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Final Master's Portfolio

John Wilson
johnsw@bgsu.edu

FINAL MASTER'S PORTFOLIO

John S. Wilson
johnsw@bgsu.edu

A Final Portfolio

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Dr. Chad Iwertz Duffy, Portfolio Advisor

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Analytical Narrative

Since I began my English studies at BGSU in 2019, working on my M.A. in English on the individualized track, my goals have always been consistent: I wanted to round out my English education and undergird my teaching of English with both theory and new insights into evidence-based practice. I have been teaching English composition at a community college in Colorado since 2007, but my previous master's degree is not in English. I knew that graduate courses at BGSU would help me to create a stable body of knowledge and experience that I could use moving forward in my career, and that has proved to be true. From theory to practice, I have gained new insights in my time at BGSU that have helped me to become a better teacher and that have in turn benefitted my students as well. Notably, theory and practice are intertwined in nearly any field; theory informs practice, and practice informs theory. These mutually reinforcing domains of a given discipline provide a fertile ground from which praxis, knowledge, and wisdom can ensue.

The first work I chose to include in this portfolio, "Rhetorical Analysis of the EPA's AirNow Air Quality Mobile App," was written for Dr. Ethan Jordan's ENG 6800 course, Multimodal Composition: Theory and Practice, in the fall of 2020. In this paper, I composed a rhetorical analysis of a smartphone app produced by the United States Environmental Protection Agency, examining the various multimodal choices the authors of this app made and their rhetorical effects upon their audience, the end users of this app.

I selected this work for this portfolio because I feel it represents not only my analytical skills and understanding of multimodal composition, but also because it reflects my interest in the practical application of communication and composition in modern life. Texts are everywhere we look, even on the apps we install on our ubiquitous smartphones, and I feel that it is worthwhile to examine them as examples of not only communication but as a type of

cultural artifact that tells us about the society in which (and for which) they were created.

To improve this paper, I made some rational changes. First, I added more information to the introduction to make it more relevant to the reader. Second, although at the time this paper was assigned by Dr. Jordan, he urged us to make it brief and direct and advised us to essentially dispense with a conclusion apparently with the goal of producing a streamlined, concise paper. After my peer review feedback, however, during which my reviewers all noted the absence of a conclusion, I chose to write one. I feel that of course this added conclusion changes the feeling of this paper and rounds it out effectively. Third, I have chosen to include two screenshots of the smartphone app itself as an in-text figure to aid the reader in understanding my rhetorical analysis. Fourth, I added some insights into the cultural aspects and potential users of this app, plus the possible emotional/psychological aspects of using this app. Next, I added some insights on the rhetorical use of color in order to strengthen my analysis of the app's apparently deliberate design choices. Further, I corrected a couple of typographic errors, modified the paper title, changed some wording in limited places, and removed some contractions to increase the formality of the paper. Lastly, though it was not required for the version I submitted to Dr. Jordan, I have added some cited sources and a Works Cited page to this work.

"The Affordances of Multimodal Composition in Online Video Instruction in the Proper Use of Self-Administered COVID-19 Health Tests," the second work in this portfolio, is the piece that serves to demonstrate my evidence of substantive research and analysis. Written in the Spring 2022 semester for Dr. Cheryl Hoy's course, ENG 6410, Research and Resources in Professional and Technical Communication, this work examines in detail the various affordances of multimodal composition, in this case, a *YouTube* instructional video produced by Abbott Laboratories to teach the audience how to correctly conduct Abbott's BinaxNOW lateral-flow COVID-19 antigen test.

In this paper, after a review of the literature, I examine each of the modes of multimodal video composition, such as video, audio, alphabetic text, and images, and their various affordances as relate to the goal of carefully instructing an audience in performing an important manual task. I then discuss the best practices inherent to effective instructional videos, separated into physical, cognitive, and affective components. This is followed by an analysis of the Abbott Laboratories BinaxNOW instructional video as an exemplar of effective multimodal video composition.

I selected this work for my portfolio in part because Dr. Hoy heartily recommended I do so, but also because I feel that it demonstrates the depth and breadth of research, analysis, insight, and documentation that I can produce. I feel that this paper provides a thorough examination of multiple aspects of the multimodal text and supports this examination with carefully chosen and interpreted research sources and an investigation of various design criteria for multimodal video. This work is also timely, due to the ongoing and evolving COVID-19 pandemic and its impact on our lives.

After our peer review of this second work in ENG 6910, I decided to make a number of changes to this document. First, I improved concision by simplifying my syntax and some punctuation. Next, I inserted a screenshot of the BinaxNOW instructional video from *YouTube* in order to illustrate a complex point regarding the use of text, color, and their on-screen referents in the video. I also fixed some minor typos, such as unneeded commas in a few parenthetical citations, and I added a section that provides *YouTube* usage statistics. Lastly, I rearranged some sentence structure to aid the reader in understanding my points. For example, I switched one example of passive voice to active. I feel that these revision strategies helped to increase both the clarity and flow of this paper.

The main theories and methods I employed in both of these works center largely on

visual rhetoric and multimodal composition and its various affordances. One peripheral theory that I always stay mindful of as I study a given discipline or text is that of threshold concepts, those stepping stones of understanding that we must pass through in order to proceed to higher levels of comprehension and new ways of seeing. An understanding of the techniques behind effective multimodal composition, such as Gestalt theory, semiotics, font choice, and the use of color in visual rhetoric, all presented themselves to me as a transformative, compound threshold concept that allowed me to see the act, practice, and art of communication in a new way.

Formal writing, generally being both iterative and recursive, is always an exploration for me. As I proceed through the steps of my writing process, I make myriad choices and backsteps, arrive at unexpected insights, and hone my communicative strategies. The process of creating, researching, and revising the two works in this portfolio generated much the same experience. Just as I assign my own students writing in order to help them learn by writing, so too did I learn more about the topics of these two chosen papers as I wrote, researched, and revised them, but I also improved my writing skills through the process. It is quite a feat for a writer to conceive of a composition and then bring it into being, almost as if it needs to gestate in the mind, congeal, and eventually be given a physical form upon its birth. The thing of the mind becomes a thing in the world–readable, transmissible to others, alterable, a text that can be revisited, re-envisioned, and improved. Rare indeed is a text that cannot be made better; new insights come to the author after submission or publication, and new ways in which meaning can be made are often discovered. I have written many papers in my years of formal education, but I can always detect continued improvements in my ability to communicate a chosen message for a chosen purpose. From honing my research and citation skills, to improving the organization and structure of my writing, to putting that persuasive twist on an academic

argument, the act, process, and craft of writing always makes me a better writer, and in the context of my career, a better teacher.

