Combining Pedagogy and Modern Technology into the Public Relations Classroom: Arousal Theory as a Roadmap for Student Success

Jess Block Nerren California State University, San Bernardino

Jessica Vierra California State University, San Bernardino

This study further assesses instructional pedagogies utilizing public relations technology in classrooms leading to the heightening of student success, empowering students, increasing comfort, bridging disparities, and embracing a diverse learning community. Public relations professional technology hinges on educating and informing key publics, and similarly, can serve as tools that every instructor has at their disposal. Predominantly, this study dives into the literature review of research associated with the use of consumer grade and professional grade technology in the classroom and the types of different resources (i.e. live polling, animated video presentations, socials, etc.) a person may wish to apply in the classroom that is significant not only to public relations as a practice but also as a pedagogical tool, accomplishing two goals at once for students. Particularly, this study connects learning in the classroom with Arousal Theory and will be among the first to analyze the benefit of PR technology in the public relations classroom, through primary and secondary research by two PR practitioners and instructors. Technology used in the field of PR used as learning tools can persuade students to be more interested and participate more in content, which creates a healthy collectivistic classroom climate.

Keywords: pedagogy, public relations, communication, technology

INTRODUCTION

In order to further assesses instructional pedagogies utilizing public relations technology in classrooms leading to the heightening of student success, empowering of students, increasing comfort, bridging disparities, and embracing a diverse learning community are essential for contemporary student learners. Public relations professional technology hinges on educating and informing key publics, and similarly, can serve as tools that every instructor has at their disposal. Predominantly, this study dives into the literature review of research associated with the use of consumer grade and professional grade technology in the classroom and the types of different resources (i.e. live polling, animated video presentations, socials, etc.) a person may wish to apply in the classroom that is significant not only to public relations as a practice but also as a pedagogical tool, accomplishing two goals at once for students. Particularly, this study connects learning in the classroom with Arousal Theory. This study will be among the first to analyze the benefit of PR technology in the public relations classroom, through primary and secondary research by two PR practitioners and instructors. Technology used in the field of PR can be

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effective learning tools and can persuade students to be more interested and participate more in content creation, which creates a healthy collectivistic classroom climate.

When asked, Public Relations practitioners may share memories of PR classrooms that felt strict, serious, solemn, or distant in comparison to future work in the field. Instructors can change this association through a blend of professional and pedagogical methods to offer a new experience in the PR classroom including "fun, clear, and useful" by altering the delivery of course content and the utilization of professional technology as a pedagogical tool.

Public relations is the process of professionals helping a business or individual cultivating a positive reputation for publics in various communications, including "traditional media, social media, and inperson engagements" (Forsey, para. 1). A public relations instructor has a duty to ensure students understand how to reach these publics in an effective manner.

Chari indicated in her (2017) article titled "The 10 characteristics of a successful PR professional" that successful practitioners have the following qualities "flexibility, meticulous learning, collecting information, seeing the bigger picture, building relationships, knowledge, strong writing, honesty, attention to detail, and a thick skin" (p.1). The idea is that, instructors can teach the tools critical to the field more effectively if, simultaneously, they are also modeling those same tools by putting them into practice. Says Chari, "As the public relation scene continues to evolve, new professionals must possess all the cards to have the best chance of winning" (2017, p.2). Instructors can model best professional practices for their students, best preparing them for what lies ahead. This research is going to explain how the student perception of fun and the use of technology in the classroom can help address and bridge equity gaps among diverse learners.

Particularly, this study connects learning in the public relations classroom with Arousal Theory. This study illuminates the effects of fun in the classroom and students learning outcomes caused by technology. Presently, research suggests that technology in the classroom can heighten students interest in information being provided (Ball, Eckel, & Rojas, 2006; Jansson, 2007; Lajoie, 2017). To understand this correlation a person must first understand what public relations is.

LITERATURE REVIEW

Historians explain that the origins and foundation of public relations can be traced back to Classical philosophers or even Ancient Greece, however, the contemporary public relations we see today is believed to be connected to Edward Bernays and Ivy Lee (Siddiqui, 2014). Bernays believed political propaganda created by the government could influence different publics by manipulating the message and is believed to have refined the art of press releases to how it is used today (Siddiqui, 2014, para. 7). Lee, on the other hand, began his career as a journalist for the New York Times, and later advised the American industrialist John D. Rockefeller Jr." (Siddiqui, 2014, para. 5). Both of these individuals are responsible for what we now know public relations to be today.

