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Ten Minutes of History: Activities for Promoting Learning About the History of Comparative Psychology

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The history of psychology is fascinating and replete with important content for students to learn. The scholars and events that highlight the history of comparative psychology are no less compelling. However, there are many challenges in teaching the field's history in a way that is engaging, inclusive, and comprehensive. One strategy for addressing these issues is to develop and employ a library of student-generated electronic tutorials that allow the introduction of under-represented groups and under-discussed contributors. In the present paper, we report the effectiveness of this strategy compared to several other class activities. Learning-outcome and student-evaluation data indicate that information introduced exclusively in these "Ten Minutes of History" e-tutorials and academic ancestry presentations is learned to degrees at least comparable to the topics and contributors discussed in traditional lectures and readings. Without contending that these instructional activities are either particularly novel or uniquely suited to this particular course, the data reported here are encouraging for instructors who are facing obstacles to active learning and student engagement in a stand-alone course on psychology's history broadly or comparative psychology more specifically.

Keywords: comparative psychology, teaching

Psychology is a broad discipline, as heterogeneous as the individuals who work within it. To illustrate this point, review the list of the almost 100 journal titles published by the American Psychological Association (APA) and its affiliates, from *American Journal of Orthopsychology* to *Traumatology*—which, of course, reflect only a fraction of the outlets and titles for the varieties of psychological scholarship. Chief among the threads that knit this diverse group of psychologists together is our common history. Recognizing this, the APA has included knowledge about the history of psychology among the learning outcomes that it specifies for the undergraduate major (APA, 2006) and that it requires for accreditation of graduate-training programs (APA, 2013).

Comparative psychology is certainly more narrow as a subfield but is foundational to the broad discipline (Thomas, 2009; White, 2007). The specialty has an equally distinguished history (indeed, many of the giants in the history of psychology were comparative psychologists) about which students require training (see Table 1 for a sample of historical figures from comparative psychology and pre-course familiarity ratings for these individuals). Ten of the 100 "extremely eminent psychologists" in the study by Diener et al. (2014) and 4 of the 12 "historical great persons of psychology" are best known for their research with animals—and those lists do not even include other well-known and important scholars like M. F. Washburn, K. Spence, C. H. Turner, and R. Yerkes whose primary contributions occurred in the first half of the last century (see Haggbloom et al., 2002, for a less contemporary list of eminent psychologists). Various innovative teaching activities have been described in the literature to help students learn about these historical figures (e.g., Abramson & Long, 2012; Gagnon, 2016; see related activities by Bryant & Benjamin, 1999; Ware & Benjamin, 1991; Wight, 1993; Woody, 2011).

Table 1

Selected Comparative Psychologists from History, with Pre-course Familiarity Ratings*

Historical Figure	Familiarity Rating
Charles Darwin	2.52
John Dashiell	0.05
Harry Harlow	0.25
L. T. Hobhouse	0.05
Wolfgang Köhler	0.42
Nadezhda Ladygina-Kohts	0.00
Karl Lashley	0.34
Neal Miller	0.10
Conway Lloyd Morgan	0.13
Ivan Pavlov	2.30
George John Romanes	0.05
B. F. Skinner	1.91
Willard Small	0.13
Kenneth Spence	0.08
Edward L. Thorndike	1.22
Edward C. Tolman	0.30
Charles Henry Turner	0.12
Margaret Floy Washburn	0.35
John B. Watson	1.29
Robert Yerkes	0.82

Note. *Mean Familiarity ratings: Unfamiliar = 0, Somewhat Familiar = 1, Familiar = 2,
Very Familiar = 3 (see text for explanation)

For the last few years, the senior author has used several class assignments in a stand-alone graduate history-of-psychology course to promote student identification with and research into the field's key historical figures and developments. These activities are designed to encourage active learning, to promote the view that psychology's history is not just a content area to be learned but also a viable topic for scholarly research by students (Benjamin, 1979), and to help with the selectivity problem that every history-of-psychology instructor faces—namely, that even in a semester-long stand-alone course, one cannot cover every significant person, event, and development that merits attention (Wight, 1993). Although these activities are not uniquely designed for teaching the history of comparative psychology, the present review is focused on the content development and learning outcomes specific to our subfield and the topic of this special issue.

