3

On Using Found Object Photographs in School Research

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Introduction

Educational research has focused heavily on first-person observation and, more recently, on researcher-produced photographs and videos of schools and educational settings (Costello 2001; Prosser 2007; Prosser & Loxley 2002; Sekula 1980; Tobin, Wu & Davidson 1989). Another approach, 'photovoice', includes the analysis of subject-produced photographs and drawings to investigate children's lives in school. Photovoice is also used to gain subjective insight into student and teacher experiences (Mitchell & Weber 1999a; Burke & Grosvenor 2003; O'Donoghue 2007; Ganesh 2007; Shohel & Howes 2007; Mitchell 2008). However, as privacy and liability issues increasingly influence decisions about research access, particularly in the United States, this type of visual research has become increasingly cumbersome, difficult and, in some cases, virtually impossible. Schools held to high-stakes performance standards are less willing to allow access since they feel that researcher presence might 'take away' from lesson time. Parents and teachers are less willing to sign informed consent forms – much less modelling-performing-narration releases – due to concerns of distraction and privacy. In addition, even when access is possible, oversight by 'institutional review boards' (IRBs), administrators, or ethics panels often place restrictions on photographs that may infringe on the anonymity or confidentiality of informants, especially protected populations like children. These restrictions make visual research in educational settings challenging, if not impossible.

In reaction to these pressures, and to increasing interest in the evolution of education over time, historians of education and other

Figure 3.1 Mathematics lesson in English classroom, unidentified photographer, ca 1860

Source: Collection of Jeremy Rowe Vintage photography – Vintagephoto.com.

educational researchers have begun to employ photographs as data in compelling investigations (Vinao 2005; Lawn & Grosvenor 2005; Burke & Grosvenor 2008; Burke, Howard & Cunningham 2013) Interestingly, researchers that turn to photographs as research tools find they have access to more images of schooling and educational settings than ever before. In the past, researchers seeking photographs had to physically visit historical collections and archives. More driven researchers also explored antique shops, collectors and shows seeking new material relevant to their research. Today, millions of images are available online. Some are self-produced and populate personal, school, Web, and social media sites. Millions more are pre-digital images scanned and posted for their aesthetic, social or historic context. The combination of digital and digitized images, the availability of sophisticated cataloguing and

search and retrieval mechanisms, and online access have brought a wealth of images to the researcher's desktop.

With little effort, researchers can find images that depict educational settings and activities from many sources, such as historical archives, online social-networking sites like Facebook, Pinterest, and Reddit, or simple Google image searches. Many other images are available for sale on sites, like eBay or Etsy, which offer an ever-changing array of photographs for sale and have become another valuable resource for educators and researchers. Other sources include yearbooks and, increasingly, advertising images designed to 'sell' or 'brand' a school. Our discussion will centre on the use of 'found' photographs, including commercially produced and distributed images, as well as vernacular, amateur images as research data.

Although historians traditionally do not consider materials 'historic' until they are more than fifty years old, it is valid for visual researchers studying education to use broader definitions that fit their topic. By identifying and analysing a photograph in a historic and indexical sense, the researcher can make inferences about the subject, setting and intent to inform their analysis. Hypotheses can be generated and tested using photographs as research data. Within this context, like tracks on a beach, photographic images can be understood and accepted as 'causal evidence' related to and reflecting the objects they depict. We take for granted that images, and the objects represented, disappear into the mists of history as soon as the shutter is released. Annette Kuhn noted the central issue of photographic images:

> The truth/authenticity potential of photography is tied in with the idea that seeing is believing. Photography draws on an ideology of the visible as evidence. The eye of the camera is neutral, it sees the world as it is: we look at a photograph and see a slice of the world. (Kuhn 1985, pp. 27–28) ... [However] A photograph, however much it may pretend to authenticity, must always in the final instance admit that it is not real, in the sense that what is in the picture is not here, but elsewhere. (pp. 30–31)

We do not adopt the naïve, realist view that photographs are merely 'pencils of nature' passively documenting the scene before the lens, still less as 'peepholes into history' as Errol Morris put it (2007b, np). In this discussion, we see photographs as a multi-layered resource of embedded information and a visual vocabulary. Photographs can provide researchers with socially constructed texts for detailed analysis whose

