aids, on-site signage for the hospice, and annual reports, fundraising materials, a set of sympathy cards, brochures, and more – all within this new style and always using the same exact colors, fonts, and image style treatment. By doing this, we create an instantly recognizable brand that looks trustworthy and consistent and, most importantly, guides people to get the help they need. Good design allows the reader to determine if the service or product is for them. Good design doesn't need giant arrows, starbursts, or tricky effects to get their reader to click through the course.

Tip: Good design is consistent, intuitive, and accessible.

The below figure provides another example of a design standards guide that we created when rebranding the organization. These colors informed the website, business card, and all marketing collateral.

main colors

Pantone 7688C   Pantone 361C   Panton 7408C   Pantone 1925C

secondary colors

Pantone 7687C   Pantone 7636C   Pantone 367C   Pantone 268C   Pantone Cool Grey 4C
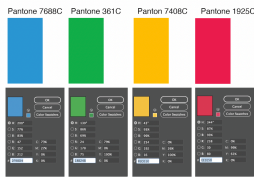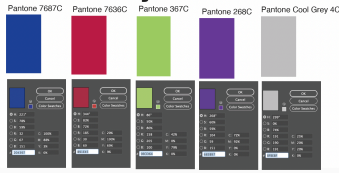
fonts

aceum
74pt
helvetica bold lowercase

advisors & search
32pt   28pt
helvetica light oblique lowercase

logo

aceum
advisors & search

aceum
advisors & search

Graphic designers and instructional designers can create a set of guidelines to inform their color and typography choices so that all marketing collateral and/or courses have a consistent look and feel.

Different projects still need brand consistency

These Futures and Options pieces in the below figure look like they come from the same organization. Different deliverables related to workforce development and education for young adults yet the look and feel is consistent because of the concentric color scheme. If you create two curriculum guides or job aids with slightly different purposes for two organizations, they should have a similar look and feel. In the example, there is an annual report, a fully integrated fundraising campaign run in Real Simple magazine, Time magazine, and across the country with a focus on Madison avenue shops. I chose these examples to brand consistency among project variety.

Repeating shape

Have you ever noticed that in a yearbook, the headshots of the students in the book are all in the same shape? You may notice that they are lined up in a grid, and inside a picture box that is a vertical rectangle. In fact, chances are you may even see the golden ratio there. It would look odd if a handful of students were inside an oval picture box. There should be a consistent picture-box shape unless you want to call out a focal point. In an e-learning course, you don't want to mix and match too many elements. If you have illustrated characters, you don't want to also have photographic ones. If you have rounded buttons, you don't also want to have square ones. If you have black text in your headers, you don't also want to have red. Too many choices look random and unprofessional. We want to find unity, balance, and calm to allow our learners to get through the material with less friction, fewer obstacles, and less visual tension. All of this translates to reduced cognitive load and better

learning. In the figure below taken from the Articulate Storyline character selection panel, you can see how inconsistent and unprofessional the first set of characters look. This character set creates confusion due to the different photo and illustrative styles. The rule is to use all illustrations or all photographs, do not combine the two. The second set in the figure below is the better choice in these examples.

Cohesive
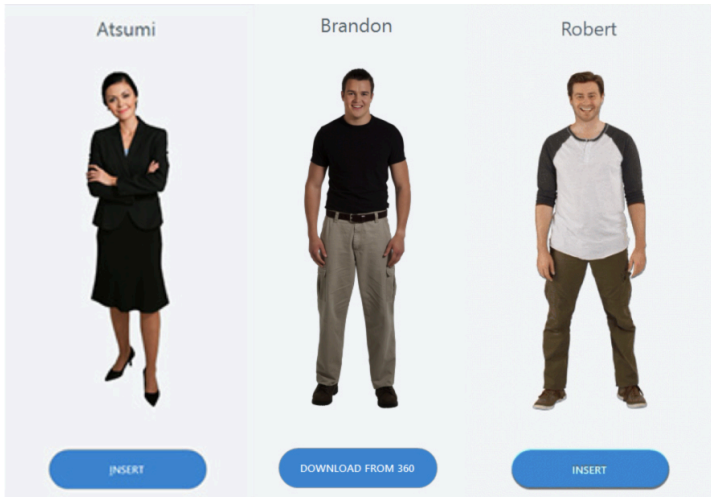
Not cohesive
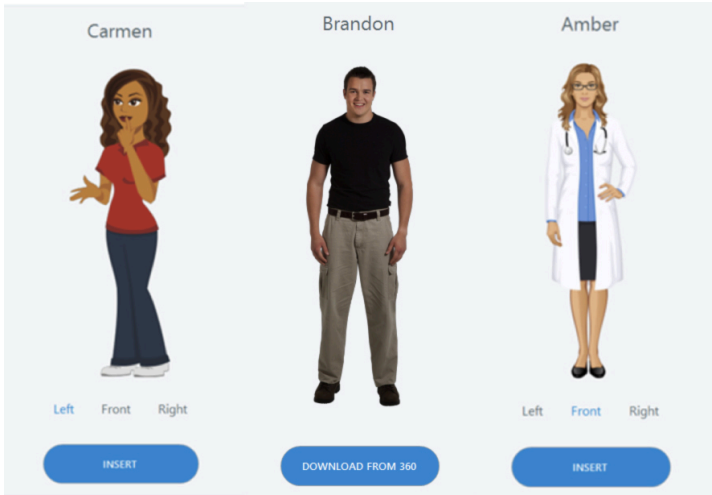
Suggested guided questions/projects to assess your understanding of repetition:

- Find a set of icons to use for your next project. Where did you locate them and how did you ensure they went well together? What is it that makes them feel consistent?

13

PROXIMITY

Proximity Checklist

- Similar items are grouped together
- Items that are not similar are separated or moved apart
- If there are more than 3-5 items on a page, see if you can group separate items by bringing them closer together into one visual unit

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You know what looks good, but you aren't sure why. We are inherently attracted to what aesthetically looks good, yet we may not be able to explain why. Graphic design theory builds upon art history and mathematics. The golden ratio is the ratio of 1:1.618. Using the golden ratio makes a composition more attractive and aesthetically pleasing (*The golden ratio in art,* 2018). In fine art, we can use the golden ratio to position our subjects.

Graphic artists use both math and art in their practice and their intentionality with both makes for a precise visual outcome.

The golden ratio is seen in the architecture of the Parthenon. Famous artists have used it in their paintings. Not only man-made objects follow the golden ratio. In fact, this spiral can be found in nature in multiple places like on snail shells, the proportion of human faces, sunflowers, hurricanes, and the make-up of the Milky Way constellation. The golden ratio is found in the patterns of seeds on a sunflower (Darvas, 2007). The figure below displays some visuals of how the golden ratio is found.

The golden ratio found in nature.
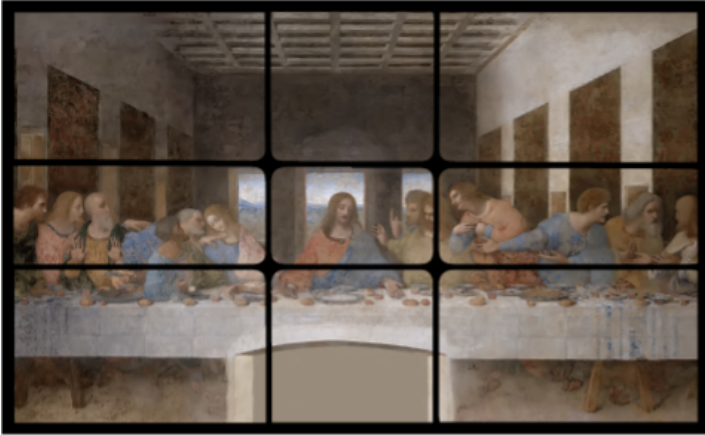
The Golden Ratio is found in art.

The Golden Ratio is found in architecture.

"Without math, there is no art" – Luca Pacioli.

Now you may wonder how do we apply the golden ratio in art and design? This perfect proportion has been used by designers and artists of all kinds to locate aesthetically pleasing areas on the page to place elements and distribute the weight within the composition. In graphic design, we use a grid, which aligns items on the page with precision. We often use the golden ratio to create

compositions that are pleasing to the eye by following the rule of thirds, popular in photography, or another tactic to create like the one below. One strategy is to use the four eyes of the rectangle (circles below) on the left side of the figure below to position the graphic elements.
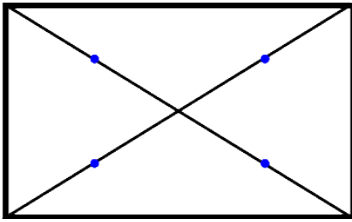
The Golden Ratio with eyes or circles indicated where to place objects in a layout
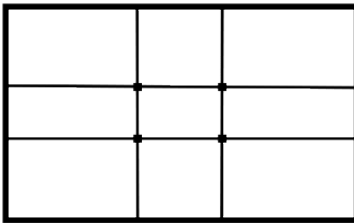
The Golden Ratio with eyes or circles indicating where to place objects in a grid

Another option is to segment your page into nine unequal sections using the golden ratio as a grid. Many software programs allow you to use grids, and you can set your graphic elements to snap to grid or show baseline grid so you can be sure both proximity and alignment are precise. Proximity (like all the principles of graphic design) can elevate the look and feel, reduce cognitive load, and improve learning but in my opinion, it is the most difficult principle to master. It takes higher-order thinking skills to properly categorize and organize elements in a way that makes sense cognitively. It is

challenging because one can argue why certain design elements do or do not belong in a group of other elements and someone else may feel completely different. Whatever the decision it needs to be intentional and conscious. If the groups of elements are unclear, the design will feel cluttered. If items are not properly aligned and placed in groupings, the learner has a hard time understanding what groupings of information go together (Oppermann, 2020). This, in turn, affects the principle of alignment, proximity, and Mayers principle of Spatial Contiguity.

Mayers Spatial Contiguity Principle

Place photos and the text that is related to them close together.

The spatial contiguity principle states that people learn better when corresponding words and pictures are presented near each other rather than far apart on the page or screen. This works hand in hand with the principle of proximity. If you place things close together,

they will be perceived as a group. But if you separate them visually, they will feel disparate and unrelated. Modules of information that are related logically to one another should be set intentionally close together to help the learning stick.

If the brain has to work harder to piece together the content on the page like a puzzle, the learner is taking up valuable brainpower that could have been used to learn. Everyone's cognitive resources are limited. If one has to look at a map, then search for a key that is located far from it, they are less likely to hold both that visual and the key in their working memory, because the effort expelled to try to piece the two together caused an overload of their cognitive resources. Mayer conducted retention tests and found that learners performed better when corresponding text and illustrations or animations were placed close together compared with farther away.

The spatial contiguity principle says we should align words to corresponding graphics. This means, for example, that if the graphic on the slide is a major subject of the text, it shouldn't be far removed from that text. It also means that if there are a few text boxes, they should be aligned and grouped together, not separated to the far corners of the page. The spatial contiguity principle is especially poignant when it comes to charts and graphs with labels. We want to make sure that we don't have to go searching for a key and use our eyes and brain to track back and forth from the key to the various parts of the diagram. A better solution is to label parts of the diagram and have those labels aligned closely with the corresponding parts it belongs to.

E-learning developers often violate the contiguity principle by separating text and graphics into distinct

pages online to prevent users from having to scroll. For mobile reading and browser-based reading, it is preferable to keep these like items together versus adding more clicks and places to find content. Another way this principle is violated is when feedback on assessments is separated from the questions, which makes it harder for the learner to relate the feedback to the correct question. Web designers and learning designers often violate the contiguity principle when they implement pop-up windows. As a web designer, I have fought against clients who wanted to implement this practice. One of my clients wanted to put a "donate now" pop-up window over the website, thinking it would encourage people to donate if they had to physically remove the barrier to see the content on the page. Sadly, the opposite is true and the pop-up window actually becomes a barrier to fundraising as users become irritated at the invasiveness. Nobody likes pop-up windows. Always make pages like this open up in a new tab. This gives users a choice if they want to explore further. Putting links far away from the instructions also violates this principle. If you ask them to click on the link, don't put the ask on the top left and the link on the bottom right.

Tip: Put the directions close to the call to action.

If you want to get really fancy, there are even apps that can create an overlay to check if your designs are following the golden ratio. Graphic designers are already trained to see and apply the Golden Ratio and align to a grid, but there are tools you can use to assist you with mastery, especially if you are new to design. Grids are

an essential part of the design, and a good step to create an e-learning course that has properly positioned page elements.

Golden Ratio/Grid overlay apps and websites

Golden Ratio Generator
Golden Takes
Golden Ratio Camera
Phishot

Proximity and gestalt theory

Gestalt theory is often used in UX design and can help us understand the principle of proximity. Gestalt principles suggest that we perceive elements on the page in their simplest form. So, if two objects are linking, touching, or super close together, we perceive them as one element versus many. Gestalt also suggests that people naturally follow lines and curves and it also says that the mind will attempt to fill in detail that isn't there.

The Gestalt law of proximity tells us that graphic elements that are close to one another appear to form groups. Even if the shape or the size of the objects are radically different, they will still appear to be part of a group if placed close together. Smaller elements can be grouped together like a series of photos to form a grid, for example. Or a border or shading can be applied to further group items similarly.

It is important to remember that our brains build connections between different elements depending on how close or spread apart they are, or on the law of visual perception. We talked about how we need to group things that belong together. But if we want elements to be

perceived as being separate, we need to use white space to create a space between elements.

This book, for example, is separated by paragraphs, chapter headings, and subheadings so that the reader knows when a new thought, idea, or concept is being introduced. The white space tells the reader that a new thought is going to emerge at the start of a new paragraph. Gestalt's law of proximity helps improve usability and interaction, which helps learners absorb the material.