As a teacher of English composition, I am always aware that what I teach my students is essentially communication and communication strategies; moreover, the goal I have for my teaching is to help students communicate their ideas and information as clearly as possible. This clarity of communication has always been not only my main teaching goal but a valued personal goal as both a student and a person in everyday life outside of the academic realm.

Both of my portfolio selections embody this value of communicative clarity because the subject matter of both deals with practical, applied communication: "Rhetorical Analysis of the EPA's AirNow Air Quality Mobile App" examines the affordances of multimodal composition in the EPA's air quality smartphone app, evaluating its ability to competently communicate information to the end user. "The Affordances of Multimodal Composition in Online Video Instruction in the Proper Use of Self-Administered COVID-19 Health Tests" likewise examines the use of multimodal composition, but in this case the aim of the composition being analyzed is to effectively instruct an end-user audience in an important and practical physical task. The degree to which both of these products (one a smartphone app, the other an instructional video) clearly communicate information from the author to the audience directly determines their effectiveness as compositions and thereby their practical utility for the end user who hopes to benefit from their use.

Moving forward with my English teaching career, I know that what I learned in my years in the BGSU graduate program will help me not only personally but will help my current and future students as well. The understanding of theory I have learned at BGSU will continue to inform my practice of teaching, and the insights into the practice of teaching that I have learned will in turn help me to sharpen my knowledge of theory. This interaction of theory and practice

will continue to create a productive symbiosis in my life and career moving forward, benefitting both me and the students I teach.

John Wilson

Instructor: Dr. Jordan

ENG 6800

24 September 2020

Rhetorical Analysis of the EPA's AirNow Air Quality Mobile App

Clean air is one of the criteria that comprise human quality of life, but it's unfortunately not always clean and free of pollutants, some of which (like ozone) are invisible and can only be detected with scientific equipment. In order to inform the public about the air quality in a quantifiable way, the EPA has produced an air quality app that is both quick and easy to use and apparently accurate (see fig. 1).

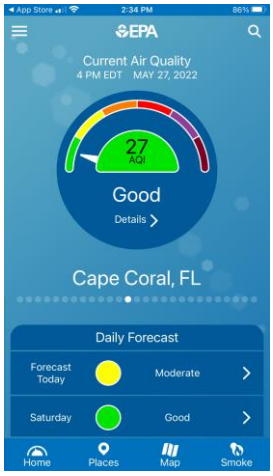

Fig. 1. The Main Information Screen of the EPA's AirNow Mobile App

The EPA's AirNow air quality monitor app is available for both iPhone and Android smartphones and can be easily installed and accessed by most users, even those with very little experience with smartphones. This paper will examine the rhetorical and design choices of this multimodal digital composition in order to understand how it leverages its design in the service of functionality and utility for the end user.

This app provides users with quick air quality readings by city or zip code for nearly any

town or city on Earth. With air quality assigned a score from 0-500, with 500 being the highest level of "Hazardous" indicated by the app, users can determine not only the measure of the air quality in the chosen area but also determine the specific pollutants that comprise this air quality index (AQI) score. The app retrieves its data from the air quality monitoring station that is within 50 miles of the location for which AQI data are desired. The pollutants for which a score is generated are fine particles (PM2.5), coarse particles (PM10), and ground-level ozone, and the app displays first the "primary pollutant" on the leftmost swipe-able tile on the "details" page, which is accessed from the center dial of the main AQI home page of the app. Right now, for example, the current air quality in Broomfield, Colorado, is 61, which is "Moderate," and the details page notes that the "primary pollutant" is ozone, which is the basis for this AQI score of 87. PM2.5 is now reading an AQI of 35, and PM10 is reading an AQI of 29 (see Fig. 2).

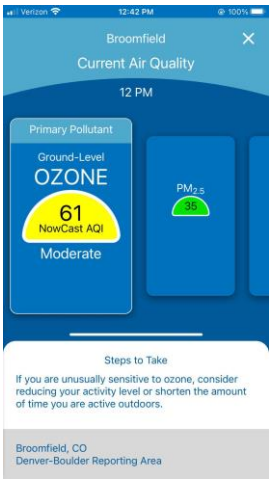

Fig. 2. The AirNow Details Page Showing the Types of Pollutants and Their Measurements

Contrast this with Kona, Hawaii, for example, which has an AQI of 19, based on a PM2.5 of 19, with neither of the other two pollutants currently registering on the AQI scale. In comparison, as of this writing, Beijing has an AQI of 93, Shanghai is 51, and Los Angeles is 143, "Unhealthy for Sensitive Groups," a reading most likely due to the forest fires in California at the time of writing.

Users of this app can employ these AQI readings to plan the best time for outdoor activities for themselves or groups, and when to avoid strenuous activity—or avoid going outside at all—if they or someone they know is in a vulnerable group, such as the elderly or people with respiratory or cardiovascular health concerns.

The direct audience for this app is likely outdoor enthusiasts, people who tend to exercise outdoors, caretakers for the medically vulnerable, and those who are medically vulnerable themselves. Indirectly, the audience could be children and medically vulnerable people cared for by others, both of which groups would be perhaps less likely to be primary users of this app but who could benefit from its data nonetheless.

This text does embody some ethos, especially because it is published and maintained by a federal government agency, the Environmental Protection Agency. The app is not-for-profit, and by being created by the EPA, users might infer that the information in the text is relatively unbiased and based on scientific data rather than opinion. We could also infer that the EPA is nominally tasked with what their very title indicates—the protection of the environment. This might induce some users to trust the data used by this app since the author's job is to care for the health of the environment, which of course includes air quality and likewise requires accurate monitoring of contaminants in the air.

The logos of this text could be found in the form of quantified air quality readings, which seem relatively anchored in objectivity. We could also note that the color-coded air quality dial itself can imply that there are six different levels of air quality, each with a numerical, scored range, and each assigned its own color for easy identification.

One interesting example of pathos here is the fake "lens flares" on the lighter-blue of the main page. These lens flares, often discovered (or intentionally created) on photographic images, sometimes appear as glare or symmetrical, polygonal shapes as the light passes through the

aperture in a lens' iris diaphragm. The implication of these fake flares is that the lighter blue of the main page is the sky, and the hexagonal flares were resulting artifacts caused by the sun on a clear, sunny day. This sky-blue and sun-filled imagery implies health, the outdoors, and general wellbeing, which users of this app would ostensibly support and relate to emotionally.

Another example of potential pathos in this text is the segmented darkening of the color-coded, arc-like gauge in the AQI dial. First, to reduce ambiguity when the audience reads the dial, the colors do not blend into each other even though they are contiguous both on the image and on an artist's color wheel. The colors therefore "jump" from one to the other rather than gradually transitioning in their indications of greater or lesser levels of air quality.