Today, public relations is defined as "a strategic communication process that builds mutually beneficial relationships between organizations and their key publics" (Forsey, para. 3). This means that many times members of the public relations field are the intermediary between an organization and stakeholders which may include investors, the public, employees, or members of the press. It is important that each member of a group comprising the key publics be communicated with in a way they find compelling, understandable and collaborative, thereby creating many opportunities for those in public relations to communication across many channels and using many types of new communication technology. Similarly, each student in a PR classroom can be communicated with in a way that is compelling, understandable and collaborative.

Arousal Theory

Arousal Theory is defined as the theory that human beings respond best to a regulated amount of stimulation and will seek a level of stimulation that best suits the individual or task (Arousal Theory, n.d.). This means that learning might be able to take place under the best conditions for stimulation and regulation.

FIGURE 1 THE TROPE OF AROUSAL THEORY



This is an image representative of those words commonly used to depict arousal theory principles showing the polarity of too much or too little stimulation. (Arousal Theory, n.d.)

Arousal Theory originated over 100 years ago, finding that the right level of arousal for the task created a significant increase in response (Yerkes, 1908). Transferring this finding outside of social science into the study of Communication and pedagogy, that means that the right amount of stimuli can increase performance in learning and in the classroom.

Interestingly, more demanding learning may require more stimuli (Yerkes, 1908). Something that continues to be echoed and can be particularly relevant for the levels of persistence needed for the repetition in revisions and persistence needed in quality Public Relations coursework.

So important to human learning was stimuli that NASA went on to conduct a significant conceptual framework of arousal theory, discussing the continuum of awareness from unconscious or sleeping to fully alert, acknowledging that "arousal mobilizes and regulates the human stress response" and that "moderate levels of arousal will result in optimal performance" (Staal, 2004).

Humor's relation to arousal theory in the classroom have also been studied as an "enabling mechanism for thought" (Attardo, 1994). Meaning that perhaps humor is one delivery mechanism more attuned to the optimum level of arousal, or that perhaps the arousal levels needed may be higher than previously thought in a standard lecture classroom.

Critique of Arousal Theory

The understanding of arousal and the actual arousal levels may be significantly different (Picard, 2016). This means that an individual might understand arousal differently than the physiological levels of arousal, calling into question what a level of arousal is or where it may come from.

Arousal theory emphasizes that arousal and regulation must be considered, but where and how to consider arousal continue to evolve and be reevaluated as time continues past the original studies and assumptions made.

Pedagogy

Technology is only as effective as the instructor designing the curriculum and the implementation of the technology when learning new skills or acknowledging writing as a process rather than a product tying it to learning objectives and pedagogy, presenting unique elements to Public Relations curriculum which are deserving of a closer examination. Our research, displayed the importance of understanding the audience and catering to the students needs.

Although it has been hypothesized that technology can enhance learning, it is hard to make a causation claim, because most findings are directly related to students perceived learning experience and are qualitative in nature or are about perception. For instance, students may believe they learn more in a classroom that has a high amount of technology and a high amount of stimulation, but it does not necessarily follow that they learn more in these classes. Although it is clearer as to why technology is beneficial, all findings are based on student perception of their active learning, which is not a sufficient way to evaluate these findings.

In one classic pedagogical study, it was found that success expectancy paired best with incongruencies between feedback and expectations, producing higher overall success when incongruent rather than alike (Means, 1979). This finding is related to arousal theory because, while a strong type of feedback, the input can also be seen as a type of increased stimulation or arousal. The student can be surprised, shocked, encouraged, or engaged to a greater degree because of these incongruencies between expectation and result. Of course there are many additional methods to increase arousal that may be utilized in the public relations classroom, but anecdotally all instructors know of times where they or their colleagues may utilize this method towards the start of a term with new students, to set a tone for expectations.

Stimuli

Technology can be utilized to evoke a message or feeling within an individual. If the act does not elicit a positive feeling, a person will not be aroused. Arousal theory rationalizes the use of technology in the classroom as a complex interaction, which connects emotion and cognition.

It is worthy of mention that the level of optimum arousal in the classroom appears to continually increase and this is observed in many recent studies (Chang 2017). Modern classrooms compete with multiple screen experiences, two-way symmetrical communication models on social media and streaming as just a few of the media uses students engage with and seek outside of the classroom.