Principle of Proximity in everyday life

Ever ride in an elevator and notice how all the buttons for the floors are grouped together? What if they were scattered? What would happen then? You wouldn't be able to easily find the floor you are looking for, and people in the elevator may be annoyed and frustrated as well. What if the floor 1 button was over the door, floor 2 to the left, floor 3 to the right, and floor 4 behind you on the far wall? Buttons are grouped together because of the concept of proximity. If we have a course with a few choices to select like buttons, we don't want the buttons to be on the far corners of the page or course. They need to be grouped together to reduce cognitive overload.
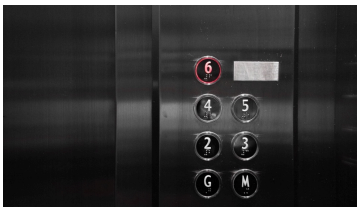
Buttons on an elevator are close to each other so that people can find them quickly.

The key to mastering proximity is to use logic to analyze information to determine what group it does and does not belong to. This isn't as easy as you think. There could be a couple

of possible solutions. Think back to when you were in elementary school and your teacher had one of those giant felt boards and she told a story or taught a lesson with felt objects that clung to the board. Pretend you are sitting in circle time. Your teacher is teaching you basic math by using the story of the three little pigs. Every time the wolf huffs and puffs and blows down a house, she removes one pig from the board and asks you how many are remaining. Chances are, in your mind, you see a grouping of pigs in their homes neatly lined up. The concept becomes clear because there is order and proximity. If she had closed her eyes and haphazardly threw the 3 felt pigs on the board, they may be backward, upside down, at various corners, or astray on top of each other.

If you asked your learners to do basic math in this fashion, their brains would have to work harder to make sense of the activity and get the answer. We can apply this concept to e-learning. For example, we can use an accordion to group FAQs in our course so everything is in close proximity and grouped together. By assembling items close together, the learner can find all the answers to their questions in one place, which lowers frustration and removes barriers.

Some design concepts are harder to learn than others. Proximity isn't something you can read about and master, it needs to be intentionally practiced.

I struggled with this principle in design school. I would hyper-analyze the content and say to myself, "the website should go with the phone number, but the address should go with the phone number, too. And maybe the website should go with the logo. Oh, wait, maybe the website, the logo, and the address should go with the phone number...The client wants me to stick the logo big and, on the top, should I?" And so on. Every time I designed something, a similar dialogue would occur. Yes, it's good to analyze and use our brains rather than just go with what appears to look good. But we also have to stop overanalyzing to the point of performance paralysis. One way to overcome this is to offer options.

If I really couldn't decide what should go where I would offer the client a few layout ideas. Over time you get better at figuring out what goes where. But the key to learning this principle faster is to remember that our brains like information that is grouped, and the fewer places we have to look on the screen the better. Less

friction, less cognitive load. Make the information easy to find and don't style it in 100 different ways with no alignment or thought to placement.

Rank	College	Cost	Graduation	Acceptance
1	Princeton	$74k	98%	6%
2	Columbia	$79k	95%	5%
3	Harvard	$73k	97%	5%
4	MIT	$73k	93%	7%

A table of random data to illustrate aligned text. Tables are challenging to design accessibility but when done correctly they can organize information clearly.

Learners need to focus on the learning and not use their brains to decipher what the heck is going on in the layout. We want our learners to expend their energy on the learning task, not dissecting a horrible, cheesy layout. Graphic design should exist in the background, and visually communicate writing in an appealing and accessible way. The design supports the writing, but it doesn't take over the show. Imagine that you are grocery shopping online. Think of how the website or app looks and how you can browse items to add to your cart. What if the items you looked up didn't have the prices associated with them placed beneath the image, but instead the prices were placed on the sidebar and the images in the middle? What would your experience of buying food online be in that case? Even if the design

included strong typography, excellent color theory, and was beautifully designed, the lack of proximity would create a poor user experience for the shopper. Form over function every time.

Proximity tips

Tip: Do not be afraid of white space.

Even small mistakes with proximity can inhibit learning. We can more easily notice groupings when there is plenty of white space. We need to fight the urge to fill up every bit of white space with an image or textbox. Proximity is a funny concept in real life. We may love a hug from our kids or our partner and snuggling with our family pet is just the best. However, we are uncomfortable when strangers stand too close to us, pat our pregnant stomach, or peer too closely in our baby's face.

When we crowd things together in a cramped fashion, it makes learners feel uncomfortable. When we look at a design and see text crashing into images, we have a hard time reading the text. This causes excessive cognitive load. And the opposite is also true. When learners see items that are not grouped together logically, it causes cognitive overload, too. If an image caption is randomly placed off to the side, instead of directly under the photo, not only is this ugly, but it slows down the learner as they try to put the pieces together and make sense of the page. We don't want them to have to put together a puzzle, but rather align-items and group them in a way that makes sense logically and visually while allowing the white space to let the content breathe.

Grouping items reduces clutter and makes the

information clear, organized, and concise. Think about your desk at home, the office, or wherever it is your work. Do you have papers haphazardly all around? Thumbtacks willy-nilly, pens and pencils rolling off the desk and under your chair? Is your monitor far from your keyboard and your printer on another floor? No, of course not. If that was the case, you would have a hard time working, learning, or being productive at all. Proximity helps us locate objects faster so we can do our jobs. We want to preserve brainpower so people can use it on the learning we design for them, not expend it on trying to make sense of what we are asking them to do.

The author Robin Williams in her book *The Non-Designer's Design Book*, explains how the purpose of proximity is to organize. When information is organized well it is more likely to be remembered and we want to create experiences that are remembered. If our learners have a hard time getting through the content due to poor graphic design (like a lack of proximity), they won't read what the writer spent so long to craft. If they don't read the content, they certainly won't remember it.

In the figure below, you can see that items that belong together are grouped together visually. The cover of the report closely groups the heading with the subhead and separates the logo. In the table of contents, the header is separate with bold contrast while the content listing is grouped together with repeated spaces between line items. In the headers and call-out boxes on the subsequent page, you can see how proximity helps us determine hierarchy and reduces cognitive load so that we know how to navigate the page and where to find what we are looking for.

Tip: Squint your eyes slightly and count the number of visual elements on the page by counting the number of times your eyes stop. If there are more than 3-5 items on a page, see if you can group separate items by bringing them closer together into one visual unit.

Always aim for minimalism; ask yourself what is on this page, slide, video, webpage, or whatever it is you are designing and does every single thing need to be here? Can something be moved to another slide, or page, or omitted altogether? We want to simplify and distill information into its essence. Remember, slides are free, and its only 1 concept per page.

The best tips for proximity are to reduce the number of separate elements on a page and to group items if there are more than 3-5 elements. White space is your friend. Negative space is equally as important as positive space. Make it obvious. Remember contrast? We want to clearly delineate headlines from body copy and images. This means do not group them together with a font that is too close in size. We want to establish hierarchy and

contrast and use proximity to group only items that belong together. Do not create relationships between two elements that don't logically belong together. The phone number doesn't belong next to the headline and the photo caption doesn't belong next to the website. Think carefully about your arrangement of elements and be intentional in your learning design.

Suggested guided questions/projects to assess your understanding of proximity:

- Think about the last time you used a map of some kind. This could be digital, printed, on a billboard, anything at all. When you were finding your intended location did you pay attention to what was in proximity to it? Did you notice any landmarks, street signs, or even a key? Did you find your location easily? Yes or no? What could have been improved in the map or directions to get you where you needed to be?
- Create a map for a friend to a destination of your choosing using a key. See if they understand your design without you having to explain anything. Ask them what was clear or unclear. How does the proximity and design of a key help guide travelers?

14

COLOR THEORY

Color Theory Checklist

- Color is emotionally and psychologically in line with the project, learner, and brand.
- A digital color wheel or color scheme software was used to help inform color combination selections.
- There aren't more than 3 main colors and 2 supporting colors used except in rare circumstances or in specific use cases where you need to use colorful photos or illustrations.

Recently, we redid a bathroom in our house. We replaced the vanity and the fixtures and we realized we also needed to repaint. I looked at the color on the wall and said to myself, oh that is Colorado Grey by Benjamin Moore. I like to think I have all Pantone colors and the entire Benjamin Moore color palette memorized, like my

ability to detect fonts. It turns out I don't. I went to the paint store, got a can of Colorado Grey, and proceeded to touch up the areas where we replaced the fixture and realized the color was much darker than what was already placed there. At first, I thought, hmm, the paint is just wet but then once it dried, it was embarrassingly wrong.

Every time I would go into the bathroom, my eyes would fixate on this one spot and it would bug the heck out of me. I couldn't stop looking at it, it wouldn't blend in with the background, and I became obsessed with fixing it. I ended up having to paint the entire bathroom, Colorado Grey. But to this day, I am still not happy with this selection because it's just far too dark for the room and it communicates a different emotion than I was going for. Color is funny like that. The point is that we need to be intentional about color selection, and we need to make sure we are using the same exact color, not a slightly different variation when designing projects. Consistency is key with all these principles of graphic design. And if we don't use the same exact color for the headline of our course as we do in all the slides, our learners' brains will notice just like I noticed the tiny patch of color.

Always think about what choice you want to make before making it. This chapter will help you to make wise color choices, give your ideas on color schemes, and help you to understand the psychology of color. You will learn about how our different target audiences or learner personas perceive color – so we can design intentionally and thoughtfully while helping our learners enjoy and retain learning. When color is used incorrectly or inconsistently, it can cause accessibility issues, excessive

cognitive load, and general distaste. But, with a few simple tips, we can use color to transform our moods, our learning, and our lives.

Color Accessibility

Color accessibility has already been discussed in part 1 of this book, but it is mentioned again in this chapter because it is a skill worth mastering. When you use accessible color choices, you promote inclusive classrooms and cultures. It shows that you care about access and want your content to be available to all learners. Color is not perceived the same way for everyone and, with 5% of the population being color blind, we must remember to design in a way that is accessible to all. Be sure you check for color contrast before reviewing this chapter.

Setting up Tints and Shades

You can set up tints and shades in PowerPoint, Adobe InDesign, Illustrator, PhotoShop, Coolers.co, and Adobe.color to give you a full range of color spectrum for designing. When you start creating a color palette, you start with a single base color. You can then broaden the range of that color with tints and shades. Tints are made by adding white to the base color. The more white you add, the lighter you make your base. Shades are created by adding black to your base color. The more black you add, the darker your base.

The color wheel illustrates the full spectrum of hues, tints, and shades

If you observe the figure to the left you will notice the ring of colors in the middle are the hues ROYGBIV, the ring on the inside are the tints, and the ring on the outside is the shades.

Color Combinations

It is not easy to balance using color in an accessible way while still creating color combinations that are appealing to the eye, and that aesthetically do not cause irritating vibrations or visual tension. The key to achieving this is to use tonal variation as well as hue to contrast. In my example with red and green, we can use this combination only if we adjust the tone of each hue. Otherwise, we cause eye strain and we create a combination of colors that cannot be read at all by 5% of the population. Red and green are unique because they are a complementary color combination with the same tonal variety. Both turn the same shade of grey when converted to greyscale and when mixed as paint, they neutralize each other and turn into a muddy hue. Other complementary color combinations such as purple and yellow and orange and

blue have one color that is bright and light and one that is dark – this makes for both a solid color combination for both aesthetics and accessibility. Complimentary color combinations usually work because they have the highest degree of hue contrast and, when paired, they emphasize each other.

If we want to add in a third color, a split complementary triad is usually a good choice. You can select a complementary triad by looking at a color wheel and the complementary pairs. But, instead of selecting the color directly opposite of the other, you select the two colors that lie on both sides of that color. For example, if you knew you wanted red, instead of choosing green you would choose blue-green, and yellow-green. The combination would be red, blue-green, and yellow-green. Or red, blue, and yellow.

Tip: You can also adjust the tints and shades of the hue to add more contrast and interest.

Not everyone perceives color the same way because individual perceptions of hue and saturation can vary. Tonal contrast has the least variance in human perception of color, which is why designers should focus on providing enough tonal contrast to make the page as accessible as possible. Additionally, adequate tonal contrast can eradicate that irritating color vibration that can occur with poor color choices and ensure that anyone with color vision deficiencies can see the course components clearly. Besides turning your designs to greyscale to check for tonal contrast, you can also use settings software or online accessibility checkers to quickly examine your selections. Another quick way to

check for tonal contrast is to print your image on a black and white printer to see if there is enough gradation between darks and lights.

Analogous Color Combinations

Choose color combinations with care. Some color combinations make it easy to read text while others color strain our eyes. Below is a simple table set with colors that may look good together, but don't always read well.
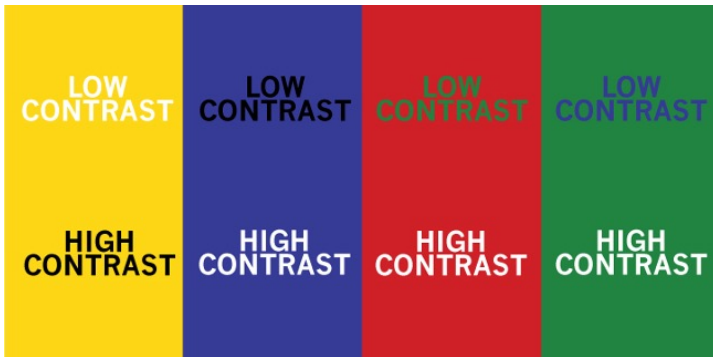
High contrast colors are easier to see in small and large sizes.

The red background with green text has the same tonal value (which makes it hard to read for the red, green color impaired), and also causes color vibration or eye strain. The blue on the green is also the same value and has very little contrast. Blue and green are close to each other on the color wheel, so when we select colors to use in a brand, a logo, or a design, we know colors that are close together on the color wheel always look good, but when text is concerned, we need to be careful.

