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Artistic Sensibility is Inherent to Research

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journals.sagepub.com/home/ijq**Benjamin C. Ingman, PhD¹** 

Abstract

Artistic sensibility is defined in this work as the sensitivity and capacity to appreciate and act upon concerns of or pertaining to art and its production. This article contends that artistic sensibility is inherent to research. This contention is supported through three points which reveal a fourth: (1) Research requires dissemination. (2) Dissemination requires representation. (3) Representation requires artistic sensibility. These three points considered in conjunction illustrate a fourth: (4) Research requires artistic sensibility. This argument has implications for research venues, evaluations of research, and the preparation of researchers in all research disciplines. Namely, certain tenets of arts-based research may be applied to a much broader array of research methodologies. Identifying, honoring, and harnessing artistic sensibility in research has the potential to improve research products and enrich discourse.

Keywords

artistic sensibility, dissemination, representation, arts-based research, aesthetics, rethinking research venues, reconsidering research evaluation, cultivating artistic sensibility in researchers

It is common to consider art as a reference to “the beauty parlor of civilization” (Dewey, 1934/2005, p. 357). Paintings, sculptures, drawings, songs, and books are said to be “works” of art. But these items are only art insofar as they facilitate human expression and interchange. This is because art is more than the product per se. As Dewey (1934/2005) explained:

Art denotes a process of doing or making. ... Art involves molding of clay, chipping of marble, casting of bronze, laying on of pigments, construction of buildings, singing of songs, playing of instruments, enacting roles on the stage, going through rhythmic movements in the dance. Every art does something with some physical material, the body or something outside the body, with or without the use of intervening tools, and with a view to production of something visible, audible, or tangible. (p. 48)

Art is often presented in opposition to science, whereby science honors objective, positivistic, or experimental activities of deduction and art attends to more subjective, ontological, and aesthetic sensibilities. It seems any engaging seriously on the topic note art and science as perspectives which overlap in human activities (Eisner, 1981; Strosberg, 2001; Wechsler, 1988). Accordingly, the boundaries of what can or should be considered art are not clearly drawn.

Research is one venue where the contours of scientific and artistic sensibilities are not neatly demarcated. When a line is drawn between the two—this is art and that is science—research is often positioned as an activity of science. But such rationales have been challenged for many decades. As George (1938) noted, “Scientific research is not itself a science; it is still an art or craft” (p. 29). Of late, these arguments have supported methodologies under the banner of arts-based research (Barone & Eisner, 2012; Lawrence-Lightfoot & Davis, 1997; Leavy, 2015). The uptake of these methods raises questions not only of where the line between researcher and artist should be drawn, but also if it can be drawn at all.

As Eisner and Powell (2002) contend, “Scientific research can be thought of as a practice, as something done over time. It could be argued that the conduct of any practice can be thought of, at least potentially, as an art” (p. 134). Similar rationales have fueled efforts to explore approaches to research grounded in aesthetics (Barone & Eisner, 2012) and discourse on the functions of art in research continues (Bast et al., 2015; Daykin, 2004; Leavy, 2015; Viega, 2016). However, making use of

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artistic sensibility in research has largely been considered an optional pursuit rather than an inherent characteristic of the work. Thus, perspectives of artistic sensibility have been somewhat quarantined to research paradigms that embrace subjective, ontological (Hein, 2013), or experiential (Denzin, 2014; Powell, 2015) epistemologies. So, the question remains: “If artistic and esthetic quality is implicit ... how shall we explain how and why it so generally fails to become explicit?” (Dewey, 1934/2005, p. 11).

The purpose of this paper is to review select qualities of research to deliver a fresh definitional perspective of research: that research requires artistic sensibility. *Artistic sensibility* is defined in this work as the sensitivity and capacity to appreciate and act upon concerns of or pertaining to art and its production. This argument is structured as a sorites, in which successive units of logic are presented to offer a new perspective of the topics therein. This contributes to our understandings of the practice of research and aligns with Barone and Eisner’s (2012) aim to “enlarge the conceptual umbrella that defines the meaning of research itself” (p. 2). Although the applications and intersections of artistic sensibility and research are numerous, this work focuses on the role of artistic sensibility as associated to representation and dissemination. Identifying, honoring, and harnessing the inherent role of artistic sensibility in research has implications for the venues of research, research evaluation, and the preparation of researchers. Prior to presenting this argument, I revisit relevant perspectives on artistic sensibility in research.

Signs of Artistic Sensibility in Research

The contention that artistic sensibility is inherent to research would suggest that we might already witness evidence of this attribute in contemporary and historical research. And so we can, through the methodologies, venues, and dissemination efforts that have embraced artistic sensibilities.

Methodologies centering artistic sensibility. A growing collection of research methods embrace and celebrate the role of artistic sensibility in research. Perhaps most broadly, the activities of the researcher and artist have been connected to provide a foundation for the discipline of arts-based research, which Barone and Eisner (2012) present as, “an effort to explore the potentialities of an approach to representation that is rooted in aesthetic considerations and that, when it is at its best, culminates in the creation of something close to a work of art” (p. 1).

Numerous methodological approaches are aligned with this effort. Educational criticism and connoisseurship (or educational criticism), for instance, is a research method in which the researcher attends to description, interpretation, evaluation, and thematics through the process and products of inquiry. Through the descriptive dimension of this method, researchers seek to generate vivid depictions of the subject matter in order to provide readers with a vicarious experience of thematic findings (Eisner, 1998b). Portraiture, similar to educational criticism, adopts an explicit aim of identifying “the good” through exploring single cases to great depth. In this method, the researcher operates as

“portraiture” and may seek to illustrate a sense of the universal in the particular (Lawrence-Lightfoot & Davis, 1997). A/r/tography celebrates the simultaneous and overlapping roles of artist/researcher/teacher and centrally locates the ontological perspectives of the a/r/tographer (Springgay, Irwin, & Kind, 2005). Visual ethnography embraces non-discursive forms of representation in the portrayal of ethnographic works (Pink, 2013). Visual methodologies honor non-linguistic representations in research, exploring images as the central subject of inquiry through methods such as photo elicitation or photo documentation. Visual methodologies also demonstrate and explore the use of images for the dissemination of findings (Rose, 2016). Performative social science (Gergen & Gergen, 2016) and performance ethnography (Denzin, 2003), apart from positioning research itself as a performance, also celebrate the aesthetic dimensions of both inquiry and the portrayal of findings. To be sure, there is no shortage of methodological options for researchers interested in channeling artistic sensibility. Products of these research approaches continue to challenge traditions of form and function in the representation and dissemination of scholarly work (Slattery, 2003).

