Integrating the Arts and Mixed Methods Research: A Review and a Way Forward

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**ABSTRACT**

Methodological pluralism characterizes mixed methods research (MMR) and arts in research practices, but how these traditions have informed each other is unexplored. The purpose of this article is to explore how the arts and MMR have and can be mutually informative for social benefit. A scoping review of 6 databases was conducted to identify the current state of practice of art-MMR integration. Articles were selected using pre-established inclusion criteria and used to map current applications and future potentials. Aside from MM evaluation of arts interventions, which offers no opportunity for integration, 6 applications of the arts and MMR were identified. Of these, using the arts and MMR to understand methodological processes or phenomenon, or to develop a framework or intervention, offered the potential for synergy and integration. However, current uses of art-MMR fit the arts into MMR rather than push their mutual boundaries. I offer a definition of arts-MMR as research that combines arts research methodology with methods positioned in an alternative paradigm within a single study or program of study. Future arts-MMR should consider the transformative and critical possibilities of the arts and how these might be positioned as central justifications for art-MMR integration.

**KEYWORDS**

Arts-based research; arts-informed research; integration; mixed methods research

**Overview**

Increasingly, researchers are leveraging the benefits of creative and expanded research designs that incorporate multiple research traditions. This trend towards methodological pluralism is evidenced by growing popularity of mixed methods research (MMR) wherein qualitative and quantitative components are integrated and commonly described in the literature through MMR typologies (e.g., Creswell & Plano Clark, 2007, 2011; Morse & Niehaus, 2009; Teddlie & Tashakkori, 2009), alternatives to typologies (e.g., Guest, 2013; Maxwell & Loomis, 2003), and types of MMR (e.g., mixed methods phenomenological research; Mayoh & Onwueguzie, 2015). Indeed, methodological pluralism is a common turn of phrase within the MMR community, generally referring to using multiple methods or frameworks to address a research problem (Popa & Guillermin, 2017). Proponents of methodological pluralism see it as a critical and pragmatic response to complex and ever-changing social issues hinged on epistemological pluralism—recognition of the legitimacy of sources and types of knowledge (Popa & Guillermin, 2017).

Also reflective of methodological pluralism is the growing use of art-based strategies to generate knowledge of possibility (Sullivan, 2006), or from a more utilitarian perspective, to gain different and deeper understandings and compelling representations of research phenomena (Eisner, 1997). Just as MMR has a history that extends beyond what is often recognized (Maxwell, 2016), the arts have long since been used in and as research, and are positioned...
with legitimacy within the humanities, physical education, social sciences, and health sciences, as examples. Although it is commonly understood that multiple methods were used in the early 20th century, but a mixed methods (MM) methodological movement was not discussed until the 1980’s (Creswell & Plano Clark, 2011; R. B. Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Teddlie, 2010), arts-based research has a comparable life-course, equipped with equivocal discrepancies in understandings. Some practitioners subsume arts-based approaches within qualitative research methods. Others suggest the 1970’s, or the early 2000’s, as the era of paradigmatic movement in arts-based research (Jagodzinski & Wallin, 2013). Terms such as practice-based research (i.e., arts practice as scholarly inquiry) are common in higher education visual arts programs but are virtually absent in health science discourses (Sullivan, 2006). Implicitly (and idyllically), proponents of methodological pluralism would embrace arts-based approaches within MMR designs. However, arts-informed or arts-based approaches to MMR have not yet been elucidated.

Arts in and as research encompass a broad range of practices and forms. In a highly cited definition, Knowles and Cole (2008) define arts-informed research as “a mode and form of qualitative research that is influenced by, but not based in, the arts broadly conceived” (p. 59). Arts are incorporated into some stage of the research process, often to better understand the complex human condition, to reach a broader audience through arts accessibility, or to enhance participant engagement. Using visual data collection methods, engaging with art making throughout the analysis, and representing research findings through theatre are examples of arts-informed inquiry.

Contrary to arts-informed research, arts-based research is often considered to be a research tradition onto itself, complementary to, but to yet distinct from, qualitative research traditions. Art is the primary way of achieving understanding and examining experiences through “systematic experimentation” where the researcher-artist-practitioner is frequently the subject of understanding (McNiff, 2008, p. 33). Practice-based research (i.e., art making and art learning as scholarly inquiry, Sullivan, 2006) and a/r/tography (i.e., an ongoing inquiry using art making and writing as arts-based and practice-based research) are examples of other relevant terms encountered in the literature. Although many more terms exist, arts-based and arts-informed research (or inquiry) are of central importance to the present manuscript.