Arousal theory also suggests that individuals have motives to counteract insufficient or excessive environmental stimulation. People engage in various behavioral activities to increase or decrease their level of arousal and to reach optimal level of arousal. Individuals are different in optimal level of arousal at which they feel most comfortable (Reeve, [34]). People tend to expose themselves to media content that can reach optimal level of arousal. For example, high sensation seekers tend to expose themselves to more novel and varied media content, whereas low sensation seekers tend to use more familiar media because they have high and low optimal level of arousal respectively (Calvert, [4]; Donohew et al., [7]) (Chang 2017).

When the student is not in their optimal state, it creates a sense of discomfort and motivates the student to seek out exposure to resume being in the optimal state of arousal (Chang 2017). That arousal level needs vary is an important element to take into account, that instructors may have people seeking widely diverse arousal states in the classroom, and that the motivation is inherent to consume media to meet the need for the preferred state of arousal.

In a recent conference presentation, large data sets were examined for the effect of casual speech on student learning in higher education with great effects. Students absorbed and retained more through dissemination of information delivered in conversational easy-to-understand language (Wagner, 2019). It could be argued that this use of more casual language was found to be more in line with a preferred arousal state, thereby regulating the environment for optimum learning.

In relation to universal design and serving the unique needs of unique students, it was found that in a classroom for students with profound disabilities, "communication and interactions in the classroom setting can significantly affect the scoring of arousal" (Richards, 2005, p. 11). This study deeply ties the effects of communication to the state of arousal in arousal theory. So instructors may choose how they

communicate and what technology they use to create they classroom experience to significantly affect the state of arousal in their own classrooms.

The pedagogical practice related to arousal theory can be met through PR technology in the classroom as a pedagogical tool and also offering a professional benefit.

Equity Gaps

Studies have shown that the creation of a "third culture" mixing culture and identity from multiple sources bonds individual and may also bond knowledge (Vierra, 2019). In the study of PR technology in the classroom as a pedagogical tool, perhaps the third culture would be a blend of PR professional technology with traditional classroom learning.

Similarly, it has been found that peer groups reinforce messaging, and are safe spaces to counter conflicting messaging (Nerren, 2018). Therefore, technology that may be stressful, overwhelming or confusing if exposed in the work environment, may become stimulating, engaging, useful and familiar if utilized and challenged in a peer group setting in a classroom.

Technology

No matter where a person goes there is technology; from cell phones, computers, tablets, projector systems, to radio systems. Technology is present throughout most college campuses. Although technology is present in most public relations classrooms it does not necessarily follow that it is being used in a beneficial manner, however, "as we sail through the 21st century, technology in the classroom is becoming more and more predominant" (Cox, para. 1). As public relations instructors their focus is usually on content, but technology can clarify content and allow students to be responsible for their own learning. Also, allowing them to connect content to the real world and what is currently happening in today's society. The adoption of technology into classrooms has completely changed how students learn and how teachers teach content.

When technology in the classroom is introduced students active learning increases. Active learning is a broad term which comprises different instructional methods to help keep students engaged in their learning, improve retention, and provide a higher level of learning. By utilizing technology, students are seen taking control of their own future and their ability to learn content. "Active learning requires moving away from teacher-centred instruction where the teacher controls what gets taught, when it gets taught and the pace by which it gets taught to a student-centred approach. Student-centred instruction holds students accountable for their own learning, pacing learning to their own rhythm and learning with peers" (Nicol et al., 2018, p. 254).

Although active learning is student centered, instructors remain in control of the classroom. "Studentcentred instruction holds students accountable for their own learning, pacing learning to their own rhythm and learning with peers" (Nicol et. al., 2018, p. 254). Technology fosters student motivation and their ability to engage in material making learning student-centered.

Technology also intrigues students to want to be involved in discussions. In fact, there are computer programs such as menti and kahoot that help create discussions via technology. Individuals can comment back and forth or answer questions allowing instructors to create a discussion from the comments or answers. "The impact that technology has had on today's schools has been quite significant" (Cox, 2016, para. 3). Programs are continually growing and adapting to intrigue students to want to learn more. This can be seen by the technology programs created for instruction (i.e. kahoot, menti, biteable, doodly, etc.). Teachers are adapting to the ever changing instructional changes and learning how to effectively emerge technology (tablets, iPads, Smart Boards, digital cameras, computers) into the public relations classroom. Students are using technology to shape how they learn and study and are able to use other mediums other than notes to prepare for any obstacle they are faced with. "By embracing and integrating technology in the classroom, we are setting our students up for a successful life outside of school" (Cox, 2016, para.3). There is numerous benefits that come from adapting technology into the public relations classroom.