Academic venues honoring artistic sensibility. Academic journals are perhaps infamous for offering standardized and inflexible venues for research. The limits of these dissemination avenues have inspired inquiry of how dissemination products and processes might be (re)shaped to reach intended audiences, such as community partners (Jones, 2012; Keen & Todres, 2007), policy makers (Purtle, et al., 2018), or public agencies (Brownson, et al., 2018). Some academic journals have addressed these concerns through provision of flexible platforms for innovative approaches to dissemination (see McKiernan, 2002). For instance, the editors of the *Journal for Artistic Research* (JAR) explained that this journal, “abandons the traditional journal article format and offers its contributors a dynamic online canvas where text can be woven together with image, audio and video” (Editorial Board, 2016, p. 1). Many other periodicals have begun offering authors creative options in dissemination (Conrad & Leavy, 2016; Fraser & Harrison, 2016; Hodgins & Boydell, 2014; Miller-Day, 2008) and a growing number of universities have embraced this flexibility in the doctoral thesis (Ings, 2015; Paltridge et al., 2011). This evolution in venue has not been without consequence for content. As Dunham (2011) stated, “The ability to include multimedia files as an integral part of research dissemination is redefining the nature of scientific writing” (para. 12) (see also Uhrmacher, 1991). Academic journals providing platforms for researchers that are responsive to these perspectives may be considered exemplars of a broader shift in the form of academic discourse. It seems the nature of a refereed “journal,” per se, is undergoing something of a revolution alongside the digitalization of society.

Dissemination efforts celebrating artistic sensibility. Artistic sensibility in research is perhaps best demonstrated through the actions and products of researchers who have embraced these sensibilities in dissemination efforts. Their works

highlight both the breadth of application for these ideas across disciplines, as well as the possibilities for dissemination strategies available to researchers. To highlight a few examples: Barry (2017) disseminated her findings of wardrobe interviews with men in the form of a fashion show in which interview excerpts were played over speakers and posted alongside garments through social media as research participants walked the runway. McKnight et al. (2017) experimented with collaborative poetry as a form of inquiry, challenging the distinction between academic and creative writing (see also, Faulkner, 2018). Markula (2011) combined dance and narrative text through a performance ethnography in which findings were danced. Sousanis (2015) disseminated his dissertation in comic book form, which challenges the commonly linear modes of dissemination and blends visual panes with text. Gerstenblatt (2013) blended portraiture with collage to showcase marginalized voices and narratives in dissemination efforts. West (2001) released an album concerning the same topics of his academic works but framed in a representation designed to connect with a broader audience. There are other examples still that demonstrate the artistic use of language and rhetoric (see Finley & Knowles, 1995) and spoken word (see William-White, 2011) in research.

Although many of these examples are studies of social science, artistic sensibility has also been channeled in the natural sciences. Indeed, several great products of science are considered as such, in large part, because they attend to these aesthetic considerations (Gruber, 1988). The works of Hypatia (Booth, 2017), Einstein (1905), Gray (1858), Byrne (1847), Copernicus (1543), Sibylla Merian (1705), and Just (1939) have all been celebrated on these grounds. Recent application of artistic sensibility in research is also evidenced in the growth of data visualizations and discourse of aesthetics across the sciences (Campbell, 2017), including fisheries (Goetz et al., 2017), genomics (Krzyszowski et al., 2009), chemistry (Weibel & Fruk, 2013), and other fields (Groeger, 2011; Harrison et al., 2015). These researchers highlight not only that artistic sensibility has been applied across disciplines and methodological paradigms, but also that conscious engagement of these sensibilities in dissemination can allow research to take on otherwise unattainable meanings (see Jewitt et al., 2017).

Contemporary products of journalism also exemplify the application of artistic sensibility in dissemination. Works at the *New York Times*, *ProPublica*, *the British Broadcasting Corporation*, and other venues illustrate the possibilities of attending to aesthetics in communicating findings (see Bostock, 2014; Groeger, 2019). Many data visualizations and graphics found in these venues exemplify Tufte's (2001) assertion that "Graphical elegance is often found in simplicity of design and complexity of data" (p. 177). Tufte (1997) also detailed how the visual display of statistical results has proven consequential to the ways in which findings are interpreted and acted upon. These applications of artistic sensibility present promising and important possibilities for the uptake of research.

This review of methods, venues, and dissemination efforts demonstrates the potentialities of embracing artistic sensibility in research. However, the examples included above are the exception rather than the rule. As a research community still growing through a positivist-dominant era of epistemology, we have largely neglected to acknowledge the artistic sensibility inherent to research. As Eisner (1988/2005b) argued, "The politics of method are not solely rooted in matters of epistemology; they also stem from human frailties. Any method or approach to the world depends upon the exercise of certain skills and dispositions" (p. 119). We continue the tradition that precedes us, carrying the torch of a persistent hegemony that seldom recognizes the utility of artistic sensibilities. As Thiong'o (2002) stated of artists, "the artist, to the extent that he is a member of a given society, is caught up in the contradictions of that society" (p. 218). So we, as researchers, are subject to a contradiction in our broader discipline concerning the relationship of artistic sensibility to research. But we need not let inertia define our trajectory.

Research, Dissemination, Representation, and Artistic Sensibility

This work explores the relationship of research, dissemination, representation, and artistic sensibility. This analytic inquiry is structured as a sorites, a form of argument aligned with syllogistic logic in which a series of successive propositions is taken as a whole to reveal an additional conclusion. In a sorites, the predicate of one point forms the subject of the next and the conclusion connects the subject of the first point with the predicate of the final point (Hyde, 2011). This is similar to transitive relation in the field of mathematics (Russell, 1919/1993, p. 33). For example, if a is greater than b , and b is greater than c , then it may be deduced that a is greater than c . The argument in this work applies this logic to select attributes of research as follows: (1) research requires dissemination, (2) dissemination requires representation, and (3) representation requires artistic sensibility. These points, when taken as a whole, illustrate a fourth point: (4) research requires artistic sensibility. The concepts and literature included were selected and analyzed by me (Morse, 1994). From the outset, I acknowledge that argumentation by sorites is not infallible (Hyde, 2011) and this argument is only worthy of application insofar as it enriches the practice of research. Preludes and disclaimers attended, let us dive in.

1. Research Requires Dissemination

To contend that research requires dissemination relies on a shared understanding of what research, in fact, is. As Beveridge (1957) offered, "Research is one of those highly complex and subtle activities that usually remain quite unformulated in the minds of those who practice them" (p. viii). While it is common to sidestep discussion of what research is as a precursor to conducting it, several have offered definitions worthy of revisitation:

Research is the empirical part of science—of seeking scientific knowledge. (Anderson & Arsenault, 1998, p. 5)

In contrast to sources of knowledge that are primarily idiosyncratic, informal, and influenced heavily by subjective interpretations, research involves a systematic process of gathering, interpreting, and reporting information. (McMillan, 2004, p. 4)

Scientific research is the application of the scientific approach to studying a problem. It is a way to acquire dependable and useful information. Its purpose is to discover answers to meaningful questions by applying scientific procedures. (Ary et al., 2002, p. 16)

... research is the systematic attempt not only to collect information about an identified problem or question, but also to analyze that information and to apply the evidence thus derived to confirm or refute some prior prediction or statement about that problem. (Hittleman & Simon, 2006, p. 2)

We view research as a process of interconnected activities that individuals use to address important concerns or issues in fields, such as education, social work, and health. Individuals practicing research follow a general set of steps from the initial identification of a research problem to ultimately disseminating their conclusions so others can read and evaluate their work. (Plano Clark & Creswell, 2010, p. v)

The attentive reader will note that only one of these definitions calls explicit attention to dissemination. Furthermore, these varied definitions suggest an eclectic operational conception of research and raise questions regarding the extent to which differing conceptions of research may influence its conduct. Indeed, we all carry our own definitions of research and my intention in this article is, in part, to call into question these functional definitions.