Arts-based and arts-informed inquiry represent legitimate sources of knowledge, and similarities abound between arts and MMR. Arts and MM practice are inherently pluralistic, both methodologically and epistemologically. Both incorporate multiple ways of knowing for specific purposes such as enhancing understanding or creating juxtapositions. Both approaches have a long and sometimes under acknowledged history of use as inquiry practices (Maxwell & Loomis, 2003). Both have been subject to, and have contributed to, the hegemonic dominance of modernism and associated positivism (Jagodzinski & Wallin, 2013). Within the MM tradition, the question of the nature of the relationship between qualitative and quantitative approaches is perennial. Similarly, within arts-based research, dialogue and debate about the relationship between arts and research persists, and particularly in the common case of positioning quantitative and arts-based research in diametric opposition (Jagodzinski & Wallin, 2013). Both approaches raise questions about the nature of data and provide unique insights into facets of reality (real or constructed).

Despite these parallels, if and how arts and MMR have been merged has not yet been explored, and an approach to arts-MMR integrated research has not been conceptualized. To move towards this objective, the primary purpose of this article is to identify how authors have approached integrating the arts and MMR to date. This involves (a) mapping the literature on arts and MMR, (b) illuminating how authors have approached the unique contributions of arts and MMR traditions for mutual benefit, (c) identifying shortfalls and opportunities that arise in these processes, and (d) ascertaining how these insights can help inform future MMR. To achieve these objectives, I conducted a scoping review using a systematic methodology to highlight current approaches to combining arts and MMR. In general, a scoping review is a review method used to rapidly identify, map, and describe key characteristics of research on a particular topic (Colquhoun et al., 2014; Mays, Roberts, & Popay, 2001). Although both systematic and scoping reviews employ specific research questions, the latter tends to be broader in scope, and is particularly useful to identify the types and sources of evidence available in complex or previously un-reviewed areas of investigation (Arksey & O’Malley, 2005). I was guided by the following five stages of scoping studies as outlined by Arksey and O’Malley (2005): (a) identifying the research question (i.e., how have authors approached integrating the arts and MMR, to date?); (b) identifying relevant studies (i.e., standardized and broad search strategy of interdisciplinary, online databases); (c) study selection (i.e., by way of explicit inclusion, exclusion criteria applied uniformly across studies); (d) charting the data (i.e., extracting data into a Microsoft Excel file to facilitate data management and analysis); and (e) collating, summarizing, and reporting the results (i.e., identifying patterns in tabulated data and
thematic patterns in narrative data). I use examples gained through the review to illustrate various ways in which arts and MMR can be mutually informative, highlighting new opportunities for arts-MM research. I conclude by presenting a key conceptualization and considerations for arts-MMR research based upon integration.

In this review and aligned with Knowles and Cole (2008), I consider art broadly as inclusive of any art form from the visual (e.g., photography, drawing, painting, sculpture), text-based (e.g., poetry), to auditory and performance modalities (e.g., music, dance, theatre). I position this work based on three core assumptions related to the arts and MMR. First, is that reflective, imaginative, and interactive processes do and should characterize sound research across the arts and MMR traditions (Sullivan, 2006). Second, is that openness to difference, divergence, and unintended processes (and outcomes) can help generate needed understandings (Archibald, 2016). Third is a belief that methodological pluralism is useful in addressing complex problems and that the arts as epistemologically valid ways of knowing can offer needed dimensions to reflecting upon such complexities.

Method

Search Strategy

I searched six electronic databases (i.e., CINAHL, Scopus, Art Full Text Database, Medline, ERIC, socINDEX) using standard search terms (i.e., art*, mixed method*) and no date-limiters. Databases were selected because of their interdisciplinarity, to reflect the breadth of application of the arts and MMR approaches.

Inclusion and Exclusion Criteria

To be included in the review, articles needed to be electronically available, focused on the arts and self-identify as MMR. Non-English articles, dissertations, published abstracts, literature reviews, studies focusing on the effectiveness of art or an arts-based approach; and articles focused on persons affiliated with the arts (e.g., artists, art teachers), rather than the art itself, were excluded from the review. These criteria were uniformly applied across studies.