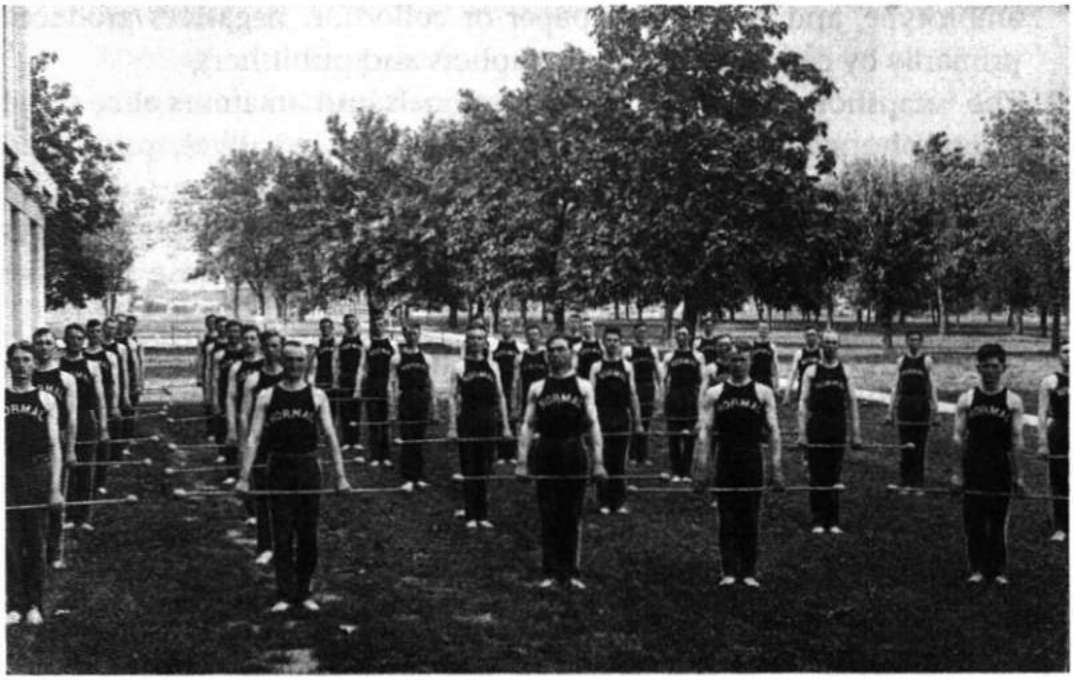

Figure 3.2 Men's gymnastics class, Arizona Territorial Normal School, unidentified photographer, ca 1907

Source: Collection of Jeremy Rowe Vintage photography – Vintagephoto.com.

meanings require a visual literacy to be explored and understood. In this regard, images become exceptionally valuable research tools, particularly in study of the history of education. We can accept photographs as providing important data about the forms and practices of schooling to inform research. It is important to note that although inferences can be made, it is not possible to take photographs or make drawings of 'education' per se. Determining whether teaching or learning is actually taking place is an important issue, but it requires different methods. This is another compelling argument for the importance of explicitly stating and documenting researcher assumptions.

Photography and education have a long and intertwined relationship. One of the first photographs made in the United States, a daguerreotype in 1839, was of Central High School in Philadelphia. This was the first of millions of 'school photographs' taken by everyone from professional photographers to teachers, parents and even school children today. Our discussion of post-positivist, ethnographic and interpretivist paradigms is divided into three overlapping historical periods:

1. The 'early history' period, where photographs were only made by professionals and existed as direct positive images (e.g. daguerreotype,

ambrotype, and tintype) or paper or collodion negatives produced primarily by commercial photographers and publishers;
2. The 'snapshot' period, where professionals and amateurs alike could create photographs, and amateurs produced negatives, prints and direct positives like colour slides; and
3. The 'digital' period, where the number of photographic images exploded, but there has been a dichotomy between ease of online access and ephemeral nature of digital files.

We will similarly address three periods of time in terms of ownership and copyright permissions:

1. The historic period before January 21, 1923, where published photographs are in the public domain and are free for research unless copyright has been asserted and renewed;
2. The 'grey area' period between January 21, 1923, and the Digital Millennium Copyright Act (DMCA) protection, where marking with © (copyright) and requiring periodic renewals have made the granting of researching permissions challenging; and
3. The modern period, where photographs are copyrighted upon creation but can be 'donated' for several types of use via creative commons licenses.

This chapter also briefly examines three methodological approaches and practical methods for studying found images of school: post-positivism, ethnography and interpretivism. The discussion is necessarily 'methodological' because what constitutes evidence, standards of proof and a trustworthy conclusion differs for each approach. However, used together, the three paradigms provide powerful ways to examine the representation of schooling. In order to remain firmly grounded in imagery, we will present and analyse representative examples of the various approaches.

- Photoforensics – gathering concrete information based on film and negative type, photographic style, archival notes and chains of provenance, clocks, calendars and other sorts of evidence embedded in images (Morris 2007a; Rowe 2002).
- Ethnographic approaches may make use of grounded theory in examining images (Charmaz & Mitchell 2001). Methods include:
  - Constant comparison,
  - Simple coding,

  - Axial coding,
  - Theoretical coding, and
  - Construction of mid-level theories.
- Interpretivism deals primarily with the symbolic meanings embedded in images but may also employ a number of methods, including:
  - Iconography,
  - Semiotics,
  - Marxist,
  - Critical pedagogy,
  - Feminist, and
  - Critical race theory.

In addition to the serendipity of which images were made, saved or preserved, passed down, and still retain identification or documentation to add meaning beyond the image, 'happenstance' also impacts what the researcher has been able to identify and acquire. Despite the power of search engines, results rely on the scope and quality of unreliable user-supplied descriptions and metadata. Moreover, while progress is being made in searching by image alone, keywords are still essential. Keywords are typically user assigned by photographers or archivists, usually with little regard to control vocabulary or standards. To find school photographs, one may need to do a series of searches using words like 'school', 'teacher', 'classroom', and so on and then sort out tangential results such as schools of fish or piano teachers, for example. One's research questions will determine which images are available, identified by the researcher, and recognised as meaningful. This holds true for physical images sought in archives, collections, and shops, those that are found or acquired first-hand as well as those that have been posted and made available online. Abigail Solomon-Godeau (1991, pp. 182) highlights the well-defined qualities of visual research:

> individual documentary projects, themselves the product of distinct historical circumstances and milieus, 'speak' of agendas both open and covert, personal and institutional, that inform their contents and, to a greater or lesser extent, mediate our reading of them. It is properly the work of historians and critics to attempt to excavate these coded and buried meanings, to bring to light these rhetorical and formal strategies that determined the work's production, meaning, reception, and use.