Academic Ancestry

The first activity was an academic-ancestry research presentation, in which students traced their academic lineage through a mentor or favorite teacher, back through that scholar's mentor or major professor, and so forth—back at least to the founding of the discipline (Coffield, 1973; Goodwin et al., 2002; Weigel & Gottfurcht, 1972). The academic family tree was required to include a significant research project on one underdiscussed historical figure within the lineage, someone who is not typically covered at length in comparative psychology or history texts. For this assignment, students were also prohibited from focusing the paper and oral presentation on living scholars. Students used a variety of research methods—oral histories, academic records and library, web resources like PsychTree and NeuroTree, obituaries, autobiographies, and other strategies—to compile biographical and contribution histories of key figures in comparative psychology. A 10- to 15-min class presentation of the academic ancestry and research biography of the focal individual was required, and the content of these presentations became part of the testable content of the course.

Ten Minutes of History e-Tutorial

Students were also required to produce a "Ten Minutes of History" (TMoH) electronic tutorial (e-tutorial). Each TMoH was a student-generated electronic lecture (with narration and visual aids) on any under-discussed topic (person, event, program, etc.) in the discipline's history. The tutorial typically took the form of a narrated PowerPoint, exported as a movie and uploaded to the class YouTube channel; however, PowToon or explainer presentations, narrated Prezi talks, TED-style talks, and other formats were also permitted and occasionally submitted. The rules for this course assignment were that (a) the topic could not be a person/event/work that was otherwise discussed in the readings or lectures, (b) the initial or primary impact of the topic could be within the previous 50 years, (c) the e-tutorial must be free-standing, in that it could be reviewed by any student in any semester without reference to other discussions or information from the course, and (d) the TMoH presentation must be 5 to 15 min in duration. For narrated PowerPoint presentations, text-only screens were strongly discouraged to promote visual interest and to avoid the e-tutorials simply becoming an e-book or paper. Students combined text and images to make interesting visual aids to accompany the spoken lecture. The narration could be scripted or extemporaneous but could not consist of simply reading whatever text appeared on the screen. Timings, animations, and automated transitions were used so the PowerPoint file and the resulting video was able to executed from start to finish without intervention. Students were required to watch the e-tutorials outside of class, with the information becoming testable content for the course. (For examples of videos submitted by students for this assignment, see Beatrice Tugenhut Gardner, https://www.youtube.com/watch?v=MdGuDk8Xbi4&t=10s by Kristin French; and Keller Bramwell Breland, https://www.youtube.com/watch?v=OmQJxT4g6f0&t=287s by Ashley Meacham).

Wikipedia Option

In cooperation with the Association for Psychological Science's Wikipedia Initiative (https://www.psychologicalscience.org/members/aps-wikipedia-initiative), students could choose to prepare and publish a new Wikipedia page for an individual or to substantially improve an existing page rather than submit a narrated e-tutorial for their TMoH submission. This option was infrequently selected because it required students to commit to working on the Wikipedia page until it was accepted for final publication on Wikipedia, which occasionally meant working beyond the constraints of the semester; however, these Wikipedia pages, when produced, were also part of the testable content for the students in the course. (For examples of Wikipedia pages written or re-written by students for this assignment, see Molly Flessert's https://en.wikipedia.org/wiki/Nadezhda_Ladygina-Kohts and J. Antonio Salamanca's https://en.wikipedia.org/wiki/Kenneth_Spence).

Although the TMoH topics were occasionally significant events, apparatus innovations, or similar historical events (e.g., the development of the regional primate research centers), most were biographical in nature. In the 10 years that DAW has used these activities in graduate History of Psychology courses, ancestry or e-tutorial research projects have been completed on scholars from the history of comparative psychology (and related fields) including Marion Breland Bailey, Frank Beach, Keller Breland, John Dashiell, Beatrix Gardner, L. T. Hobhouse, Nadia Kohts, Neal Miller, Henry Nissen, Austin Riesen, Duane Rumbaugh, Willard Small, Kenneth Spence, Calvin Perry Stone, Niko Tinbergen, Margaret Floy Washburn, and Robert Yerkes. The present report examines the effects of instruction through the ancestry or e-tutorial platforms and compares learning outcomes to those associated with introduction of information through traditional lectures or readings.

Method

Participants

To examine whether these two instructional activities were helpful for achieving the objectives indicated above, data from 10 semesters of a graduate history-of-psychology course are summarized here. The course primarily enrolls second-year doctoral students from psychology, educational psychology, counseling psychology, and school psychology programs. Total enrollment for the 10 semesters was 280 students. In each course, several measures of effectiveness were collected.