Colors located next to each other on the color wheel are called analogous. These may include red, orange, and yellow or blue, green, and purple, or blue-green, green,

yellow-green. There are no rules saying you can't use these combinations, but when you are using them in typography, you need to make sure the values are appropriate for strong contrast.

Yellow background with blue text works and vice versa because yellow is lighter and brighter and blue is deeper and darker. You can also adjust the shade to get a better combination of colors. For example, the violet on the hot pink doesn't work because it's too close in value and causes eye strain. But, if we really need to combine a purple hue and a pink hue, we could perhaps make the pink a pale pinkish lavender on a dark eggplant color.

In the figure on the left, there are reds, oranges, and yellows which are considered analogous because they are close to each other on the color wheel. Any combination of 2-3 swatches close together on the color wheel would be considered analogous. To make the combination accessible you need to be aware of tints and shades. Dark red and bright yellow contrast effectively but orange-yellow and orange-red do not.

Primary and secondary colors
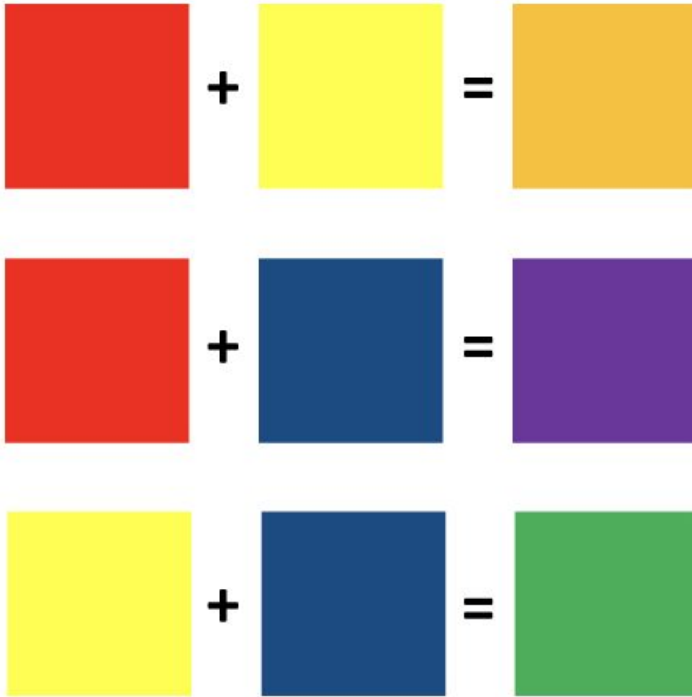
Mix a primary color paint or ink with another to create a secondary color.

The primary colors are red, yellow, and blue. Every child has a memory of mixing these paint colors to make an assortment of other colors in the rainbow. If we are talking about paint or ink, red and yellow make orange, yellow and blue make green, and red and blue make purple.
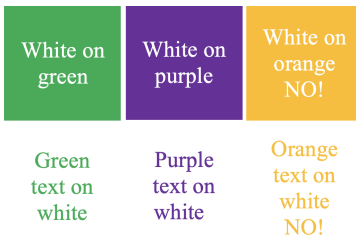
If we were to mix any two of these secondary paint colors together, however, we would get brown because they neutralize each other, just like if we were to combine complementary paint colors.

Red and yellow alone are used often in graphic design and so are yellow and blue. But it is rare you will see a red, yellow, and blue color combination unless we are designing something for primary school or very young children. Psychologically, we associate this combination with children and for this reason, we want to avoid using the three of them together.

We can use secondary colors – green, purple, and orange – and know this combination will also look good together.

White on green	White on purple	White on orange NO!
Green text on white	Purple text on white	Orange text on white NO!

Secondary colors are equally spaced on the color wheel and create a visually appealing aesthetic. We do have to be careful with using certain color combinations with our type choices. The

thickness of the type of font we select can also make a difference in readability. Secondary colors are hard to read against a white background but using color blocking and a thick bold font can work well for accessibility.

Many of the templated designs you see out there have a sans serif font on a color swatch. This is an accessible way to design if the contrast is high. But, keep in mind, that if you never break from the template mold, the designs can start to look common and boring. Also, keep in mind, not all color blocking is accessible and some fonts can be hard to read in certain colors.

Black on white

White on black

Green text can be too hard to read on white and orange doesn't have enough contrast, but purple, if it is dark enough, has sufficient contrast and no color vibration. The blue text should be avoided as users will mistake it for a link. If the color block is dark, white text is best, but if there isn't a color block behind the text block, dark grey or black is best for text color since the contrast ratio is the highest.

complimentary

split complimentary

analogous

split complimentary triad

In the figure to the left, there are some common color combinations that are derived from the hues of the color wheel. To increase contrast, you can always add a tint or shade to one of the colors. Visually the swatches look good together and you can't go wrong if you use these combinations as a base while modifying tone and value (when needed) for accessibility and contrast.

Psychology of Color

Color is a powerful element of graphic design and has the power to evoke an emotion, grab attention, encourage click-throughs, and even change purchasing behavior. Specific colors are correlated psychologically to certain attributes. When a logo is designed for a Fortune 500 company, the designer doesn't just randomly select a color on a digital color wheel. It isn't Russian Roulette. We need to be intentional with color selection. Our minds are triggered by certain colors and combinations of colors. We correlate experiences with color much in the way that we use the sense of smell to conjure a memory. The most famous example is the use of red

and yellow in fast food advertising. These two colors when used congruently cause a response in the brain that makes us hungry (Urie, 2018).

Next time you drive by your local fast-food joint, pay attention to the color scheme. Burger King, McDonald's, El Pollo Loco, Checkers, Hardees, In and Out Burger, and Carl Jr. all use red and yellow in their logos. There are dozens of examples of how we can attract our audience, engage their interest, and carry them through a learning experience through the use of carefully chosen colors.

Tip: Color Matters, (formerly called the Institute for Color Research) has done some extensive research on color and found that color can improve learning from 55% to 78% and boost comprehension by 73%. Additionally, colored images are recalled more than black and white images, which helps improve memory and long-term retention.

Color can also evoke emotions in e-learning by giving our brains signals to the endocrine system. Our brains release certain hormones upon seeing color. Cool colors have a calming effect with a release of dopamine and serotonin, while warm colors can evoke excitement or stress and with it, cortisol, and adrenaline. We want to use color to establish an emotional connection to the learning and induce the desire to achieve.

Red

The color red is associated with passion, love, danger, and excitement. It is a warm color and it is attention-grabbing and energetic in nature. Since red is the most intense color on the spectrum, it is often used in call-to-action buttons on websites. It stands out among other colors and is also a common choice to indicate that there

is a sale. Red should be used sparingly since it can trigger strong emotions such as anger. Red is a popular choice among companies for logos. Red is used in Target, Legos, Rolling Stones, Nintendo, Ace Hardware, Coca-Cola, and YouTube among others. As mentioned, red can cause hunger so it is often a good choice in the fast food and beverage industries like Coca-Cola. Coca-Cola's brand voice is exciting and happy and their messaging, ads, and package designs use language that demonstrates these emotions. YouTube uses its red icon to create excitement around watching videos. The play button icon invites the user to click play on their videos. You can use red in e-learning to attract attention and inspire excitement to follow through on the call to action.

The figure to the left is an educational sales sheet we did for a Stand Up Paddle Board company that offered lessons, excursions and was also a reseller of paddleboards. The logo was red to express the passion and excitement of the sport and the red was repeated for emphasis in the piece for emphasis.

Orange

Orange represents optimism, energy, creativity, enthusiasm, adventure, and success. Orange is a vibrant color often used as an accent or for a call to action. Another reason it is a great choice for design is that its bright hue contrasts and combines well with black.

Orange is not as commanding of our attention as red, and it doesn't have any negative connotations as red does. Examples of logos that use orange are Home Depot, Nickelodeon, Fanta orange soda, Amazon, and Harley Davidson. Home Depot represents creativity with do-it-yourself projects and Nickelodeon communicates enthusiasm and plays since it is a children's Television channel. Fanta orange soda was a staple at birthday parties in the 1990s and although recent trends point to a decline in sodas for children, many adults recall a bit of nostalgia when spotting it in the store.

Amazon cleverly uses a hint of orange in its iconic smile logo. They know the excitement of an Amazon box being placed on your doorstep can cause an adrenaline rush and it goes without saying that Harley Davidson customers enjoy a bit of fun and excitement in their lives. Orange brightens our lives and enhances our designs. We need to be careful not to go overboard with it, as the neurodiverse can be sensitive to an overload of bright colors. For example, I wouldn't recommend that orange be used for the entire background of a course or slide.

Orange works well as an accent color or a call to action,

but if we style everything in orange, nothing will stand out. Additionally, due to its light and bright hue, it is not a good choice for font color unless it is on a darker background like black. The figure above is a logo we did for Brighter Higher Ed and includes a strong accent of orange.

In the figure to the left, an orange-infused job aid is displayed for a continuing medical education conference (CME). The topic of the conference was about targeting a specialized cancer medication dose and so it portrays orange and red as a sense of urgency along with the target-like graphic elements.

Yellow

Like red and orange, yellow is a warm color. It is close to red and orange on the color wheel. One half of the color wheel contains warm colors – red, orange, and yellow (and red-orange and yellow-orange) and the other side of the color wheel contains cool colors – green, blue, and violet (and green-blue and blue-violet). Designers will often pair a color on one side with a color on the other to get the most contrast while creating a pair that looks aesthetically pleasing together. Yellow is similar to orange in that it acts as an accent color but it cannot be used alone in a design due to readability. We cannot set

text in yellow unless it's knocked out on a dark-colored background.

Yellow represents happiness and sunshine and radiates positivity. Think of a bright and cheerful summer sun or shining buttercup. However, yellow is used frequently in signage to demonstrate a warning. Think about the yield signs on the highway, or the police ribbons at a crime scene, or the yellow in a stoplight that warns us to slow down. Since yellow is attention-grabbing, you can use it as a call to action in your e-learning or as a way to encourage folks to purchase something on your website. Often, we see "free shipping" set in yellow and black.

One of the most iconic logos uses yellow in a grandiose way: McDonald's. The golden arches are meant to attract children and communicate fun, luring them in with a promise of tasty food and a surprise in the Happy Meal. Ikea also uses yellow in its logo and branding. Going to IKEA is an experience filled with bright light, an open floor plan, and interesting products displayed in creative layouts. Its stores often have multiple floors with a food court, a daycare, and a friendly staff. The audience is first-time home buyers, people moving out of their parent's house for the first time or graduating college. It is a time of optimism for the future and is a great choice for the target audience. Other yellow logos are National Geographic with its yellow rectangle and black text, a perfect golden ratio that suggests living in an adventure and seeing the world through your unique lens. Ferrari is also yellow because driving a Ferrari is the epitome of fun and it's exciting, and yellow is a perfect color to communicate that.
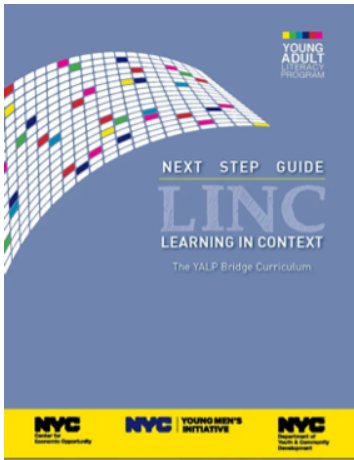
Next Step Guide Learning in Context Curriculum Guide for NYC

The Next Step curriculum guide we designed for the Young Adult Literacy Program had a bright yellow stripe that complimented the warm color of the blue background and communicated positivity in learning, which made it a perfect accent color.

Westhampton Beach Brewing Company Maibock can

We designed the Westhampton Beach Brewing Company logo and their entire line of flavors including the Maibock. The yellow Maibock beer can and the yellow is clearly used to demonstrate fun and whimsical. The goat in board shorts adds an extra layer of fun to the motif.

The first design and flavor in the lineup.

In the Beach Blonde you can see a paler version of yellow to demonstrate the pale ale flavor. Although more subdued, the yellow is still seen as a fun on brand choice for the design. Each can contains a signature metallic icon, in this case, a female surfer running to the shore with a surfboard.

Pink

Pink is a warm color close to red on the color wheel. It is not a popular color for logos because many still associate it with a feminine audience. So, unless you want to narrow your audience and only attract people who identify as female, you generally want to avoid using this hue as the main color in designs. In psychology, pink means femininity, frivolity, playfulness, youth, idealism,

and unconditional love. Pink is a good choice for product packaging for girls' toys. In fact, Lego has only in the last couple of decades purposely marketed to girls. By changing the color scheme to include pink in some of its packagings, it has created a larger market share among young girls. Victoria's Secret has an entire line called Pink and capitalizes on the femininity of the color to sell to women. Barbie is another product that uses pink in its website, package design, and marketing. Hot pink is often used in navigation bars, a call-to-action button, or to call out a specific area of the page. Pink has a high contrast ratio with black and is a technically accessible choice, however, it is not always an emotionally accessible one.

The figure to the left is an example of a logo we created for an organization whose mission is to change pregnancy, birth, and postpartum including doula services and birth education. Purple and pink is the perfect color scheme directed at women to make them

feel like royalty, pampered, and cared for during the pregnancy and postpartum period. Birth and Beyond Resources supports families in pregnancy, labor, birth, and postpartum. They are dedicated to helping the birth and postpartum community.