Photoforensics

Early history

The early history of photography included many formats which produced unique images, including daguerreotypes and collodion positive photographs like ambrotypes and tintypes. The physical object that holds your gaze is the original that was made in the camera by the photographer. Copies could initially only be made by re-photographing the original, or later by using a multiple-lens camera to create several identical images on a single plate. Interior views, such as classrooms, were very rare in the first decades of photography, providing few examples of educational settings other than exterior views of schoolhouses, class portraits made in the studio, or posed teachers with books from the era before 1860. Due to the cost and complexity of photography at this time, most images were printed on albumen paper from collodion wet plate negatives by professional photographers or commercial publishers in formats including cartes de visite, cabinet cards, and stereographs. Cartes de visite are roughly the size of business cards and were primarily used to produce portraits from the mid- to late 19th century. A later slightly larger version, the roughly 4½" × 6½" cabinet card was similarly used from ca 1860 into the early 20th century, again primarily

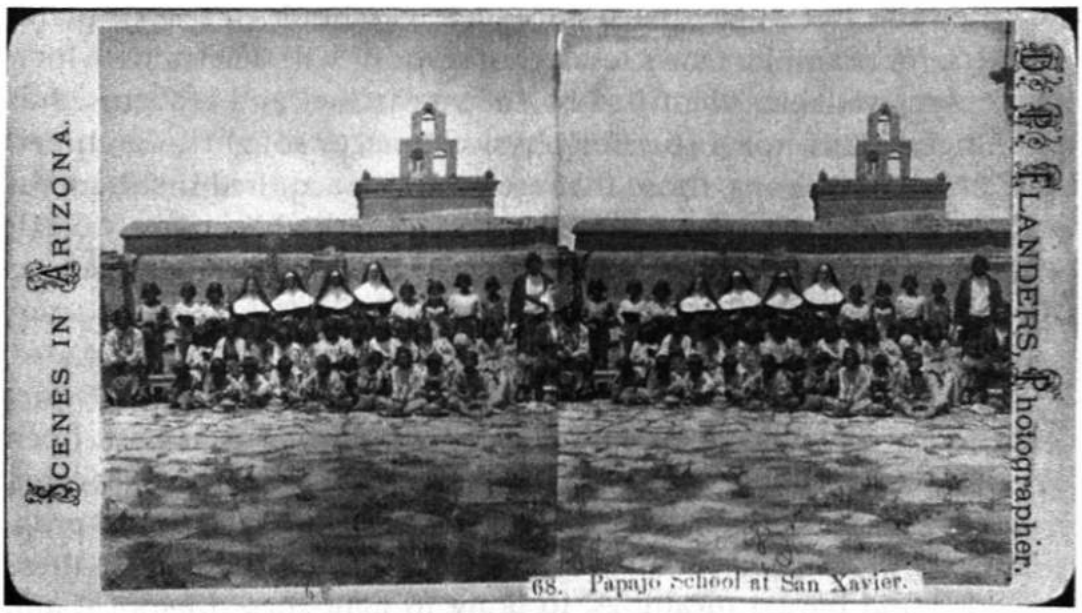

Figure 3.3 Papago Indian School, San Xavier Mission, near Tuscon, stereograph by D. P. Flanders photographer, ca 1874

Source: Collection of Jeremy Rowe Vintage photography – Vintagephoto.com.

for portraits but occasionally for interior views such as classrooms and school interiors.

Stereographs required a camera with two lenses that produced images from perspectives matching the separation between human eyes. When placed in a viewer, the brain fused the two images into an immersive three-dimensional view. Stereographs were incredibly popular as both documentary resources and (after the 1890s) teaching tools in their own regard (Rowe 2014). Early stereographs provide one of the best sources of information about educational settings, initially from posed genre scenes that became popular in England and Europe and were marketed and copied in the United States. Some are clearly parodies of educational settings, others more allegorically accurate, eventually documenting actual classrooms and educational settings. Though primarily photographic, stereographs also occasionally depicted cartoons, printed illustrations and drawings. Many classrooms had stereoviewers for each student; boxes of stereocards were marketed expressly for schools, often

Figure 3.4 Pima Girls School lunch group, near Phoenix, Arizona, unidentified photographer, ca 1898

Source: Collection of Jeremy Rowe Vintage photography – Vintagephoto.com.

including associated scripts and texts. The sets were often tailored to specific academic disciplines: three-dimensional views of palaces and pyramids accompanied geography, images of solids and graphs accompanied math, and views of dissections supplemented medical school curricula. Several thousand titles in areas such as history, social sciences, botany and biology were offered by companies like the Keystone View Company. Stereographs continued to be a valuable resource for educational documentation into the mid-20th century. To date, we have seen little evidence of the use of stereographs for analysis from the perspective of curriculum studies.