Assessment of Learning Outcomes

Pre-course Survey

At the beginning of the semester, each student completed a pre-course survey that included, among other things, a list of over 200 names in alphabetical order (and a few significant dates, places, and terms) from the history of psychology. For each item in the list, students rated their familiarity using a 4-point (Unfamiliar, Somewhat Familiar, Familiar, Very Familiar) scale. (For the most recent 4 years, the "Somewhat Familiar" category was eliminated.) Additionally, the students were instructed to write things that they knew and remembered about each person, place, or event that they rated as familiar. For the "Very Familiar" category, it was expected that the student would write at least one fact about the person in question. The list of names included many people who would be discussed every semester in the readings (textbook and other assigned readings) and/or in the lectures (e.g., Darwin, Pavlov, Skinner, Watson). The familiarity survey also included names of people who were not discussed in detail within the readings or the instructor's scheduled lectures. For example, this group included people (e.g., Dashiell, Gardner, Hobhouse, Stone) or topics discussed in previous semesters only as part of a student presentation or activity.

Post-course Assessments

At the end of the semester, students again completed the 200+-item survey, rating their level of familiarity with the people, places, years, and events and writing facts about these topics in the open-ended space on the survey. Note: Because students select the topics of the ancestries and TMoH e-tutorials (albeit with instructor approval, so as to prevent overlap), the end-of-term survey also included items that were not on the pre-course instrument. Thus, the post-course survey includes topics that were covered in readings and/or lecture, the research activities, or that were not covered at all during the semester (e.g., academic ancestry figures from prior semesters who were not mentioned during the current semester). Change in familiarity ratings and accurately reported facts were analyzed for each of these categories of people/topics.

Additionally, students were asked to provide end-of-term feedback on all of the assignments, lecture topics, class activities (e.g., videos, Skype interviews, guest lectures), and readings for the course. This anonymous feedback form (submitted in addition to the regular evaluation of instruction solicited by the college) solicited a "LOVE IT/KEEP IT – LIKE IT/TWEAK IT – HATE IT/DUMP IT" rating for each course element, and provided space for students to write suggestions (e.g., if they checked "tweak it").

Exam performance on multiple-choice and matching sections was also available for analysis. Information can be provided regarding exam performance for material encountered through student-generated activities (TMoH and ancestries) compared to all other material.

Results and Discussion

Assignment Objectives

As described above, the TMoH and other activities were assigned in an attempt to increase the breadth of coverage of a graduate history-of-psychology course, both with respect to demographic categories of diversity and also with respect to topics (e.g., to expand coverage of areas like comparative psychology or community psychology, driven by student interest) that might otherwise be excluded by the focus on traditional topics. Figure 1 provides frequency counts for under-represented groups (women, racial/ethnic/sexual-preference minorities)—across fields in psychology, not just for comparative psychologists—as a function of the way that these individuals were introduced in the course. Note that the course is already designed with specific readings and lectures on such marginalized groups, so any individuals from the course activities were in addition to the pioneering women and African Americans whose contributions were already discussed in the class. Across years, the number of discussed contributors from under-represented groups essentially doubled because of the ancestry and TMoH assignments, although of course these student-led discussions were spread across the years, so that each semester benefitted by an average of about 8 such individuals who might otherwise not be discussed.