For the purposes of this work, research is defined as “Systematic investigation or inquiry aimed at contributing to knowledge of a theory, topic, etc., by careful consideration, observation, or study of a subject” (Research, n.d.). In this view, inquiries that lack the aim of contributing to knowledge are not research. This is consistent with Institutional Review Boards, which list two criteria to qualify a project as research: “(1) the project involves a systematic investigation, and (2) the design—meaning goal, purpose, or intent—of the investigation is to develop or contribute to generalizable knowledge” (Amdur et al., 2006, p. 101). The only way to make such a contribution is through some form of dissemination.

The above definitions note reporting or sharing information, contributing to bodies of knowledge, and the application of findings in the tradition of the scientific method. Underlying all of these activities, while different in scope and focus, we may perceive the spirit of dissemination; of getting our findings, results, or ideas, out there. Regardless of our epistemological stance toward research, and the practices we use in the name of research, the point remains: research requires dissemination.

2. Dissemination Requires Representation

Dissemination is defined as the spreading or sharing of information. In the context of research, dissemination pertains to the communication of findings or results. We share what we have come to know with those who also have an interest in knowing it. But communication is not a direct transfer of information. Dewey (1934/2005) provides some grounding for this concept:

... communication is not announcing things, even if they are said with the emphasis of great sonority. Communication is the process of creating participation, of making common what had been isolated and singular; and part of the miracle it achieves is that, in being communicated, the conveyance of meaning gives body and definiteness to the experience of the one who utters as well as to that of those who listen. (p. 253)

Communication is made possible by representation. I introduce the term representation here as an activity, rather than product; it is the *creation* of a portrayal of that which is held privately. As Shields and Penn (2016) offer, “the process of representation occurs when we link a symbol or sign to a concept that emerged from an experience” (p. 8). Papers, speeches, signs, images, books, videos, songs, and poems are all forms created through the act of representation. They all convey messages, revealing some aspects while concealing others (Eisner, 1994). These representations are experienced idiosyncratically, as dictated by the idiosyncratic contexts and sensibilities of the audience (Barthes, 1970/1974), which produces varied meanings with different audience members (Eisner, 2002).

The linchpin of this point is that communication is impossible without expressing ideas through some medium (although even abstaining from communicating can be considered a form of communication (Watzlawick, Beavin, & Jackson, 1967)). As Eisner (1994) explains, “If the individual wishes to express the meanings secured from [experience] he or she must use some form of representation to do so” (p. 47). And as it pertains to research, Tufte (1997) notes that “Those who discover an explanation are often those who construct its representation” (p. 9). Within the context of research, the form we choose to achieve this communication is commonly books, journal articles, conference presentations, and other linguistic forms. The selection of a particular form is informed by the findings, the researcher, the purposes of dissemination, and the traditions preceding the act of representation (Eisner, 1994; Wechsler, 1988).

In sum, dissemination in research is not a direct transfer of information because research must be communicated through portrayals of that research. These portrayals, or forms, are created through the act of representation. Without a form to facilitate communication, dissemination ceases to exist. Dissemination, therefore, requires representation.

3. Representation Requires Artistic Sensibility

In order to represent something, we must make decisions about where and how it should be represented. These decisions of representation are judgments that require attention to aesthetics (Wechsler, 1988). Eisner (1985/1998a) helps clarify this connection:

... form is not only an attribute or condition of things made; it is a process through which things are made. Knowing how forms will function within the finished final product is a necessary condition for creating products that themselves possess aesthetic qualities. Such knowing requires an active and intelligent maker. (p. 36)

Selecting medium and venues, and manipulating representations to portray certain messages, if these decisions are to be made consciously, requires artistic sensibility. As a point of clarification on artistic sensibility: I use the term artistic rather than aesthetic, “Since ‘artistic’ refers primarily to the act of production and ‘esthetic’ to that of perception and enjoyment” (Dewey, 1934/2005, p. 48). Artistic denotes the conscious production, rendering, or manipulation of something to be experienced or interpreted by others. Such production is artistic insofar as the creator attends to the perspective and “attitude of the perceiver while [s]he works” (p. 50). Sensibility refers to our proclivities, sensitivities, or capacities of perception, discrimination, judgment, and response. *Artistic sensibility*, therefore, is our sensitivity and capacity to appreciate and act upon concerns of or pertaining to art and its production. Others have explored this concept under different nomenclature, including *artistic intelligence* (Fowler, 1990); *artistic determining* (Blumenfeld-Jones, 2015); *aesthetic literacy* (Eisner, 1985/2005b); *artistic modes of thought* (Eisner & Powell, 2002E. Eisner & Powell, 2002); *aesthetic judgment* (Wechsler, 1988); and through the lens of creativity (Shields & Penn, 2016; Thompson, 2009). These works also approach, operationalize, explore, and discuss the notion of artistic sensibility in unique and complementary ways based on the purposes and positioning of the authors and audience. But as a collective, these terms all describe a similar process: the channeling of artistic sensibility in making decisions concerning some aspect of work.

Employment of this artistic sensibility is readily observable in the works of those reviewed previously. We may read Sousanis’ (2015) comics, attend Barry’s (2017) fashion show, listen to Blain’s (2013) composition, read McKnight, Bullock and Todd’s (2017) poem, or “hear” William-White’s (2011) spoken word to appreciate artistic sensibility in these products of dissemination. The growing application of these sensibilities in the social sciences bodes well for the continued advancement of discourse along these lines.

But for many in the natural sciences, this step may still be considered a leap and an example may help us across. Take, for instance, the equation, $e = mc^2$. While the theory represented by this equation is scientific, the equation itself is an

effort to communicate that theory; it is a representation. Other viable ways to represent this concept are $c^2xm = e$, $e/m = c^2$, or, as Einstein (1905) initially presented it “If a body gives off the energy L in the form of radiation, its mass diminishes by L/c^2 ” (translated from German, p. 228). This sentence, which uses L to denote energy, translates to the equation: $m = L/c^2$. It took some doing to arrive at the now famous $e = mc^2$. Selecting this representation over others is the result of a conscious effort to represent this concept for dissemination. Einstein’s ability to arrive at this elegant equation is evidence of artistic sensibility at work.