Cox (2016) outlined the benefits of technology in the classroom as "making learning fun, prepares students for using technology in the future, improves retention rate, helps students learn at their own pace,

and allows students to connect in a diverse way" (para. 1). Benefits are not just limited to these areas. Students report having higher interest in content due to technology (Jansson, 2007). Technology allows for students to receive instantaneous gratification. In fact, even when students seem like that are not engaged it has been reported that they "soak up just as much information as those who appear completely engaged" (Hicks, 2011, p.189). Students everyday life revolves around technology, which has shifted them to become more visual learners. Since students are now changing the way they learn it only makes sense that teachers adapt and change the way they teach, but how?

RESEARCH QUESTIONS

As the public relations field continues to grow, as researchers, it is our duty to understand how arousing our students will increase their affective learning. Because of the questions surrounding arousal theory specific to the public relations classroom, the opportunity exists to explore these questions more in depth.

RQ1: Does the use of public relations technology in the classroom increase arousal?

RQ2: Does an increase in PR tech in the classroom affect equity gaps in the classroom

METHODS

Methods for this research took place over two years of refining and developing a course, Comm 344 Public Relations Communication by Professor Nerren, culminating in the shadowing of the course by Instructor Vierra and the initiation of the writing of this paper.

Over this duration, the course changed dramatically, always with the goal of student success, bridging any disparities present (the university is an HSI with over 80% first generation students) in the effort to make the course student centered, universally designed, scaffolded, and inclusive of all types of learners. In an effort to understand the use of technology in the classroom and its effectiveness we will be analyzing students' comments presented to the instructor anonymously.

RESULTS

Results from this pedagogical approach were significant, increasing many of the strengths needed by students for success in the study and practice of public relations. Student familiarity and use of PR technology increased, helping students in the field and in future interviews for work. Both student engagement and instructor satisfaction increased. Importantly, because of the active learning approaches involved in the use of this technology, the introduction of PR technology also bridged disparities within the classroom helping to increase course content understanding across all learners in the classroom to a greater extent. Concurrent with this study and based on student success and student feedback, availability to technology increased, with the PR writing course being offered in a computer lab, and being studied for future active learning spaces.

Equity

Following the intervention of the introduction of increased stimuli in the classroom using professional technology as a learning tool, equity gaps were nearly eliminated, with .002-.007% equity gaps consistently taken across a 2 year period (CSU, 2019). The course Public Relations Writing Comm 344 appeared as one of the 10 courses with the smallest equity gaps in the department (CSU, 2019). What this means is that students who are underrepresented minorities and are first generation students have equitable opportunities to learn in the class conducted in this manner and studied for this paper.

Student Experience

Post intervention, students continued to see satisfaction in the course. Quantitatively, satisfaction increased by the following measures:

Year	Student perceptions of instructor contributions to learning	Student perception of quality of instruction
Spring 2019 (post intervention)	5.7/6 mean, 6/6 median	5.8/6 mean, 6/6 median
Winter 2018 (pre intervention)	5.5/6 mean, 6/6 median	5.6/6 mean, 6/6 median

TABLE 1STUDENT EXPERIENCE

(CSU San Bernardino, 2018; CSU San Bernardino, 2019)

This feedback can be indicated as the students reporting directly that they received the proper amount of stimulus to get the information they needed *in the way they needed it* to succeed in the class.

Adapting Different Types of Technology in the Classroom

There are a variety of methods that an instructor can adapt their teaching methods such as utilizing technology, activities, or group projects in the classroom. Numerous programs are available across the internet, however, the programs that we will be discussing are biteable, doodly, Instagram, mentimeter, and kahoot. This is not to say that these are the only programs that an individual can utilize, but as experienced public relations practitioners we believe that these programs brought clarity and fun into the classroom.

Biteable and Doodly

Both digital animation programs where students can tell their stories, later utilizing this same tool they used for reflection for social posts, company videos and animated infographics. It allows public relations students to have another tool at their disposal for their future career. Allowing students to practice alternative ways to create a presentation.

FIGURE 2 STUDENT-MADE VIDEOS



This is an image representative of biteable and doodly. Programs utilized to create informative videos or presentations.

Canva

A free graphic interface offering many useful branding and sharing tools, allowing students to practice their PR writing in a modern, stimulating and updated way. Allowing students to enhance their portfolio. This program allows students to create flyers, programs, etc.