Color, as noted by the semioticians Gunther Kress and Theo van Leeuwen, "can be and is used to *do* things to and for each other" (348). In other words, though the meanings of a given color are socioculturally relative, we can use colors to do work. We can, for example, infer that the EPA feels that the "darker" colors on the air quality dial should signify "worse" air quality. We could say that this is logical, since dark air during the day is usually a sign of pollution, but we could also say that yellow, the next-to-least severe color indicator here, which is paired with "moderate" air quality, could be said to represent yellow air, which can be seen in some major cities around the world during bad pollution events. So, assuming that the colors of the dial represent air pollution, why is yellow "moderate" air quality and purple "very unhealthy" air quality, for example? We could argue that yellow is the color of the sun, which can be seen on clear days, but purple? Other than during some uncommon sunsets, we rarely see purple skies or pollution. We could also examine the use of green to represent "good" air quality. The air is never green, and if it were, that would likely represent a serious health risk, not "good air." Notably, the color blue, instead of green, could have instead been used to represent "good" air quality, since we often equate blue skies with clear air. The authors could also have approached

the semiotics of color differently and used a black and white scale, of course, with white on the left and black on the right, signifying soot-filled skies, but they chose to use colors instead, which are certainly more memorable even if not logically related to the visual pollution found in the Earth's troposphere, the five-to-nine-mile-thick layer of the atmosphere in which we live ("Troposphere").

The medium of this multimodal text is digital smartphone graphics, which carries with it its own affordances and detriments. On the positive side, smartphone graphics can be rendered in virtually any color known, which creates a vast palette of hues for the developer to choose from, and which can then in turn be used to evoke mood or even certain behaviors in the audience. The shapes that may be rendered, though two-dimensional, can be widely diverse, as long as they fit within a given screen size (though some graphics can be scrolled so they extend beyond the screen size of the phone). Smartphone graphics can also be seen in the dark without an additional light source, which cannot be said of the text-on-paper medium, for example, and their brightness and sometimes even text size can be altered by changing the phone's settings to aid in accessibility. Additionally, smartphone graphics and/or data and information can be updated in real time (and the app can also be updated manually by a downward swiping motion), a feature of the textual mode which is impossible, difficult, or slow to do with some multimodal media, such as video, music, podcasts, or of course, words on paper.

There are a number of negatives to digital smartphone graphics, however. First, they can only be seen if the device has electrical power. Second, the medium is always rendered in two dimensions, no matter how skilled the digital designer was who programmed the text. Third, the light emitted from the screen, plus the glare from the reflective glass of the screen itself, can cause eye strain in the audience. Fourth, unlike most paper media, notes cannot usually be made directly on the digital image unless it is first converted into a screenshot, which means that the

medium cannot be interacted with by the audience in the same way as some other physical media, such as paper. Fifth, while digital images on smartphones can be converted into screenshots, which can be sent around the world via text or email in seconds, the image itself cannot be given to someone physically and immediately unless the phone is just handed to them. It is certainly not a business card, pamphlet, book, magazine, or newspaper that can be distributed freely and easily in a non-digital, physical, hardcopy form. Rather, any recipient of a *copy* of the digital images of this app can not only *not* access other features of the app when all they have is a screenshot, but they cannot even possess a screenshot of this app (or download it for themselves) if they do not have a digital device on which the screenshot or app can be downloaded and viewed.

In terms of textual longevity in time and space, digital images can of course be archived for posterity or transmitted from person to person in their original digital form, or in other media as a paper photocopy, plastic photographic film image or photographic print on paper, a digital photographic image, or even as an oil painting, etc., yet we could pose an interesting contrast of digital texts with non-digital media, some of which is remarkably durable and low-tech, such as the Dead Sea Scrolls, which required no batteries or screen and withstood the test of time. We can then of course see that digital media can be viewed non-digitally (such as a paper print of a previously digital image) and non-digital media (like books, art, or ancient artifacts) can be converted and then viewed as digital images, such as can be done when the Pyramids at Giza or the Code of Hammurabi appear on one's computer screen, far removed from the time and place of their composition.

When looking at this text, we can identify a variety of Gestalt principles that are evident in its arrangement. One of these is similarity. The dark blue dial in the center of the image, which appears to be the main vector of attention, matches the color of the "Daily Forecast" panel in the

bottom third, which also has two rounded edges which resonate with the dial circle. We can also see the principle of similarity in the small, color-coded circle of the "Daily Forecast," which matches one of the six dial segments in the AQI dial in the center. In this way, the forecast for the day can be immediately related to the same color in the center dial, which rapidly communicates the forecast quality of the air relative to the color-coded dial.

In this text, we also find the principle of continuation, in which the human eye tends to follow the smoothest visual path rather than jutting off at sharp angles, even if the tangent is of the same color or consists of the same shape as the leading segment. The eye will tend to follow a smooth, flowing line, much like a driver will usually follow a dashed-but-curved line on a road or turn lane. The center dial contains a semicircular gauge along the top circumference, and the eye tends to follow this rainbow-like arc rather than jumping around immediately to other parts of the image, even the matching, colored circle in the "Daily Forecast" panel at the bottom. We could also instinctively infer that the colors in the dial arc are related to each other in some way because they progress in a contiguous curved shape, and because the segments are all roughly of the same radius of curvature regardless of their disparate colors.

The flat bottom of the semi-circular dial in the middle of the image could be said to evince the principle of closure because we can "feel" that the ends of this rainbow-like arc and the central AQI semicircle that contains the AQI number are indeed the "bottom" of the dial even though there is no line delineating that "bottom." This rainbow-arc of the dial in the central dark-blue circle in which the dial is situated therefore feels coherent rather than just floating in space or unanchored, even though it is untethered to adjacent objects by any lines.

In terms of figure-ground relationships, it seems apparent that the dark blue circle that contains the AQI, combined with the "Daily Forecast" panel at the bottom of the home page, are the figure, and the lighter blue of the text is the background, much like we can create the illusion

of depth in a paint-rendered mountain range, with the lighter mountains having greater implied and inferred distance from the reader, though of course they are all two-dimensional and have no actual depth. Conversely, the white text on the lighter-blue "background" appears to be a figure, not a background to the background, so to speak. So apparently, the mere lightness of a textual feature does not always imply depth relative to a darker color.

In the center dial, right below the air quality label reading "Good," "Moderate," "Unhealthy for Sensitive Groups," "Unhealthy," "Very Unhealthy, or "Hazardous," there is the clickable button labeled "Details >," which when pressed brings the user to specific readings for chosen pollutants for the location being assessed. The right-facing arrow implies to most users of modern technology that there is a page of the app beyond this home page, and that this other page can be accessed by "following" the arrow to the next page even though no linear distance is actually traveled by the user upon touching this ">" symbol.