Figure 1

Frequency Counts of Gender/Racial/Ethnic Minorities Introduced into the History of Psychology Course as a Function of the Introduction Method, Totaled Across Five Semesters
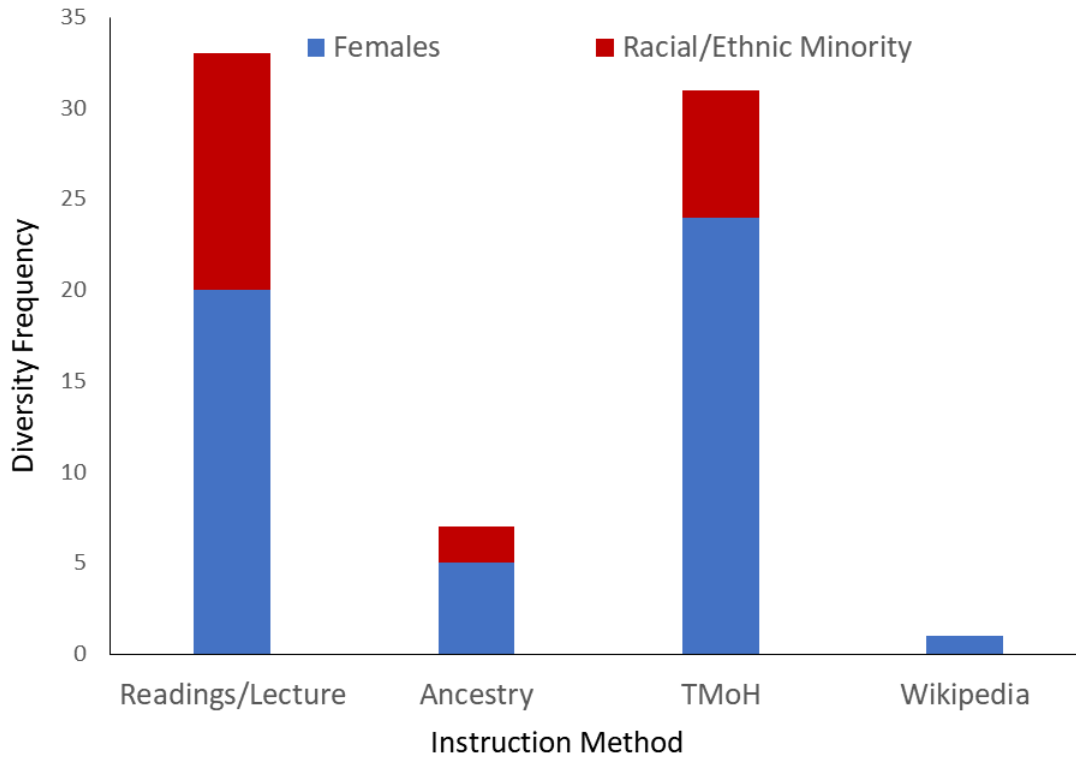

Figure 2 displays pre-course and post-course familiarity ratings as a function of group (source of information). It could not be known at the pre-term assessment which contributors would be selected by students for their ancestry, TMoH, and Wikipedia submissions; however, many of those names were added to the pre-term survey for subsequent semesters. Moreover, the ancestry/TMoH/Wikipedia names from previous terms probably served as a suitable pre-course baseline for these new names. In any case, familiarity increased—as would be expected—for historical figures who were introduced in the lectures, readings, and/or from one of the student-generated presentations. It is noteworthy that the familiarity ratings for contributors who were not discussed in any platform during the semester (the "None" condition) were not changed, so we can infer that it is not the familiarity-rating instrument alone that served to boost students' responses. It is also noteworthy that each of the methods was approximately equally effective in raising familiarity; although the highest level was observed for the lecture and readings category, it is also true that the contributors in this category included many of the most familiar names in the history of comparative psychology even before the course (e.g., Darwin, Pavlov, Skinner, Thorndike, Watson). Note that no effect was observed from mere exposure of names on the pre-/post-class familiarity survey.

