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Exhibiting Teachers' Hands: Storytelling Based on a Private Collection of Engravings

Abstract: The starting point of this chapter is the observation that certain hand gestures, such as the raised index finger, appear to be typical among teachers as a professional group. Using a private collection of 379 educational engravings, we¹ have attempted to identify patterns in the gestures teachers make when interacting with students, using social science research methods and statistical techniques. In doing so, we ultimately tell a story about teachers whose image in the public sphere has changed from authoritarian to authoritative. We also pay special attention to the differences between male and female teachers, as well as the gender composition of classrooms. We do not find confirmation of the stereotypical image of dominant male and submissive female teachers.

Keywords: teachers, gestures, public history, engravings, visual turn

Introduction

Google the word “teacher”, select images, and what do you see? People in front of white screens or black boards with raised hands and pointing fingers. The uniformity of the gestures of teachers is striking; it almost seems as if there were typical or universal gestures for the teaching profession. In any case, gestures are of great importance to the art of communication in general, and to teachers in their role as knowledge and value transmitters specifically. In fact, in the history of communication, the gesture came before the spoken word. Even today, gestures are still important for effective communication. There is empirical support establishing a positive relationship between the use of hand gestures by teachers and better comprehension of texts by students. In fact, within educational science there is a rich tradition of research

¹ I speak about “we” because this chapter is based on engravings collected by Maria del Mar del Pozo Andrés and myself over the past decades. This text, however, was written only by me.

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on this relationship.² The coordination of speech with gestures is even connected with changes in speakers' problem-solving behavior. Results from neurosciences, for instance, show that gesturing has a larger impact on problem-solving than action, even when action is accompanied by words.³

The study of gestures in general, not just among teachers as a professional group, is a topic that has been on the scientific agenda for centuries. In the words of Thomas Keith, there is nothing new about the study of gesture.⁴ From the time of the Renaissance, Giovanni Battista Della Porta (1535–1615), Charles le Brun (1619–1690), and Johann Caspar Lavater (1741–1801) codified facial expressions of emotions and character. The English philosopher Francis Bacon (1561–1626) wrote in 1605 that gestures “are as transitory hieroglyphics, and are to hieroglyphics as words spoken are to words written, in that they abide not; but they have evermore, as well as the other, an affinity with the things signified”.⁵ Gestures were also central to the work of the Italian lawyer Giovanni Bonifacio (1547–1645) and the English physician John Bulwer (1606–1656).⁶ Both men started from the assumption that there was a universal, natural language of gesture that was comparable in different countries, and could serve as a language of communication for international trade.⁷ In the 19th century, Charles Darwin (1809–1882) made his contribution to the field by supporting the view that

2 Susan Goldin-Meadow, and Martha W. Alibali, “Gesture’s Role in Speaking, Learning, and Creating Language,” *Annual Review of Psychology* 64 (2013): 257–283; Mitchell J. Nathan, Martha W. Alibali, and R. Breckinridge Church, “Making and Breaking Common Ground: How Teachers Use Gesture to Foster Learning in the Classroom,” in *Why Gesture? How the Hands Function in Speaking, Thinking and Communicating*, eds. R. Breckinridge Church, Martha W. Alibali, and Spencer D. Kelly (Amsterdam: John Benjamins, 2017), 285–316. In history of education journals “hands” are not a topic of interest. An exception, although not related with teachers or gestures, however, is: Christian Roith, “Representations of Hands in the Florentine Codex by Bernardino de Sahagún (ca 1499–1590),” *Paedagogica Historica*, 54, no. 1–2 (2018): 114–133.

3 Caroline Trofatter, Carly Kontra, Sian Beilock, Susan Goldin-Meadow, “Gesturing has a Larger Impact on Problem-Solving Than Action, Even When Action is Accompanied by Words,” *Language, Cognition and Neuroscience* 30, no. 3 (2015): 251–260.

4 Keith Thomas, “Introduction,” in *A Cultural History of Gesture. From Antiquity to the Present Day*, ed. Jan Bremmer and Herman Roodenburg (Cambridge: Polity Press, 1991), 2–3.

5 Francis Bacon, *The Advancement of Learning* (London, Paris & Melbourne: Cassell & Company, Limited, 1893) [1605], <https://www.gutenberg.org/files/5500/5500-h/5500-h.htm>.

6 James R. Knowlson, “The idea of Gesture as a Universal Language in the XVIIth and XVIIIth Century,” *Journal of The History of Ideas* 26, no. 4 (October-December 1965): 495–508.