Snapshot

After about 1890, we see the era of amateur photography supplanting professionals. As availability of roll film and inexpensive, handheld cameras made photography simpler and less expensive, the volume of photographs increased exponentially. As the technology evolved and film became more sensitive, views of interiors such as classrooms became more frequent. Amateur photographs, such as snapshots – and after about 1905, photographic postcards – provide a fertile source of visual data for researchers interested in real educational settings. This snapshot era continued as cameras became smaller and simpler and as simple flash and then colour improved the ability to photograph indoors. The ability to easily document educational settings, and to empower teachers and students to make images, led to an ever-greater volume of photographic documentation, from school photos to classroom interiors, auditoriums, gymnasiums and other educational settings. While collectors prize historical images, including daguerreotypes, tintypes, and 19th-century images, the very desirability can make them prohibitively expensive to acquire. However, peers and private and public collections can still provide potential sources for researchers.

Though the vernacular school photographs from the 'snapshot' era are also collected and increasing in value, many images potentially valuable for research can be reasonably purchased from collectors, shops or shows, or from online auction sites. Examples include a recent search on eBay that revealed 26,910 results for 'photographs school' under 'Collectibles'. Another popular source, Etsy, returned almost 1000 items related to school photographs. Overall, simple, quick keyword searches can turn up an ever-changing array of tens of thousands of images related to schools and education.

Digital

The most recent quantum change has been the digital era, which has facilitated massive numbers of 'modern' images and increased access to historic photographs through search engines, huge digital archives and other online sources.

It is important to note the corresponding decrease in physical evidence produced by photographers as more photographs are posted online to be viewed on computers, pads, and phones. Silver-based photographs of the past have an inherent physicality that allows them to be placed in scrapbooks or collected in boxes and passed on to researchers, collectors, libraries and archives. It is also the case that 'prints' require no additional software or hardware to view. Though digital files can be and are printed, it appears that fewer and fewer physical prints are being produced as more material is 'born' and lives only in digital form.

Digital files have the benefit of simplicity regarding copy and transfer, as well as the ability to be easily 'improved' and 'corrected', using tools like digital-imaging software, in ways that required difficult and costly lab work in the past.

A primary weakness of digital files is their ephemeral nature. Without tangible, physical form the image files are at the mercy of accidental deletions, over-recording, hard-drive crashes, or other storage issues. Over time the additional issues of file format compatibility and the ability to access files raise additional concerns; that is, in twenty-five years, who

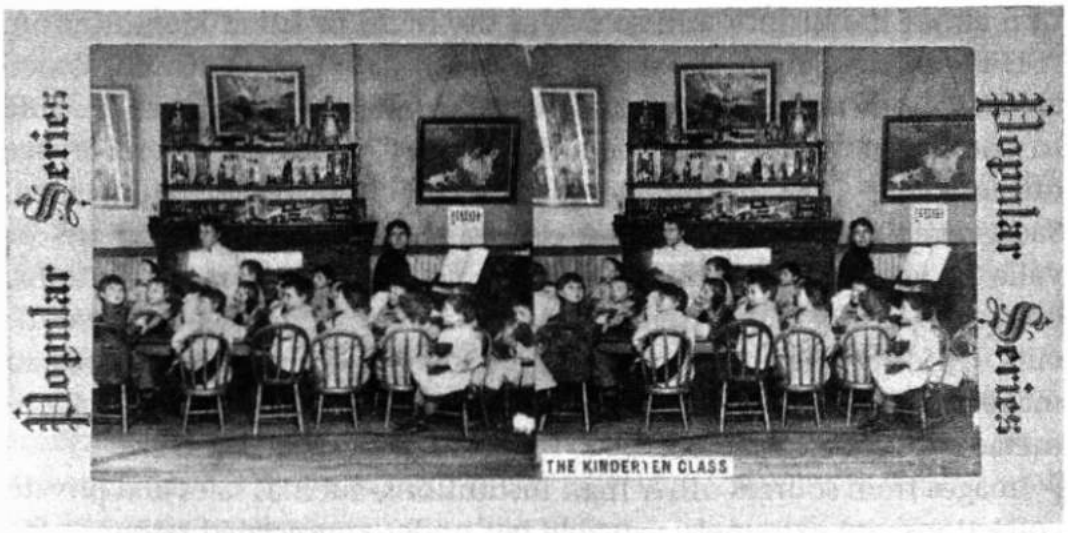

Figure 3.5 'Typical' kindergarten class, stereograph, unidentified photographer, ca 1885

Source: Collection of Jeremy Rowe Vintage photography – Vintagephoto.com.

will know what a JPEG or TIF file is or how to open it? Finally, there is an issue of resolution. Though many digital files are now fairly large, big files are rarely posted online. Without access to full-sized files, it is often difficult to enlarge the image to see detail important to researchers, or to reproduce in print.