Many other seminal works demonstrate this artistic tact. The equations of Newton, Boltzmann, and Heisenberg are akin to Einstein’s in concisely communicating complex and groundbreaking theories and theorems. Evidence of artistic sensibility can also be traced back through Hypatia’s (Booth, 2017) and Copernicus’ (1543) astrological diagrams (see Bentley, 2018), Sibylla Merian’s (1705) and Just’s (1939) scientific illustrations, Priestley’s (1770) historical charts, Gray’s (1858) anatomical drawings, and Byrne’s (1847) mathematical diagrams (see also Kent & Muraki, 2016). Throughout history, physicists, historians, astronomers, and mathematicians alike have sought not only correctness but elegance (Alsin & Nelsen, 2010; Wechsler, 1988). Such iconic forms of influence do not come easily. The various versions of Darwin’s tree of nature diagram (which also reference seaweed and coral as alternative metaphors) showcase both the difficulty and importance of intentionally crafting representations (see Gruber, 1988). To arrive at such a product takes considerable effort and this effort is in the discipline of artistic sensibility. Dewey (1934/2005) helps explain the process of creating these representative forms:

With respect to the physical materials that enter into the formation of a work of art, every one knows that they must undergo change. Marble must be chipped; pigments must be laid on canvas; words must be put together. It is not so generally recognized that a similar transformation takes place on the side of “inner” materials, images, observations, memories and emotions. They are also progressively re-formed; they, too, must be administered. ... The work is artistic in the degree in which the two functions of transformation are affected by a single operation. As the painter places pigment upon the canvas, or imagines it placed there, his ideas and feeling are also ordered. As the writer composes in his medium of words what he wants to say, his idea takes on for himself perceptible form. (pp. 77-78)

The wide expanse between thought and form is bridged when thought operates in concert with action in the creation of form. The extent to which these decisions are made intentionally is reflective of the degree to which artistic sensibilities are channeled. As Blumenfeld-Jones (2015) noted of his experience creating representations as an arts-based researcher, “They are my expressions of my understanding ... I

am exploring what I am making in and of itself as form, motion, color, space, and so forth. I am thinking as an artist” (p. 328). It is through our artistic faculties that these representative decisions are made. The act of representation, therefore, requires the employment of artistic sensibility.

4. Research Requires Artistic Sensibility

This fourth and final point lies in relation of the three preceding points. To review: (1) Research requires dissemination; it is among the essential actions of researchers that they share what they have learned. (2) Dissemination requires representation; sharing or communicating information is not possible without creating some portrayal of that information. (3) Representation requires artistic sensibility; creating a representative form includes considerations, judgments, and decisions that demand the engagement and exercise of artistic sensibility. Supposing the logic to this juncture is not meaningfully flawed, the three points reveal a fourth: (4) Research requires artistic sensibility. Or, put differently, *artistic sensibility is inherent to research* (Figure 1). Eisner (1992/2005a) also hinted toward this connection: “...in the context of creation, a work of science is a work of art” (p. 133). With the argument presented, I will now entertain a few probable counterarguments.

Counterarguments

Some may disagree with this argument. A likely rebuttal is that academic writing in the positivistic tradition, which abides by a lockstep template of reporting in scientific prose and

mitigates the researcher’s voice and identity throughout leaves no room for artistic sensibility. Surely, the requirements of these venues place boundaries on creativity, but artistic sensibility remains because decisions of representation must still be made. For example: How did the authors decide to disseminate their research by way of a journal article? How did they decide whether to use a table or graph to represent statistical results? What sequence of argumentation for the implications best communicate the weight of the findings? What words should comprise the final sentence to ensure it delivers the desired emphasis? This very work was produced through a series of similar decisions: What is gained and lost in portraying the work through deductive logic? Would a more complex or more simplified figure better connect with the desired audience? And so forth. These questions reiterate the point that artistic sensibility is inherent to research because these decisions, and many others like them, must be made. And these decisions, even when couched within the corpus of standardized scientific reporting, are made through artistic sensibility.

Some may still disagree, noting this as merely an optional pursuit. Engaging our artistic sensibility in research, so they may say, is the decision of the researcher. While it is true that conscious engagement is a choice, the decisions of representation in dissemination remain. The extent to which we engage artistic sensibility in informing these decisions will be reflected in the work itself. Intentionality, in this context, likely breeds quality. One paints with careful attention to form, watching and reacting as the brush interacts with the paint on the canvas. The other dumps paint on the canvas. If we choose not to engage our artistic sensibility, we position ourselves to make these decisions badly.

Some may still disagree, contending that branding research as artistic is inconsistent with many established disciplines of inquiry, and these disciplines must preserve this separation to continue. However, my aim is to present this argument as an additional perspective, not a detraction or repudiation of any discipline of research. I do not discount or discredit that which we have been able to achieve in research without explicitly acknowledging artistic sensibility. I do contend, however, that it is prudent for all disciplines to consider the implications of this argument regardless of historical precedents related to artistic sensibility. In exploring and naming all attributes of our work, we better position ourselves to do that work well.

Others still may disagree, criticizing the argument constructed as a house of cards that relies on too many steps of relation. Further, this work might be critiqued as highlighting only those principles and literature that align with this argument, conveniently omitting concepts and discourse that may scaffold contradictory relationships of research and artistic sensibility. To the first point, the strength of an argument of sorites is reliant on both the quantity and quality of argumentative units therein. This work takes three steps to reveal a fourth. Second, surely it is not by serendipity that the points I have presented align in the construction of an argument. Works

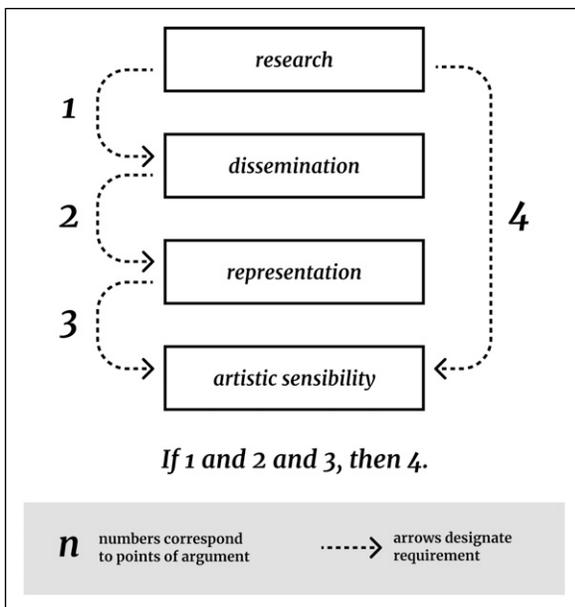


Figure 1. Research, Dissemination, Representation, Artistic Sensibility.

such as these are constructed through the conscious identification and articulation of select concepts at the expense of others. The literature included in this work also projects a pragmatic worldview, and it is from this stance that the argument holds up. Entertaining other arguments espousing different theoretical and practical stances and intentions will yield alternative conclusions that also have the potential to be instructive (see critics of Dewey and Eisner: Knapp, 1999; Popper, 1935). I present this argument because I believe it can be helpful. I illustrate how through the following section.