Green

The psychology of the color green signifies nature and wealth. Green can mean growth and fertility, like the plants on a new spring day. Green can also represent health and generosity. Companies that want to be perceived as promoting wealth and financial wellness will use green, like H&R Block, Fidelity, and TD Bank. Green can have one negative connotation: envy. Green is often added to goods and services to convince people they are selling something healthy. For this reason, you will often see green in the health and fitness world. The farming industry has also been using green for half a century. Take the iconic green John Deere logo on tractors and lawnmowers. That unique color is instantly recognizable to mean high-quality lawn and farming equipment. Green has become a popular color in both logos and marketing in recent years. Companies wishing to appear eco-conscious and healthy will use green. Animal Planet, Whole Foods, Starbucks are an example of this. In e-learning, it is a popular choice, especially for the pharma, health, and medical industries, and for good reason. Green is considered a cool color and is calming in nature.

The figure on the left is the E3 Smart Build Training Center logo we designed which is part of the housing division of the United Way of Long Island. According to the website, the E3 SmartBuild Training Center is a state-of-the-art lab where students can come to learn building science, energy efficiency, and green construction. A partnership between United Way of Long Island and the New York State Energy Research and Development Authority (NYSERDA), the E3 SmartBuild Training Center is a tool that United Way of Long Island uses to offer expanded career opportunities to residents and local businesses in the green construction and energy efficiency industry. With this lab, United Way of Long Island is providing tomorrow's workforce with the skills needed to build a Long Island Community of the future that leaves a lighter footprint on the environment.

The before and after of the Suffolk County Junior Tennis League website above and logo rebrand is shown to clearly demonstrate a cleaner, user-friendly site with tennis ball green being used as an accent color. The limited color palette creates a more professional look and feel.

Blue

Blue is a cool color as well. It is the most popular color for logos because it stands for stability, calm, peace, and trust. It is linked to the sky and sea. The only negative

meaning blue has is that it can be linked to depression and its hue can be a bit cold and stoic. Blue is used often in website navigation to ensure trust. The Better Business Bureau icon is blue to demonstrate a sense of trust and security. Technology and pharmaceutical brands often use blue in their marketing to ensure safety, reliability, and trust. Some examples are Facebook, BestBuy, Twitter and Zoom for tech and Oral-B, Pfizer, Roche, and Bristol Myers Squibb for healthcare and pharma. Chances are, your local hospital and dentist uses blue because they want their patients to feel calm versus anxious when they arrive. Blue can make people feel sleepy, so if you want to energize your learner, you want to avoid an excess of blue.
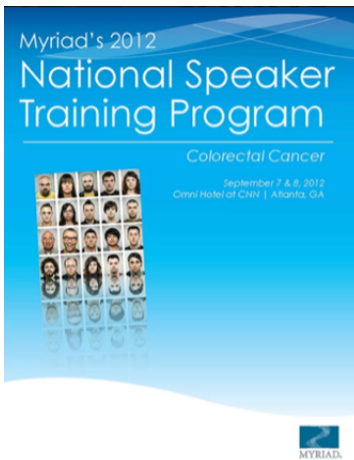

The figure to the left is an example of a poster we designed for a CME conference for Myriad Genetic Laboratories along with a presentation deck, signage, conference, and curricular materials. The blue represents stability, and trust and the cool color is common in the healthcare industry.

Medical settings are intentionally painted with cool colors to lower anxiety.

Above is an orange wall with a dentist in red scrubs which may produce anxiety in patients. On the next page is a cool, white medical office that feels sterile and calm. Which one would you prefer to be in?
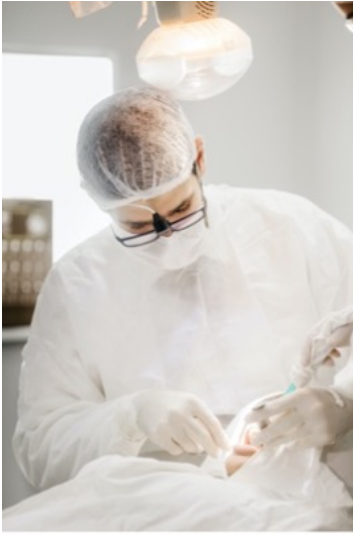
Color can be used to communicate a clean and sterile environment.

Blue demonstrates stability, calm and cool. Cool colors make us feel trusting and they can have a calming effect. A nightclub shouldn't be painted blue since it is a place of high energy. A dental office or doctor's office is often painted in blue as they care about calming the patients inside. In the photos below you can see examples of warm and cool colors in a medical environment. Pay attention to the way each makes you feel when you imagine yourself in the role of the patient.


The Vanderbilt Museum logo in green, cyan, and dark blue

The Vanderbilt Museum logo rebrand we did uses blues and greens to communicate the three-part destination: the mansion/estate, the planetarium/sky, and the Hall of Fishes Museum/water. The Vanderbilt Museum is set on acres of rolling hills along the shores of Northport harbor. The stars in the logo represent the celestial star of the sky, the sea star from the sea, and the iron metalwork star repeated throughout the mansion.

Purple/Violet

Purple is another cool color that signifies royalty. This is because centuries ago, peasants couldn't afford to dye their clothes and were usually adorned in natural colors of brown and tan; royalty and the upper class were able to have access to the dyes that create a deep color. Purple is one of the darkest hues in the rainbow and required a lot of dye to achieve the result. Purple is also connected to power, luxury, and nobility for this reason. It has also been associated with intuition, spirituality, and wisdom. Purple is often used with gold or yellow since they are complementary and the combination can look very royal and sophisticated. Purple can come off as arrogant, however, especially if it is on a product with a high price point. Using purple can communicate high quality that often comes at a higher price point. For educational institutions, if you want to attract a higher-income demographic and make them feel like they are interacting with a sophisticated high-quality course, purple is a good choice. Some popular purple logos are College of the Holy Cross, Louisiana State University, Hallmark, Yahoo, and Cadbury.
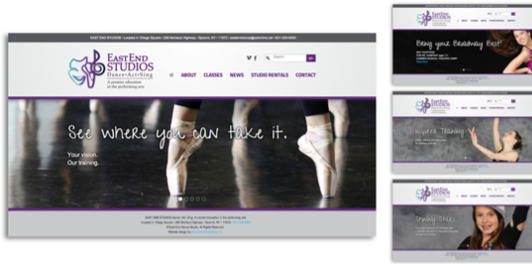
A website re-design that used purple to communicate the premier performing arts center on the east end of Long Island.

We designed a corporate identity system, website, brochure, and more for a dance studio that was rebranding itself to include more offerings in the performing arts. Located on the East End of Long Island, it was considered a high-income area, and the quality needed to come across, hence the purple.

White

Using white in design has been associated with cleanliness and innocence. In some parts of the world, white can mean something else. For example, in China, people wear white to funerals, but in America, doctors wear white to signify sterility and cleanliness: two very different meanings from the same color. All-white kitchens are popular and it is a common occurrence to see a home with white walls, white backsplash, white cabinets, and white countertops. This is a trend that

people currently prefer for kitchens because of their sterile and clean appearance. It doesn't always feel inviting, however; white can feel cold, sterile, and stoic, and too much of it lacks warmth.

In e-learning, white is often used as a background with black text on top because this is the easiest combination to read as far as a contrast ratio. When showing off products in a gallery or e-commerce website, you want to use a white background to highlight the product and let it shine through. Some logos that use white along with another color (since white-on-white logos cannot be seen) are Adidas, Nike, Dove soap, World Wildlife Federation, and Apple. The figure below is an example of the generous use of white space in a course. The white space around the text takes center stage, while the header image pulls the viewer in and the button encourages learners to peer inside the course. A white background is used to create high contrast against black text and allows for a more sterile/corporate look and feel.
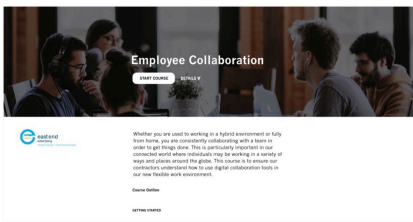
In the workforce development report below, you can see the strong use of white space/negative space around the icon, logo, and title. There is just enough graphics to pull you in and help you understand the material, but not so many that you don't know where to look first.

Black

Black is a very popular color in course design since it has

high contrast against white. The contrast ratio makes it a good choice and allows for the text to be read easily. The psychology of the color black is symbolic of power, elegance, sophistication, and mystery. It can also have negative connotations of rage, depression, or sadness. Black is one of the most popular colors in fashion and it is seen in logos like DKNY, Chanel, Gucci, Kate Spade, Kenneth Cole, and Calvin Klein. High-end brands love black because it is the deepest, darkest color, and the most sophisticated. Think about the last black-tie event you attended. The men probably wore black tuxedos or suits, and the event was probably formal and sophisticated, perhaps a wedding. The color also conveys power and prestige. Have you ever noticed that judges wear black robes? If judges wore pink or yellow or multi-color robes, their authority would be questioned. Black represents authority and boldness, two character traits that judges need in their job. Other people in authority who wear black are clergy, politicians, and businesspeople. When someone goes on an interview, their choice in a suit is often black. Wearing black demonstrates competence and professionalism.

Black History & Culture Academy In e-learning, we often deliver prototypes in black and white until designs are finalized. This avoids color aversion from clients. If a client sees a good concept and prototype designed with a color they dislike, they may eliminate the choice altogether. By designing in black first, you focus on nailing the design and then offer a color exploratory to select an appropriate palette.

With the Black History & Culture Academy logo, you

can see the use of black communicating power. Elizabeth Leiba designed this logo, but we helped her tweak it slightly.
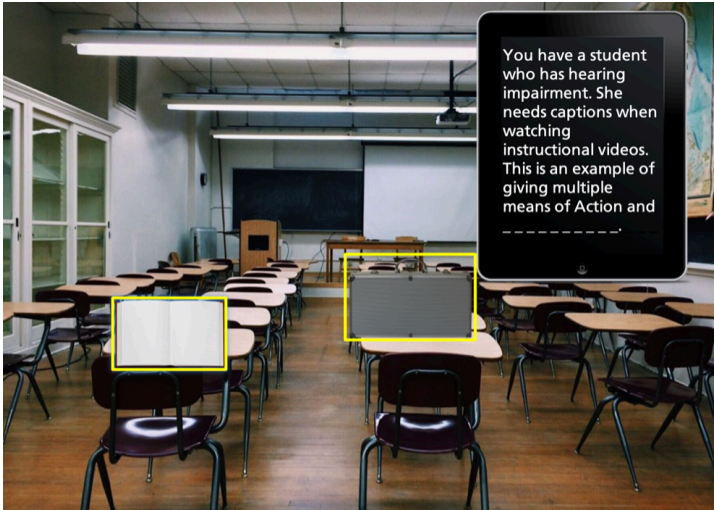
Color choices are even more important when there is text on an image. Aim for strong contrast and avoid distracting brightly colored typography.

In the mock-up of an e-learning escape room on Universal Design for Learning, you can see the black tablet is used as a backdrop for white text. Black is often used in the tech industry since it is powerful, smooth, and sleek and in this case, it makes for a strong contrast ratio.

Would you trust a judge in a black robe or one in a multicolored robe? It is hard to think of the one in bright stripes as in a position of power and authority. Judges adorn black for a reason.

Brown

Brown is an earth tone, the color of soil, dirt, sand, wood, and stone. It represents all-natural and is often used in the packaging of natural consumer goods, such as a brown bag of organic coffee or the tags of an organic

cotton clothing company. It represents security and comfort and down-to-earth nature. It is not as much of a commanding presence as black or purple, but it is a practical, no-nonsense color that communicates reliability. Think about the brown Amazon packages that arrive on your doorstep. They came on time in one piece. UPS has a brown logo, uniform, and truck for this very reason. They want to communicate reliability, trust, and dependability. As far as application to e-learning or graphic design, we want to apply brown as text over a white background or as a brown background with white text. We can also use color to dress it up and decrease its dull factor. A good choice would be green or yellow since together they represent nature, earth, and growth. Brown and green psychologically complement each other. Just be careful layering them together with text. Green text is never readable, no matter what background color you have. Brown text can be read, but make sure it has a darker tone to contrast effectively against a light background.

Brown is predictable, stable, and reliable but would you want to open a pile of brown boxes on your birthday or brightly wrapped ones?

The brown is chosen to represent the dark color of a signature stout.

For Dorset Maple Syrup we designed their logo (found in the label) and some package design/label designs for their products. The brown color of the syrup shows through intentionally and the fall color scheme with browns, orange, golds psychologically communicate high quality, bourbon barrel, homegrown Vermont maple syrup. The sheen adds to the sophistication and is in line with the price point – a reflection of quality.

Grey

Grey is considered a neutral color and is the shade between black and white. In color psychology, grey represents neutrality and balance. It has a cold, cool, and stark feeling to it, much like white and it can sometimes represent dullness or depression. It can also be used effectively with black and white to communicate sophistication and high tech. It is a common choice for

technology companies. Dark grey is often used instead of black for text to soften the look of the design. This is a stylistic choice and it depends on how commanding you want your voice to look. If using grey for text in your e-learning, make sure it has a strong contrast ratio.

One of the most appealing qualities of grey is that it can be used to appeal to a large audience due to its neutrality. You will notice many Apple products come in grey or silver. This is because their minimalist high-end, high-tech brand is meant to also communicate accessibility and clean design. Additionally, using grey appears gender-neutral in tone and brand. Apple appeals to both the engineer and the designer and avoids appearing too masculine or feminine. Grey is a strong choice when you want to select one other color to pop against it – a tactic that can be used with black as well.

Grey pairs well with any color and can be darkened or lightened to create sufficient tonal contrast with other elements in the design. The next figure shows how a grey course homepage can benefit from a mustard-hued pop of color. Grey is an excellent canvas against which to contrast a strong color against.

In the image of the chair in the corner, your eye is drawn to the mustard-hued pillow in an otherwise neutral room.

Grey is a neutral color that can work with a variety of hues.