Over the past two decades, online access to photographs has dramatically changed photo research. No longer must researchers travel to collections to view catalogues of holdings in person. Many collections, like the Library of Congress American Memory project and online collections being released by institutions such as the J. Paul Getty Museum, Reuters, and The Metropolitan Museum of Art, are relatively and accurately well catalogued, and as a result can be extremely valuable research tools. Over time these resources become heavily used, as researchers seek material and individual images are repeatedly published and referenced. Many archives of important images from WWII to the present are useful to researchers and important for viewing and studying; however, access, reproduction and use fees are often large. Fees for publication vary from libraries, museums and historical societies on the low end, to commercial 'stock' houses like Getty Images and Corbis, which typically charge higher commercial rates. Though fees are frequently lower for academic research, most institutions have a separate fee structure for publication. Issues related to fees and agreements for online use are complex and beyond the scope of this chapter.[1]

Online collections, though readily available, may be riddled with misinformation or offered without provenance (collateral information about the history and source of the item) or other identification. It is incumbent upon the researcher to validate and verify the associated captions and citations and to use whatever techniques possible to correctly and accurately identify images regardless of source (see our unpacking of the Albuquerque Indian School photograph below). Sadly even when knowledgeable researchers provide corrections or valid new information about images held in institutional collections, correcting errors and disseminating accurate information is very difficult. Unfortunately, there is often a 'chain of command' required to make changes, and this information is often delayed or lost before metadata can be corrected.

Images from sources other than institutions, such as sales and private collections, are extremely valuable but under-appreciated resources for photo researchers. Browsing antique shops, flea markets or other sources often provides access to new images. Online sources such as eBay provide access to thousands of images each week. Though many are searchable,

Figure 3.6 African American school house, Florida, stereograph by R. K. Bonine photographer, ca 1885

Source: Collection of Jeremy Rowe Vintage photography – Vintagephoto.com.

most collectors and many researchers find that mislabelled material is often most interesting – though great amounts of time and effort are needed to explore and find relevant images.

Social media sites such as Facebook and Pinterest have grown to be fora where collectors and researchers exchange information. The accuracy of the information is variable but can provide a starting point for researcher verification. An additional complication is the cavalier nature of many posters in failing to cite original sources for the images. The lack of credit and citation adds additional researcher time and effort to track sources, verify information and obtain permissions for reproduction and use.

While the original photographic intent can sometimes be gleaned from captions or context, unfortunately provenance information is frequently limited or missing. Photo albums made by parents, students or teachers are all too often destroyed when purchased at auction or tag sale – broken into component parts and offered for resale with key words like 'school', 'sports', 'Christmas', and so on. Thus any chain of provenance is sundered. Nevertheless, these sources can still provide a treasure trove of images depicting the materiality of schools, educational settings and processes.

It is important for the researcher to understand and analyse within the historic, technical and aesthetic context in which the image was created (Rowe 1997, 2007). Researcher assumptions made about the

validity of the documentation and intent of the creator are critical to the analysis and should be explicitly documented as part of the process. Creating an audit trail of the research question, process of selecting, acquiring and accessing the images, and assumption in terms of using the photographs as evidence or catalysts for the research are critically important; audit trails permit others to question, refute or validate the research.

Photoforensics was coined by the first author as a term for understanding the physical and technical evidence associated with and embedded within the photograph. Provenance refers to the collateral information about the history and source of the photograph. Included is data that may be associated with the image or available in terms of who made the photograph, where was it made, where has it been since its creation, what manuscript or collateral information is or has been associated with it, and if and where it has been reproduced.

Good researchers examine and explore the provenance to verify its potential accuracy (Rowe 2011; Margolis 2004; Margolis 2004). For example, if notes on a 19th- or early-20th-century photograph were made in ballpoint pen (after its invention during WWII), then they were likely made by descendants, and thus may include second-hand recollections as opposed to primary source, first-hand evidence. Even where there is no associated provenance, the photograph itself often includes embedded information that can prove valuable to researchers. The type and style of the photographic mount can provide clues as to date of production or distribution based on size and style. The style of dress, classroom size, equipment being used, messages on the walls and blackboards, lighting and so on or other clues in the photograph can help identify or better validate other information about the possible age of a school photograph.

Often the photographic mount includes a photographer's imprint on recto or verso, providing potential clues to geographic source. With a little research into city directories or other sources, photographer address can often be identified to provide additional potential dates for creation of the image. Knowledge and experience with photographic processes permits researchers to evaluate whether the image is an original print from the negative, or possibly a copy or 'pirate' photograph (see the 'Popular Series' example illustration) that may have been produced at a later date.

For later images from the 'snapshot' era, there is often caption information, and on still later photos, processing lab or dating information printed on the edge or back of the print. Photographic postcards are a

valuable source of information both for the image and collateral information they can provide (Rowe 2007). Messages written on the card often provide contextual information about the image and occasionally dating. Postmarks are helpful as indicators of the latest date that the image could have been produced. Sometimes photographers identified themselves by writing in the negative or on the card itself. Interestingly, it was common practice to copy earlier images onto postcards, so additional scrutiny is required to confirm dates. Under magnification or scanning, many images are sharp enough that it is possible to read calendars at the back of the classroom or to find other clues as to date or location embedded within the image.