Significance of the Argument

Historically, arts-based research has been positioned in the tradition of qualitative inquiry (Barone, 2001; Barone & Eisner, 2012; Eisner, 1998b). Of late, it has been argued that arts-based research deserves consideration outside the quantitative-qualitative dichotomy, as a unique paradigm (Leavy, 2015; Rolling, 2013). To this, we might add a third perspective: That certain tenets of arts-based research transcend existing paradigms of research. In other words, the arguments made by those who embrace the artistic nature of research may apply to all research. Perhaps Lawrence-Lightfoot and Davis' (1997) attempts to "combine systematic, empirical description with aesthetic expression, blending art and science, humanistic sensibilities and scientific rigor" (p. 3) can be applied in numerous disciplines, not only those explicitly labeled "arts-based." In this discussion, I introduce the prospective application of artistic sensibility to a broader audience through the venues of research, evaluations of research, and the preparation of researchers.

Rethinking Venues of Research

This argument promotes a reconsideration of venues for research dissemination and the role they play in shaping scholarly products, inquiry, and knowledge. As the American Psychological Association (2010) notes, "In the case of an empirical research article, perhaps the most apparent feature is its standard structure, which follows some variation on the format of Introduction–Method–Results–Discussion" (p. 10). There are certainly virtues to this approach; this very work reflects an appreciation of this structure. Standardization in representation allows works to be predictably crafted, easily recognizable, and promotes a structured and linear trajectory of knowledge development. Furthermore, the logic supporting this approach has been widely accepted, such that this standard form can act as a catalyst to inter/transdisciplinarity.

However, with the inherence of artistic sensibility in full view, these standardized reporting guidelines may be conceived as artistic constraints for some researchers, potentially reducing an artistic experience of expression to that of paint-by-numbers. These guardrails in representation also reflect historical paradigms of knowledge development, which embody political and power differentials. These practices, in turn,

shape not only the knowledge we produce but also the topics and methods of inquiry itself (see Eisner, 1997, 1998b). But one size need not fit all concerning modes of dissemination. As I noted early in this work, innovative scholarly venues, and products therein, are already enriching and expanding the epistemological foundations of our disciplines (see Sousanis, 2015). Especially given the possibilities shepherded in with the transition to digital journals, the refereed journal no longer need resemble a bound periodical and the peer-review processes need not be relegated to the medium of text (see Rose, 2016). We can envision a near-future in which multimedia products are subject to the same referee process and, in so doing, can be held to similar standards of consequence. Using video, audio, visual, and interactive digital modalities to disseminate research can also help authors reach previously inaccessible audiences and facilitate stronger connections between research and practice.

The course to continued innovation in the venues of research runs through those in positions of power in this enterprise: editors, reviewers, and authors. There are several concrete actions those participants could take in promoting this cause. For instance, editorial boards and editors may review operational practices of the referee process to ensure journal submission guidelines explicitly welcome innovation or flexibility in its dissemination guidelines. Reviewers may also interrogate their review practices and biases in representation to identify and correct unnecessary constraints as introduced through their role in the process. Authors may continue to extend the invitation to editors and reviewers to consider how form influences knowledge when artistic tact has led their representation in a direction dissimilar to prefigured journal guidelines. These actions will advance the renovation of research venues to promote the development of knowledge unconstrained by tradition. Moving in such a direction would also suggest a reconsideration of how scholarly products are evaluated.

Reconsidering Evaluations of Research

Our current practices of evaluating research tend to place disparate values on different modes of scholarship. Namely, we value refereed journal articles, books, and national or international refereed presentations. We quantify these presentations and publications as evidence of our productivity and further note the incidence of their referral (impact factor) as evidence of their value (Seglen, 1997). We take this a step further by quantifying the efforts of the researcher on this same universal ruler with, too often, a limited appreciation for the content of their scholarship (Cheek, 2007). We evaluate research by applying a standard. As Dewey (1934/2005) explained, works of art are not conducive to such standardized judgment:

... standards define things with respect to *quantity*. To be able to measure quantities is a great aid to further judgments, but it is not itself a mode of judgment. ... When, therefore, the word

“standard” is used with respect to judgment of works of art, nothing but confusion results. (p. 320)

While we may comprehend the salience of this argument in the “fine” arts (Jimi Hendrix, Maya Angelou, and Frida Kahlo are not household names because of the number of works they produced), the extent to which these rationales may gain traction in academe remains to be seen. Innovation in evaluating research hinges, in part, on those in positions of influence in evaluating research and researchers, many of whom have been well-served by the current approach to research evaluation.

But there is hope that we may learn to evaluate research as we evaluate works of art; with attention to quality, value, and more nuanced conceptions of impact. For instance, we may review [Barone and Eisner’s \(2012\)](#) criteria for appraising arts-based research (incisiveness, concision, coherence, generativity, social significance, evocation, and illumination) as it applies to other domains of research. Other measures of evaluation, such as [Leavy’s \(2015\)](#) evaluation criteria or [Cho and Trent’s \(2006\)](#) transformational validity, may also help promote a more nuanced approach to research evaluation. These approaches to evaluation suggest transcending the application of a standard and moving toward modes of appraisal or criteria as alternatives. Amending these evaluative practices accordingly may promote further innovation and creative activity in research dissemination, which raises implications of how researchers should then be prepared.

Cultivating Artistic Sensibility in Researchers

In contemporary practice, it is common to prepare researchers to collect, analyze, and disseminate data with attention to validity, reliability, generalizability, trustworthiness, credibility, and so forth ([Denzin & Lincoln, 2018](#); [Rossman & Rallis, 2017](#)). We orient students to Institutional Review Boards, introduce them to the history and traditions of research, and challenge them to grapple with sometimes competing ethical concerns and epistemological stances. We hone their methods, teach them techniques, and acquaint them with a plurality of methodological paradigms for pursuing their inquiries.

Artistic sensibility is rarely on the syllabus of research methods courses ([Wechsler, 1988](#)). But if the thesis of this work holds, then artistic sensibility deserves explicit consideration in preparing researchers. Just as we prepare students to design a survey, conduct an interview, or analyze data, so should we prepare them to channel artistic sensibility in selecting and shaping forms of representation to disseminate their research. These activities are no less central and, I would contend, no less important than the conventional knowledge and skills of the researcher.