In the course homepage mockup (above), the mustard color is used as an accent to pull in the reader and entice them to select a course offering. High contrast is used for easy readability.

Branding with Color

While this book focuses on e-learning and course design, it is important to discuss brand and tone as it relates to graphic design. Branding affects the psychology of your course and the perception of the organization that is delivering it. Although you may not have a choice in the colors used for the logo, website, or marketing, you can often make color selections in your course that align with the brand and clearly communicate and attract the learner in an accessible way. When deciding colors in a course, it may be beneficial to learn more about the current trends in color and the psychology and meaning behind them. Color selection can be challenging as we want to first design intentionally and ensure our learners can read the text and course elements. Then, secondly, we want them to fall in love with the brand, connect to it in an emotional way and engage easily with the content. People fall in love with brands; they recognize them from afar, they display them on their shirts and hats, they become loyal customers for life. When we design our courses, we want our learners to feel that same connection, and color can help us to achieve that.

People fall in love with brands and form emotional ties

An analysis of United States Patent and Trademark Office data concluded that red and blue were the most popular colors in logos. The next most popular colors, in order, were green, yellow, orange, brown, gold, and lastly, violet. Further research shows the breakdown by industry, which tells a very different story. For beverages, the most popular color by far is red, then blue. Chemical logos had blue as the most popular as well. Hospitality is red, and insurance is blue. Medical companies were mostly blue, pharma mostly had blue, and so did telecom.

This doesn't mean you have to follow suit. But, when designing a logo or course, it is important to research the current product/service category to make sure your design doesn't come out of left field. It should feel a part of the product or service category. Occasionally, you can make an exception, and I only advise this when your client is a Fortune 500 or large company with the budget to introduce its product through multiple marketing channels. An example of a successful company that strayed from the usual color scheme of a service category was TD Bank. TD Bank was successful in using green in its logo, and prior to its launch, most banks had not been so bold to do so. It makes sense to use green to communicate wealth, but blue recently had been the more stable, conservative color. In fact, you often would see blue logos with serif fonts years ago. Since then, banks have been rebranding with bold sans serif fonts and bright colors.

Overall, color choices should match your client. They should feel like they belong to the product or service category. When you design courses, you must think about the learner experience, and how the colors will make them feel about the content and brand.

In the Simfit logo, a calm cool color is paired with a warm color to make the logo pop.

Simfit is a modern, holistic health and nutrition company with subscription exercise classes.

Color choices can transform the learning experience

Color choice can reduce cognitive load, increase memory, and direct attention. Use color to help create transformative e-learning. A well-chosen color scheme can reduce cognitive load because learners will spend less time trying to access and understand the content and use their brainpower on the learning itself. For example, too many bright colors can cause eye strain or make the learner feel agitated compared with a cool color scheme with strong contrast so that learners can focus on the information/content on screen.

Color Stats according to elearninginfographics.com

- Colors can improve learning from 55% to 78%
- Color can enhance clarity and readability by up to 40%
- Color can help improve comprehension by 73%
- Highlighting text with a high contrast color can incite action. This tactic is used in the billing industry and when invoices were highlighted they were paid 2 weeks earlier on average.
- Green can encourage creativity
- A red chromatic learning environment can help increase concentration
- An indigo/blue chromatic learning environment can stimulate intuition
- Warm color schemes promote productivity in an office setting

Colors help learners to memorize information by increasing focus on the material. Warm colors are attention-grabbing and can be used to call out select

pieces of content in e-learning. This draws the attention of the learner and helps them remember key facts like what to do or not to do, data, illustrations, and examples. Colors can also improve readability on the screen and give more clarity to the learner.

Color is a nuanced part of graphic design in which many factors need to be considered. It is not a matter of randomly selecting one, but being intentional in your choice, which allows for accessibility, tone, and aesthetics. It will take some practice but by studying other designs, getting feedback on your work, and using accessibility checkers, you can in fact use color to reduce cognitive load and create a better learning environment.

Suggested guided questions/projects to assess your understanding of color psychology:

Go to the website Adobe.Color. Hit Explore. Type in keywords for a course you are designing or thinking of designing. Now check it using a digital contrast ratio to see if it is accessible. Think about how you can apply the colors in the theme and still enhance readability. Perhaps you don't have to create colored text, but maybe you use the colors for buttons or background shades. Play with the tints and shades until you find an emotionally accessible psychologically sound color combination that is also technically accessible.

15

TYPOGRAPHY

Typography Checklist

- Fonts are at least 12pt in size and line height is at least 120% of the font size.
- All caps are avoided unless in an H1 header and in 7 words or less.
- Bold and italics are used sparingly, never combined and underlined text is avoided.
- Negative tracking is avoided and positive tracking is applied when the font is too condensed.
- Type is simple, readable, legible, and emotionally, technically, and functionally accessible able to be read by dyslexic, visually impaired, and aging adults.
- Fonts are emotionally and psychologically in line with the project, learner, and brand.
- Avoid hyphenated text, widows, and orphans.
- Avoid line lengths that are too short or long and line lengths longer than 100 characters are split between two columns

The practice of arranging type well is one of the biggest predictors that readers will engage with the text. Typography is a nuanced art that many spend years perfecting. However, one can greatly improve their abilities with a few basic concepts, more awareness, and some practice. The typeface you choose makes a big difference in determining whether a design is considered good or bad. Legibility, readability, and human behavior all play a part in font selection and groupings.

I took several semester-long classes in typography, yet I still didn't consider myself a master and in fact, I was reminded of this embarrassingly on one of my first interviews. I vaguely recall sitting in the office of the Chief Creative Officer as he flipped through my book. (Yes, years ago, we used a leather-bound zipped-up binder with plastic sleeves to showcase our work.)

Leather-bound portfolio cases were used to carry print ads and printed images of digital work.

Anyway, the slow act of a creative director turning the pages of my portfolio was enough to give me heart palpitations.

I literally watched him mentally tear it apart, all my vulnerabilities out in plain view for the world to see. As I watched the creative director turn the page, I saw him smiling. We conversed about my projects and work until he stopped at a page, frowned, and then shut the binder, zipped it up, and handed it back to me. I looked at him, waited for some sort of response or feedback. When I got none, I mustered enough courage to kindly ask what the next steps were in the interview process.

He responded, "I am done. There is nothing else I need to see. In fact, when I got to your highway

billboard example, I realized you weren't putting in the level of detail we need at this firm. You see, your lowercase 'a' is too far away from the capital 'W', which means you let the default setting do the job and didn't take the time to kern the letters in a space where every letterform counts."

Wow. He opened up the portfolio again and pointed to the example. I thanked him for the detailed feedback and his time, and quietly left the office. This lesson isn't about kerning per se, but knowing how to apply graphic design theory and being intentional with your choices sets you apart from the competition. Those small details make a huge difference. Do you want to be a high-quality designer or a "meh" one? Which do you think earns higher pay? Which do you think gets to work on more known products or bigger clients? Which do you think will stop a hiring manager in its tracks in a positive way?

Typography, like color, is a complex and nuanced subject. For this book, we discuss the psychology of typography, how to select fonts, font categories, combining fonts, and how to set type in a more accessible way. By being intentional with typography we can work to reduce cognitive load. Typography can be beautiful when done well. Typography exists to make the writing easier to read. It is not meant to be a decorative element to adorn the page. Type makes the experience of navigating the learning easier and more enjoyable for the student. Typography communicates visually and works with the elements on the page to transmit messages, inform, and inspire.

Font categories

Fonts come in a few different categories. It is good to learn them all and to understand when and where to use them, and how to identify them. Once you learn how to identify the font category, you can become more successful at combining fonts. There are several different font categories including serif, sans serif, decorative, and script. The font in this book is set purposely with an old-style serif. I wouldn't have it any other way. I am a voracious reader of books, journal articles, and all sorts of long-form content. Serifs are the best for this use case because they help lead the eye from one letterform to the next, and from one word to the next just by their inherent design. Serif means feet, and if you zoom in and look at the letterforms you will see there are little – "feet" on the bottom of some of the letters like r, m, n, l, s, d, h, I, l, x, z, u, a. Serif fonts, like the one in this book, tend to be traditional and have been used for centuries, dating as far back as Gutenberg.

Old Style Fonts

The font set in this book is Times New Roman. It is a serif font that is part of a category called Old Style fonts. You can tell this because of the moderate variability between the thickness and thinness of the letterforms. You can also tell by the slight axis of the letters. If you look closely at the O, for example, and examine the spots where the letterform is most thin and draw a line through those two spots, you will see the entire letterform is on a slight axis. There is also a slight curve to the serifs, as they are wedge-shaped and slightly angled. Old Style fonts have just enough sturdiness because their variability doesn't

cause eye strain over time. It also saves ink if you were to print something compared with using a heavier, thicker font. Old-style fonts are a classic, and will most likely be set in books, newspapers, and magazines for as long as print is still around. Some examples of Old-Style fonts are Times New Roman, Adobe Jenson, Garamond, and Goudy Old Style.

Chances are, you have a few old-style fonts in your font library. These fonts are in fact old, so old that they were created between the 15th and 18th centuries. You can identify the font by curved strokes with left inclined axes and a little contrast between thick and thins. Serifs are almost always bracketed in old-style designs, and head serifs are often angled. The lowercase "e" in some versions features a diagonal cross stroke. When you study these characteristics over time, you will be able to develop a superhuman ability to identify fonts, their history, and their place in this world. The figure below is a diagram of some common identifiers of old-style fonts. An example is Adobe Caslon.

Slab Serif

Slab serif is a font that has thick heavy feet/serifs. They

are not quite as dainty as an Old Style. Fonts set in a slab serif are often found in children's books set in a very large point size since their exaggerated serifs help young readers get from one letter to another. It is not a wise choice when set in very small fonts (like in a novel) as the slabs can appear a bit clunky, almost bumping into each other. Slab serifs work well for headlines and in large sizes. Some examples of Slab Serif fonts are Clarendon, American Typewriter, Rockwell, and Courier. They do not have much variability in letterform thickness and tend to be uniform without any slants. Slab serifs that look like a typewriter font can be used in a decorative way, again set large maybe as a title of a book. Slab serifs pair well with sans serifs. The figure below has a diagram of a slab serif, in this case, it is Super Clarendon.


Modern Fonts

Modern fonts are a type of serif font and they are used very selectively. When I say modern, this doesn't mean recent. Modern fonts are a category of typography. You often see them as a title in a fashion magazine or a billboard for a movie or event. You can tell a Modern font by the large variability of the thickness of the letterform and the lack of an axis.

The letters stand very straight and tall and were quite

popular around the 1920s when the Golden age and the style of Art Deco seemed to permeate all forms of design with the same tall thin shapes. Modern fonts became a symbol of aristocracy, which is still associated with the font category today. Even though we may want to use typography to create this feeling of high-end luxury, we want to remember to use this font in moderation. It is not the easiest to read and is best used when set in 5 words or fewer. Some examples of Modern fonts are Modern, Billboard, Bodoni, Didot, and Didone. Figure X contains a diagram of a modern-style font.
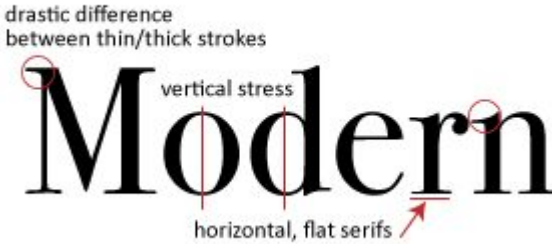
Sans Serif

Sans serif fonts do not have serifs. They also have very little variation in stroke width and tend to appear rounded and upright. They convey simplicity. The Swiss Dot movement, which was all about minimalism and clean lines, helped to catapult the popularity of the Sans Serif. Helvetica for example permeated society and still does. You can see Helvetica on government forms, signage, posters, ads, e-learning, college campuses, and pretty much everywhere. Sans serif fonts are the most popular typefaces in e-learning because they are the most

suitable for short bursts of text. This is why it is the go-to category for all social media, most websites, blogs, and apps. Some examples of popular sans serif fonts are Helvetica, Calibri, Lato, Arial, Century Gothic, Avenir, Avant Guard Pro, Montserrat, and Franklin Gothic.

Some Sans Serif fonts are more readable than others, and one way to examine this is to look at the "x" height of the lowercase letters. If you notice the lowercase 'a" reaches almost as high as the ascender of the lowercase "d," your font has an especially high x-height. This can cause barriers and make it harder for learners to read the content. To review what an ascender is take a peek at the figure below.

Ascenders are the parts of the letterform that extend beyond the x-height. Descenders are the parts of the letterform that extend below the baseline.

The font Hobo is considered decorative but it is a sans serif font as well and a terrible one to use in e-learning. Why? Because there are no ascenders or descenders, and the x-height is too high, which confuses learners when they try to decipher words. The "a" and the "d" are too similar, and the "n" and the "h" are often confused as well. Readability is an important issue, not only for the visually impaired but also for the neurodiverse.

ABCDEFGHIJKLMNOP
QRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz
0123456789

The Hobo font lacks ascenders and descenders and those attributes combined with a high x-height make it difficult to read and a poor choice.

Another font to avoid is Papyrus. Papyrus is overdone and seen on so many Mediterranean restaurants, spas, nail salons, thrift stores, you name it. Papyrus is also extremely hard to read. The letterform is purposely decomposed and degenerative and the strokes can be hard to decipher from each other when set at small sizes.

ABCDEFGHIJKLMNOP
QRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz
0123456789

Papyrus is a tired font used for way too many applications but not in a classic sort of way. It is hard to read, and literally feels degenerative in nature as if the ink has started to come away from the letterforms.