7 Thomas, “Introduction”, 2.

physical expressions might be biologically inherited.⁸ His work would inspire ethologists who stressed the similarities between humans and animals with respect to bodily movement and facial expressions of emotion. One of the popular authors in this field, the English socio-biologist Desmond Morris, famous for his book *The Naked Ape: A Zoologist Study of the Human Animal*, published in 1967, took up the challenge in his writings about human gestures and body language.⁹ These topics have gotten the renewed attention of international audiences thanks to the work of Allan Pease.¹⁰ To mention just one example, his talk *Body language, the power is in the palm of your hands* was viewed more than six million times on the Internet.¹¹ Desmond Morris has recently moved the study of gestures and body language into the world of art, while museums are also paying attention to body language in special exhibitions.¹²

In the historical attention paid to gestures and body language, and to the possibly universal nature of gestures, teachers have remained invisible. However, our observations of the possible existence of gestures typical of the profession lead us to broach the issue of whether teachers' gestures have been subject to change over the centuries, or if these gestures are just visualizations of stereotypes with historical roots taking us back to times of discipline and order in the schoolroom and part of a grammar of schooling that has remained unchanged over the years.¹³ In this chapter, we will go back in time and explore the ways in which teachers used their hands when teaching their students. We will specifically look

8 Charles Darwin, *The Expression of the Emotions in Man and Animals* (London: John Murray, 1872). <http://darwin-online.org.uk/content/frameset?itemID=F1142&viewtype=text&pageseq=1>.

9 Desmond Morris, *Manwatching: A Field Guide to Human Behaviour* (London: Jonathan Cape; New York: Harry Abrams, 1977); Desmond Morris, Peter Collett, Peter Marsh, and Marie O'Shaughnessy, *Gestures: Their Origins and Distribution* (London: Jonathan Cape, 1979); Desmond Morris, *People Watching* (London: Vintage, 2002).

10 Allan Pease, *Body Language. How to Read Others' Thoughts by their Gestures* (London: Sheldon Press, 1981); Allan Pease and Barbara Pease, *The Definitive Book of Body Language. How to Read Others' Thoughts by their Gestures* (Buderim, Australia: Pease International, 2004).

11 Allan Pease, "Body Language, the Power is in the Palm of your Hands," TEDx Talks, November 17, 2013, Accessed July 22, 2022. <https://www.youtube.com/watch?v=ZZZ7k8cMA-4>.

12 Desmond Morris, *Postures: Body Language in Art* (London: Thames & Hudson, 2019); Wendelien van Welie-Vink, *Body Language: The Body in Medieval Art* (Utrecht: Museum Catharijneconvent, 2020).

13 David Tyack and Larry Cuban, *Tinkering toward Utopia. A Century of Public School Reform* (Cambridge: Harvard University Press, 1995).

for the typical, and perhaps even universal, gestures of teachers that have stayed the same over the centuries.

We will use engravings and prints that circulated among several audiences during the 17th to 20th centuries. We are referring here to educational engravings, a source that, while constituting a blind spot in educational historiography,¹⁴ can be quite useful for the reconstruction of the public images of teachers in the past.¹⁵ These engravings, which are part of a private collection of 379 items (counted in 2021), show both male and female teachers interacting with boys, girls, and mixed groups. There are prints from different language areas and from different centuries. To investigate the existence of typical teachers' gestures prints have been coded in line with the Grounded Theory Method, an inductive approach well known in social science research.¹⁶ Induction means that we take data as the starting point and via empirical generalizations we try to arrive at theoretical statements about, in our case, hands in education. So, we will focus on describing the empirical patterns that emerge from the analysis of several hundred engravings from the 17th to the 20th century depicting teachers interacting with students. But as mentioned previously and based on our own observations and conversations with other scholars, there are certain expectations about what we are going to see when it comes to teachers' hand gestures through the ages. More specifically, our theoretical inspiration comes from two typical cases that we have come across.

The first case is the image of a teacher made in 1781 by Johann Caspar Lavater. Lavater worked within the tradition of physiognomy, a pseudo-scientific but popular field that from the 17th century onward tried to map the character traits of people by means of facial expressions. The most famous example of this approach is probably the work of Cesare Lombroso (1835–1909), who linked specific facial features to certain types of crime. Physiognomy was popular because, like the science of psychology developed in later years, it gave its practitioners the idea that human behavior could be predicted just by looking at somebody's face. A sense of recognition may also have been evoked with Lavater's image of the

14 Maria del Mar del Pozo and Sjaak Braster, "Exploring New Ways of Studying School Memories: The Engraving as a Blind Spot of the History of Education," in *School Memories: New Trends in the History of Education*, eds. Cristina Yanes-Cabrera, Juri Meda, and Antonio Viñao (Cham: Springer, 2017), 11–27.

15 Antonio Nóvoa, "Ways of Saying, Ways of Seeing. Public Images of Teachers (19th–20th Centuries)," *Paedagogica Historica* 36, no. 1 (February 2000): 21–52.

16 Juliet Corbin and Anselm Strauss, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. Fourth Edition* (Newbury Park: Sage, 2014).

teacher (Figure 1). We will use this image as a reference point for our analysis of the other images of teachers from Lavater's time and subsequent periods.



Figure 1: Lavater, 1781 (Private Collection Del Pozo/Braster).

The most striking feature of Lavater's teacher is the raised right hand with the finger pointing upwards, a gesture that could also already be found in a book by Bulwer published in 1644.¹⁷

This gesture was named *Attentionem poscit*, (demand for attention) and it was shown together with several other pointing gestures (Figure 2). Lavater's physiognomy was not only about faces; some images, like the one of the teacher and his pupils, were also about gestures. In this sense the work of Bulwer and Lavater were coming together.