Another important aspect of the textual arrangement here is that the only way to know and view the alphabetic air quality labels and numerical ranges associated with the colors on the AQI is to look at the color-coded key on the information page accessible by touching the three horizontally stacked dashed lines on the top left of the app's main page. If the user does not do this for whatever reason, then the meanings of the color-coded gauge must be purely inferred. It seems that the authors did not want to clutter this main page with the color key and its labels and numerical ranges, so they relegated it to the information page instead.

This rhetorical analysis and examination of the EPA's AirNow mobile app can serve to illustrate the depth and significance of the multiple modes of composition inherent to not only digital media but all multimodal compositions. Every multimodal composition represents a deliberate amalgamation of crafted and leveraged communicative modes that aim to achieve a set of goals by virtue of the modal affordances chosen by the authors. Whether an instructional

video, an infographic, a smartphone app, or any other multimodal composition, authors can and must choose from a palette of design options they can employ to help their creation make its meaning and perform its work.

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Bowling Green State University

The Affordances of Multimodal Composition in Online Video Instruction in the Proper Use of Self-Administered COVID-19 Health Tests

John Wilson

ENG 6410: Resources and Research in Professional/Technical Communication

Dr. Hoy

23 April 2022

Can multimodal video, such as that on *YouTube*, be an effective medium of instruction for self-administered COVID-19 health tests, and if so, what characteristics make it effective? The topic of multimodal composition is a relatively new one, and, in the span of history, so is the use of video technology. When these areas of study are combined into an examination of multimodal video, there is not a great amount of research available, but there is some. The research below enters into this conversation in order to contribute to our understanding of the efficacy and affordances of multimodal video as its own medium of communication. Specifically, the goal of compiling this research here is to further delve into the affordances of multimodal online video as it is used to provide instruction in the self-administration of health tests by consumers, most notably as regards COVID-19 viral antigen testing that is now increasingly performed by end-users in a home setting.

This topic bears a distinct exigence due to the ongoing and evolving COVID-19 pandemic, but along with self-administered tests for COVID-19, there are other types of self-administered health tests that must be performed accurately, step by step, in order to obtain useful results. For example, at-home tests for pregnancy, DNA, vitamin deficiencies, and various diseases have been available to the general public and used at home for many years. All of these tests, however, have a key element in common, whether they are performed in a doctor's office or laboratory or at home–they need to be both accurate and precise. That is, the results of these tests must actually provide the stakeholders with the information they are seeking (accuracy), and those results must be repeatable and obtain the same results upon further testing (precision). After all, if a test is not both accurate and precise, it is not useful, and if it is not useful, why take it? The procedural discourse, clearly, must be correctly designed in order to attain its objectives. As David Farkas notes in "The Logical and Rhetorical Construction of Procedural Discourse," "procedural discourse derives from purposeful human behavior" and "at the most abstract

level . . . describes system states and actions that change system states" (42). The system states involved in procedural discourse such as multimodal video instruction can be considered as first, the "desired state" that the user wants to attain–in this case, the state of having successfully conducted a self-administered health test; second, the "prerequisite state," which is a precondition for proceeding to the desired state and is akin to situational preparation; third, the "interim state," which is the in-between state that we enter as we achieve goals and subgoals on the way to our main objective; and last, the "unwanted state," which commonly results from malfunctions and errors of various types. An example of this last state as regards self-administered health tests would be inconclusive test results caused by procedural mistakes (Farkas 43).

A key to getting accurate test results is not only the physical characteristics of the test itself, such as the reagents, the specimen collection equipment, etc., but the *procedure* by which the tests are performed, whether at home or in the lab. For at-home, self-administered health tests, this procedure must be especially clear to the person performing the test since the user is likely not a medical professional or scientist of any type and might have never administered this sort of test before. Furthermore, the user might have barriers to full understanding of the procedure, such as cognitive impairments, or might even just be undergoing anxiety or stress at the time of testing. Hence, we could logically assume that self-administered health tests are prone to user error more so than tests performed in a laboratory by a trained professional. If self-administered health tests are performed incorrectly, especially for serious tests such as for COVID-19, the negative consequences are numerous. Namely, the user might end up wasting not just time but money on the tests (and retests), which can be expensive to purchase, even at a local grocery store. If the test does not provide accurate (or precise) results, and instead produces an inconclusive result, the test might have to be administered again (and hence purchased again).

Similarly, if a result on a COVID-19 test produces a false negative due to improperly performed testing, there is a potential for the spread of infection from the test subject to the community, plus the possibility of not seeking early treatment for the disease. There is also the possibility of a false positive test result, which can cause not only great inconvenience for users and their families as life plans are put on hold or altered (such as needless quarantining and changes to travel plans, work routines, etc.), but also great psychological stress.

The research included here has a few main subcategories: one, instructional video and its utility and effectiveness for various instructional tasks; two, multimodal composition more generally and how its various affordances, such as that of sound and color, contribute to the making of meaning; and third, the use of *YouTube* video tutorials and their effectiveness. Taken together, these studies fill out the picture of what contributes to effective multimodal video instruction.

Because *YouTube* is a relatively new phenomenon, and instructional video on *YouTube* has not been extensively studied, there are some gaps in the literature regarding the multimodality inherent to most *YouTube* instructional videos and the affordances thereof. However, it would be expected that these gaps would be increasingly filled in the near future as much of the world seems to be turning to *YouTube* (specifically) for instruction on a vast array of topics. According to recent data from 2022, *YouTube* hosts over 51 million channels, with 100 local *YouTube* versions in more than 80 languages. It is also the second-most visited website on the entire internet (right behind first-place *Google*), and over 122 million people use *YouTube* daily ("*YouTube* User Statistics 2022"). It is especially interesting that *YouTube* seems to have become, by far, the default video hosting platform on the internet, with more than one billion hours watched every day—a fact that clearly has implications for its use for educational and business purposes ("*YouTube* User Statistics 2022").

As a key component of the research and analysis presented here, the Abbot Laboratories BinaxNOW self-administered COVID-19 antigen test will be examined as an ideal case study of multimodal video composition.