A good metaphor when analysing photographs is the story. Photographs, and perhaps more importantly photographic archives, tell stories that gain complexity as the context and embedded information they contain is explored and understood by the researcher. Each layer of information – aesthetic, historic provenance, embedded physical and technical – provides additional depth and validity to the story for knowledgeable researchers. There is a growing cadre of collectors and researchers knowledgeable in photographic history that can be invaluable to educational researchers. Resources such as collectors' organisations, like the Daguerreian Society and Ephemera Society of America, as well as expanding research interactions to include researchers in history, social and material culture, in addition to photographic history, can provide valuable assets to assist in analysing and interpreting photographs. Good researchers present good stories; the best researchers tell the best and most compelling stories, grounded in empirical, 'validateable' evidence.

Using interpretivist tools

Interpretivism has a long history in the social sciences, going back at least to Wilhelm Dilthey and Max Weber. Dilthey especially drew on biblical hermeneutics, the interpretations of sacred texts and an alternative/companion to exegetics. Interpretivism is a critical appraisal of a text – in our case, an image – adding historical comprehension, social meanings, symbolism and iconic understanding to the photoforensics discussed above. Weber, for instance, in his critical study on the *Protestant Ethic and Spirit of Capitalism* (1904–1905) provided an *interpretation* of two major social movements. His discussion does not look for causes as much as various understandings of how Protestants and Catholics interpret how to live a good and just life, and how these interpretations affect

economic behaviour. Perhaps the most important interpretivist of the later 20th century was Clifford Geertz, an anthropologist, who wrote:

> (My) concept of culture ... is essentially a semiotic one. Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be not an experimental science in search of law but an interpretative one in search of meaning. (Geertz 1973, p. 5)

Maybe a decade or two ago there were what were termed 'paradigm wars' between post-positivist and interpretivist positions in most of the social sciences. This has been generally resolved so that, for example, the two authors of this chapter work together and make substantial contributions to understanding images of school, drawing on both paradigms.

Like currency and other commodities, photographs of educational settings circulate; today, as Alan Sekula (1981) noted, there is an unprecedented 'traffic in photographs'. A simple look at the volume of material available online clearly validates this statement. Moreover, as the exchange value of photographs has begun to triumph over their initial meaning (or use value), they become semantically available:

> the subordination of use to the logic of exchange thus not only are the pictures in archives often *literally* for sale, but their meanings are up for grabs. ... This semantic availability of pictures in archives exhibits the same abstract logic as that which characterizes goods on the marketplace. (Sekula 1983, p. 444, emphasis added)

This semantic availability is precisely what makes 'found photographs' useful in educational research. Photographs transition from emic to etic as they are trafficked. A graduation photograph taken to commemorate a beloved daughter's success becomes one of thousands of images of 'coming of age ceremonies'.

The goals of the photographic documentary efforts of the U.S. Farm Security Administration (FSA) were:

> to tell people, through pictures, about the great human problem with which the Farm Security Administration is struggling: the problem of giving a decent break to the lowest third of our farm population. The other basic aim is equally sweeping – to make a photographic record of rural America. (Howe 1940)

A search of some 3000 images of schools in the FSA archives revealed 'Black schools' and 'White schools' but included no images of racially integrated schools. It was probably not the intent of either Roy Striker or the Roosevelt administration to support Jim Crow schools, but a systematic investigation revealed that the evidence depicted by the number of segregated and lack of integrated schools in the archive mirrored the practices of boards of education in the areas documented by the FSA (Margolis 2005). As in the famous Sherlock Holmes story, 'Silver Blaze', of the dog that didn't bark in the night (Doyle 1894). Detailed interpretative studies of photographic archives can also reveal what is not included.

As noted earlier, images of school can provide information for researchers from nearly every time period since the 1850s and were produced in virtually every nation. Photos show classrooms settings with students both sitting in rows and columns, and engaging in more active educational pursuits. They depict change through the ages: in interior and exterior architecture, playgrounds, educational technology, student and teacher dress, posture and deportment, and the arrangement of bodies in space (Fram & Margolis 2011); important occasions for photography range from ceremonial occasions, like rites of passage, to degradation rituals (Chappell, Chappell & Margolis 2011). One can easily find evidence of race, social class, and gender as well as segregated and integrated schools or classes (Margolis 1999). There are also ongoing historical studies of the visual culture of schools (Howard, Burke & Cunningham 2013).

Ethnography may make use of grounded theory in examining images (Strauss & Corbin 1998; Charmaz & Mitchell 2001).[2] The researcher systematically collects photographs and sorts them into categories (folders). This process can be aided by software such as ThumbsPlus.[3] First using simple codes perhaps 'date', 'photographer'.... As images are compared with one another the codes become more complex; for example, students seated in rows and columns, or actively involved in a project. The process of axial coding involves examining the categories for 'mother-daughter' subcategories (e.g. 'seated and lecture', 'seated and watching media').

Persistence and constant comparison will produce theoretical categories; for example, 'coming of age ceremonies' (Chappell, Chappell & Margolis 2011) or a null category of 'integrated classrooms' in the enormous archive of the Farm Security Administration (Margolis 2005). If one has a very large collection or archive to work with, simple statistical measures can help identify and define categories. In the end, the

researcher works to develop theoretical categories like the function of schools as sites of ceremony and ritual, or race and social class hierarchies. Visual images of schools can also inform feminist (Mitchell & Weber 1999a, 1999b) and Marxist analyses (Sekula 1980) using a priori categories like social class, sex and gender.