¹⁷ John Bulwer, *Chirologia: or the Naturall Language of the Hand. Composed of the Speaking Motions, and Discoursing Gestures thereof. Whereunto is added Chironomia: or the Art of Manuall Rhetoricke etc.* (London: J. B. Gent Philochirosophus, 1644).



Figure 2: Bulwer, 1644, p. 95.

Another striking feature of the image of Lavater's teacher is the left hand pointing downwards, holding a stick. If we look at them both, the right hand tells us to pay attention, while the left hand is telling us that we could be punished if we don't. The central message of the image is also mentioned in one word in the accompanying text: teaching is about keeping "order". In summary, the raised hand with the teacher's index finger pointing upwards represents a demand for attention, the stick represents discipline and punishment, the holistic view of the image being about authority.

The second case we want to present as a reference is a colored picture from the beginning of the 20th century showing two teachers (Figure 3). This image was part of a richly illustrated children's book, published in 1901, that portrayed the world of the past (1801) and the world of the present (1901).¹⁸ On one page of the book the old and the new classroom were presented. The teacher from the past shows clear similarities to Lavater's teacher from the 18th century. Discipline is the motto. But the modern teacher from the early 20th century communicates with his pupils in a different way. The arms are down, and the open palms point upwards. It is this difference in particular, the contrast between the closed hand pointing upwards and the open palm facing upwards, that the artist of the illustration seems to have focused on in order to emphasize the difference between "old" and "new" education. In fact, in Allan Pease's work in the field of body language there are three possible positions of the palm: (1) the submissive palm position with the palm facing upwards; (2) the dominant palm position when the palm is turned to face downwards, and (3) the aggressive palm position where "the palm is closed into a fist and the pointed finger becomes a symbolic club with which the speaker figuratively beats the listener into submission".¹⁹

The submissive palm position is a non-threatening gesture; you are showing others that there are no concealed weapons in your hand. In an educational context the palm-up position can have different meanings. In general, it means openness and trust. More specifically the open hand can be about asking, as in a beggar's opening his hand as the universal symbol of pleading for a coin. In an educational context, however, it can also be about offering, explaining, and showing. Important to note is that not one of these meanings has an authoritarian connotation.

This is quite the opposite of the palm-down position, which expresses immediate authority. A hand with the palm-down can grab anything it wants. It

18 Fredericus Hendrikus van Leent, *Toen en nu: Van 1801 tot 1901* (Amsterdam: Gebrs. Koster, 1901).

19 Pease, *Body Language*, 31.



Figure 3: Then and Now: From 1801 to 1901 (Private Collection Del Pozo/Braster).

can cover and hide objects. In education this hand position can also have a negative meaning when the hand is placed on top of an object, expressing ownership or domination. Hands with palms facing down can also be used to direct a group of pupils, much like a conductor conducting an orchestra or directing a choir. In general, the gesture with the palm down is more about control than the palm-up position, but clearly less than the palm-closed-finger-pointed position. Like we said earlier, the pointed finger is like the stick used for beating.

The theoretical exploration of the two cases presented raises several questions. The first question is: What hand gestures do teachers use when interacting with their students in past centuries, and what do those gestures mean? The second question is: To what extent do differences exist between the gestures used in different centuries, and to what extent do these differences reflect changes in pedagogical views? What we do not see in Figures 1 and 3 leads us to a third question. These two images show only male teachers in classes with boys. Females and girls are not displayed. The third question therefore is: To what extent do the hand gestures of male and female teachers differ, and what relationship does the gender composition of the class play in this? In line with the biological evolutionary perspective already mentioned, one could possibly expect a less dominant role for (or a more subtle/body-controlled approach of) female teachers than for male teachers. But in previous centuries, when physical punishment was the rule rather than the exception, women – for their survival, so to speak – may have played as dominant a role in education as men. While the presence of women in the teaching profession or of girls in higher forms of education may have been less pronounced than that of male teachers or boys in earlier centuries, they were certainly not absent. Thus, in addition to trying to find a typology of gestures of the teaching profession, we will look at not only whether there have been changes over time in terms of those gestures, but also whether there are differences between men and women in classes with boys and/or girls. But before we take on this task, let's tell the story of the collection we will analyze for this purpose.

The History of a Collection

Old prints are abundant and affordable in the antiquarian market, but exceptional engravings are very rare and valuable. The characteristic of the good print collector is the clear and precise definition of his/her topic and the accuracy with

which he/she sticks to it.²⁰ The collector must balance two criteria: the quality and excellent condition of the specimen that can be found in the market, and the power of this specimen for visualizing or illustrating a pre-defined concept.