Literature Review

Video has been widely employed for instructional purposes in many contexts, both in medical and general education for many years (Salina et al. 68). However, is multimodal instructional video effective, or even more effective than written instruction, in teaching audiences to correctly perform medical procedures, among which we could include self-administered health tests such as for COVID-19? Generally, the results of numerous studies indicate that it is both. Azer et al. found that *YouTube* medical tutorials for physical examinations were typically useful, but that the quality was highly variable. Others, such as Tewfik et al., echo this sentiment. They found great utility in educational video but also great variation in quality (6). Others, such as Hove and van der Meij, found that more popular videos were characterized by better production quality, more static pictures, the combination of static with dynamic pictures, shorter texts on the screen, subtitles in other languages, more background music, lower levels of interfering background noise, and a faster rate of the presenter's verbal speech, all characteristics that can be inferred to result in more effective instruction of audiences (55-60). Weber et al. determined that a video tutorial on surgical hand washing procedure among first-year medical students was superior to a two-minute, conventional, in-person lesson taught by an experienced nurse (5). Shah and Gupta, similarly, determined that a computer-based video tutorial on proper asthma inhaler technique would educate users better than a written document (17-18). In Pan et al.'s study of video instruction for venipuncture procedure, it was found that video instruction was not only more effective than traditional instruction alone but also a useful addition to traditional pedagogy on venipuncture (439-441). Dong and Goh found that the

inclusion of video instruction in teaching contexts can increase learning both by itself and in conjunction with traditional pedagogy (140). Likewise, Jove-Blanco et al. concluded that video discharge instructions in addition to traditional verbal instructions increased caregivers' knowledge of pediatric gastroenteritis, though the COVID pandemic interfered with the recruitment of the patients used for the study (572, 574).

Methodology

The examination and analysis of multimodal video instruction undertaken here uses primarily a descriptive analytical methodology along with a case study of the *YouTube* instructional video for conducting the Abbot BinaxNOW self-administered COVID-19 antigen test. Further, an evaluative rubric by Jason Swarts, adopted from the article "New Modes of Help: Best Practices for Instructional Video" was used in conjunction with Saul Carliner's framework for technical communication design, as described in the article "Physical, Cognitive, and Affective: A Three-Part Framework for Information Design."

The Modes of Video Composition and Their Respective Affordances for Instruction

As Gunther Kress notes in "Reading Images: Multimodality, Representation and New Media," "The choice of mode has profound effects on meaning," and "meanings are always disseminated through particular media" (111). Video is nearly always a combination of media that contains multiple modes within it, all of which have their own characteristics, benefits, and limitations in terms of composition and audience experience. It is also known that the various modes of composition each evoke unique audience responses, and their complementarity helps to create overall meaning in a composition–meaning that is greater than the sum of the parts; in essence, the individual modes of a multimodal composition combine and interact to create a multimodal Gestalt (Liu 1261). As composition evolves, designers must take into account the given audiences' current preferences for how they prefer to have their meaning created. The days

are gone when only text-on-paper was considered a “text”; what is considered a “text” now has undergone a thorough transformation, especially in light of advances in digital media technology and people’s propensity to learn from screens (Hull and Nelson 224).

The employment of these modes by the designer of the composition carry with them many important choices. For example, the designer must consider what mode the audience is likely to prefer, the mode the designers themselves prefer, the ways with which the choice of mode will position the designer vis-à-vis the audience, etc. (Kress, “Reading Images” 116).

Even a cursory examination of multimodal video can easily show us that it bears great semiotic and rhetorical power through a highly flexible combination of possible communicative modes. Clearly, there are numerous distinct and inherent advantages of multimodal video compositions over single-mode or other multimodal compositions such as infographics or alphabetic text with images and/or graphics, as are commonly found in paper forms such as pamphlets or instruction sheets and booklets that accompany consumer products.

For example, while in-person instruction can indeed be effectual, multimodal video instruction is vastly more practical and uses fewer human resources for dissemination of complex information over wide geographical distances.

Furthermore, multimodal instructional video can be altered and customized fairly easily to benefit a variety of audiences. For example, any recorded speech in a video can be re-recorded in any known language to help more effectively instruct diverse audiences. Like recorded speech, music tracks can also be removed and/or changed if needed, which, like language changes just mentioned, helps authors provide culturally responsive instruction.

In their various end forms, “videos” can be deliberately designed to include or omit any of the main modes inherent to them: video, audio, text, and images. Further, the many modes inherent to “videos” can be deliberately leveraged by the author to effect the transmission of

meaning to the audience. The author of a video might emphasize the use of sound effects, or carefully chosen music, or moving images, or on-screen text. We might encounter a "video" in the form of a silent recording of a silent movie, or a recording of alphabetic text and no sound, or a recording of sound and no video or images at all. Likewise, distinct parts of a given video might be deliberately composed to use sound, or moving or still images, or graphics, or none at all. Much like the negative space present in a drawing on paper, it is often the gaps between information such as sound, images, text, etc. that convey information as much as the "objects" that are perceived by the audience. Clearly, both the presence and absence of multimodal elements in a video recording can convey meaning. Let's examine the modes inherent to multimodal instructional video below:

Video

While the word "video" colloquially implies "a video" in its multimodal form with audio and often textual or other visual elements such as graphic design, it is technically defined as recorded (and typically moving) visual images–in the most bare sense, recorded images on a screen. A video can of course be silent, with no text or graphic design features on the screen whatsoever, and that is the form that is discussed here. One of the key advantages of video is the use of not only still images but moving images to illustrate concepts and explain procedures. Communicating step-by-step instructions on paper, in contrast, requires the author to encode what are typically physical acts (such as performing an antigen test at home) in symbolic form (written alphabetic text) rather than simply demonstrating them as moving (or static) visual images in a carefully chosen demonstrative sequence. The words encoded in paper instructions then need to be decoded by the reader, which of course can lead to reading errors and therefore errors in performing the task for which the instructional material was produced. Video, though it appears on a two-dimensional screen rather than in three-dimensional reality, can still effectively

represent the real physical world and operations done within it because the viewer can readily extrapolate the meaning of the images on the screen, especially if they involve familiar and relatable human elements such as hands gesturing and performing tasks.

Studies have also shown that people do not like reading manuals printed on paper. First, some people find paper manuals old fashioned and very boring; they also find some paper manuals difficult to navigate. Companies are aware of this, which is why many produce instructional video content for their products (Swarts 196). Video, then, seems to appeal to modern audiences conditioned to get their information about the world from digital technology and screens rather than words on paper.

Audio

While not all videos have (or need to have) audio, nearly all instructional multimodal video uses recorded sound, which can be in the form of human or computer speech, music, sound effects, etc. This mode is highly useful in conveying information, which is usually done through recorded human voices but can also appear in the form of audio cues such as tones or other sound effects, or as music, which can also serve to communicate meaning. The form in which sound is manifested in video recordings is diverse; human speech, for example, uses what Kress calls "the material of (human) sound," in contrast with writing, which he terms "the material of graphic substance" ("Reading Images" 112). It is known that the use of sound may harness and concentrate learners' attention, increase learner engagement, and help to diminish distractions to learning. Sound can also organize information through auditory cues and may link new knowledge to that already presented (Bishop and Cates 5).