One can use the tools of semiotics/iconography to formulate hypotheses about what story the photograph is telling. For example, Margolis (2004) published an article using the image in Figure 3.7 of students holding flags at the Albuquerque Indian School. Following Foucault, he noted many of the images constituted 'visual evidence of how teacher, school and photographer collaborated to force children's bodies to "emit signs" of assimilation, Americanization, rank, discipline, symmetry and order.' (p. 57)... Examining the closed faces of the Indian children and their teachers, Margolis wrote... 'Like mug shots and rogues' galleries they suggest the facial expressions of those who have no ability to

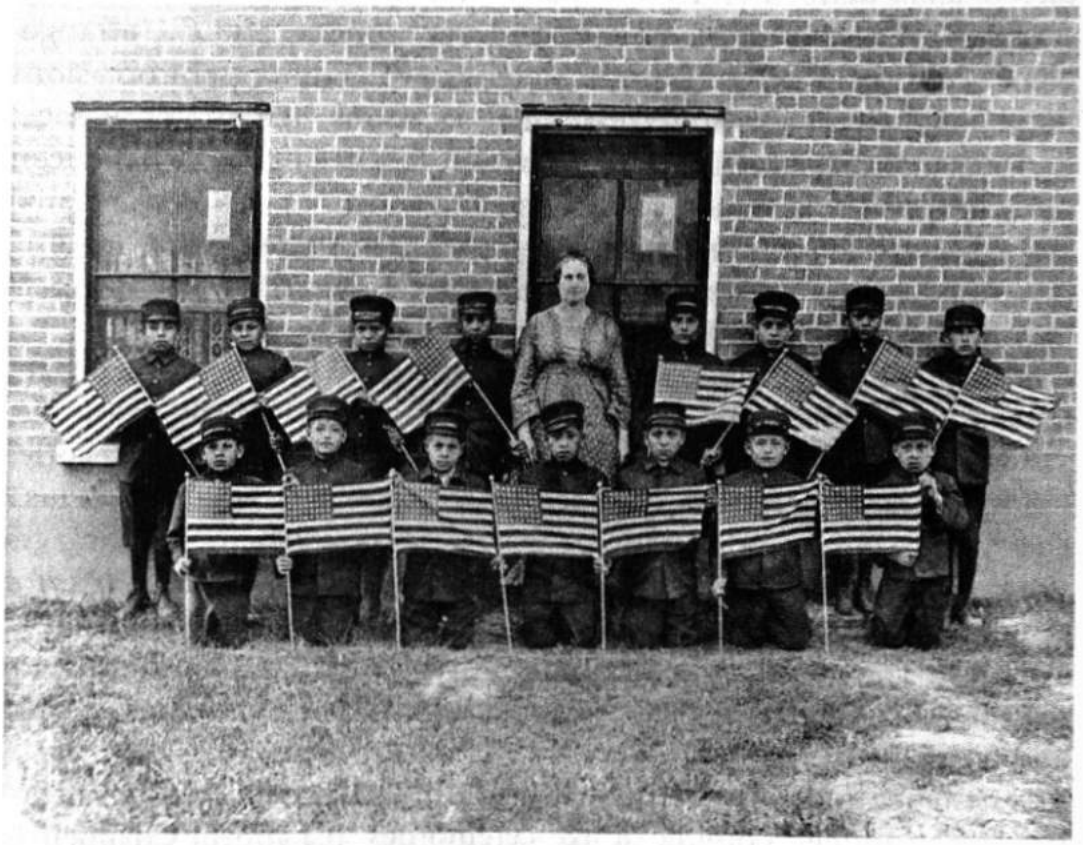

Figure 3.7 Very early class of young boys with flags at the Albuquerque Indian School, ca 1985

Source: National Archives https://research.archives.gov/id/292873.

resist the gaze of the lens or the power of the photographer to take a picture.')... (and) demonstrated to administrators of the BIA, not only the students' state of socialization, but the teachers' ability to establish discipline and order' (p. 62).

A simple photoforensics analysis suggested that this image could not have been produced in 1895. The caption in the National Archives:

> Very early class of young boys with flags at the Albuquerque with the following caption: Indian School. Production Date ca.1895 [sic.]. National Archives and Record Center (BIA)NRG-75-AISP-10 (Margolis 2004, p. 77)
>
> Note: Based on information in the photograph, this photograph was actually made after 1912 – at some point after New Mexico (January 6) and Arizona (February 14) were admitted to statehood and President Taft established the 48-star flag with six horizontal rows of eight (June 24).

One hypothesis was that the photograph was made to celebrate New Mexico becoming a state. The 'statehood' hypothesis is likely also wrong, as may be some of the conclusions about demeanour based on facial expressions. In a great example of the value of the benefit of cross-disciplinary input, during a spring 2014 seminar taught by Margolis, a student named Ian Punnett noticed the stars in the window and identified them as probably indicating participation in WWI. In addition, Ian noted there is also a Red Cross banner in the window. The photo is, of course, black and white, so it is not possible to tell colour of the stars. A blue star indicates a family member serving in the armed forces and a gold star indicates one who died. Ian also discovered that 'The U.S. government took over the banner specs for "service flags" and mandated their consistency for WWII. Before that, there were as many as 40 competing designs'.