When we started our collection in July 1992, we did not have such a clear intention in mind, we only wished to gather educational prints from the past for two purposes: an aesthetical aim, to decorate the walls of our study rooms; and a didactical objective, to use them in our lectures for making education in the past more understandable. From the very start we collected prints from the seventeenth through the nineteenth centuries, with a clearly defined topic: the inside of primary school classrooms. We noticed from the first moment that this was quite a rare topic in educational iconography, so therefore we broadened our search, including themes closely connected with the classroom. We were never interested in the most popular educational subjects of prints, i.e., school or college buildings, but we cannot say that the collection does not include some of these. In recent years we have also opened the collection to include some school material, mainly rare wall charts. We gradually noticed that most of the engravings could be classified in several “genre pictures”. The approximately 400 original prints that are now in our collection can be grouped into several categories that correspond to turns and disciplinary (sub)fields in history:

- Inside the classroom, pupils and/or teachers in several educational activities (practice turn; cultural turn).
- Going in and out of the school.
- Teachers punishing or rewarding pupils (disciplinary regimes).
- The school in an uproar, in the absence of the schoolteacher.
- Educational methods, i.e., individual systems, the monitorial system, simultaneous teaching, Froebel, Pestalozzi, object lessons, classroom organization, etc. (curriculum history).
- The teaching of specific subjects.
- Children in the courtyard, or children doing physical exercise (health regime).
- Male and female teachers (gender history).
- School design and school materials (material and spatial turn).

Another characteristic of the collection is its global nature. The prints come from several countries (Australia, United States, Great Britain, Austria, Hungary, Germany, France, Belgium, The Netherlands, Poland, Italy, Spain, and Japan), but

²⁰ Vicenç Furió, *La imagen del artista. Grabados antiguos sobre el mundo del arte* (Barcelona: Edicions de la Universitat de Barcelona, 2016), 9.

there are many more nations and cultures represented in the collection. The topics are also rather transnational and allow us to see the cultural transfer of pedagogical ideas and practices. But some images are of a specific nature – i.e. a particular or model school – which allows us to perform national studies or to make comparisons between countries. We gave much consideration to the criteria of quality in our first years of collecting the prints, buying only those engravings that we believed to be “original”, with explicit references to the artist, painter and/or engraver and a caption explaining and defining the gravure. If we already had a specific image, we never bought the same one again. At the time we knew nothing about the history and techniques of printmaking, but upon reading some of the key works in the field we were completely shocked. We learned of the difficulties that exist for guaranteeing “that the print is an «original» created by that artist” and how complicated it has become to define an “original” print from the moment in which printmaking became a process of photomechanical reproduction.²¹ We also learned about the pirated copies of popular works that ignored the original authorship, made possible by the lack – even in the middle of the 19th century – of a legal framework regarding intellectual property rights and copyright.²² Our delving into this fascinating world has allowed us to view the print from a different perspective, not only as an art object, but also as a historical object that has played an important role in the life of ordinary people. The print “crosses language barriers and political borders, can influence public opinion for better or for worse, and on a fragile piece of paper may carry messages of far-reaching importance and cultural impact. [. . .] It enters the homes of the poor and the rich, the ruler and the ruled”.²³ We also realized that Walter Benjamin’s observation linking the invention of photography with “the age of mechanical reproduction”, in which the original and authentic works of art have lost their “aura” because of the fact that they can be reproduced in great quantities, can also be applied to the expansion of the print.²⁴ We see then that long before the invention of photography, as early as the end of the eighteenth century, mechanical reproduction existed in the form of the mass production of prints.

21 Anthony Griffiths, *Prints and Printmaking: An Introduction to the History and Techniques* (Berkeley and Los Angeles: University of California Press, 1962), 12.

22 Hilary Guise, *Great Victorian Engravings: A Collector's Guide* (London: Astragal Books, 1980), 11–15.

23 Fritz Eichenberg, *The Art of the Print: Masterpieces, History, Techniques* (New York: Harry N. Abrahams, Inc., Publishers, 1976), 4.

24 Walter Benjamin, “The Work of Art in the Age of Mechanical Reproduction,” in *Illuminations*, ed. Hanna Arendt (New York: Schocken Books, 1935), 1–26.

This awareness prompted us to change the original concept of the collection, introducing cheap copies and, especially, prints published in illustrated newspapers from all over the world. Around the year 2000 we started to buy all the existing versions of several prints already present in the collection, i.e. the ones that appeared to have a kind of global popularity. And we began to gather educational images included in illustrated magazines, mainly those of primary school classrooms, that we had discarded previously. These journals became popular among the bourgeois social class around 1842–1855, the period in which Herbert Ingram and Mark Lemon started *The Illustrated London News* in England (1842), Jean-Baptiste-Alexandre Pauline and Édouard Charton created the French *L'Illustration. Journal Universel* (1843), inspired in the previous one,²⁵ and Frank Leslie founded the *Frank Leslie's Illustrated Newspaper* (1855), “America’s first weekly illustrated news magazine”.²⁶ At this point we had started to sense the possibilities that the gravures could offer to the historians of education, conceptualizing our collection as a research source.²⁷ Our identity as collectors was thus fused for the first time with our identity as researchers, a fact that has changed the nature of the collection.