Analysis

I exported relevant titles and abstracts to the reference management software, RefWorks, and then screened the RefWorks database for duplicate titles. Article full texts were screened against the pre-established criteria and designated an include or exclude status. Using a Microsoft Excel file, I then extracted data into 30 categories, including for example: publication year and title, journal, discipline and country of first author, purpose, population focus, purpose of MMR, design, methods, art form used, artist details, description of arts component, stage of using art in research process, extent of arts and MMR integration, use of visuals, and contribution of the arts to the substantive content and research methodology. I looked across and within these categories for numerical and narrative patterns, which I synthesize in the following sections.

Results

Figure 1 presents a flow chart of the article inclusion. This figure indicates that 26 articles were included in the review, representing 2.6% of the total articles retrieved. Figure 2 displays the number of articles integrating the arts and MMR by year of publication. It can be seen from this figure that despite using no date limiters, I found only one article published before 2008 that met the inclusion criteria. The majority (88%) of included articles were published between 2012 and 2016. The greatest number of articles was published in 2013 (n = 8), followed by six articles in 2014.
A wide range of journals \((n = 24)\) published articles on arts and MMR. Of these, *Arts in Psychotherapy* and *Visual Culture and Gender* were the most common venues, each publishing two articles. The remaining journals published only one article and represented a diverse range of disciplines such as education, health, culture, and geographic studies.

The disciplinary backgrounds of the first authors were diverse, and many authors’ credentials spanned disciplinary divides (e.g., art therapy and public health). Health sciences and education were the most frequently represented disciplines, followed equally by art therapy \((n = 2)\), media or visual studies \((n = 2)\), and sociology \((n = 2)\). First authors

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**Figure 1.** Flow chart of article inclusion.

**Figure 2.** Articles integrating the arts and MMR by year of publication.
from criminology, environment, and geography were also identified. Thirteen of the article’s first authors resided in the United States of America, followed by Australia (n = 5), then by the United Kingdom (n = 2), Canada (n = 2), and Israel (n = 2), and, finally, by Germany (n = 1) and Switzerland (n = 1).

Regarding population, the overwhelming majority of articles (73%) focused on well populations (i.e., individuals where no health conditions were identified) (n = 19). Students and youth (n = 14) were the most common participants, followed by individuals with mental health conditions (n = 3), museum visitors (n = 3), and professional groups (n = 3), and then by healthcare recipients (n = 2). Authors of one study focused on the organizational level.

**Purpose**

The stated purpose of each article was coded inductively and grouped thematically. As presented in Table 1, the following six categories were identified: (a) Category 1: art engagement and meaning making, (b) Category 2: methodology and artistic process, (c) Category 3: understanding phenomena, (d) Category 4: art and learning, (e) Category 5: development, and (f) Category 6: art content. At times, overlap existed among these categories, with articles having more than one purpose. For instance, Shannon-Baker (2015) discussed how arts-based approaches contribute to and complicate mixed methods inquiry in the context of understanding culture shock, thereby contributing both methodological and substantive knowledge. As another example, Lu (2013) had students create artwork in a virtual learning environment to understand the experience of the virtual world as an art medium and to inform art education. As a third example, Aita, Lydiatt, and Gilbert (2010) predominantly used art to gain a deeper understanding of caregiving, but then used the results to generate survey and journal tools for use in future research.

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<tr>
<th>Article Foci</th>
<th>Operational definition</th>
<th>Articles</th>
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<tr>
<td>5. Development</td>
<td>Develop a tool, framework, or intervention (e.g., research dissemination)</td>
<td>Aita et al. (2010) Bieri et al. (2013)</td>
</tr>
<tr>
<td>6. Art content</td>
<td>Mixed methods analysis of an artistic work or art product (e.g., lyrical analysis)</td>
<td>Czechowski, Miranda, and Sylvestre (2016)</td>
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During my analysis, it became apparent that although the arts can be utilized alongside MMR in the various ways depicted in Table 1, not all approaches provide an opportunity for integration or for research design decisions informed by both the arts and MM research traditions. For instance, authors in the first category of art engagement...
and meaning making use MMR approaches to understand how individuals interact with art in various settings and curatorial contexts. In this way, arts engagement and audience were the subjects of study; arts-research practice contributed little to the research design. Authors in the fourth category of art and learning generally focused on the effectiveness of arts-based teaching methods in student learning, or the broader contextual factors that facilitate learning in the arts. The author of the sixth article category, namely, art content, used MMR to examine an artistic work. A commonality among these three categories (Category 1, Category 4, and Category 6) is that MMR was used to understand art content, learning, or engagement better. Arts-generated data were not treated as a data source with unique potential for contribution alongside qualitative or quantitative data. As such, there was little, if any, possibility of integrating arts and MMR at any level (e.g., sampling, data).

