Why Interdisciplinarity Sharing in Research Is for Your Own Good:
Especially When Facing Insignificant Study Results
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Introduction

Your dreams are crushed: Your well-planned and executed research project has ended in insignificant results. Not only are your chances for publication slim to non-existent, the benefits you envisioned for extending your findings to other fields of study have also dissipated. This is not an uncommon scenario among researchers and one that I experienced in my first foray into the wonderful world of educational research. I consider my experience as a fortunate misadventure because it has forced me to look deeply into the research culture. I believe that instead of discounting some research studies as unpublishable or unsharable, these studies have the potential to advance knowledge for the good of society, as well as to advance the personal goals of the researcher.

I present my argument by sharing my journey from a “failed” research project to the discovery of three underlying principles that drive the research culture. These principles, in my opinion, are the foundation to the behavior of non-sharing of insignificant or negative research study findings. The principles can be described as: (a) the “publish or perish” rule, (b) the “hoard until it’s published rule”, and (c) the “what happens in Vegas, stays in Vegas” rule. I highlight the reasons for following these rules and the detrimental consequences to the researcher. I argue that interdisciplinarity sharing is a viable way to advance the research goals of the individual while also acting altruistically. I conclude with suggestions for safe sharing across disciplines.

The Loud Silence of Unpublished Results

My dissertation research was a quantitative study that investigated the effect of an instructional strategy on illness script development for first-year physician assistants. The findings were both statistically insignificant and unexpected. The insignificant results were due to the small sample size: The unexpected results were due, I believe, to the lack of robust participation by the members in the experimental group. Although I was disappointed in the end results, I wasundauntedly assured that I could publish my research as a pilot study, worthy of future generalizability to many other fields that involved diagnostic abilities. Reality began to set in, however, with my first manuscript feedback from reviewers indicating that my results were not worthy of publication. Still undaunted, I decided to explore the surely wide-spread problem of poor participation in online research studies. One researcher has noted that “lack of participation is a likelihood for any participant-based research, but one that is not often discussed in scholarship” (Dich et al., 2017, p. 3). Trying in vain to research poor participation led me to expand my search to any publications of other research “failures,” such as insignificant findings. And this is where I discovered the “loud” silence of unpublished research problems.

Systemic Reasons for Non-sharing

Why is there so little published about surely a widespread, common experience among researchers? How can we learn from each other’s “mistakes” if we cannot read about them in the academic literature? I believe the answer is rooted in what I view as three foundational principles of contemporary research culture. The first principle is the “publish or perish” rule. Researchers affiliated with academic institutions may fall victim to this rule of survival. Academic
institutions often measure worth of job applicants and faculty employees by their publication records (Davies & Felappi, 2017). According to Holosko and Barner (2014), North American universities have adopted a “corporate culture with increased accountability and outcomes” (p. 278). Not only is the number of publications a standard of measure but being published in high ranking journals and the number of times a publication has been cited are extended measures of researcher productivity and quality (Barner, Holosko, & Thyer, 2013). Compounding this problem is the competition for research grants where funding decisions are based on a researcher’s quality, again, as measured by published research (Kun, 2018). In short, the “publish or perish” rule can make sharing insignificant results a behavior that is not self-promoting for the researcher. With such measures of personal worth, a researcher is not rewarded by sharing research studies with insignificant findings. In fact, such sharing may prove detrimental to a researcher’s academic success.

The second principle that underlies the reason for non-sharing is the “hoard until it’s published” rule. This is a natural consequence of the “publish or perish” rule. A research study designed to explore the effect of agreed upon collaborative rules in a research project discovered that participants viewed data sharing as a “generous act.” That is, the normal attitude concerning data sharing stems from a research culture based on “competitiveness and possessiveness” (Kits, Angus, MacLeod, & Tummons, 2019, p. 29-30). If the traditional view among researchers is that sharing, even research data, reduces one’s competitive edge, then it follows that hoarding research data, research findings, even research ideas is a requirement to survive in a “publish or perish” environment. As noted by Kun (2018), it is unreasonable to expect an individual to act contrary to his or her best interest as it pertains to advancement in academia (p. 10).

The final principle that drives the culture of non-sharing is the “what happens in Vegas stays in Vegas” rule. This principle is an extension of the first two rules. The “publish or perish” rule would demand that insignificant results would remain “in Vegas” due to the non-promoting aspect of such sharing. The “hoard until it’s published rule” would require the secreting of research results until deemed safe to share, fearing that one’s ideas may be pilfered due to what Park (2018) describes as one of the dangerous side-effects of the “excessive research outcome-oriented competition in academia” (p. 2).