The Analysis of a Collection

The first articles we wrote based on our collection were studies of single cases: “Jobs as a school teacher”²⁸ and “The school in an uproar”.²⁹ In the latter case, we had a multitude of versions of the original English print which was the focus of a chapter in a book about new methodologies for telling school stories.

25 Jean-Noël Marchandiau, *L'Illustration (1843–1944): Vie et mort d'un journal* (Toulouse: Privat, 1987).

26 Andrea G. Pearson, “Frank Leslie’s Illustrated Newspaper and Harper’s Weekly: Innovation and Imitation in Nineteenth-Century American Pictorial Reporting,” *The Journal of Popular Culture* 23, no. 4 (1990): 81.

27 María del Mar del Pozo Andrés and Sjaak Braster, *Understanding Images of Secondary Education (Spain, Second Half of the 19th century)*. Paper Presented in the 24th Session of the International Standing Conference for the History of Education, ISCHE XXIV, Paris, 10–13 July, 2002.

28 Sjaak Braster, “The People, The Poor and the Oppressed: The Concept of Popular Education through Time,” *Paedagogica Historica* 47, no. 1–2 (2011), 1–14.

29 Pozo and Braster, “Exploring New Ways of Studying School Memories,” 2017; María del Mar del Pozo, “The Undisciplined Child: The Image of the Rebellious Childhood in an Age of Educational Disciplining (1809–1840),” *History of Education & Children’s Literature* 13, no. 1 (2018): 71–97.

In another book contribution, the French-language version of “The school in an uproar” received particular attention.³⁰ These articles were all characterized by a qualitative research approach and insights from social semiotics were used in the visual analysis. For this new chapter we will perform a quantitative analysis preceded by an open coding of the 352 prints collected until 2021; of the original 379 we have eliminated the 27 engravings that were copies. Of these remaining 352, 246 portrayed interactions between teachers and pupils. The remaining prints depicted only teachers (11), only pupils (51), or only material educational objects or buildings (44). In answering the research questions, we will only use the 246 images that show interactions between teachers and pupils.

After an initial exploration of the selected images we decided to construct two variables related to the position of the teacher's hand in the images. The first variable was the type of gesture. We do this for both the left and right hand. We include a second variable that indicates whether the teacher is holding an object, and if so, what object. We do this for the right as well as the left hand. This exploration results in four so-called dependent variables (Table 1). They are related to four independent variables consisting of descriptions of the context of the images that are analyzed. These independent variables are:

- (1) Gender composition, i.e., the gender of the pupils pictured in the image, with the categories: only boy(s), only girls, and a mixed group.
- (2) Teacher gender, i.e., the gender of the main teacher in the image, with the categories: man, and woman.
- (3) Century, i.e., the century in which the image was produced. We should note that this did not necessarily coincide with the period portrayed in the image. For instance, engravings of 17th century paintings were reproduced in later centuries as well. Unfortunately, the year that a particular engraving was printed could only be determined for a limited number of the prints. However, it was possible to come up with a rough idea of the period in which an engraving was produced. We eventually kept to two periods: 16th–18th century, and 19th–20th centuries. It must be noted that in the 20th century, engravings are available only in the first decade.
- (4) Language, i.e., the language used in the caption of the engravings, with eight categories for single languages and one category for engravings with multiple languages. This last category illustrates the fact that one specific print could be distributed in several countries at the same time. It was also

30 María del Mar del Pozo and Sjaak Braster, “An Image Travelling Across Europe: The Transformation of ‘The School in an Uproar’ into ‘Le Désordre dans L’école’ (1809–1850),” in *Images of Education: Cultuuroverdracht in Historisch Perspectief*, eds. Hilda Amsing, Nelleke Bakker, Mineke van Essen, and Sanne Parlevliet (Groningen: Uitgeverij Passage, 2018), 84–97.

not uncommon for some engravings to be printed with captions in different languages. Both observations illustrate the universal character of engravings and their international distribution. For our analysis we recoded the language variable into four language categories corresponding to four different geographic regions: American English, British English, West-Germanic (German, Dutch), and Romance (French, Spanish, Italian).

Table 1: Variables constructed to describe the patterns of gestures used by teachers in engravings, 17th-20th century.

Independent Variables	Dependent Variables
Gender composition	Type of gesture right hand/ left hand
Teacher gender	Object in right hand/ left hand
Century	
Language	

In addition to the two variables relating to hand gestures and the four context variables, further teacher and pupil characteristics can be distinguished, relating, for instance, the emotions of teachers and pupils. In this chapter, however, we limit ourselves to the two sets of variables mentioned. We will connect them by presenting the relationships between categories in cross-tabulations, and by subsequently reporting the independent variable categories whose column proportions differ statistically from each other to a significant degree.