As such, the articles with the greatest potential for art-MMR integration were those focusing on an aspect of art making through arts-based or arts-informed inquiry. This comprised Categories 2, 3 and 5, wherein arts and MMR were used to understand methodological process or phenomena of interest or to develop a framework or intervention. Of the 26 articles initially identified, 14 (54%) articles had this focus and were analyzed as a subset, based on their potential to advance arts-MMR integration and thereby contribute to methodological innovations.

A Focus on Arts-Based and Arts-Informed Inquiry in MMR

Of the subset of 14 articles employing art making, all could be classified as arts-informed inquiry. Visual arts were overwhelmingly the most common artistic form used, encountered in 13 of 14 articles. The majority (83%; n = 10) of studies using visual art did so independently of other art forms, whereas 17% used visual art in combination with writing. Only one study using visual art focused on sculpture and another on collage; all others focused on drawing, sketching, or painting alone or in combination. Music was the exclusive focus of one article (7%). The arts were most commonly used during data collection, although occasionally authors used the arts as reflexivity strategies, for analysis, and for disseminating research results.

Where art making was involved, study participants most often produced the artwork. Although others used trained professionals (e.g., music and art therapists) within the research context, only Aita et al. (2010) employed a professional artist to create art for research purposes. In this example, the authors integrated professionally developed artwork for the purpose of development. A professional artist-in-residence created more than 100 portraits during a 2-year period to explore ideas of care and caregiving with 46 participants. A multi-disciplinary analysis team carried out the initial analysis of portraits and subject data. Analysts focused on the portraiture and its interpretation and noted the correspondence with subject data. However, the authors then used these arts-based findings to develop a quantitative survey and qualitative journal tool that the public used to give feedback at a subsequent exhibition.

Grob (2012) provided the only example of researcher-developed artwork when using arts-based inquiry as a complementary analysis technique, akin to a systematic reflexivity strategy, which she incorporated as data into her analysis. Through the accessible medium of collage, Grob (2012) explored bricolages, defined by Oxford Dictionary (2017) as “something constructed or created from a diverse range of things” (para. 2), which represented 17 organizational cases in her study of organizational sustainability. Through this approach, Grob (2012) was able to explore and better understand the way that various actors worked together to administer a program based on trust and communication, and used visual symbolism to represent how the agents in program administration became unified.

Design

Only two authors of articles (14%) included in the subset labeled their research designs using a typological approach (e.g., Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 2010). Artra (2014) claimed to use an explanatory sequential design (i.e., collection and analysis of quantitative data followed by collection and analysis of qualitative data) to study combat veterans, whereas Shannon-Baker (2015) used a concurrent parallel design (i.e., simultaneous collection and analysis of qualitative and quantitative data) to study culture shock. This finding was comparable to the larger study sample wherein authors of five articles (19%) explicitly labeled their research design using a typology, most commonly using an explanatory sequential design (80%). Although the majority of authors did not indicate a typology, a two-phase explanatory model (i.e., qualitative data are used to explain quantitative results)
was the most common design used. This finding mirrors other methodological reviews and methodological texts that identify the popularity and accessibility of explanatory sequential designs (e.g., Archibald, Radil, Zhang, & Hanson, 2015; Bryman, 2006).

Justifications for Mixing

I examined the justifications for mixing methods using Greene, Caracelli, and Graham’s (1989) influential conceptual framework to determine whether and how the arts were reflected in the rationale. Greene et al. (1989) conceptualized five common justifications or reasons for mixing in a single study, as follows: triangulation (e.g., comparing findings from qualitative and quantitative investigations, often with the aim of increasing validity and reducing bias); complementarity (e.g., seeking elaboration, clarifying findings, enhancing strengths, or minimizing weaknesses from one analytic strand with results from another); development (e.g., using the results from one method to inform the other method, often for the purpose of instrument development); initiation (e.g., comparing findings and contradictions from two analytic strands to discover alternative views, paradoxes, and contradictions); and expansion (e.g., using multiple analytic strands for different study phases to expand the breadth and range of inquiry). I paid particular attention to whether the author(s) explicitly justified the inclusion of the arts approach and whether they linked this to the larger MM justification.