An initial step could be to help students understand the relationship of representation to epistemology and the role of forms in shaping knowledge. As [Eisner \(1994\)](#) analogized, “The kinds of nets we know how to weave determine the kinds of nets

we cast. These nets, in turn, determine the kinds of fish we catch” (p. 41). Indeed, it seems there is growing acknowledgment of these perspectives in the social sciences ([Bredo, 2009](#); [Gergen & Gergen, 2016](#); [Goodman & Fisher, 1995](#)) and natural sciences ([Wechsler, 1988](#)) alike, so these discussions may soon be commonplace in research courses. Students may also explore the role of artistic sensibility in the creation of scholarly products by critiquing seminal and contemporary works of research, such as those included in this piece.

But it is one thing to introduce an artist to brush and palette, it is another entirely to encourage mastery with those tools. Clarifying the role of artistic sensibility in research may serve as a springboard to the cultivation of these sensibilities (see [Thompson, 2009](#)). To accomplish this, we may consider exploring how different forms accentuate particular meanings ([Eisner, 1998a](#)). We may also encourage experimentation with various forms such that the application of artistic sensibility might be practiced and cultivated, and “aesthetic profile(s)” be awakened in researchers ([Gruber, 1988](#), p. 138).

We may also look to others who have taken seriously the cultivation of these sensibilities for guidance (see [O’Donoghue, 2015](#)). For example, [Eisner’s \(1998b\)](#) arguments for the preparation of qualitative researchers include attention to the development of perception (or connoisseurship), representation (or criticism), and attending to the relationship of representation to epistemology. Similarly, [Tufte’s \(1997, 2001\)](#) recommendations for visually displaying quantitative information may be useful for those interested in awakening artistic sensibility in quantitative researchers. However, even those engaged directly in arts-based research are just beginning to shape discourse on artistic sensibilities in researchers ([Blumenfeld-Jones, 2015](#)). The possibilities for how this task might be pursued are many.

Conclusion

This work has been an exploration of the relation of research, dissemination, representation, and artistic sensibility to contend that artistic sensibility is inherent to research. This argument challenges the boundaries between art and research and suggests a broader audience for arguments that center artistic sensibility in research. I have illustrated the significance of this argument for the venues of research, evaluations of research, and the preparation of researchers. Although this work has focused on the role of artistic sensibility in the context of representation and dissemination, other inquiries may explore the role of artistic sensibility in other activities of the researcher (see [Gruber, 1988](#); [Wechsler, 1988](#)).

The medium, form, and venues we select to represent our research matter. Our decisions in representation influence who is introduced to the research, how they experience it, what sense they make of it, and what they do with it. Through acknowledging and harnessing the artistic sensibility of research we can better represent our work and, in turn, better accomplish that which we hope to achieve. In this regard, it is

important to remember that the boundary that separates research and art is a cultural imposition, and our mores concerning research are dynamic (Dewey, 1934/2005). So, while the tradition of research precedes us, our future is not fixed. Honoring, cultivating, and celebrating the inherent artistic sensibility of research may well catalyze research to flourish in form and consequence.

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References

- Alsina, C., & Nelsen, R. (2010). *Charming proofs: A journey into elegant mathematics*. Mathematical Association of America.
- Amdur, R. J., Speers, M., & Bankert, E. (2006). Identifying intent: Is this project research? In E. A. Bankert, & R. J. Amdur (Eds.), *Institutional review board: Management and function* (pp. 101–104). Jones and Bartlett Publishers.
- American Psychological Association (2010). *Preparing manuscripts for publication in psychology journals: A guide for new authors*.
- Anderson, G., & Arsenault, N. (1998). *Fundamentals of educational research*. RutledgeFalmer.
- Ary, D., Jacobs, L. C., & Razavieh, A. (2002). *Introduction to research in education*. Wadsworth/Thomson Learning.
- Barone, T. (2001). Science, art, and the predispositions of educational researchers. *Educational Researcher*, 30(7), 24–28. <https://doi.org/10.3102/2F0013189X014009003>.
- Barone, T., & Eisner, E. (2012). *Arts based research*. SAGE.
- Barry, B. (2017). Enclotted knowledge: The fashion show as a method of dissemination in arts-informed research. *Forum: Qualitative Social Research*, 18(3), Article 2.
- Barthes, R. (1974). *S/Z*. Translated by R. Miller. Hill and Wang. (Original work published in 1970)
- Bast, G., Carayannis, E., & Campbell, D. (Eds.). (2015). *Arts, research, innovation and society*. Springer.
- Bentley, P. (2018). Star taker: Art, science and mathematics in an astrolabe from fourteenth-century Spain. *Journal of Mathematics and the Arts*, 12(2–3), 170–180. <https://doi.org/10.1080/17513472.2018.1477037>.
- Beveridge, W. I. B. (1957). *The art of scientific investigation*. W. W. Norton & Company.
- Blain, M. (2013). Composition-as-research: Connecting flights II for clarinet quartet – a research dissemination methodology for composers. *Music Performance Research*, 6, 126–151.
- Blumenfeld-Jones, D. S. (2015). The artistic process and arts-based research: A phenomenological account of the practice. *Qualitative Inquiry*, 22(5), 322–333. <https://doi.org/10.1177/1077800415620212>.
- Booth, C. (2017). *Hypatia: Mathematician, philosopher, myth*. Fonthill Media.
- Bostock, M. (2014). Visualizing algorithms. <https://bost.ocks.org/mike/algorithms/>.
- Bredo, E. (2009). Comments on Howe: Getting over the methodology wars. *Educational Researcher*, 38(6), 441–448. <https://doi.org/10.3102/0013189x09343607>.
- Brownson, R. C., Eyler, A. A., Harris, J. K., Moore, J. B., & Tabak, R. G. (2018). Getting the word out: New approaches for disseminating public health science. *Journal of Public Health Management and Practice*, 24(2), 102–111. <https://doi.org/10.1097/PHH.0000000000000673>.
- Byrne, O. (1847). *The first six books of the elements of Euclid in which coloured diagrams and symbols are used instead of letters for the greater ease of learners*. William Pickering.
- Campbell, J. M. (2017). Visualizing large-order groups with computer-generated Cayley tables. *Journal of Mathematics and the Arts*, 11(2), 67–99. <https://doi.org/10.1080/17513472.2017.1318511>.
- Cheek, J. (2007). Qualitative inquiry, ethics, and politics of evidence: Working within these spaces rather than being worked over by them. *Qualitative Inquiry*, 13(8), 1051–1059. <https://doi.org/10.1177/1077800407308227>.
- Cho, J., & Trent, A. (2006). Validity in qualitative research revisited. *Qualitative Research*, 6(3), 319–340. <https://doi.org/10.1177/1468794106065006>.
- Conrad, D., & Leavy, P. (2016). Editorial. *Art/Research International: A Transdisciplinary Journal*, 1(1), 1–4. <https://doi.org/10.18432/r2tg6h>.
- Copernicus, N. (1543). *On the revolutions of the celestial spheres. De Revolutionibus Orbium Coelestium*.
- Daykin, N. (2004). The role of music in an arts-based qualitative inquiry. *International Journal of Qualitative Methods*, 3(2), 36–44. <https://doi.org/10.1177/160940690400300203>.
- Denzin, N. (2003). *Performance ethnography: Critical pedagogy and the politics of culture*. SAGE.
- Denzin, N. K. (2014). *Interpretive autoethnography* (2nd ed.). SAGE.
- Denzin, N., & Lincoln, Y. (Eds.). (2018). *The SAGE handbook of qualitative research* (5th ed.). SAGE.
- Dewey, J. (2005). *Art as experience*. The Berkely Publishing Group. (Original work published in 1934).
- Dunham, G. (2011). *Trends in scholarly publishing*. American Speech-Language-Hearing Association. Retrieved from <http://www.asha.org/Articles/Trends-in-Scholarly-Publishing/>.