Conflicting Studies on Comic Sans

If you ask any graphic designer what they think of Comic Sans, they will likely commiserate on the perils of using this font. Usually, they will state their dislike of the font, and explain their rationale. If you Google Comic Sans you will find apparel, posters, and websites devoted to hating on the font. Comic Sans was developed for comic books many years ago and resultantly, it works best for very short bursts of text. K-12 educators later adopted the font because of its handwritten primary-looking appearance and now it is known for these two things. Fortune 500 companies wouldn't be caught dead donning Comic Sans in their branding, because their digital appearance would immediately be devoid of professionalism.

ABCDEFGHIJKLMNOP
QRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz
0123456789

Comic Sans has unique characters that prevent mirroring. Text set in comic sans may be more memorable, but the reader may read slower than other fonts choices.

Comic sans has been evaluated for readability, legibility, and retention by reading researchers. The results of these studies are conflicting. The irregular shapes of the individual letterforms have helped some dyslexic learners focus on the individual parts of words. In contrast, Helvetica arguably is constructed of repeated sections of the font so that the p is actually just rotated to make a q and d and b. This can be problematic. Comic Sans uses very few repeated shapes which creates unique original letters. British Dyslexia Association and Dyslexia Association of Ireland list Comic Sans as one of the few recommended fonts. Keep in mind that although this font allows some with dyslexia to read easier, it doesn't mean people can read it faster. In fact, many learners will read much slower when the font is set in Comic Sans, which can be frustrating and cause the user to drop off the course or website. It can also cause eye strain. Unfortunately, what works for one does not work for all, so I fully support educational technology products to develop customization options so that users can create

their own choices that make learning easier and more accessible for them. Luckily, Comic Sans is readily available because they are included in the default settings on many operating systems and programs and Comic Sans is also considered web-safe.

Tip: To outright say Comic Sans is evil is ableist and elitist.

Comic Sans has a time and place, and no, it shouldn't be used for logos on places and products that communicate sophistication and corporate appeal; however, it should in fact be an option on the websites of these same companies when communicating content to the masses. Allowing Comic Sans to be displayed as reading text helps make it accessible for those with dyslexia.

Font designers have created fonts specifically for dyslexic people. They are crucial in helping some learners read curricular materials. Three free specially designed fonts for dyslexic learners are:

Lexie Readable
Open-Dyslexic
Dyslexie

The font OpenDyslexic has unique characters that are not easily confused with others

Here is where it gets confusing

In a study by Rello and Bazea-Yates (2013), they found the opposite is true and that the best fonts for readability for people with dyslexia are Helvetica, Courier, Arial, and Verdana. The study analyzed reading performance and

subjective preferences. They analyzed the use of fonts made specifically for dyslexia in this study as well as the ones mentioned above.

In another article, researchers studied fonts in a web-based voting application for people with dyslexia and found similar insights. The participants strongly preferred Helvetica over the two fonts that were specifically designed for dyslexic individuals. In fact, the participants found that the fonts decreased legibility for them. This study is fascinating and analyzes several factors of legibility. You can read more about the study by searching for "GTRI Dyslexia fonts 2013"

When mirroring is factored in (letters that are identical when flipped) Tahoma is preferable over Helvetica, Arial, and Calibri for dyslexic learners due to the mirror effect of the following letters p q d b.

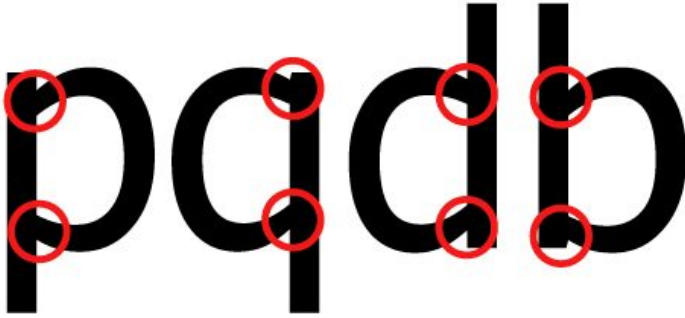## Fonts that mirror

p q d b – Calibri
p q d b – Helvetica
p q d b – Arial

The p is an exact reversed replica of the d and q in the fonts Calibri, Helvetica and Arial.

Fonts that don't mirror

p q d b – Tahoma

When it comes to readability small nuances in letterforms make a big difference.

The bottom line: Make choices WITH your audience, beta test your courses, and allow customizability as much as you can and if you can't advocate on an organizational level to procure technology that allows customization.

Choose fonts intentionally and test them with your user. Design for accessibility and for those with various disabilities versus testing at the end. Our words take time to be written in a way that conveys meaning and that makes sense. When we set the type in our courses, we want to be sure those words are easy to read and understand. We want to avoid slowing down our readers. This can cause apathy and frustration. Learning designers seek to create access, not decorate the page. Omit anything that is getting in the way of clear visual communication.

Decorative/Display fonts

Decorative fonts are those meant to adorn the page. They are like the junk drawer of fonts. They are the category we put stuff in when we know the font is not super readable but could be considered fun or festive. An early

example in history would be a drop cap font like the kind you may have seen in Canterbury Tales or the Gutenberg Bible. They are adorned with illustrations. An example of this is in the figure below.
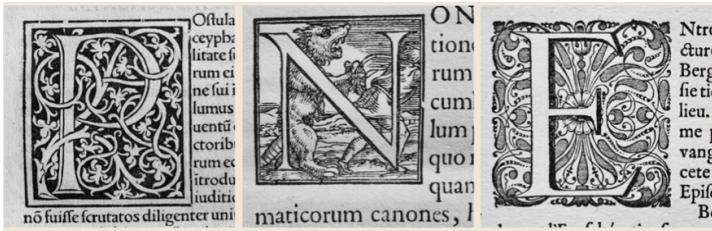
Decorative fonts were common in some of the world's oldest texts and continue to be used in many contexts.

Decorative drop caps add a flair to long-form text. The example is not to be read but just to demonstrate the use case.

Obviously, years ago, we didn't have computers, but now decorative fonts can be retrieved from our systems with ease. Some examples of digital decorative fonts are typefaces that appear hand-drawn, handwritten, script, graffiti, illustrated styles, decorative drop caps, high-tech looking fonts, and even abstract 3-D ones. The font Algerian was just used in the figure above this paragraph as a drop cap, meaning it is a decorative font spanning more than one line vertically. Book and magazine

designers use this effect frequently to create a focal point, especially at the beginning of chapter headings.

Any font that doesn't fit into the other category is considered a display font. Some people put script or handwriting fonts all in their own category. But, for the purpose of this book, I want you to think of those fonts as included in the category that doesn't do very well typeset in long stretches of text. A decorative font, much like a script, cannot be read unless it is only a sentence or two. A few words work just fine. Some decorative fonts are Chalkboard, American Typewriter, Stencil, Cooper, Bauhaus, Alex Brush, and Algerian. Decorative fonts are often used interchangeably with the term Display fonts.

Chalkboard
American Typewriter
Cooper
STENCIL
ALGERIAN
Bauhaus

Display fonts are used in small bursts of text and in specific use cases.

Combining fonts

The rule for combining fonts is to not use two of the same font categories, and don't use more than 3 fonts total in your course. The same font category rule is because

you want to use font contrast and if you use two sans serifs they will not contrast, but conflict. Your learner will say, "Are these the same or are they different?" And we don't want them using brainpower to stop and assess font irregularities.

When there is consistency across the board, we lower cognitive load and improve learning. This is why using contrasting fonts that look extremely different is key. If they look too similar, it causes visual tension and confusion; our brains link the consistent elements as part of a group. So, if you have something that isn't clearly different or exactly the same, we have to use our brainpower to figure out if they logically go together or not. A classic example of how two fonts from the same font category can cause visual tension is when people combine fonts like Helvetica and Arial together. Helvetica and Arial have many similarities but they also have differences in the nuances of the letterforms.

If you use Helvetica on a headline in one place and Arial in another place, it creates an inconsistent look and feel and makes your work look unprofessional. It also hinders the learner. You can see the lowercase "a" in the examples below are quite different, but not different enough to be considered contrast. The combination creates conflict. Other differences are in the terminals, the counters, and the general shape of the letterform. The figure below is a diagram of the main differences in form between Helvetica and Arial. I am team Helvetica and although some may advise using an alternative, I appreciate the history of this font and recommend watching the film *Helvetica* to learn more about its presence, history, and meaning in the world.
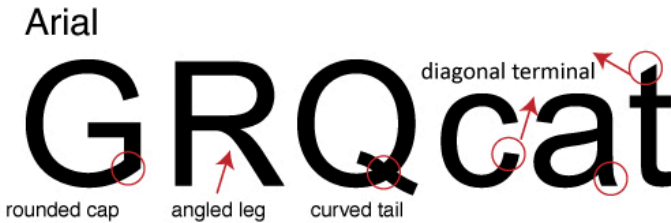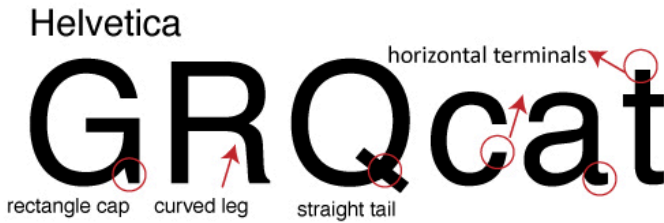
Helvetica and Arial may be similar but once you spot the differences it is easy to tell them apart.

You want to differentiate text in your title, subtitle, and body. Match the main content ideas with the same typographic styling and size, remembering to use hierarchy to establish dominance and order. Try using a very large all caps sans serif font for a heading that has only a few words and a sans serif for body copy set in a font size that is drastically smaller. Make sure the font selection is readable and consistent and that the letterforms aren't too close to each other or crashing into each other because this will make it harder for dyslexic learners to read it. In fact, all caps are tricky to implement and should only be used in short bursts. Once you have mastered type theory you will know which fonts are more suitable for all caps stylization.

If you want your text to be accessible to more learners, don't let your font size never goes below 10pt. Although some may argue 12pt is a minimum, the point size of

one font can look different than the point size of another. The height of the x-heights can make a difference in how readable a certain sized font is as well. The term 'font size' is misleading since we don't define the size of the font when setting the point value in InDesign, Word, or other applications, but rather we specify the body height.

"In manual typesetting, the body height is defined by the height of the lead type or metal sort on which the actual font face, the printing surface of the type, is molded. It is surrounded by blank or empty portions of the letterform, the so-called counters (Korthaus, 2021)."

Think of fonts as being cut away from a block with the negative space surrounding the glyphs/letterforms. The negative space is the same for all 12pt fonts but the letterforms within that block take up the positive space in different shapes and sizes. In the figure below you can see a variety of different fonts set all at the same point size but the actual size of the letterform inside that "block" varies substantially. Helvetica is substantially bigger than Adobe Caslon, even if they are both set to 12pt; so Helvetica wouldn't need to be set as large in your course and if it is set too large, it could take up too much real estate on the page.

Dicey **Helvetica**

Dicey **PT Sans**

Dicey Calibri

Dicey Adobe Caslon Pro

Dicey Times New Roman

Just because Helvetica and Adobe Caslon are set at 12pt doesn't mean they are physically the same size. Point size varies by font which is why designers often eyeball font size while trying to hit the minimum requirement.

Try not to make your headline font so large that it goes onto 3 lines. You have to think of how your course will look on a mobile device and test how your fonts and images look on a phone using multiple browsers and devices. My business partner and I test websites out on Android, Google Pixel phones, Apple phones, iPad, Android tablets, and various sized mac and PC desktops. Sometimes just moving the browser window will give you an idea of how responsive something is but testing it on actual different browsers and devices is an even better way to check for consistency.

Test out web fonts on different browsers and devices and check for inconsistencies.

One of the best strategies for combining fonts is to choose two that are very different. A classic example is a serif with a sans serif: for example, an old-style font with a blocky rounded sans serif. You also want to combine thick, bold, condensed sans serifs with the same typeface but set in a thin, extended version. It is wise to purchase and download several categories of fonts, but one of the key things to look for is fonts that have a variety of options within them.

For example, Helvetica Neu Regular, Helvetica Neu light, Helvetica Neu Italic, Helvetica Neu Semi-Bold, Helvetica Neu Bold, Helvetica Neu Condensed, Helvetica Neu Condensed Bold, Helvetica Neu Extended, etc. When we force our fonts to be bolded or italicized, the design doesn't look as polished as if we had a font with that option already. We can do it, but just because you can, doesn't mean you should. The best practice is to use the bold version of a font versus force bolding it in the software.

When I taught typography, I would have my students play a typographic dating game called the Type Connection. This game is a fun hands-on experiential digital game that teaches students to combine fonts by playing a dating game with them. Even when making the wrong match the game is still fun and you learn from both your mistakes and the right answers. In the figure below Adobe Garamond (the font for this book) is

displayed as a choice card to the left with a description of the history and stroke architecture below it. A witty saying adorns each font card to help the matchmaker make a good pair.

In the typographic dating, game users select two fonts and send them on a date to compare their compatibility. Learners gain knowledge of type history and application while playing this fun interactive game.

Psychology of fonts

Fonts have the power to evoke certain emotions. We can psychologically feel a certain way about the e-learning course. Old-style fonts are more sophisticated, for example, but they may feel stuffy or too formal. Sans serif fonts are hipper, younger, and feel more vibrant, but they can appear too common or default as if the designer didn't really put much thought into its selection. Additionally, the way we style our fonts, the type of treatment we use (bold, italic, large, small, colored text, or text on a background) can drastically change the emotion of the user.

Times New Roman may make people feel like they are writing a term paper, but Comic Sans will appear unprofessional and juvenile. You have to think about your product or service and your learner persona when selecting a font. If you are creating a poster for a children's clothing store, you may choose something whimsical for the headline font versus a font that looks like it belongs on a Broadway playbill. However, a font like Broadway or Modern would look perfect on the cover of a fashion magazine or in an ad for high-end jewelry. A script on a wedding invitation is used to

communicate the level of formality of the occasion and it would make sense to use it for a black-tie affair. The font helps the writer communicate in the appropriate tone of voice. Choosing the wrong font will have a detrimental effect on your e-learning course, which is why we need to be intentional with our selections.