Authors infrequently identified explicit rationales for integration; justifications often were buried and inferred. When stated, the most common justifications were expansion (Bertling, 2015; Shannon-Baker, 2015), triangulation (Bieri et al., 2013; Lu, 2013), and initiation (Grob, 2012). However, only authors of two of these articles included the arts-informed component in their justifications. Grob (2012) stated that “arts-based techniques offer a complementary method of inquiry” (p. 58), whereas Shannon-Baker (2015) referred more broadly to multiple forms of inquiry that enable exploration of otherwise inaccessible information. Justifications exclusive to the unique potentials of arts approaches were absent.

Visuals of Integration

Many studies used visuals such as charts, tables, and artwork to communicate qualitative, quantitative, and arts-derived data. However, few authors showed in-depth visual evidence of arts integration with other data forms, or with the overall research design. Authors of eight studies (Bertling, 2015; Bieri et al., 2013; Flowers et al., 2015; Grob, 2012; Jackson, 2013; G. Johnson, 2014; Luthy et al., 2013; Shannon-Baker, 2015) showed some extent of integration by using visuals to illustrate a coding rubric, to show data collection measures, or to demonstrate how data sources contribute to developing a tool.

Bieri et al. (2013) conducted a community-based MM study to develop an educational cartoon to prevent worm infections in Chinese school-age children. Findings from quantitative and qualitative data sources (e.g., questionnaires, in-depth qualitative interviews, drawing assessments) informed the development of the tool and directed which key messages were included. The authors used a figure to visually represent this process, similar to visually depicting a MMR design. The visual linked the data sources (e.g., key informant interviews, questionnaires, draw and write) to (a) the most relevant information obtained, (b) key messages in the cartoon, and (c) sections where this information was portrayed. Shannon-Baker (2015) provided a rare example of an integration matrix to facilitate comparison across three data sets (i.e., arts-informed, qualitative, and quantitative).

In studying how students demonstrated empathy in their environments, Bertling (2015) simply used a table to show how various data collection measures would be implemented. Although the author sought to keep data separate, she treated visual data collection as a form of qualitative data. Flowers et al. (2015) used art to assess the environmental attitudes and awareness of school-aged children (ages 6-12) and compared results to those from a survey instrument. The authors provide a visual example of how children’s drawings were coded using a standard rubric. Interrater reliability scores, using Kappa and Pearson Correlation, were reported for each factor (e.g., human, biotic) in a separate table.

Luthy et al. (2013) used a comparable approach to Flowers et al. (2015). Specifically, Luthy et al. (2013) used a table to represent a coding rubric alongside content items (e.g., body parts) represented in patients’ drawings of their perceptions of their chronic obstructive pulmonary disease (COPD). The approach taken by Flowers et al. (2015) and Luthy et al. (2013) demonstrates a data transformation procedure (Fetters, Curry, & Creswell, 2013) by way of
a content analysis of visual representations. Here, visual data are quantified based on content represented. Drawings are regarded as informative, developmentally appropriate (Flowers et al., 2015), and although seen as “distant from the biomedical view of the body” (Luthy et al., 2013, p. 698), are reduced to their components. G. Johnson (2014) used a similar approach and used content analysis to analyze participants’ superhero drawings across five domains.

Grob’s (2012) method of visually conveying integration is unique in that her collages formed “a complementary data analysis technique.” Here, displaying the collage functioned as the visual depiction of integration between visual and qualitative data sources, and were regarded as “conceptual constructions representing key themes” (p. 49). Grob’s collage was the closest example of using art to merge datasets, rather than connect datasets through sampling, or build informatively on data collection procedures (Fetters et al., 2013). Similarly, Jackson’s (2013) article included a photograph of visual body mapping of the Black woman body, which captured the visualization and actualization of qualitative data beyond the narrative (spoken or written) space. The authors of other studies did include visual depictions of their research findings, artwork, or both, but not in a manner that demonstrated any extent of integration.