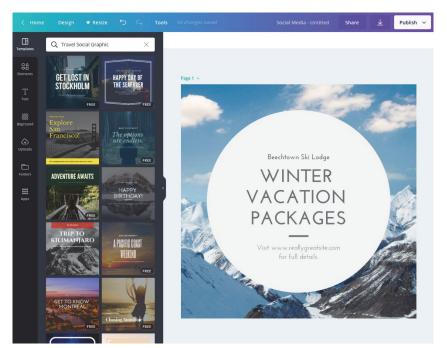


FIGURE 3 STUDENT-MADE GRAPHIC DESIGNS

This is an image representative of canva. A computer program used to create media kits, flyers, brochures, etc.

Instagram

Used in the classroom as a live feed, students can anonymously share and post their ideas, answers to questions, thoughts and questions on a topic sharing on a platform they are familiar with and already have available to them, also practicing their PR skills for the future of fast thinking, writing and posting. Instagram is a common public platform that most public relation students will have to face at one point in their career. Although we are familiar with instagram for personal use it is important that students adapt their use of instagram for professional use. Classroom instagram allows students to learn how to manage social media networks.

FIGURE 4 CLASS INSTAGRAM FOR QUICK FEEDBACK

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This is an image representative of the very popular application and social media platform instagram. This is a social media platform where individuals can post pictures or content related to the class discussion and display it to the class.

Mentimeter

A platform that live feeds students thoughts and ideas to the screen, this is an invaluable tool that can also be used in public speaking, speechwriting, and presentation creation.



FIGURE 5 CLASS POLLING ON MENTIMETER

An image that displays how mentimeter would be utilized. Propose the question and students are able to respond directly to question while utilizing their cell phone.

Kahoot

A pedagogical tool that quizzes students in low stakes opportunities and create opportunities for students to lead this activity themselves. This activity is also great to display immediacy and create a positive rapport with your students.

FIGURE 6 CLASS LOW STAKES QUIZZES ON KAHOOT



This is an image representative of a kahoot quiz. A program students can participate in while utilizing their cellphones.

Fun and Humor

An instructor can also introduce fun into the classroom by hosting workshops. These workshops allows students to peer review each other's work and embrace each others styles of writing. Allowing students to learn from one another and not just from the instructor; thus, creating a collectivistic environment. Whether introducing fun into the classroom or technology they are both tools utilized to arouse students, making them more intrigued to want to know more.

Modeling is defined as showing students how to do something by demonstration. For instance, if a person is asking students to write a press release an instructor might present an example press release to show them what they are looking for, but how can this model become more intriguing instead of just a paper filled with words. The answer is to bring fun into the classroom and turn the model press release into a "mad lib". Since it is the instructors duty to model for their students, individuals should also model the qualities businesses look for in the public relations field, such as seeing the bigger picture, building relationships, attention to detail, and flexibility.

Fun in the classroom can be adapted in a variety of methods "whether simply using an Onion news headline as a quick warm-up in history class or creating a full unit in which students write and perform comedic works of their own, humor can be woven in across the curriculum — to enrich literacy skills, spark creativity, teach critical analysis or just to have fun" (Doyne, Ojalv, & Schulten, 2011, para. 2). As experienced public relations practitioners we believe that adapting technology to the classroom can bring a layer of fun to learning.

Overall, the increased levels of arousal prompted greater persistence, leading to greater student success. The PR technology created opportunities for students exposure time to future worthwhile tools to be increased, while also providing the increased stimulation students were seeking, regulating learners and assisting with the comprehension of PR writing comprehension. Future studies could include quantitative calculations of student success per PR technology tool, quantitative analysis of student polling and surveying, and qualitative analysis of student comments.

Engagement Without Technology

While technology is not at everyone's disposal, just because a person does not have technology does not mean a person cannot engage their students following this model. Active learning can be done without devices and without internet. No matter if a person utilizes technology or physical activities engagement is important to arouse students and trigger their emotions. It is important that as instructors we make lessons memorable and allow our students to engage with the content.

CONCLUSION

Overall, it is important to adapt the PR classroom with the ever-changing world. If the world is changing then so should classrooms. This research displays the importance of arousing students with proper stimuli to meet their needs in an effort to enhance learning.