There is, however, a more potent reason that suppresses some research findings from being shared—the positive outcome bias. Positive outcome bias is defined as “the increased likelihood that studies with a favorable or statistically significant outcome will be published than will studies of similar quality that show unfavorable or ‘no-difference’ results (Emerson et al., 2010, p. 1934). Emerson et al. (2010) submitted two research studies to two medical journals for peer review by 210 reviewers. The studies were identical except for the statistical outcomes. One study had a positive outcome: The other study reported no differences between the control group and the experimental group. Five errors were purposefully added to the manuscripts. The findings showed that reviewers were more likely to recommend for publication the manuscript with the positive outcome by 97.3% compared to 80% recommendation for the no-difference study. Reviewers were twice more likely to detect the errors in the no-difference manuscript than the identical errors in the positive outcome manuscript. Finally, reviewers gave higher points for the methods section of the positive outcome manuscript than the identical methods section of the no-difference manuscript.

In summary, the phenomenon of non-sharing of insignificant or negative research results may stem from organizational and individual behaviors and values. Organizations that promote research efforts by their employees are apt to assess the employees using the bibliometrics of
publications, works cited, and the importance of the publishing journal. Grant awarding institutions are more likely to award funding to researchers who have positive history of publications. Publication bias may be present during the peer review process resulting in a higher acceptance rate of studies with significant findings. Such a research culture breeds a spirit of survival that results in researchers discounting, rejecting, and not sharing non-positive results.

Consequences of Non-Sharing

Hiding or hoarding insignificant or problematic research findings seems to be a reasonable, even safe, method of reaching personal employment and research goals. However, is there a down-side of non-sharing that exacts a higher personal or societal cost? A personal cost of non-sharing could be a missed opportunity to improve one’s knowledge or skills. Dich et al. (2017) explored the results of sharing research “failures” within a faculty learning community. They concluded that failures can be a central part of the advancement of personal scholarship. For example, sharing a study with colleagues that had no participation resulted in the researcher delving into possible motivations for learners to participate in online activities. Sharing a research study that had insignificant findings inspired the researcher to revisit the assumptions about the population. A shared research that had stalled over technical problems was improved with a colleague’s help and became publishable (Dich et al., 2017).

A second personal and, perhaps, an institutional cost to non-sharing is that time and money may be wasted. McCuen (2018) has noted that unethical behavior by a researcher, such as dishonesty in the findings of a published study, could misdirect future research, thus wasting time, funds, and a “loss of excellence” in the work of the future researcher (p. 3). It is also conceivable that the same results would ensue, not from unethical behavior in publishing, but from the withholding of potentially valuable unpublished research findings. At the very least, sharing research problems may help other researchers avoid experiencing the same problem and wasting their time and funding. Eysenbach (2018) goes even further in suggesting that not publishing negative research results could incorrectly skew literature reviews toward positive outcomes.

The Advantages of Interdisciplinary Sharing

In the previously discussed study by Dich et al. (2017), the key factor in the success of sharing research problems was having a network of colleagues that represented different disciplinary fields and perspectives. There are many advantages to an interdisciplinary research (IDR) perspective. As Morss, Lazor, and Demuth (2018) suggest “such work can frame new research questions, develop novel approaches, and generate innovative insights across and within disciplines. It can also address complex questions at the intersections of established fields, beyond what the collection of contributing fields can produce on their own” (p. 1).

There are additional reasons to seek IDR perspectives and collaborations that are personally beneficial to a researcher. First, IDR collaborations can provide the opportunity for personal growth. Experts in other disciplines can enrich your understanding of a research problem by providing a new lens in which to view different aspects of your research. Experts in other fields can fill in your deficits by providing technical knowledge unique to their disciplines. Conversations with experts in other fields may even force you to re-evaluate your personal limitations, opening the door for new learning (Hibbert, Siedlok, & Beech, 2016).

Second, IDR collaborations can increase a researcher’s autonomy in reaching his/her goals. One study revealed that academic institutions tend to control and effectually limit the
research scope and activities of their employees. Furthermore, academic institutions are not as prone to embrace interdisciplinary research as research institutions. Therefore, it behooves the researcher in academia to exercise autonomy in reaching one’s personal research goals. Proactively pursuing collaborative opportunities with experts in other fields is one way to expand the range of choices for personal improvement and advancement (Hibbert et al., 2016; Filipa, 2015).

Third, IDR collaborations may provide an opportunity to solve your research problem of insignificant or negative findings. As previously discussed in Dich et al. (2017), sharing unexpected and problematic research results with a network of colleagues from other disciplines can result in fruitful changes to one’s research study. This concept of IDR collaborations is also applauded by Hibbert et al. (2016) who states that IDR allows a researcher to explore one’s on limitations and seek extracurricular knowledge to fill “personal knowledge gaps” (p. 32).

Fourth, IDR collaboration offers the possibility of increased and longer sustained citings of one’s research articles. In a bibliometric research study of cognitive science and educational research, findings reveal a higher cite rate for articles of interdisciplinary research than single-disciplined research. For educational articles, the window of citings, which decreases overtime due to becoming outdated information, is a longer window for interdisciplinary research topics. Finally, IDR research articles from closely related fields may have a wider range of influence that mono-field related research (Kwon, Solomon, Youtie, & Porter, 2017).