Of the 246 engravings analyzed, in 59.2 percent only boys can be seen, in 18.3 percent only girls, and in the remaining cases both boys and girls are present. When only boys are present, a male teacher is seen in 90.8 percent of the cases. When there are only girls, a female teacher is present in 75.0 percent of the cases. Men are slightly more likely to be involved in mixed classes than female teachers (63 versus 37 percent, respectively). The engravings generally show more male than female teachers (72.6 versus 27.4 percent, respectively), a finding consistent with the actual dominance of men in this profession in the 16th through 19th centuries. In our collection, the distribution between male and female teachers in the 16th–18th centuries is almost the same as that in the 19th–20th centuries. It is important to note that 75.4 percent of the engravings can be dated to the 19th century and 17.5 percent to the 18th century. The share of engravings from the 20th century is small (4.1 percent) and that of the 16th–17th century even smaller (2.9 percent). We should therefore bear in mind that if we make a distinction in time, we are making a comparison between the 18th and 19th centuries. As for the origin of the engravings, we have more variation: the proportion of French engravings is the highest, at 30.2 percent, followed

by British engravings at 22.7 percent, German at 12.8 percent, American at 11.6 percent, Dutch at 10.7 percent, Spanish at 4.1 percent, and Italian at 1.2 percent.

An Empirical Typology of Teachers’ Hands Gestures

In Table 2 we have presented the results of distribution of the first dependent variable. We should remark on a factor that has consequences for the interpretation of the results: when we see a right hand in an engraving, it is not necessarily the right hand of the person portrayed. It so happens that when engravings are drawn as representations of reality, the printed version of those pictures are displayed in mirror image. We often see this happen, for example, when engravings are made using paintings (or other engravings) as models.

Table 2: Typology of gestures, right and left hand of teachers.

Right Hand	Left Hand
Aggressive palm position Palm-closed-finger-pointed: 11.6%	Aggressive palm position Palm-closed-finger-pointed: 6.3%
Dominant palm position Palm down: 14.9%	Dominant palm position Palm down: 17.9%
Submissive palm position Palm up: 5.4%	Submissive palm position Palm up: 4.6%
Other positions (from dominant to submissive) Fist 3.3% Hand holding object: 41.9% Palm-open-finger-pointed: 7.9% Holding hands with another person 2.1% Hand touching another person 1.7% Not visible 11.2%	Other positions (from dominant to submissive) Fist 8.3% Hand holding object: 34.6% Palm-open-finger-pointed: 5.4% Holding hands with another person 1.3% Hand touching another person 5.0% Not visible 16.7%
Total 100% (N=241)	Total 100% (N=240)

We took an open, inductive approach to coding the teachers' hand gestures, but there were at least three types of gestures that were the result of deductive reasoning. Indeed, we find those types in the analyzed collection. The aggressive and dominant positions are more common than the submissive position, which occurs only in 5 percent of the cases. It was obvious that when education was depicted in engravings produced in previous centuries, a friendly student-centered approach was unlikely to be found. Schooling in the distant past was about order and discipline, and not about having fun. The aggressive palm position, however, is not seen as often as was expected: 11.6 percent for the right and 6.3 percent for the left hand. The same is true for the dominant palm position: 14.9 percent for the right and 17.9 percent for the left hand. This general picture, however, changes if we also take into account the other hand positions that can be distinguished next to the three that were the result of closed, deductive coding.

There were five that we have ranked from dominant to submissive: (1) Fists, or closed hands not holding any object. They are less common: 3.3 percent for the right and 8.3 percent for the left hand. (2) The closed hand holding an object. It is by far the most common category of all gestures: 41.9 percent for the right and 34.6 percent for the left hand. (3) The open palm with pointing finger: 7.9 percent for the right hand and 5.4 percent for the left hand. Furthermore, there are two gestures in which teachers use their hands for touching. (4) The hand touching the body of another person. (5) The hand holding another hand.

What do these hand gestures signify? The meaning of the first gesture, the hand holding an object, depends of course on the type of object that is held, which takes us to our second dependent variable. Empirically there were five options listed in Table 3. There are some differences in the percentages found for the right and left hand. For example, the most popular object is the book, but it can be found more often in the left than in the right hand: 39.0 versus 23.0 percent, respectively.

Table 3: Gestures of teachers, holding objects with right and left hand.

Object Right Hand	Object Left Hand
Stick or rod 24.0%	Stick or rod 18.3%
Pointer 18.0%	Pointer 11.0%
Pen 10.0%	Pen 11.0%
Book 23.0%	Book 39.0%
Teaching object 3.0%	Teaching object 3.7%
Another object 22.0%	Another object 17.1%
Total 100% (N=100)	Total 100% (N=82)

Teachers have pointers, but also sticks or rods in their hands which, in principle, can be used to point something out, but which can also serve to strike a pupil. The pointer, stick or rod can be found in 42.0 percent of the cases in the right hand and in 29.3 percent of the cases in the left hand. In about 10 percent of the cases, teachers handle a writing implement. Other teaching objects are used sporadically. So, in general, we see a distinction between sticks, rods, and pointers on one hand, and books on the other; a dichotomy that broadly corresponds to a closed/directive or an open/communicative pedagogical style. Both styles occur at similar rates, but contextually there are some relevant differences which we will discuss later.