- Editorial, Board. (2016). *Journal of artistic research*. <http://www.jar-online.net>.
- Einstein, A. (1905). Its die trägheit eines körpers von seinem energiegehalt abhängig? [Does the inertia of a body depend upon its energy-content? (Trans.)]. *Annalen der Physik*, 323(13), 639–641. <https://doi.org/10.1002/andp.19053231314>.
- Eisner, E. (1981). On the differences between scientific and artistic approaches to qualitative research. *Educational Researcher*, 10(4), 5–9. <https://doi.org/10.3102/0013189x010004005>.
- Eisner, E. (1994). *Cognition and curriculum reconsidered* (2nd ed.). Teachers College Press.
- Eisner, E. W. (1997). The promise and perils of alternative forms of data representation. *Educational Researcher*, 26(6), 4–10. <https://doi.org/10.3102/0013189x026006004>.
- Eisner, E. (1998a). Aesthetic modes of knowing. In E. W. Eisner (Ed.), *The kind of schools we need* (pp. 32–43). Heinemann. (Original work published in 1985).
- Eisner, E. (1998b). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. Prentice-Hall.
- Eisner, E. (2002). *The educational imagination: On the design and evaluation of school programs* (3rd ed.). Prentice-Hall.
- Eisner, E. (2005a). The misunderstood role of the arts in human development. In E. W. Eisner (Ed.), *Reimagining schools: The selected works of Elliot W. Eisner* (pp. 129–135). Routledge. (Original work published in 1992).
- Eisner, E. (2005b). The primacy of experience and the politics of method. In E. W. Eisner (Ed.), *Reimagining schools: The selected works of Elliot W. Eisner* (pp. 112–122). Routledge. (Original work published in 1988).
- Eisner, E., & Powell, K. (2002). Art in science? *Curriculum Inquiry*, 32(2), 131–159. <https://doi.org/10.1111/1467-873x.00219>.
- Faulkner, S. L. (2018). Special issue editorial: Using poetry and poetic inquiry as political response for social justice. *Art/Research International: A Transdisciplinary Journal*, 3(1), 1–6. <https://doi.org/10.18432/ari29372>.
- Finley, S., & Knowles, J. G. (1995). Researcher as artist/artist as researcher. *Qualitative Inquiry*, 1(1), 110–142. <https://doi.org/10.1177/107780049500100107>.
- Fowler, C. (1990). Recognizing the role of artistic intelligences. *Music Education Journal*, 77(1), 24–27. <https://doi.org/10.2307/3397791>.
- Fraser, P., & Harrison, F. (2016). Art for? Framing the conversation on art and social change “with” Steven Hill. *Art/Research International: A Transdisciplinary Journal*, 1(1), 24–28. <https://doi.org/10.18432/r26p47>.
- George, W. H. (1938). *The scientist in action: A scientific study of his methods*. Emerson Books Inc.
- Gergen, M. M., & Gergen, K. J. (2016). *Playing with purpose: Adventures in performative social science*. Routledge.
- Gerstenblatt, P. (2013). Collage portraits as a method of analysis in qualitative research. *International Journal of Qualitative Methods*, 12(1), 294–309. <https://doi.org/10.1177/160940691301200114>.
- Goetz, F., Jasconowicz, A. J., & Roberts, S. (2017). What goes up must come down: Diel vertical migration in the deep-water sablefish (*Anoplopoma fimbria*) revealed by pop-up satellite archival tags. *Fisheries Oceanography*, 27(2), 127–142. <https://doi.org/10.1111/fog.12239>.
- Goodman, R., & Fisher, W. (1995). *Rethinking knowledge: Reflections across the disciplines*. State University of New York Press.
- Gray, H. (1858). *Anatomy: Descriptive and surgical*. John W. Parker and Son.
- Groeger, L. (2011). *Words, pictures, and the visual display of scientific information: Getting back to the basics of information design*. Scientific American.
- Groeger, L. (2019). *Lena Groeger*. <https://lenagroeger.com>.
- Gruber, H. E. (1988). Darwin’s “Tree of nature” and other images of wide scope. In J. Wechsler (Ed.), *On aesthetics in science* (3rd ed., pp. 121–140). Birkhauser.
- Harrison, L., Reinecke, K., & Chang, R. (2015). Infographic aesthetics: Designing for the first impression. In B. Begole (Ed.), *Proceedings of the 33rd annual ACM conference on human factors in computing systems* (pp. 1187–1190). Association for Computing Machinery.
- Hein, S. F. (2013). Thinking and writing with ontological time in qualitative inquiry. *Qualitative Inquiry*, 19(7), 493–501. <https://doi.org/10.1177/1077800413489512>.
- Hittleman, D., & Simon, A. (2006). *Interpreting educational research: An introduction for consumers of research*. Merrill.
- Hodgins, M., & Boydell, K. M. (2014). Interrogating ourselves: Reflections on arts-based health research. *Forum: Qualitative Social Research*, 15(1), Article 10.
- Hyde, D. (2011). The sorites paradox. In G. Ronzitti (Ed.), *Vagueness: A guide. Logic, epistemology, and the unity of science* (19). Springer. https://doi.org/10.1007/978-94-007-0375-9_1.
- Ings, W. (2015). The authored voice: Emerging approaches to exegesis design in creative practice PhDs. *Educational Philosophy and Theory*, 47(12), 1277–1290. <https://doi.org/10.1080/00131857.2014.974017>.
- Jewitt, C., Xambo, A., & Price, S. (2017). Exploring methodological innovation in the social sciences: The body in digital environments and the arts. *International Journal of Social Research Methodology*, 20(1), 105–120. <https://doi.org/10.1080/13645579.2015.1129143>.
- Jones, K. (2012). Connecting research with communities through performative social science. *The Qualitative Report*, 17(41), 1–8.
- Just, E. E. (1939). *The biology of the cell surface*. P. Blakiston’s Son & Co.
- Keen, S., & Todres, L. (2007). Strategies for disseminating qualitative research findings: Three exemplars. *Forum: Qualitative Social Research*, 8(3), 17.
- Kent, D. A., & Muraki, D. J. (2016). A geometric solution of a cubic by Omar Khayyam in which colored diagrams are used instead of letters for the greater ease of learners. *The American Mathematical Monthly*, 123(2), 149–160. <https://doi.org/10.4169/amer.math.monthly.123.2.149>.
- Knapp, T. R. (1999). Response to Elliot W. Eisner’s “The promise and perils of alternative forms of data representation”. *Educational Researcher*, 28(1), 18–19. <https://doi.org/10.3102/0013189x028001018>.