Suggestions for Safe Collaboration Across Disciplines

One must weigh the benefits of sharing against the personal costs. If the benefits truly outweigh the risk, then the question becomes how best to mitigate the associated risks of sharing? I believe the answer lies in interdisciplinary collaboration which may be truer to our personal make-up and be a safer venue for sharing our unpublished research ideas and studies. If we were to reflect on our own backgrounds, many of us may discover that we are products of interdisciplinarity. In my own case, my educational background includes four disparate fields: mathematics, computer science, biblical counseling, and instructional design for online learning. Even if our backgrounds do not reflect interdisciplinarity, there are professions that are inherently interdisciplinary. One such field is the field of instructional design (ID). [Add more info with citations.] It logically follows that ID researchers should be natural role-models of interdisciplinarity.

Given that many of us incorporate the spirit of interdisciplinarity, how can we proactively and safely pursue interdisciplinarity sharing in our research efforts? First, be aware that that collaboration can be of differing levels of involvement and choose the level in which you are the most comfortable. The most basic collaborative relationship is the simple transactional exchange of ideas. The sharing of ideas may even be a one-way sharing. Another level involves temporally shared tasks, such as a research project. The most intensive collaborations are enduring relationships resulting in emergent learning and new opportunities (Hibbert et al., 2016).

To achieve any level of interdisciplinarity sharing, a researcher must be intentional about pursuing the chosen relationship. Watch out for danger zones that may be limiting your attitude or ability to expand your relational horizons beyond your discipline. The first area may be your existing network. Researcher personal networks have a strong influence over interdisciplinarity. The influence may be positive or negative. A personal network with high levels of discipline similarity, especially if you are a member of an academic department, decreases the
interdisciplinarity. In fact, simply membership in an academic department has been shown to decrease interdisciplinarity in research efforts. The second delimiting factor to interdisciplinarity sharing is the researcher’s personal beliefs and values. The desire to avoid risks, to remain in one’s comfort zone, and to hold fast to a methodological approach or theory detracts from interdisciplinarity explorations. Interdisciplinarity requires humility, an acceptance of one’s own limitations, curiosity, and an openness to change and new ideas (Filipa, 2015; Siedlok, Hibbert, & Sillince, 2015).

Since personal networks are central to effective interdisciplinarity, the next step is to ensure that your network includes the right mix of disciplines. Seek proximal disciplines that are related to your field. Research indicates that interdisciplinary research studies that are too distal are less likely to be highly cited. On the other hand, proximal disciplines represent a middle-ground of fields that share related knowledge and are have a greater rate of citings (Yegros-Yegros, Rafols, & D’Este, 2015).

Be intentional in adding members to your network that may advance your desire for interdisciplinary sharing. Form communities of learning across disciplines within a personal network, within a university affiliation, and within internet research platforms. As suggested by Siedlok et al. (2015), seek out researchers in other disciplines at professional conferences who may be interested in your ideas and attend events from different communities of learning to expose yourself to diversity.

Begin with an exploratory mindset. Start a conversation by asking others if they have experienced your problem and how they overcame it. Share your research ideas and interests. Be sure to “upframe” your research topic. This simply means “generalizing and de-contextualizing the research problem” to appeal to the interests of researchers from other disciplines (Siedlok et al., 2015, p. 100-101).

Finally, do all that you can to ensure that you have surrounded yourself with researchers of other disciplines who will respect the code of ethics regarding plagiarism. There are several things you can do to mitigate the risks of your ideas or unpublished research from being stolen or not receiving the proper credit. Make agreements in writing and follow-up all conversations with an emailed summary (Gladwin, 2018; Martin, 2013). Use preprint services platforms to protect your ideas, similar to a registry of prospective trials in medical research (Campbell, Loving, & Lebel, 2014; Harriman & Patel, 2016). A preprint service platform for social science is the Social Science Research Network (SSRN, n.d). You may also consider publishing your work as a white paper or working paper in your affiliated institution (Gatigon, 2018).

**Conclusion**

It is commonly understood that academic research is for the purpose of expanding the knowledge base and to inform practice for the good of others [Cite?]. I have argued that unpublished research studies that have resulted in insignificant results or unexpected results can be considered worthy of sharing, as well. Such studies can add value to future research efforts, be a catalyst for personal growth, and perhaps even help avoid skewed positive results in the literature. However, obstacles to sharing negative or insignificant findings, such as research culture and positive outcome bias, must be overcome. One way to mitigate these problems is for the individual researcher to explore the possibility of interdisciplinary sharing. Such sharing offers both benefits and risks. The benefits may include new skills and knowledge added to the
researchers’ toolbelt, new research opportunities, publications opportunities, and increased autonomy in reaching personal goals. One of the obvious risks is plagiarism or stolen research ideas. I have offered ideas to reduce the risk of stolen ideas and suggestions for pursuing interdisciplinary sharing. I challenge those of us who are products of an interdisciplinary background or hold professional positions that require a transcendence of disciplines to be the forerunners and role models of interdisciplinary sharing.