The hand holding a pointer, stick or rod, including the hand clenched like a fist, can be considered dominant or more authoritarian types of gestures. The open-palm-finger-pointed is a gesture that, in terms of meaning, is literally in the middle between the aggressive and the dominant hand palm position.

Pointing with the index finger of the right hand (with open and closed palm) is done by teachers in 19.5 percent of the cases, and in 11.7 percent with the left hand. The question that arises then is, what are they pointing to? To begin with, teachers point to education-related objects ($n=30$), the textbook ($n=10$) and the blackboard ($n=8$) being the most popular ones. Sequentially, teachers may also point to individuals ($n=11$), with students being the obvious favorite ($n=9$). Finally, teachers do not necessarily have to point to a specific object or to a person ($n=32$), and if this situation occurs, relatively often their hands point upwards ($n=17$). Two examples of female teachers with their fingers pointed can be found



Figure 4: Female teachers with closed-palms-fingers-pointed (Private Collection Del Pozo/Braster).

in Figure 4. They are contrasting images: in the 18th century engraving the woman is pointing her right index finger upward (towards God?) while holding a rod with her left hand; in the 19th century engraving the woman is pointing her right index finger toward her listeners, while holding a book with her left hand. The older engraving shows a clear resemblance to Lavater's physiognomic representation of a typical teacher, calling attention with the right hand and threatening punishment, if necessary, with the left hand. In the newer image, the teacher addresses the students directly with her right hand, armed with her source of knowledge – a book without religious symbols – in her left hand. The differences are subtle but may indicate changing pedagogical practices over time. We look at this in more detail in the next section.

Most of the hand gestures mentioned so far indicate considerable authority on the part of the teacher. Their hands are used to hold things, to point things out, and to call for attention and silence. The submissive palm-up position, or any other signs indicating openness, are largely absent. Touching students is also rare: for the right hand we record 1.7 percent, and for the left 5.0 percent. In the present era this may be called self-evident, but in the centuries preceding the 21st there was not much physical contact between teachers and pupils either. A more specific form of “touching,” or holding each other's hands, is also rare in the old engravings; for the right hand it is 2.1 percent and for the left, 1.3 percent. Holding children's hands seems to be reserved for progressive educators like the Swiss pedagogue Pestalozzi, who in every picture where he is depicted is surrounded by children, but also ordinary teachers could be touched by pupils (Figure 5). Touching and holding hands seems in general to be an act of friendliness. Touch can be a gesture of empathy and connectedness, or carry religious symbolism related with healing. However, there are negative examples too; teachers may grab children by their ears as punishment, while in the case of male teachers gently touching girls with their finger to their face there may be sexual overtones. A systematic study of the teachers' hands positions may therefore subtly reveal examples of potential sexual harassment in the classroom.

Contextual Differences between Gestures

Following the above description of the most common teacher gestures, we are going to focus on the differences by context: period, language, gender composition of classes or schools, and the gender of teachers (Table 4). We have found ten statistically significant contextual differences. This is a relatively low number as there are potentially 72 possible relations, or: 9 categories x 2 dependent



Figure 5: Pestalozzi in Switzerland and an unknown teacher in Vienna, Austria (Private Collection Del Pozo/Braster).

Table 4: Typology of gestures, right and left hand of teachers, by context characteristics: categories whose column proportions differ significantly from each other (z-test; $p < .05$; Bonferroni corrected).

Right Hand	Left Hand
Gender composition Palm-closed-finger-pointed: 25.0% girls' school vs 7.7% boys' school	Gender composition Fist: 12.8% boys' school vs 0.0% girls' school
Teacher gender Palm-closed-finger-pointed: 19.7% female teacher vs 8.6% male teacher Hand holding object: 46.9% male teacher vs 28.8% female teacher	Teacher gender Fist: 11.4% male teacher vs 0.0% female teacher
Century Palm-closed-finger-pointed: 20.4% 16 th –18 th vs 9.5% 19 th –20 th	Century Not visible: 19.6% 19 th –20 th vs 6.1% 16 th –18 th
Language Palm down: 32.1% USA vs 7.1% German/Dutch Palm up: 12.5% German/Dutch vs 0.0% UK	Language Palm down: 37% USA & 21.2% France/Spain/Italy vs 3.6% German/Dutch

variables x 4 context variables. However, we should keep in mind that not finding differences can also be a relevant result. For instance, the submissive palm up position is not seen more often in the more recent engravings from the 19th and the first decennium of the 20th century. It also applies to the usually friendly gestures where there is physical contact between student and teacher. In sum, a child-centered approach does not appear yet if we use a collection of engravings mainly produced in the 18th and 19th centuries together.