Font psychology allows you to select the right font for the job and affects the way your learner perceives the content. For example, if your learner was in the K-12 space, a more whimsical-looking font may convey the emotion you want compared to a higher ed space where conservative and sophisticated fonts are more commonplace. When you design with type, you are looking for a very specific reaction from your audience; depending on the seriousness of the course, the subject matter, stakeholders, and audience, that reaction may differ. Understanding font psychology will put you in control of that reaction versus your learner having an undesirable reaction due to the wrong font choices. Avoiding the wrong fonts is just as important as selecting the right ones.

Psychology of Serif fonts

Serif fonts are considered classic and traditional. They convey a feeling of respect, formality, trust, and authority. They are perfect for industries that need to convey these emotions: law firms, financial institutions, insurance, dental or medical offices. Some organizations that use Serif fonts are Gap, Time Magazine, Sony, and Volvo. There is a reason why all the Ivy League schools use serif fonts, including Penn, Columbia, Harvard, Dartmouth, Yale, Cornell, Brown, and Princeton.

Dartmouth veered away from an Old Style serif. The new font was custom designed.

In 2018, Dartmouth did a rebrand, which created a more modern, future-forward, younger feeling logo. The font is still serif, although designed specifically for the university. It has a cleaner icon while still maintaining the same Pantone color. Dartmouth stands out among the rest of the Ivy League logos as a bolder corporate identity system. The wrong font can completely change the look and feel of your course and may turn learners away. Imagine a graduate-level Canvas course set entirely in Comic Sans. What learner would take that seriously? Brand perception is important and first impressions matter. When you are looking to meet a goal, remember font psychology drives results. We may not think of our task as course designers to sell courses but the more visually appealing, they are, the more likely they will be completed. Poor font choices slow down learning, so the right font and font combination can make or break a course. Each font category has its own set of distinct features and psychology, which I have broken down for you in the next few pages.

Psychology of sans serif fonts

Sans serif fonts are considered more modern and are perceived as being sleeker and often are considered more cutting-edge, techy, and less formal. The sans serif is often used in technology, fashion, and startup companies. They are viewed as innovative, future-forward, and bold. Numerous companies use sans serif fonts. But the ones I think particularly communicate cutting-edge and tech-driven are Dell, Hewlett Packard, Facebook, Samsung, PayPal, Microsoft, Oracle, and Amazon.
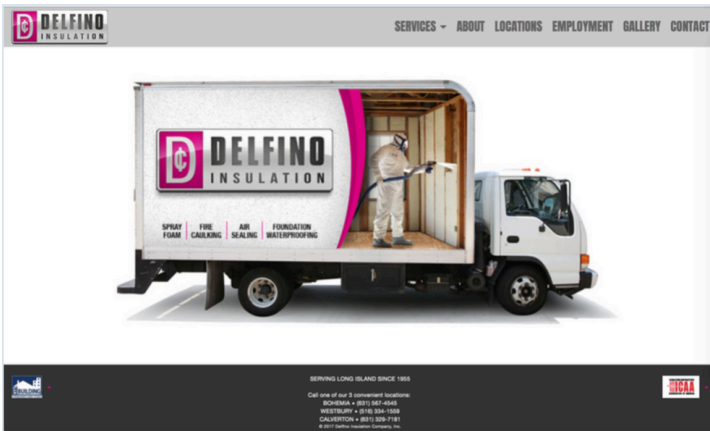
Pink is often thought to go hand in hand with insulation so pink was used as an accent color and popped against the grey and white minimalist design.

The screenshot above, the Delfino Insulation website is displayed which used a clean minimalist look and feel and only san serif fonts to communicate a more corporate, efficient, and clean company.

Psychology of Script fonts

Script fonts can be varied, as you have more formal styles

that look like the kind of font on a wedding invitation. Or, you may have a font that looks more like handwriting. Scripts are elaborate in detail but can be hard to read, so you need to be careful and not use them in body copy. You can create either a grassroots, personalized look and feel or a more formal, elegant look and feel, depending on the script font. There is a new trend to use a handwritten font in direct mail so that it appears as if someone wrote you a customized message, when in fact the designer just selected a handwritten style script font. Research shows that direct mail written in a handwritten/script typeface is more likely to be opened! Being a type geek, I am happy to admit I have never been fooled, but I have been impressed by the level of effort direct marketers use to lure me into opening their solicitations, especially when they look like a lovely invitation to a wedding. Who doesn't enjoy the feel and experience of opening those?

Script fonts are used in wedding invitations to communicate an intimate and sophisticated gathering. Handwritten script fonts are often used to typeset addresses instead of traditional calligraphy.

It does appear more personalized and often people will even use a script font to sign something digitally to avoid the hassle of having to print out a paper to sign it. Script fonts have a special look and can feel more fun and whimsical or even old-fashioned. Some of the emotional responses evoked are elegant, creative, sophisticated, whimsical, personalized, or extravagant. Common places you may see a script font being used would be for food, beverage, or children's brands. Some examples of brands that use script fonts are Disney, Cartier, Kellogg's, Sharpie, and Ford. Some examples of script fonts include Lobster, Alex Brush, Pacifico, Shelly, Marker Felt, and Blessed Day.

Alex Brush

Blackadder

Brush Script

Edwardian Script

Script fonts are hard to read in extended body copy but work for short bursts of text. Cursive handwriting is not being taught everywhere and so it is possible that script fonts may also see a sharp decline in use.

Tip: Apple Chancery is an extremely hard font to read due to the way the ascenders and descenders extend far and at an angle. Any script font is hard to read beyond a short burst of text but Apple Chancery is particularly difficult.

Apple Chancery – (do not use this - very hard to read)

The Forever Bella logo design we created for a local makeup company uses a script. The font is feminine and ornate.

Westhampton Beach Brewing Company logo contains a script font called Lobster feels nautical and fun, much like the brand.

Target audience and fonts

If you are trying to convey messages to your learner, think about their demographics. Who are they? What is your learner persona like? Are they age 45 and older making $100k+ or are they 18-24 and just starting out in their careers? Think up a learner profile for your course. Who is the ideal student? What do they do in their day-to-day lives? What do they wear? What music do they listen to? What

products do they buy? Where do they live? What are their hobbies? Advertising companies create focus groups consisting of people who are defined as the target audience. Detailed insight emerges from those meetings and helps formulate the way a brand looks, feels, tastes, and is designed. Product and service testing occurs using the demographic that would purchase it. In e-learning, you want to make sure to design with your learner and have them beta-test the course, if possible when it is finished.

Beta testers can tell you if the look and feel appeals to them, if the content made sense, if the navigation was clear, and if the materials were accessible. They can provide insight into their preferences for design and learning and, as instructional designers, you can customize the experience to fit their needs. This is not always possible, but creating a representation of a learner (otherwise known as a learner profile) can assist you in looking at the course through the lens of the student and help you to detect and flag any areas that need improvement.

One thing you may detect is the need to change your style guides including the fonts in headers, subheads, and body copy. The font you choose may look different depending on several variables. It is also important to think about the organization for which you are designing the e-learning. Are they a traditional university, a MOOC, a pharmaceutical organization, a bank? Fonts should reflect the nature of the organization. Color and font psychology are imperative to consider when designing and when you nail both you greatly improve the emotional connection of the user to the brand and course.

Line length, Paragraph size, & Column widths

Leading is the space between lines in a paragraph. The word originated years ago during letterpress days when tiny strips of lead were placed between lines of wood and lead blocks of text to transfer ink onto a page. When someone says double or single-spaced, they are referring to the leading. Most software will set a default leading of 120% of the font size, so if the font was set in 10pt text, the leading would automatically be set to 12pt. Some fonts are not accessible at this leading and adjustment is needed.

For people with visual impairments, we want to be between 125-150% of the font size, although this rule can change depending on typeface characteristics. Often, we need to use optical eye-trained techniques in design, rather than mechanical, mathematical solutions. Eye training takes practice, much like a musician who eventually learns to play with ear training. Some pick it up faster than others.

With practice and attention to good design, you can learn from the masters. The key is being able to see the difference in these small nuances and being diligent enough to make the changes to your own work. Adjusting small design details not only helps students engage in the learning but also improves the quality of your portfolio. This will land you higher-paying clients and help to establish you as an expert designer with visual aesthetics, technical expertise, and theoretical knowledge. A triple threat in the field of instructional design.
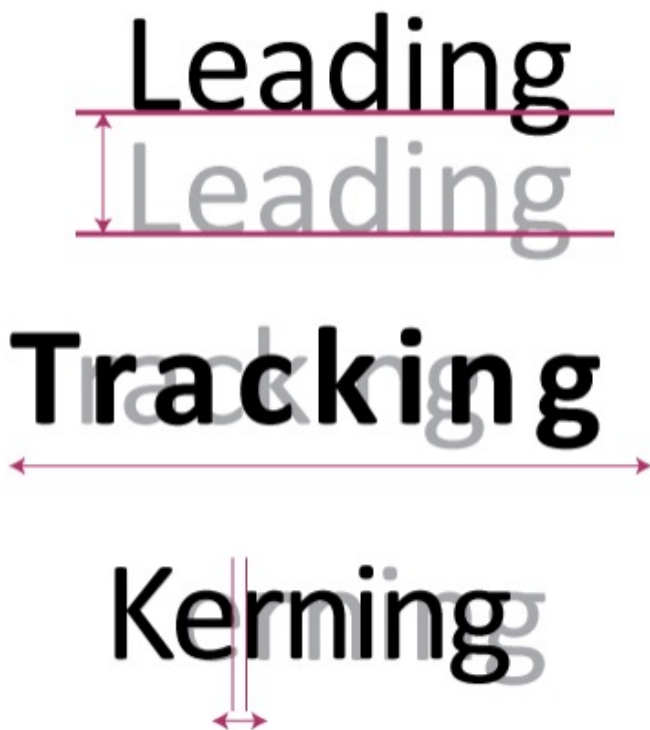
Make sure you know the following three terms well. Leading (the space between lines), Tracking (the length of the line of text), and Kerning (the space between letters).

Besides leading adjustments, paragraphs need some adjusting, too. Always be sure there is some white space between paragraphs. You need about 50% more space between paragraphs than between lines. It is more accessible to use paragraph breaks with spaces versus an indentation. If you must use an indentation, avoid an indent that's too large or too small. I generally set my indents to about .25 inches (1.5 picas or 216 pixels) by

using the tab feature or paragraph menu in whatever program I am using. If you are using columns, make sure the space between the columns is similar to the space between paragraphs. You want the white space to work for you, but don't space the columns so far apart the text looks like separate entities.

The space between columns is called the gutter and should be about the same width as the paragraph indent. If you are creating a printed piece, you want to account for the gutter between pages and the space around the edges. If you print in-house on an inkjet or personal laser printer, there will be a white border around the edges of the document. You won't be able to print a full-bleed image. Full bleed means there is no border around the edge. For designing on the web, make sure your designs are mobile-responsive and test them on various desktop and laptop sizes as well as on phones and tablets. You want your course to be accessible to users no matter what device they are using to take it.

The line lengths – meaning the number of characters that go across the page–shouldn't span the entire width of the browser. When you read a book in your hand, chances are your book is 8.5 inches wide or less, whereas on a browser it is often larger than 12 inches in width. Making the eye track all the way across the screen from left to right without a break can cause one to lose their place, which creates a barrier to learning. Your user is spending brainpower to track the text rather than reading seamlessly. Looking back and forth across a browser could also lead to neck issues, as only the eyes should have to track words across the screen. Line lengths longer than 100 characters should be split into two columns, but too many columns can impede

accessibility due to the way the screen reader reads text on a page. One way to avoid columns is to use wider margins and use more scrolling but be careful not to go overboard with scrolling and excessively long text. Consider moving text onto a new module or page if it extends too far down.

The ideal line length should be between 45-90 characters including spaces. Anyone who has posted on social media is familiar with character limitations. When you set your type, you should pretend you have a limit to how many characters can go on a line. Line lengths that are too short or too long will reduce text readability (Dyson and Haselgrove, 2001). Line lengths have a significant effect on reading speed. Readers read the fastest with 95 characters per line (CPL). If your reader has to track text with their eyes a dozen times just to get through one paragraph, it can cause frustration and inhibit the absorption of the material. Line lengths that are too short increase cognitive load because people have to jump too often from line to line which slows them down.

Of course, reading quickly without solid comprehension is not beneficial so we must optimize our text for both comprehension and speed. According to Dyson and Haselgrove (2001), reading text with margins helps increase comprehension more than text without margins. Users also preferred margins since there was overall less eye strain. Fixed width layouts allow you to constrain the margins and line lengths and are one tactic you can use to help improve reading speed and comprehension in your online course. Besides leading adjustments, paragraphs need some adjusting, too. Always be sure there is some white space between

paragraphs. You need about 50% more space between paragraphs than between lines. It is more accessible to use paragraph breaks with spaces versus an indentation. If you must use an indentation, avoid an indent that's too large or too small. I generally set my indents to about .25 inches (1.5 picas or 216 pixels) by using the tab feature or paragraph menu in whatever program I am using. If you are using columns, make sure the space between the columns is similar to the space between paragraphs. You want the white space to work for you, but don't space the columns so far apart the text looks like separate entities.

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Play with columns and white space to allow for some breathing room and visual interest along the margins, columns, and gutters of text.