Discussion: Considerations and a Way Forward

Findings from this review point to important considerations regarding the newly envisaged domain of arts-MMR research. Perhaps most central are the nature of arts-MMR integration; terminology and justifications; and design, philosophy, and research proficiency. Researchers are encouraged to take up these considerations in the spirit of openness and creativity reflective of arts-MMR potentials.

Conceptualizing Arts-MMR Integration

Although this review began with a broad look at the literature on the arts (e.g., arts-based, arts-informed research) and MMR, the results showed that not all ways of combining art and MMR are amenable to integration. For instance, MMR evaluations of arts interventions provide little opportunity for art-MMR integration. Conversely, arts-based and arts-informed approaches can be used to facilitate concept formation, reflexivity, and tool development. Based on this distinction, arts-MMR design can be defined as research that combines arts research methodology with methods positioned in an alternative paradigm within a single study or program of study. Conceptualizing arts-MMR in this way distinguishes studies that incorporate the unique knowledge contributions possible through the arts from those studies positioning arts as the subject of inquiry (e.g., evaluating arts using MMR). Arts-MMR, therefore, exists on a continuum extending past MMR about the arts (e.g., evaluating arts using MMR), and ranging from low-level (e.g., using art in data collection with little cross-over analysis) to high-level integration (e.g., interweaving the arts and MMR throughout the research process).

The results of this review showed that although potentials for arts-MMR exist, they have not yet been realized. The arts are regarded as tools for generating new or different data. They are positioned epistemologically with emphasis on how knowledge is generated (e.g., inductively; Eisner, 1997). Although critically, arts and research can catalyze questioning of the nature of knowledge (e.g., creative potential; Sullivan, 2006), arts were underutilized for this purpose in the current review. As such, researchers engaged in arts-MMR are encouraged to consider how arts-based or arts-informed inquiry contributes uniquely to MMR, how art can be used to understand better correspondence or discordance between research findings, how art can facilitate data analysis, how findings can be positioned to understand discordance better, how results from multiple data sources can be uniquely represented to demonstrate arts-MMR integration, and how to integrate the arts in a way that minimizes reduction and maximizes arts transformative potential. These components are open domains for discussion in the field of arts-MMR’s “knowledge of possibilities.”

Terminology and Justifications in Arts-MMR

Defining MMR is not a new challenge, and similarly, discrepancies in nomenclature are characteristic of any discipline (Bergman, 2011; R. B. Johnson et al., 2007). In the case of what constitutes MMR, authors have previously argued for inclusivity, wherein multiple qualitative methods or multiple quantitative methods could comprise a MMR study (Bergman, 2011; Morse & Niehaus, 2009), whereas others advocate that the terms qualitative or quantitative multi-
method be used (Bergman, 2011). Combining arts-based inquiry with qualitative or quantitative research resurfaces this question, and unsettles debate regarding whether arts-based and arts-informed are distinct from qualitative inquiry. In the new realm of arts-MMR, this issue is far from being resolved. It is foreseeable that arts-based, arts-informed, and qualitative research integration provides distinct forms of inquiry and data that are arguably MM in nature. However, a way forward that might challenge the pervasive diametric positioning between quantitative and arts-based traditions is to include qualitative, quantitative, and arts orientations to the inquiry in a single study.

The tendency to dichotomize art as concerned with emotions and science as concerned with rationality creates ontological and epistemological chasms thwarting integration (cf. Snow, 1959). In moving past dichotomies, we are cautioned not to subsume and indoctrinate arts into the dominant research ideology. For instance, some arts-based researchers (e.g., Boydell et al., 2016; Leavy, 2015; Simons & McCormack, 2007), like some qualitative researchers before them (e.g., Denzin & Lincoln, 2000; Whittemore, Chase, & Mandle, 2001), challenge the appropriateness of how rigor—or its associated terminology of validity and generalizability—is conceptualized and applied in ABR (Tobin & Begley, 2004). At times, this attention manifests itself in the development of quality criteria over standards (e.g., using general benchmarks of value and significance vs. a standardized external yardstick applied to ascertain quality; Barone & Eisner, 2012); new models of quality and merit (e.g., Norris, 2011); or, at a minimum, a reflection upon ABR’s uniqueness in relation to quality (e.g., Archibald, Caine, & Scott, 2014; Smithbell, 2010). As such, terminological challenges encountered by MMR practitioners are likely to be amplified when incorporating a third (arts-based) tradition. Another set of distinct quality criteria (bespoke) would probably be required when discussing arts-MMR designs, difficult to achieve given the lack of agreed-upon criteria across sectors.