Figure 2

Pre-course and Post-course Familiarity Ratings (higher scores mean more familiar) for Individuals and Other Topics Introduced and Discussed in Lecture or Readings or by One of the Instructional Activities Assigned in the Course.
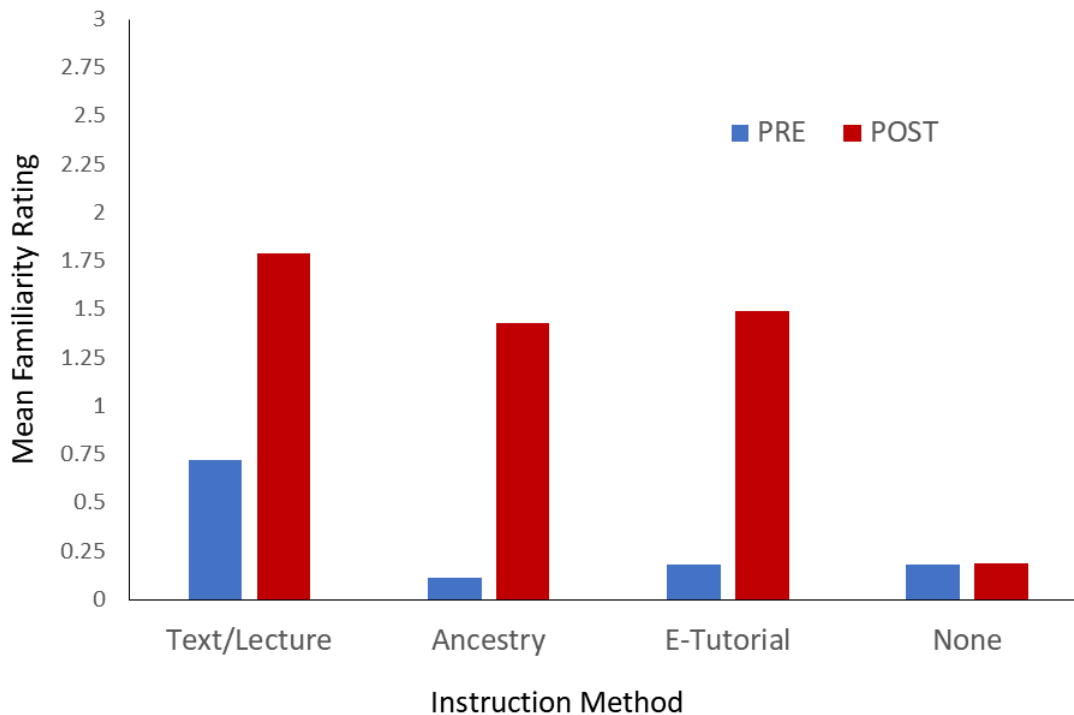
The reliable increase in familiarity is reassuring, but the degree of increase is frankly disappointing. It is difficult to reconcile these modest increases with the generally excellent level of performance on the course examinations, in which students had to match contributors with a phrase that described their contributions. On examinations, students averaged 87% accuracy for matching questions about contributors who were introduced through the academic ancestries. Accuracy on the TMoH and Wikipedia information was 78%, which is surprisingly high given that students were only required to review 11 (about one-third) of these offerings. Extra-credit points could be earned by answering more than 11 matching questions correctly, and it appears that students made good use of this option by learning at least enough to recognize the correct contribution for each historical contributor. Of course, these exam assessments were recognition opportunities; conversely, students completing the post-course familiarity questionnaire might have rated any name that they recognized but for whom they could not recall a specific contribution as familiar rather than very familiar.

One important caveat for interpreting the relatively low overall familiarity ratings is that students could rate a name as "unfamiliar" by writing a "U" or by skipping the name altogether (writing nothing). Thus, it seems likely that these familiarity ratings are very conservative; that is, they include both "true unfamiliar" ratings and measurement error from individuals skipping names with which they were familiar (although there is no reason to expect that such skipping would bias the results with respect to comparisons across the instructional conditions). For instance, the average post-course familiarity ratings (scoring nonresponses as "unfamiliar") for Darwin, Pavlov, Skinner, and Watson averaged just 2.7, although it is inconceivable that any student could pass the course without at least being very familiar with those contributors!

This same caveat is relevant to the low levels of pre-course familiarity shown in Table 1. Nevertheless, it is likely the case that important figures in the history of comparative psychology are relatively unknown to students—even doctoral students, given that most are pursuing graduate degrees in clinical, counseling, community, developmental, cognitive, and similar subfields other than comparative psychology. The activities examined in this research appear to be effective in helping students become familiar with the contributors to our field and, more importantly, actually learn about the contributions that shape our discipline.

The open-ended portion of the pre- and post-course survey provides some reassuring information regarding the relatively modest increases in familiarity ratings across the course. Many students wrote facts to correspond to the names on the list, particularly in the post-course survey. These facts were almost always accurate (>96%); interestingly, students who recalled specific facts about individuals might still rate their familiarity with those individuals as "familiar." Indeed, given the number of individuals covered across more than a century of our discipline's history (the course focused on 1860-1960, and it bears repeating that these data highlight the history of comparative psychology, but are from a general history-of-psychology graduate course), it is encouraging that (at least some) students were able to recall new learning about so many historical figures and yet realized that there was much more to know about each contributor.