Alphabetic Text

A distinct advantage that multimodal video has over traditional written text (often on paper) is that it can combine some of the benefits of alphabetic text with other modes as well. In

other words, text on paper is devoid of audio, video, etc., but multimodal video can freely use all of these modes to achieve its communicative aims, thereby giving it great power to convey information. Though it is certainly true that the dominant mode and medium of what Kress calls "the alphabetic cultures of the 'West'" are the "mode of writing and the medium of book and page" ("Reading Images" 113). In our modern age, however, this alphabetic text has migrated to digital screens of various types, such as smartphones, tablets, desktop and laptop computers, and televisions, and we could argue that it is now these media that seem to bear the written word more than paper. This tendency to "digitize" information for not only storage but access helps to explain the astounding popularity of video-sharing websites and apps such as *YouTube* and the internet in general. The internet has become the repository of much of extant human knowledge, often in the form of text-on-screen found on websites but also as one of multiple modes used in modern video recordings, especially instructional video.

Images

As Kress has argued, "language is no longer the carrier of all meaning," and images can in fact do things that words cannot ("Multimodality" 339). Images in multimodal video compositions can take the form of photos, graphics, figures, charts, graphs, drawings, and abstract and concrete graphic and animated designs. All of these types of images affect the making of meaning by the audience and the effectiveness of a given multimodal video. For example, if a video is explaining how the amortization of a home mortgage works, the audience would undoubtedly benefit from a visual image of an amortization schedule filled with numerals that would nearly always take the form of a table consisting of columns and rows; this way, the audience could see in a tabulated form a clear illustration of the change to principal and interest payments over the long life of a loan. Similarly, the designer of the video could employ a bar chart, or a pie chart, to help illustrate ratios of a given thing relative to other quantified things.

Images, whether they are charts, graphs, designs, etc., can all do work to make and convey meaning.

Color

It has long been known that color evokes human emotion and even action, though the specific connection and cause-effect relationship can be highly variable between individuals and cultures. Kress and Van Leeuwen note that "On the one hand the connection of meaning and colour seems obvious, natural nearly; on the other hand, it seems idiosyncratic, unpredictable and anarchic" (343). Still, we know that color is a "semiotic resource" and that it can be deliberately used to communicate, persuade, and teach, and that can also be used to make connections or increase cohesion between different parts of a given text (Kress and Van Leeuwen 345, 349). Many people in the United States view colors more-or-less similarly, though certainly not uniformly. There is a reason why new car advertisements rarely picture the car as dark gray or beige, but rather opt for a striking red or sleek silver, though fashions and color preferences and hence the semiotic value of a given color change over time as the societal context in which they are found also changes. Color is also of key importance for contrast of on-screen text and images vs. their backgrounds. If text is dark blue on a black background, for instance, or a background to a pie chart is the same color as a section of that chart, visibility will be diminished considerably and the communicative value of the images will be reduced.

Composition and Interrelation of the Modes

Another key mode inherent to multimodal video could be said to be the composition and interpolation of the modal elements themselves. We know, for example, that based on the contiguity principle, people learn more from multimodal compositions when the designer places pictures and words together in space or time (Moreno et al. 358). We can also logically conclude that a recorded verbal cue on a video that occurs far out of synchronization with a procedural

step that it is intended to be paired with would cause confusion for an audience. If "Step 5" of a procedure commences on screen, for example a person taking a blood sample from a test subject, then the narrator announces the beginning of step five partway through the demonstration of that step, the video's instructional effectiveness would obviously be damaged. This highlights the importance of synchronizing video, audio, text, and images in a given multimodal video. Just because the modes are present does not mean that they work well together; they must be deliberately composed for maximum creation of the desired meaning.

Best Practices in Instructional Video Production

It is evident that multimodal instructional video can indeed effectively transmit curricular information from the author to the student, who fills the role of the audience. However, it is also obvious and important to note that not all videos are produced to the same standards of quality and do not therefore "teach" as well as others. Just because an instructional video has been produced and is available to be viewed by an audience does not mean the video achieves the goals it was produced to achieve. There is, in fact, wide variation of production quality and hence instructional quality in multimodal instructional video. This can range from amateurish instructional videos that are essentially useless endeavors that waste the audience's time, frustrate them, or cause them to make errors in a procedure or misunderstand facts, to carefully crafted video tutorials that deliberately embody the best practices of instructional video pedagogy that are known to produce optimal learning results. Knowing this, we should examine the best practices for producing effective multimodal instructional video, and as we do, we can see a clearer illustration of the advantages that multimodal video offers the audience.

Using Saul Carliner's three-part schema for effective technical communication design helps to simplify the task of categorizing different evaluative criteria in instructional video. The first component, physical design, involves the actual physical form of the project or document

and the ability of the user to locate needed information. In instructional video, this physical design can take the form of layouts on the screen, fonts and font sizes, visual composition, and graphics, etc. (Carliner). The second component, cognitive design, involves the ability of users to actually make sense of the information presented. This can in turn involve issues of completeness, accuracy, and relevance (Carliner; Swarts 198). The last component, affective design, is typically concerned with users' attention, motivation, self-efficacy, engagement, and confidence (Carliner; Swarts 198).

The Physical Component

Accessibility

Generally, an accessible video is one in which the video permits the audience to visually and auditorily focus their information on key areas of a video that are pertinent to the instruction at hand (Morain and Swarts 19). This objective can be characterized by optimal cropping of a video image to only display pertinent information, the use of zooming and panning of the camera to focus users' attention on a step or task, and the skillful use of voiceovers to direct users to specific aspects of a video. These voiceovers can be paired with colored highlights or textual annotation (Morain and Swarts 19).

Viewability

Videos can be considered "viewable" if they possess acceptable production quality, which includes competent video, audio, and text design. Audio, of course, must be clear, at a comfortable and appropriate volume, and devoid of distortions or noise artifacts since it is commonly a key communicator of information and audiences quickly tire of videos with poor audio quality. Video quality is typically characterized by high-definition rendering and the ability to be viewed on larger or smaller screens without a loss of resolution (Morain and Swarts 19). Text, of course, should be of appropriate size, font, and color for the audience, and videos

that might be viewed on a smartphone must have text that is not too small to be legible. The color of text should also be of appropriate contrast with backgrounds so that it does not wash out and become difficult to read.