Additionally, when a paragraph has short line lengths, the rag left or rag right edges appear more pronounced and produce visual speed bumps that interfere with smooth reading. The term rag left or rag right refers to text that is aligned on one side of the column but not the other. This makes for a sharp alignment on one side (justified left, rag right, for example) and a ragged, jagged appearance on the other. Generally, the text is either ragged or justified. Justified text only works in narrow columns with small font sizes and generally is not accessible on-screen, where text size is usually set larger than in print. Additionally, justified text can create odd gaps between words called rivers and cause other areas of text to be condensed too tightly. What you gain by losing the ragged edge, you lose in overall readability. If you do choose full justification, be intentional with your choice and fix problem areas. It is possible to expand letterforms of certain words in a line and not others by using kerning or line spacing.

Flush left is the preferred way to align text and is easier

to read than centered-aligned or right-aligned. Headings are the exception and centered headers are fairly common, producing a nice contrast to left-align body copy if you choose to set it that way. Whatever you select, be sure to be consistent. If the body copy is left-aligned and headings centered, make sure you are consistent across the whole course. If both body copy and headings are left-aligned, all modules in the course should replicate this style. Use cascading style sheets when you can, make sure to set fonts using H1, H2, H3, etc., and if you don't like the built-in options, change them the right way and do it across the board. CSS can be edited. If you just change text willy-nilly, say in an LMS, people who use screen readers won't know what makes a heading versus a subhead or body copy. H1 styles help screen readers alert the visually impaired that a new topic, idea, or module is about to be read to them.

Be careful about using all caps (capitalization). When people learn to read, they use a combination of phonetics and sight words to recognize the letterforms that make up simple words. For example, TAG is harder to read than tag. The shape of the word helps us read faster, but when you create in all caps, it slows the reader down. All caps can be used for emphasis, but the general rule is to make sure it is only used for 7 words or fewer. Headings are fine in all caps, but body copy is much too difficult to read this way, and even subheads that extend over 2 lines can be difficult to manage for some folks. All caps are hard to read, especially with long

bursts of text because when we learn to read as children, we not only sound out the words but we recognize the words from the shape it makes. Decades of cognitive psychology have proved this to be true (Microsoft, 2021). In fact, sight words are a way to recognize complete patterns of letterforms. In the figure below you can see that the shape of words is easier to recognize if set in lowercase versus all caps.

Tag set in all caps looks like a rectangle and is harder for children to read than when set in lowercase.

Formatting like bold, italic, and underlining should be used with caution. When you emphasize too many elements, nothing is emphasized. When available, use a font that has a large variety of type styles within the foundry. For example, use Helvetica which also has the bold, italic, and roman version versus just the roman that

you force bold or italicize. Also, never bold and italicize. This is overkill and will create visual tension and increased cognitive load. One or the other, but never both. Underlining should be avoided unless you are creating a hyperlink. Never underline otherwise.

In the next figure Module 1 looks hokey and overemphasized. The module is set in all caps, bolded, and italicized and the body copy is bolded and italicized. It looks unprofessional, messy, and confusing compared with the way Module 2 and 3 are designed.

The Module 1 text style looks the most unpolished

If you can turn off hyphenation in your program, do it. Otherwise, look closely at the typeset text and move words to the next line or tighten the space between words to avoid awkward breaks. In hyphenation, words are broken into two and parts of them carry over to another line. An excess of hyphens creates cognitive load and slows readers. The rule of thumb is to eliminate excess

characters to make reading smoother. This includes things like using periods and spaces when referencing time. If you must use perfect APA standard formatting you have no choice but 3 pm looks better and is easier to read than 3:00 p.m. When typesetting using sans serif contact info, avoid tiny vertical lines to separate information because they may get mistaken as letterforms, such as a lowercase l or capital I. A design professor once told us to never set text over an image. Of course, I tried every which way to do it anyway because I felt like I was being caged in, forced to design a certain way, follow rules, and not express myself. Of course, I was naïve and knew nothing about accessibility, and didn't really think about my audience at the time. I cared selfishly about my art and creating something original. It took some time to shift my thinking and perspective and to realize commercial art is not created for oneself but for others. I rarely put text on an image these days, and if I do, I make sure the contrast is extremely high. I also make sure to have an outlet to create for the sake of creating and keep that separate from my work in the field. Instead of being bitter that I can't make money creating art, I am grateful I can make money being creative and that my work helps transform lives through learning. Not only do I get to design great learning experiences, but I also get to design marketing for organizations that I care deeply about. I am not sure where you are in your journey, but if you ever have the experience of seeing a lightbulb go on after a student has engaged in something you designed, you know just how addicting our work can be. Through practice, you will be able to apply the principles of graphic design and learning theory to create

transformative experiences that are beautiful, engaging, and last a lifetime.

Suggested guided questions/projects to assess your understanding of typography:

- Go to the website Type Connection and play the typographic dating game. When you make a good match, take a screenshot and save it to your computer. See if you can make matches with all the contestants. Explain what you learned to a friend.
- Go to the website Kernme and try to kern the letters until you get a score of 85%. Now try to beat your score and see how high you can get that percentage. Can you see the visual improvement?

16

MINIMALISM

Minimalism is more a principle than a movement. It is the idea that one can communicate the most important information with the least amount of moving parts. In other words when looking at a design, what are the things you can remove and it will still be clear? A novice designer (and more clients than I care to admit) believes

that a blank page should be filled to the brim with as much information as possible. Crowded e-learning is confusing and takes a long time to wade through. The old adage of one thought per page is relevant in advertising as much as it is in e-learning. Slides are free. Minimalist designs have graced several fields, including UX, interior design, video game design, film, and e-learning. "A minimalist design is a design that only uses the most essential elements, including basic shapes and limited color palettes, to create something that's very simple yet memorable. (Film School and Acting School Of New York Film Academy, 2016).

   Minimalist designs will make your portfolio stand out and communicate to hiring managers that you have the skills to create a polished-looking course. The best minimalist websites only use the most basic elements needed to communicate only the necessary bits of information. This means doing away with seductive details that only cause distraction and confusion. Too many elements make the usability and readability poor. Keeping things simple is not only a good mantra but one that lowers the cognitive load and improves learning. With a minimalist layout, you can better direct the learners' attention to the main idea.

This little owl may work as a character in a scene, but if he is just there for decoration, he will not help aid instruction in any way and in fact may confuse both the sighted and visually impaired. One may wonder why a random owl is present in the learning.

Minimalist designs use limited layouts. If you are using PowerPoint, you would use only a few of those templates versus recreating a new layout for every single slide in your presentation. Minimalists also use a limited color palette and although this isn't a hard and fast rule, 2-3 colors for a design is best. On a rare occasion, we may use 3 main colors and 2-3 accent colors, should the client insist on this particular array, but we usually try to encourage a more limited palette because doing this helps give visual cues to the user and they come to look for a particular color to have a specific meaning. For example, green when correct or red when incorrect, or yellow for try again. As discussed in the color chapter of this book, always be sure to use more than color to differentiate important buttons and directions so you are ensuring more learners can still gain access.
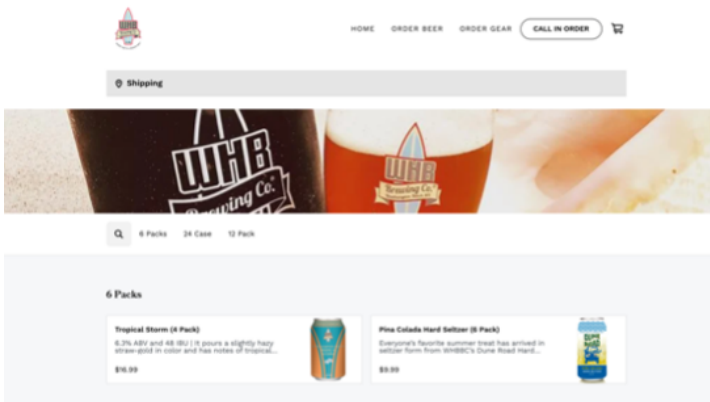
The Westhampton Beach Brewing Company shop website is designed with a clean, clear user interface. Navigation is simple and there is plenty of white space.

White Space

White space means using limited layouts and color

palettes while still making available only the most useful tools, such as intuitive and easy-to-find navigational elements. White space is often called negative space. It is the space around the positive elements on the page. It is the area without images or text and you want a lot of it. A novice tries to fill it up, an expert looks to find what they can eliminate further. Choose your graphic elements carefully. A cluttered page will cause a cluttered mind. Which office space would you prefer in the below figure?

Clear the clutter in your courses and your workspace.

Minimalism also means deciding on only a few colors that work well for the course. When choosing which color scheme to use, think about accessibility and also what you want to communicate emotionally. A minimalist approach with color lends itself well to accessibility because it allows you to use extreme contrast to create eye-catching elements with a strong hierarchy. In other words, if you are using grey, red, black, and white, the red can be used to call attention to the most important part of the course. Perhaps the header title, for example. When there are a lot of different colors being used, a high contrast strategy isn't as easy to implement. Using a color scheme with only a few colors helps the usability of the course.

Mastering typography will help you achieve a minimalist approach in your e-learning as well. I highly recommend learning more about type. Type designers have mastered the art of using type to design a page that can create not only a beautiful piece of graphic art but one that communicates the message in the emotion you want to achieve. Most will agree that fonts that are clean, simple, and easy to read are preferred over the latest trendy typefaces. That being said, typography is an art and there are many creative ways to display it. You don't have to stick to an entire website of Open Sans and can in fact even incorporate different font categories if you know how to adjust them for superior readability.

In a well-designed course, you may choose a large font for the header since it is the most important information and you want to make it more obvious and memorable. Also, remember you can vary the heading sizes and design with a mix of different font sizes to visually communicate hierarchal information and to add visual interest on a page that may have very few other elements. Typography alone can be beautiful if set correctly. This doesn't mean the entire module should be a wall of text set in only 12pt Roman type. Using a mix of type sizes prevents it from becoming boring, and the text itself will take up some space, add visual interest and prevent a cluttered page, slide, or course. Mix it up, make it beautiful, study, and look at beautiful type every place you can. It is on package design, logos, billboards, apparel, movie screens, wedding stationery, and mobile apps, and it can be in your courses as well. The figure below has some examples of minimalist designs with plenty of white space.

A clean high-end design.

Minimalist designs look classy and sophisticated.

Suggested guided questions/ projects to assess your understanding of minimalism:

- Walk into your local supermarket with a basket or cart. Walk down the cereal aisle and pick up a box that you think could be designed better. If you don't want to go to the store do a search for cereal box designs online.
- Ask yourself what is working about this design and what can be removed to make it better, cleaner, or less busy? Take a pic of the box with your phone, and when you get home do a rough sketch of your ideas. Talk out your ideas to a friend or family member using the vocabulary and principles of design.

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CONCLUSION

I really hope this book has been useful. I have covered how to use both parts of the Graphic Design Checklist to create accessible, well-designed e-learning in ways that reduce cognitive load and improve learning. Applying the concepts in the Graphic Design Checklist has been handy in my career, and I hope that you enjoyed my story in how it came to be. I have been a fan of these principles forever and I see how applying them can create access, limit barriers, and make for more inclusive classrooms. We have more ways to support you. If after reading this book you feel you would like some more support in using the checklist to design your courses.

Please email me at dawn.diperi@eastendadvertising.com if you have any questions or concerns regarding the information in this book, taking a course, or if you would like to book a free, 15-minute discovery call to discuss your professional

needs. I am happy to discuss how we can fulfill your faculty development or corporate training needs. Additionally, you can choose to work one-on-one to support your visual design goals, personal portfolios, or professional practice. We also are working on a flagship course called *Graphic Design for Course Designers*, which you can take as a way to supplement this book.

I am happy to provide more tools, technologies, techniques, and theories surrounding digital accessibility and graphic design at a workshop as well. At the time of publication, all the links provided in the book were active and live. In the future, we may plan to do additional editions. Please note that at that time, we will evaluate any tools, technologies, or links that need updating. Thank you for reading *Graphic Design for Course Designers*. I hope that it helps you to design transformational learning experiences in an emotionally, technically, and functionally accessible way.

Suggested guided questions/projects to assess your understanding of the topics in the book:

- **Scenario 1:** A Subject Matter Expert gives you 50 PowerPoint slides and tells you to "make it pretty." What do you say and do to clarify what that means? How will you approach accessibility before you begin?
- **Scenario 2:** Your manager/department head wants you to develop a new course but use the company-branded colors only. What will you say to them to ensure that visually impaired learners can still access the course? What can you do to the colors to make them more accessible if you have no choice but to include them? In what ways can you design the course while still using these organizational colors?
- **Scenario 3:** You are getting some pushback when you express concern about the accessibility of courses. You try to convince your coworkers to be on board with redesigning/evaluating current courses to improve them in terms of both visual design and accessible design. What can you say to help convince the team? What organizational procedures can you put in place if you are in a position to do so? How can you use the advocates in your organization to help the cause?
- **Scenario 4:** You are tasked with embedding some video materials online. You notice there are either no captions or inaccurate captions. What can you do to change this? What are the best practices in caption creation and how can you advocate for improvement?
- **Scenario 5:** You are about to teach a class and you have a roster of 10 people, 5 of which have some form of disability. You are teaching a course that has been taught before and you have little to no control in changing the lessons, assessments, and material. What can you do to accommodate learners and how can you give choices and options to students in this scenario? What kinds of discussions can you have with the university to improve the course and how will you evaluate it to know if it is sufficiently meeting the needs of various types of students?

- **Scenario 6:** You are responsible for coming up with the fonts and colors in a compliance-based e-learning course series on fire safety. What fonts will you use? What colors? How will you use the principles of graphic design as you create a template for other designers and how will you defend your choices if asked?

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Dawn Lee DiPeri is an education professional, visual design expert, and learning designer with over 10 years of experience teaching and designing college-level

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