REFERENCES

- Arousal Theory. (n.d.). *Communication Theory*. Retrieved June 22, 2019, from https://www.communicationtheory.org/arousal-theory/
- Attardo, S. (1994). Linguistic Theories of Humor. Berlin: Walter de Gruyter & Co.
- Ball, S., Eckel, C., & Rojas, C. (2006). Technology Improves Learning in Large Principles of Economics Classes: Using Our WITS. *American Economic Review*, 96(2), 442-446.
- Chang, Y. (2017). Why Do Young People Multitask with Multiple Media? Explicating the Relationships Among Sensation Seeking, Needs, and Media Multitasking Behavior. *Media Psychology*, 20(4), 685-703.
- Chari, V. (2017). *The 10 characteristics of a successful PR professional*. Retrieved from https://www.agilitypr.com/pr-news/public-relations/10-characteristics-successful-pr-professional/
- Cox, J. (2016, December 29). *Technology in the classroom: Benefits and best practices*. Retrieved from https://www.teachhub.com/benefits-technology-classroom
- CSU. (2019). Student Success Dashboard. Retrieved from https://csusuccess.dashboards.calstate.edu/public/dashboard-index
- CSU San Bernardino. (2018). Student Opinion of Teaching Effectiveness.
- CSU San Bernardino. (2019). Student Opinion of Teaching Effectiveness
- Doyne, S., Ojalvo, H. E., & Schulten, K. (2011, April 15). *That's Funny: Comedy Across the Curriculum*. Retrieved from https://learning.blogs.nytimes.com/2011/04/15/thats-funny-comedy-across-thecurriculum/
- Forsey, C. (n.d.). *What Is Public Relations? The Definition of PR in 100 Words or Less*. Retrieved from https://blog.hubspot.com/marketing/public-relations-definition
- Jansson, P. (2007). Interactive Learning Technology Improves Engineering Student Competencies. International Journal of Technology, Knowledge and Society, 3(3), 85-94.
- Lajoie, S. (2017). Crossing Disciplinary Boundaries to Improve Technology-Rich Learning Environments. *Teachers College Record*, 119(3), 1-31.
- Hicks, S. (2011). Technology in Today's Classroom: Are You a Tech-Savvy Teacher? The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 84(5), 188-191. DOI: 10.1080/00098655.2011.557406
- Means, V., Moore, W. J., Gagné, E., & Hauck, W. E. (1979). The Interactive Effects of Consonant and Dissonant Teacher Expectancy and Feedback Communication on Student Performance in a Natural School Setting. *American Educational Research Journal*, 16(4), 367-373.
- Nerren, J. (2018). Civic Engagement, Fake News and the Path Forward. *Journalism and Mass Communication*, 8(2), 51–55.
- Nicol, A. A., Owens, S. M., Le Coze, S. S., MacIntyre, A., & Eastwood, C. (2018). Comparison of hightechnology active learning and low-technology active learning classrooms. *Active Learning in Higher Education*, 19(3), 253–265. https://doi.org/10.1177/1469787417731176
- Picard, R. W., Fedor, S., & Ayzenberg, Y. (2016). Multiple Arousal Theory and Daily-Life Electrodermal Activity Asymmetry. *Emotion Review*, 8(1), 62–75. https://doi.org/10.1177/1754073914565517
- Richards, S. B., & Taylor, R. L. (2005). A Review of Biobehavioral State Assessment of Individuals with Profound Disabilities. *Assessment for Effective Intervention*, 30(4), 5-13.
- Siddiqui, Z. (2014, March 20). *The History of PR*. Retrieved from https://www.curzonpr.com/theprinsider/from-the-beginning-the-history-of-pr/

- Staal, M. (2004). *Stress, Cognition, and Human Performance: A Literature Review and Conceptual Framework.* NASA Ames Research Center STI Program Office in Profile. Retrieved from http://humanfactors.arc.nasa.gov/web/library/publications/publications.php
- Vanderwolf, C. H., & Robinson, T. E. (1981). Reticulo-cortical activity and behavior: A critique of the arousal theory and a new synthesis. *Behavioral and Brain Sciences*, 4(3), 459-476.
- Vierra, J. (2019). Conceptualization of Mexican-American and Euro-American Relationships: To Be or Not to Be. OSR Journal of Student Research, 5(346). Retrieved from https://scholarworks.lib.csusb.edu/osr/vol5/iss1/346
- Wagner, D., & Valentino, A. (2019, February 2). Applying Behavior-Analytic Instructional Strategies in Higher Education. Address presented at CalABA Annual Behavior Analysis Conference in California, Long Beach.
- Yerkes, R. M., & Dodson, J. D. (1908). The Relation of Strength of Stimulus to Rapidity of Habit-Formation. *Journal of Comparative Neurology and Psychology*, 18, 459-482. Retrieved June 22, 2019, from https://psychclassics.yorku.ca/Yerkes/Law/.