Because the majority of studies focused on expansion as the justification for incorporating diverse arts-based approaches, there is untapped potential to consider how arts can contribute to a wider range of justifications, namely, development of frameworks, tools, as well to juxtapose perspectives and explore contradiction by way of initiation. Justifications of initiation and development in fact seem like a natural position and contribution of arts-based research methods within the MMR context. Further, justifications are needed that highlight the unique contributions of the arts. Current justifications reflect a highly utilitarian view of the arts, which emphasizes the art product (e.g., often handled as data) rather than the art process. What is lost is art’s transformative and critical capacity—its ability to subvert dominant narratives and challenge capitalistic emphasis on art for the purpose of production. Arts-MMR has potential, but this resides in its creativity, not in its assimilation into mainstream research narratives. As such, within Greene et al.’s (1989) conceptual framework, I suggest that transformative and constructivist decoding be added as justifications for integrating arts and MMR (Table 2). Notably, these categories are appropriate for use beyond arts-based research approaches and could be applied to other critical forms of inquiry and analysis.

### Table 2. Justifications for Arts-MMR

<table>
<thead>
<tr>
<th>Transformative Constructivist decoding</th>
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<tr>
<td>Seeks to disrupt assumptions and entrenched perspectives reenacted and perpetuated by research practices.</td>
</tr>
<tr>
<td>Seeks to decipher which messages are impacted by dominant influences and research practices (e.g., social norms), and which are critically absent throughout integration.</td>
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**Design, Philosophy, and Integration**

It is difficult to consider MMR without credence to the theoretical tenets of incorporated research approaches. Mayoh and Onwuegbuzie (2015) highlight a shifting focus from emphasizing an overall MMR justification to including “a philosophical justification for including specific qualitative methods” (p. 92). In addition to considering the broader justifications discussed earlier, the method-oriented specificity suggested by Mayoh and Onwuegbuzie (2015) is also needed in MMR. Opening the door to an arts-based inquiry as a legitimate strand in MMR provides countless opportunities for understanding and convergence, and parallel challenges to achieving methodological congruence, integration, or understanding divergence among approaches. Yet, such aims mandate alignment with the specific arts approach employed. Participant-generated artwork positioned alongside qualitative and quantitative components provides opportunity to understand how data sources fit, or not, with one another; yet, little opportunity for researcher reflexivity is afforded. What exactly is “being mixed” (methods, methodology) is foremost to these considerations (Morgan, 2007).
Popa and Guillermin (2017) recently argued that “mythological pluralism can benefit from a deeper and more systematic integration of reflexive processes” (p. 19). Arts-based inquiry can assist with this objective. For instance, integrating auto-ethnography with experimental intervention design could provide personalized and internalized insights not possible through statistical analysis. Reflexive efforts (e.g., Grob’s [2012] art making to aid analysis and reflexivity in unconventional applications could help elevate arts-MMR work past arts-informed (which is associated more with a qualitative tradition) to arts-based, wherein the arts-orientation is a thread more systematically woven throughout the study. Incorporating art systematically throughout a MMR study to aid in understanding and to iteratively help guide investigation represents a more interactive approach reflective of responsive research design (Guest, 2013; Maxwell & Loomis, 2003). Here, the point of interface (of integration), rather than the timing and purpose of integration, is emphasized (as if often the case with the typological approach).

Arts integration challenges the notion of integration as it is typically conceptualized in MMR, namely, as the meaningful bringing-together of qualitative and quantitative components. Depending on the research approach (arts-based, arts-informed) and the form of arts-based data generated (e.g., art process vs. art-derived data), questions of how and what is being integrated immediately arise. A second and critical subsequent question is how visual (or other arts-based data) can be handled to facilitate integration and, further, how does the method of interpretation of visual or arts-based data influence its perceived legitimacy? In the previous examples of Flowers et al. (2015) and Luthy et al. (2013), who both used participant-generated artwork, the authors created coding frameworks for quantitative content analysis of visual data. Yet, what is lost through reducing art to numbers is arguably greater than that from reducing the text to numbers. In this way, those interested in pursuing arts-MMR integration as well as those reviewing it need to be attuned to the risk of subverting art’s purpose to a more mainstream political research discourse wherein numbers are perhaps valued more than is the lived experience, and wherein MMR in the context of arts integration is once again considered positivism in drag (Giddings, 2006). Similarly, just as qualitative research has been critiqued as the “modernist mirror to quantitative research” (p. 59), arts-based research is often created within similarly hegemonic circumstances, negating its necessary transformative and critical opportunities (Jagodzinski & Wallin, 2013).