Video Length

Di Paolo et al. discuss the optimal length of instructional videos, noting that while various researchers on the topic do not perfectly agree with each other, they have generally found that the best length is from one to six minutes. Videos longer than this typically cause "cognitive overload resulting in loss of attention and poor recall" (454). Other research indicates that the optimal length of instructional videos is much shorter–anywhere from a mere 15 seconds to three minutes, which might of necessity require video designers to present the video in multiple parts, with each separate part ideally ending with a goal of sub-goal completed (Van der Meij and Van der Meij 221). Some, such as Salina et al., note that most research indicates that the maximum length of a video should be 15 minutes (72). Although we don't have the ultimate answer about the optimal length for a video, we do know that videos that audiences consider "too short" might have rushed internal pacing, or might be missing important information, emphases, or summaries. Videos that are excessively long, on the other hand, would typically lead to the audience feeling bored, frustrated, and resistant to the message. Undoubtedly, what is considered "too long" or "too short" is both subjective and relative to the subject matter at hand and the characteristics of the audience.

Timing/Pacing

Distinct from considerations regarding the optimal length of instructional videos is the issue of timing of elements within the video itself, which we could also call "pacing" of the video (Morain and Swarts 9). Van der Meij and Van der Meij further note that pacing "can be operationally defined as demonstrating and explaining task execution at just the right speed for

the user," and that this optimal pacing typically varies depending on the narrative being communicated to the audience. They also recommend the use of a "conversational tempo," which is characterized by not speaking instructions too rapidly for the user. In order to allow the user time to catch up and process information, the video authors can deliberately insert pauses of "two to five seconds" (212). Notably, the authors of a given video of any type are in charge of its pacing during its production; while the audience can typically pause a computer and/or replay parts of the video (or the entire thing), this can get burdensome and irritating for the audience members if they consider the video to be too dense with information, too fast paced, or too complex.

Modeling and Demonstration of Procedure

Although video and written tutorials are distinctly different media, they do have some aspects in common, one of which is that effective instructional video is scripted very similarly to traditional written procedural discourse, such as in a textbook (Swarts 199). Di Paolo et al. note that one of the most effective means of instruction via video is by deliberate use of "show and tell" (456). This is basically the use of video for "modeling" either behavior or step-by-step procedures, such as we would find in instructional videos for the self-administration of at-home health tests. The use of video, the authors note, "can add useful mental images compared to students only reading about behavior" (456). Effective instructional videos typically use more time explaining and demonstrating procedures or concepts and typically less time actually doing the task (Swarts 199).

In the effort to convey instructional information, we often find alphabetic text used with on-screen images. There are two main ways in which this alphabetic text can be used in video compositions: Namely, on-screen text can be integrated with animations or video, or the on-screen text can be separated from the animations and video. Though research has demonstrated

that audiences who are presented with the sound of recorded human speech in addition to video animations learn better than those who were tasked to learn from on-screen text adjacent to animations, those who viewed on-screen text integrated with on-screen animations learn more than those who are presented with separated on-screen text and animations (Moreno and Mayer 363).

The Cognitive Component

Accuracy

Of course, nearly all users want the information in instructional video to be accurate, meaning both free of bias and factual errors and also free of errors in procedural steps (Morain and Swarts 21). This is especially true of instructional videos on medical topics but of course holds true for videos of other types, such as the procedure for repairing brakes on a vehicle, applying for a mortgage, or using machinery.

Completeness

Completeness means producing a video with enough information to effectively instruct the audience in the task being instructed. When steps are omitted, it immediately causes both confusion and user error in the performance of the task but also often error that obviates the purpose of watching the video in the first place. In a video tutorial on venipuncture, for example, leaving out steps would cause the user to make mistakes in the performance of the task and would render the instructional video essentially useless since the goal of the instruction would not be met. One way to ensure that objectives of a video are met is to provide the audience with an overview of the steps or procedures in advance, then to explain each step before it is shown, then to provide a verbal reinforcement of each step or objective as the video proceeds through each step or objective. It is also useful to inform the viewer about why each step is conducted and what results are sought from each step (Morain and Swarts 21).

Relevance

Optimally, all relevant details are included in a given instructional video, and all extraneous details are omitted. No extra steps, text, sound effects, etc., should be present in the video as they distract users from understanding the video's content (Van der Meij and Van der Meij). Occasionally, minor details may be contributed if they assist the user in learning the content. Ideally, all information presented in instructional video has a clear instructional purpose (Morain and Swarts 22).

The Affective Component

Social Presence and Engagement

In "Lights, Camera, Action: Facilitating the Design and Production of Effective Instructional Videos," Di Paolo et al. not only determine four main uses of instructional video (introducing, modeling, explaining/informing, and soliciting feedback), but also provide suggestions for a basic process for producing effective instructional videos (453-459). One key feature of effective instructional video was what the authors termed "social presence," which in instructional videos can take the form of speech and body language (454). Humans, being social creatures, like to interact with other humans and be taught by them. This proclivity for human interaction in educational contexts such as instructional video requires the presence of other humans in the videos themselves; this presence can be manifested in many ways–still images or video of people, video of human hands engaging in the instructed activity, sound of the human voice such as in narration, etc. (Morain and Swarts 24). Written instructions, though they have authorial "voice," lack the auditory sound of a real human voice–a distinct benefit of multimodal video over written material. Likewise, the visual image of a human on a video, whether a still photo or a moving image, brings a social presence to the audience in a way that written or even just spoken media such as podcasts cannot.

Self-Efficacy

One key component of effective instructional video is that the presenter in the video is able to persuade the user that they will be able to correctly perform the demonstrated procedure or learn the material taught in the video (Morain and Swarts 23). If users do not feel self-efficacious due to not considering the tasks of the instruction as attainable, then they will lose interest in the video rapidly. In other words, good instructional video design inspires audiences to think, "I can do that well enough to be successful."

One way this self-efficacy can be imparted to the user is to use presenters that are relatable. We can imagine that presenters who seem like "normal people" will be easier to relate to when we are taught a complex medical procedure, for example. If the presenter seems vastly more experienced, competent, or adept than the user, the user will possibly not feel sufficient self-efficacy because they will not see themselves as able to perform the instructed tasks in the video. Another key factor that inspires self-efficacy is the clarity and simplicity of the information presented in the video, along with presentation of the information in the actual order in which the tasks should be performed by the user (Van der Meij and Van der Meij). Unclear or complex steps tend to reduce a user's feelings of self-efficacy.

Confidence

To inspire confidence, narrators must present themselves as competent, knowledgeable, and skilled. They must also demonstrate their association with respected organizations (Morain and Swarts 23). In other words, they must convey ethos. For example, in an instructional video for installing a ceiling fan, the user would feel more confident in the instruction if the presenter were a licensed electrician rather than a random homeowner. Similarly, in a video tutorial on replacing an alternator in a car, the user would feel more confident if the presenter were a certified mechanic.