Thus the original reading of the enormous number of symbols embedded in the image may be wrong; the patriotism indicated by flags, the dark uniforms and unhappy faces may honour a student from the Albuquerque Indian School who died during the war which the United States entered on April 6, 1917; the war ended in November 1918. That would date the image as likely being created within that twenty-month period.

Symbolic readings of what an image denotes and connotes, like all scientific findings, are iterative and subject to revisions based on additional evidence.

Copyright and limitations to use

There are a number of practical considerations for anyone planning to use pre-existing photographs in educational research. Identifying ownership and obtaining rights are significant challenges for researchers using photographs, particularly for publication. In the past, there was a seventy-five-year window of copyright protection for photographs protected by U.S. copyright. Each year, on January 1, millions of images and documents 'timed out' of their protection and became public domain. The copyright holder could no longer restrict access or the ability to use, reproduce or publish public domain material, making the usage of this material simpler and less complex for research and publication. As a result of the limit of copyright protection and rolling deadline for transition to public domain, each year a wealth of historic books and photographs became available for re-publication and use.

Largely as a result of years of pressure by copyright holders with valuable assets closing in on seventy-five years of age, such as Disney and the estate of George Gershwin, U.S. Congress passed the DMCA in 1998.[4] The DMCA froze the transition to public domain at January 1, 1923, retaining copyright protection for materials created after that date. The act also strengthened protections, removed the required copyright © symbol, and made copyright protection automatic upon creation of a work in tangible form.

One result of the DMCA has been additional requirements for researchers to acquire and prove permission to use images. Scrutiny by publishers increased, and their contracts focused even further on author liability. Virtually all publication contracts place the burden, and often the expense, of obtaining permissions for publication of images on authors. Contracts usually also require authors to assume liability for any claims of infringement against publishers (Rowe 2011). As a result of these limitations many researchers have focused their research and use of historic images to those made before 1923 in order to simplify rights and permissions issues.

One example of an accessible online resource is the American Memory archive at the Library of Congress (LOC), which had grown to over forty separate photograph archives, including millions of public domain photographs, by March 2014. American Memory image searches are currently limited to 5000 returns. Interestingly a search for the keyword 'education' exceeded the 5000 item limit, and 'school' returned over 4500 results. A search for photographs of 'students' returned 2295 results. Though many of the images in the American Memory collections are

public domain and available for research use, the LOC does not charge permission fees and, in general, does not grant or deny permission to publish or otherwise distribute material in its collections. Like most institutions, this places the burden of researching and obtaining copyright permissions, and any associated fees, on the researcher/author.

Most modern images, such as those of education from the post–WWII era, including the American civil rights movement and 'duck-and-cover' drills, are owned and controlled by stock photo agencies or news agencies like Time Life or Reuters, which charge for use. While they may be available for study, obtaining permissions for publication is often prohibitively expensive for academic researchers. Similarly, most private and public collections, such as museums and archives, also limit access and charge for reproductions and use in publication. Recently several major collections, such as the J. Paul Getty Museum and the Metropolitan Museum of Art in New York, under the **Open Access for Scholarly Content (OASC)** have granted permission for non-commercial use without cost as long as the source is credited. Some institutions make only low-resolution images available online, and may be charge fees for obtaining high-resolution files needed for reproduction.

Conclusion

Historical photos are a potentially valuable but little appreciated resource for educational researchers. Text alone has a limited ability to convey complex information about what is going on in schools; the authors argue that using images and combining images and text provide a rich environment for research and powerful tools for dissemination.

Extracting the information contained in photographs requires its own tools and forms of literacy; the broader the knowledge of the researcher, the more effectively these resources can be mined and the information they contain extracted. Understanding of photographic techniques, aesthetic trends, clothing and material culture, and historical context can each add to the information extracted from an image. Identifying and assembling groups of images around themes, such as classroom practice, educational technology, or ethnographic background, can provide further fertile ground for researchers.

Grounded theory, interpretive techniques, and symbolism have their own vocabulary. Different disciplines see the images through different lenses and interdisciplinary integration of information and techniques can expand the scope and quality of research analysis.

The importance of audit trails – standpoint assumptions, analytic processes, selection criteria, coding, interpretations in context, and other subjective research elements – cannot be overemphasised. The ability to understand, re-analyse and assess is critical in the context of the original research and helps other researchers understand the thought processes behind the interpretations and results.

The authors have found that an analytic approach that incorporates and blends a post-positivist, photoforensics and technical analysis with interpretivist, hermeneutic perspectives adds depth and value to photographic analysis and image-based research. Hopefully this discussion will provide a foundation for education researchers to recognise the potential value of historic photographs as research tools and encourage them to become literate in techniques to identify, analyse and interpret these valuable resources.

Notes

1. For additional information about licenses and permissions see Rowe (2011).
2. There are other ethnographic possibilities, like 'photo-elicitation', where the meaning of images is derived by showing them to people in interviews and recording responses. Subject-produced drawings like Florence Goodenough's 'Draw-a-man Test' (Goodenough 1926) may be another way to use visual research in education; regrettably, there is not space here to discuss them.
3. Thumbs Plus software: www.cerious.com; for a full discussion of software useful in visual research, see Bassett (2011).
4. DMCA: www.copyright.gov/legislation/dmca.pdf

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