Particular modalities of arts-based research might be more amenable to integration than are others. For instance, no performance arts (theatre, movement arts) studies met inclusion criteria for this review. Authors seeking to integrate art and MMR are likely to choose an art form amenable to known ways of data transformation demonstrated in this study as a quantitative content analysis of visual data (e.g., drawing). Visual data forms, such as drawing and collage, are often more accessible than are performance modalities (e.g., dance) and more guidance exists for their analysis. As such, they are most likely to be incorporated into MMR design. It is presumable that in the coming years, integrating visual data collection and data transformation into an explanatory sequential design will gain popularity.

Extant challenges with integrating qualitative and quantitative data are complicated by incorporating arts in their various forms, including using art as a method of inquiry. Few authors succeeded at illustrating how arts and MMR informed one another; future reliance on and expansion of integration approaches will be necessary. In particular, integration matrices, visual displays, and considerate use of data transformation procedures would be particularly useful, as would more deliberate narrative integration using weaving approaches (e.g., connecting results thematically; Fetters et al., 2013), and attention to how an arts-based inquiry process can inform research design.

**Research Proficiency**

Attaining the necessary proficiency in qualitative and quantitative traditions is challenging; incorporating arts-based or arts-informed methods adds extraordinary complexity. Team approaches to research are growing in popularity, and investigator triangulation—the deliberate selection and use of multiple investigators within a single study (Archibald, 2016) —might be a necessary approach when conducting arts-MMR. Yet, challenges conventionally faced when collaborating might be amplified: establishing functional and productive collaborations across such diverse traditions is a paramount consideration.

Aiming for team proficiency across research traditions is a needed objective; requiring proficiency in each team member is not always possible, nor is it necessarily desirable (Creswell, Klassen, Plano Clark, & Smith, 2011). Each member must be open to the contributions and practices of each tradition, and the synergies made possible via integration (Creswell et al., 2011). Indeed, the extent to which investigators “recognize their biases, and the level of
methodological respect and investigative openness (displayed) exert considerable influence on the success of collaborative ventures” (Archibald, 2016, p. 2; see also Bryman, 2007; Youngs & Piggot-Irvine, 2012). As illustrated, the use of arts to facilitate reflexivity has the potential to assist in this process.

As Mertens et al. (2016) discuss, a discipline-based approach has been the historical way of training academic researchers. Yet, a broader transdisciplinary emphasis is required to support researchers to endeavor in methodologically cohesive MMR (Mertens et al., 2016). Although this can be gained through team participation and mentorship, wide methodological exposure through undergraduate and graduate training, alongside extended course offerings is also necessary (Munce & Archibald, 2017). It is unlikely that mentorship and formal training opportunities are readily available for researchers interested in arts-MMR, given the high levels of required proficiencies and the nascent developmental status of arts-MMR. Given this, it will be advantageous to use numerous (creative) training resources (e.g., webinars, diverse course work, open online courses), and deliberately seek diverse mentors who exemplify desirable personal, relational, and professional qualities (Munce & Archibald, 2017).

Conclusion

Recognizing the concurrent growth of MMR and arts in (and as) research, the similarities between these approaches, and their attested comparable benefits, the current review is a projection into the future—anticipating that forthcoming MMR will become more pluralistic and inclusive in a continued response to social complexity. However, current uses of arts-MMR fit the arts into MMR rather than push their mutual boundaries. Future arts-MMR should consider the transformative and critical possibilities of the arts and how these might be positioned as central justifications for arts-MMR integration. Arts-MMR integration has potential, but this hinges upon reflective, imaginative, and interactive research processes; openness to new and different practices; and a commitment to exploring methodological and epistemological pluralism to help understand complex and persistent social problems.

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References

[*Included in preliminary review]  [**Included in subset review]