In addition to the standardized student-evaluation-of-instruction that is collected by the college, substantive student feedback was solicited mid-term and end-of-term regarding the pace, content, and other aspects of the course. Of relevance to the present report, Table 2 summarizes students' feedback on the ancestry, Wikipedia option, and two aspects of the TMoH assignment (production of the e-tutorials and review of the presentations). Feedback on each of these activities was generally positive, although less positive for the TMoH than for the other assignments. When comments were provided as to why an assignment should be discontinued or modified for future terms, they tended to emphasize the admittedly high workload associated with including all of these assignments, plus a research paper, in a 15-week graduate course. In some terms, students also noted the need for help in solving technical challenges (e.g., recording, timing, posting) of the TMoH assignments; for the last two years, the department has actually provided a graduate teaching assistant to provide one-on-one technical help. Whereas more could be done to address the suggestions and complaints, the dominant impression garnered from these data is that most students like these assignments and see value in them.

Table 2

Summary of Anonymous Student Feedback on the Assigned Activities Discussed in this Paper.

Assignment	Hate It/ Dump	Like It/ Tweak	Love It/ Keep	Comments and Suggestions
Academic ancestry	3%	15%	82%	- Presentations take too much class time - Not interested in other people's history - Quality of presentations was uneven - Enjoyed the research more than the presentation
TMoH (researching and producing the e-tutorials)	25%	50%	25%	- Too much work/time to make - Needed technical assistance - Activity is redundant with ancestries - Why can't these overlap with ancestries?
TMoH (reviewing other students' e-tutorials)	15%	65%	25%	- Too many/reduce the number - Make optional - Inconsistent quality
Wikipedia option	<1%	27%	72%	- Love adding resource to internet - Needed technical assistance

General Discussion

The strategy of employing student-generated content is not new (e.g., Nava et al., 2019; Thomas & Marks, 2014; Yang et al., 2016) or uniquely appropriate for teaching the history of comparative psychology, or to a history-of-psychology course more generally. Instructors for other psychology courses face challenges with respect to coverage, engagement, diversity, and the like. We think these acknowledgements enhance the utility of the present comparison of TMoH and other instructional activities designed to promote learning. It is certainly true that these techniques would work tremendously well in a standalone comparative psychology or comparative cognition class. Most significantly, the data suggest that information that students encountered solely through these peer-generated assignments was learned as well (as indicated by exam performance, familiarity ratings, and recall of contributions) as topics and contributors discussed in course lectures and readings.

At the same time, the assignments do appear to achieve the goal of increasing discussion of under-represented and under-discussed populations, including early contributors who were females, racial and ethnic minorities, or working in non-Western settings. Even if this were not true, we believe that the assignments would be valuable because they give students the opportunity to increase inclusion of under-discussed topics and contributors, to tailor course content according to their individual interests (e.g., to focus specifically on primate researchers' field studies), or to make content personally relevant through the academic ancestries. Although this level of choice and flexibility certainly make the course more difficult to plan (i.e., the instructor does not know prior to the semester what topics students will introduce and what gaps will remain to be filled in other ways), the options for students to introduce content make it difficult for those students to complain about issues of inclusion and coverage in end-of-term evaluations. (In the first-author's experience, there has certainly been a decline in such complaints across terms since TMoH was introduced in this course.)

In principle, each TMoH assignment could be made available to comparative-psychology students in subsequent terms, and indeed to students in other courses and at other schools, as each new Wikipedia entry already is. The TMoH videos on YouTube generate views and positive comments when they are made public, but they can also be posted as unlisted videos to be viewed only by class members. Some of the best TMoH e-lectures from prior terms have been used as examples so students understand the nature of the assignment and also to introduce important contributors who are not otherwise covered. Students have been generally discouraged from proposing topics that were covered in previous terms, but requests have sometimes been approved for under-discussed contributors even if they were subject of an e-tutorial in previous semesters. In these cases, it is generally easier to provide students with feedback (including fact-checking) for TMoH on topics that are already familiar to the instructor. Because the student-generated content of each of these assignments become part of the to-be-learned material for classmates, pass/fail grading has typically been used such that an assignment is not accepted or distributed unless it is evaluated as being of satisfactory accuracy and quality. That said, the grading demands of the TMoH, ancestry, and Wikipedia assignments are not excessive and are certainly reasonable in light of the positive learning outcomes—for the instructor as well as for the students—from this focus on under-discussed contributors and events in our discipline's history. Thus, these activities add to the growing list of interventions that may help address the well-documented need to keep comparative psychology alive and integral in the undergraduate and graduate psychology curriculum (e.g., Abramson, 2018; Batsell & Brown, 2000; Dewsbury, 1992; Highfill & Yeater, 2018; Krachun, 2015; Thompson, 1987).

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