- Krzywinski, M., Schein, J., Birol, I., Connors, J., Gascoyne, R., Horsman, D., Jones, S. J., & Marra, M. A. (2009). Circos: An information aesthetic for comparative genomics. *Genome Research, 19*(9), 1639–1645. <https://doi.org/10.1101/gr.092759.109>.
- Lawrence-Lightfoot, S., & Davis, J. H. (1997). *The art and science of portraiture*. Jossey-Bass.
- Leavy, P. (2015). *Method meets art: Arts-based research practice* (2nd ed.). The Guilford Press.
- Markula, P. (2011). Dancing the ‘data’: (Im)mobile bodies. *International Review of Qualitative Research, 4*(1), 35–50. <https://doi.org/10.1525/irqr.2011.4.1.35>.
- McKiernan, G. (2002). E is for everything. *The Serials Librarian, 41*(3–4), 293–321. https://doi.org/10.1300/j123v41n03_23.
- McKnight, L., Bullock, O., & Todd, R. (2017). Whiteout: Writing collaborative online poetry as inquiry. *Qualitative Inquiry, 23*(4), 313–315. <https://doi.org/10.1177/1077800416673664>.
- McMillan, J. H. (2004). *Educational research: Fundamentals for the consumer* (4th ed.). Pearson.
- Miller-Day, M. (2008). Translational performances: Toward relevant, engaging, and empowering social science. *Forum: Qualitative Social Research, 9*(2), Article 54.
- Morse, J. M. (1994). The cognitive process of analysis in qualitative inquiry. In J. M. Morse (Ed.), *Critical issues in qualitative research methods* (pp. 23–43). Sage.
- O’Donoghue, D. (2015). On the education of art-based researchers: What we might learn from Charles Garoian. *Qualitative Inquiry, 21*(6), 520–528.
- Paltridge, B., Starfield, S., Ravelli, L., & Nicholson, S. (2011). Doctoral writing in the visual and performing arts: Issues and debates. *The International Journal of Art & Design Education, 30*(2), 242–255. <https://doi.org/10.1111/j.1476-8070.2011.01700.x>.
- Pink, S. (2013). *Doing visual ethnography* (3rd ed.). SAGE.
- Plano Clark, V. L., & Creswell, J. W. (2010). *Understanding research: A consumer’s guide*. Merrill.
- Popper, K. (1935). *Logic of scientific discovery*. Routledge.
- Powell, K. (2015). Breathing photography: Prosthetic encounters in research-creation. *Qualitative Inquiry, 21*(6), 529–538. <https://doi.org/10.1177/1077800415581889>.
- Priestley, J. (1770). *A new chart of history*. Engraved and published for J. Johnson.
- Purtle, J., Lê-Scherban, F., Wang, X., Shattuck, P. T., Proctor, E. K., & Brownson, R. C. (2018). Audience segmentation to disseminate behavioral health evidence to legislators: An empirical clustering analysis. *Implementation Science, 13*(1), 121. <https://doi.org/10.1186/s13012-018-0816-8>.
- Research (n.d.). Oxford English Dictionary. www.oed.com.
- Rolling, J. H. (2013). *Arts-based research primer*. Peter Lang.
- Rose, G. (2016). *Visual methodologies: An introduction to researching with visual materials* (4th ed.). SAGE.
- Rossmann, G. B., & Rallis, S. F. (2017). *An introduction to qualitative research: Learning in the field* (4th ed.). SAGE.
- Russell, B. (1993). *Introduction to mathematical philosophy*. Dover Publications. (Original work published in 1919).
- Seglen, P. O. (1997). Why the impact factor of journals should not be used for evaluating research. *British Medical Journal, 314*(7079), 498–502. <https://doi.org/10.1136/bmj.314.7079.497>.
- Shields, S. S., & Penn, L. R. (2016). Do you want to watch a movie? Conceptualizing video in qualitative research as an imaginative invitation. *Art/Research International: A Transdisciplinary Journal, 1*(1), 5–23. <https://doi.org/10.18432/r2vc75>.
- Sibylla Merian, M. (1705). *Metamorphosis insectorum surinamensium*. Amsterdam.
- Slattery, P. (2003). Troubling the contours of arts-based educational research. *Qualitative Inquiry, 9*(2), 192–197. <https://doi.org/10.1177/1077800402250929>.
- Sousanis, N. (2015). *Unflattening*. Harvard University Press.
- Springgay, S., Irwin, R. L., & Kind, S. W. (2005). A/r/tography as living inquiry through art and text. *Qualitative Inquiry, 11*(6), 897–912. <https://doi.org/10.1177/1077800405280696>.
- Strosberg, E. (2001). *Art and science*. Abbeville Press.
- Thiong’o, N. W. (2002). Freedom of the artist: People’s artists versus people’s rulers. In J. Hirschman (Ed.), *Art on the line: Essays by artists about the point where their art and activism intersect* (pp. 203–221). Curbstone.
- Thompson, G. (2009). Artistic sensibility in the studio and gallery model: Revisiting process and product. *Art Therapy, 26*(4), 159–166. <https://doi.org/10.1080/07421656.2009.10129609>.
- Tufte, E. (1997). *Visual explanations: Images and quantities, evidence and narrative*. Graphics Press.
- Tufte, E. (2001). *The visual display of quantitative information*. Graphics Press.
- Uhrmacher, P. B. (1991). Visions and versions of life in classrooms. *The Journal of Curriculum Theorizing, 9*(1), 107–116.
- Viega, M. (2016). Science as art: Axiology as a central component in methodology and evaluation of arts-based research. *Music Therapy Perspectives, 34*(1), 4–13. <https://doi.org/10.1093/mtp/miv043>.
- Watzlawick, P., Beavin, J. H., & Jackson, D. D. (1967). Some tentative axioms of communication. In P. Watzlawick, J. H. Beavin, & D. D. Jackson (Eds.), *Pragmatics of human communication: A study of interactional patterns, pathologies, and paradoxes* (pp. 48–71). W. W. Norton & Company.
- Wechsler, J. (1988). Introduction. In J. Wechsler (Ed.), *On aesthetics in science* (3rd ed., pp. 1–7). Birkhauser.
- Weibel, P., & Fruk, L. (2013). *Molecular aesthetics*. MIT Press.
- West, C. (Speaker). (2001). *Sketches of my culture [Audio recording]*. Artemis Records.
- William-White, L. (2011). Scholarship revolution. *Qualitative Inquiry, 17*(6), 534–542. <https://doi.org/10.1177/1077800411409886>.