The Abbott Laboratories Instructional Video for the BinaxNOW COVID-19 Test

An ideal case study of effective multimodal instructional video is the *YouTube* tutorial video for the Abbott Laboratories BinaxNOW self-administered COVID-19 antigen test, titled "HOW TO: A Guide for the BinaxNOW COVID-19 Self-Test" (Abbott). First published to *YouTube* on April 19, 2021 and garnering over 3.2 million views at the time of this writing, this professionally composed instructional video provides end users with excellently produced and scripted procedural steps in a mere five minutes and forty-one seconds (Abbott). The video begins with a basic text-on-screen introduction (00:00-00:20), followed by an overview of the test (00:20-00:25). Then, the narrator directs the user to read the full paper version of the test instructions found in the test box before beginning the test procedure 00:27-00:31). Next, the narrator itemizes the full contents of the test box (00:32-00:60), advises the user of recommended and required materials to have on hand before conducting the test (01:01-01:09), and explains how to prepare for the test (01:10–01:19). Following this, the video explains the step-by-step testing procedure (01:20-04:03), interrupted by text showing Abbott's toll-free technical support phone number in case the test control indicates a faulty test kit (01:45). This useful information is followed by an explanation of how to interpret the test results that appear as colored lines on the test kit, which is a lateral-flow testing system similar to an at-home pregnancy test (04:05-04:53). Again, Abbott's technical support number is displayed, but in very large font (04:53-05:00). The narrator then advises the user on proper disposal of the test kit (05:01-05:06) (Abbott).

This video is an example of optimal multimodal video composition and skillfully leverages all of its inherent modes in the service of educating consumers who are performing a fairly complex, step-by-step antigen testing procedure, very likely by themselves and in a home setting. We do know from research that end users who are performing self-administered COVID-

19 tests occasionally have problems doing so, which highlights the importance of good instructional design for these tasks. For example, a study performed in 2020 showed that users who first read instructions and watched instructional videos on the self-administration of a COVID-19 antigen test still had trouble performing the test, specifically in terms of collecting the blood sample, applying the sample to the test itself (in this case a lateral flow test similar to an at-home pregnancy test), and interpreting the meaning of faint test lines after the sample was applied to the sample pad (Jing et al., 3, 11). Simply put, not all instructions for any given task are of equal quality. Due to its skillful use of its many modes, this video, however, clearly instructs audiences in the testing procedure more effectively than a paper insert in the test package could.

Using Carliner's three-part schema for effective technical communication design, we can analyze this video and examine its component parts, giving us insight into how an effective multimodal instructional video is composed.

First, in terms of its physical design, the Abbot video is notable for its excellent quality. The video is accessible because the narration always clearly and methodically points to specific steps in the video, and the images of the test kit itself are essentially identical to the one the user would be using. Viewability is ensured by first-rate production quality: The video uses HD video, professional, distortion-free audio at an appropriate volume, and color-coded text that often is contiguous to graphics of the same color. For example, at 00:47, the text reads "TEST 2 TIMES WITHIN 3 DAYS" and "36 HOURS BETWEEN TESTS." The text "TEST 2 TIMES" and "36 HOURS" is in blue, which color matches a three-day span (in the same shade of blue) on a graphic of a monthly calendar to the right of the text (Abbott). The use of color here serves to link the text to an illustration (see fig. 1).

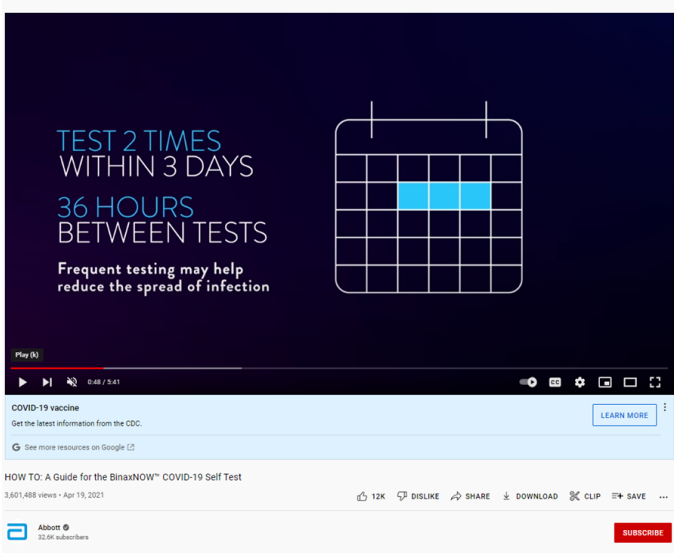

Fig. 1. BinaxNOW Instructional Video on *YouTube* (00:47).

The narration of the video is also perfectly paced and conversational, and although the user could certainly pause the *YouTube* video at any time or replay certain sections of the video, this likely would not occur excessively because the pacing of the narration is not too rapid. The voice of the narrator is clear and articulate.

In terms of the cognitive aspects of this video, the information presented is all accurate. Since this video was produced and paid for by Abbott, the maker of the BinaxNOW COVID-19 test, and not by a consumer (which is common to find on *YouTube*), we know that the company is staking its reputation and its profits on both the test and the instructional video for performing the test. As the video proceeds, each step is lucidly presented and paired with realistic and illustrative animations, for example, the insertion of the test swab into the nasal passages to obtain a mucosal sample (Abbott 02:28-03:02). No irrelevant information is ever presented in this video, keeping the tutorial concise and effective throughout.

Third, the affective component of its design is skillfully produced. The narrator's gentle but competent voice reassures the user, who would likely be somewhat (or very) anxious or uncomfortable about the prospect of taking this antigen test both due to the insertion of the swab

into the nose and likely due to fear of a positive test result and the ensuing consequences of such a result. In order to inspire self-efficacy in the user, the voice of the narrator seems to be that of a relatable peer with whom a typical person can identify, rather than a clinical scientist with a cold, unsympathetic demeanor. The video is engaging because first, it makes the steps of the testing procedure appear to be simple and within the intellectual grasp of most users. Additionally, the calming white-on-black graphics prevalent throughout the video produce a serene feeling of focus and composed relaxation that is likely welcome to those who are performing a possibly stressful test for a virus such as SARS CoV-2.

Conclusion

Whether during a public health crisis such as COVID or in more "normal" times, people will often use self-administered health tests, some of which have important diagnostic value to the stakeholders. It is of paramount importance that these tests are performed correctly so as to obtain accurate and precise, and therefore useful, results. By intentionally leveraging the combined affordances of communicative modes inherent to instructional video, meaning can be more effectively transmitted from the author of a text—in this case the manufacturers of self-administered health tests—to the end user who, like other stakeholders in the situation, has a vested interest in the outcome of such tests. The Abbott Laboratories instructional video for the self-administration of their BinaxNOW COVID-19 antigen test serves as an ideal exemplar of an effective multimodal instructional video because it skillfully employs the key modes of its form while also leveraging the physical, cognitive, and affective domains essential to effective technical communication.

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