There are differences, however, with respect to the aggressive palm position, or the palm-closed-finger-pointed, which appears twice as often in the engravings of the 16th–18th century (20.4 percent) as in the engravings of the 19th–20th century (9.5 percent). This specific position also occurs no less than three times more often in educational situations involving girls (25.0 percent) than with boys (7.7 percent). It also appears that female teachers are using this more directive hand gesture about twice as often (19.7 percent) as male teachers (8.6 percent). The connection between these last two findings is understandable because it is primarily women who stand in front of groups with girls. However, the fact that women are more likely to use the more aggressive palm position does not mean that they play a more authoritarian role in education than men. In this respect it is important to mention that male teachers and teachers in boys' schools clenched their hands into fists more often than female teachers and teachers in girls' schools. These generalizations do not contribute to a picture in which women have a more authoritarian position than men in education. Men seem to be in control too. For instance, they appear to hold more objects in their hands (46.9 percent) than women (28.8 percent). And these objects could potentially be used for punishment. Therefore, it is relevant to focus on the contextual differences for the objects that are used by the teachers.

First, sticks or rods for punishing pupils are used four times more often in teaching situations with boys (34.4 percent) than with girls (8.3 percent) or with mixed groups (7.4 percent). Second, books are used three times more often in schools with girls (58.3 percent) than in mixed schools (18.5 percent) or schools with boys (18.0 percent). Finally, tools for disciplining were more common in the 16th–18th century (44.4 percent) than in the 19th–20th century (17.5 percent), but no differences can be observed regarding other objects held by teachers between these two periods. There are no differences between male and female teachers when it comes to the use of objects that can be interpreted in terms of discipline and order. Both men and women carry instruments for beating children if necessary. In some cases, women even appear to be more in control than men (Figure 6). All these generalizations fail to confirm the stereotypical image of an authoritarian male and a submissive female teacher.

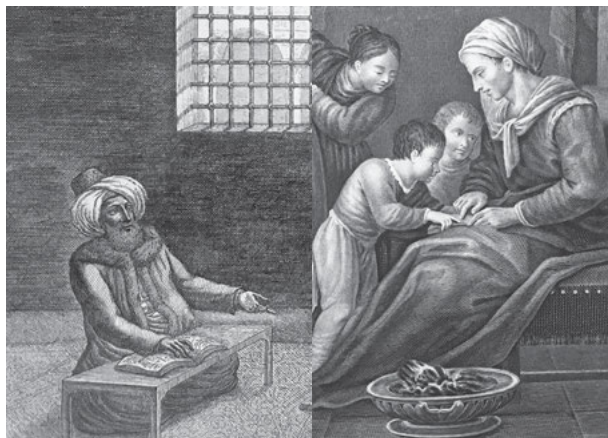


Figure 6: Male and female teachers (Private Collection Del Pozo/Braster).

Table 4 also shows some contextual differences between the sites of production of the engravings. However, interpreting those differences is tricky. What, for instance, does the absence of open upward facing palms of teachers in engravings of English origin mean? Or the relatively frequent presence of downward-facing palms in American engravings? We have no answer to this yet.

Conclusion and Discussion

In this chapter we presented an analysis of a collection of educational engravings. It is an example of a systematic analysis of a total collection with which we try to paint a picture of the central characteristics of a teacher through the ages. Although there is sufficient variation among the engravings in terms of age, it should be noted that the bulk of the engravings were published in the 18th and 19th centuries. Because of the way the engravings were collected (over a long period of time in different countries), we cannot claim generalizability as we could have if we had drawn a random sample from a population at a particular time. However, we do maintain that the collection has helped to construct a public image of teachers over the centuries.

To draw a teacher with his or her index finger pointed at a blackboard, as we would draw a blacksmith with a hammer striking hot iron on an anvil, is in any case too simplistic. To begin with, the teachers depicted use not only their index fingers or pointers, but also sticks or rods to strike pupils with. Thus, in the 18th and 19th centuries, the image of the teacher as a professional specialized

in keeping order and enforcing discipline does indeed emerge. A teacher with a raised right hand holding a stick or with an index finger pointed upwards is not at all unusual. It is an image more common up until the 18th century than in the 19th or 20th century. With this, we can indeed conclude that educational engravings show a pedagogical change over time. However, we are not inclined to see this change as a shift from a teacher-centered to a child-centered approach. Rather, it is a change from disciplining with physical force to explaining by literally pointing things out. Or, put in other terms, it is a change from an authoritarian to an authoritative way of acting.³¹ There is certainly no openness or child-centered approach even in the more recent engravings from the first decennium of the 20th century. The submissive hand with the palm facing upwards hardly ever occurs.

In contrast to the right hand that punishes or points, there is the left hand that not infrequently rests on a book. The book symbolizes the knowledge being transferred to the pupil. With a little imagination, we can see a vector running from the book in the left hand to the teacher's right hand. The fact that the book is more often seen in classroom or school situations with girls than with boys is remarkable, as is the way that teachers in schools or classrooms with girls are less likely to have sticks in their hands than in classrooms with boys. But the latter finding can be explained by the fact that male teachers deal with boys in 91 percent of cases, and females deal with girls in 75 percent of cases. The stereotypical image of authoritarian male and authoritative female teachers cannot be confirmed.

With the above methodological exercise, we have tried to show that simple observations, such as those in which academics share their experiences about an iconic image of the teacher, can be substantiated, relativized, or criticized if we have access to the right material. In our case, this material consisted of a private collection containing several hundred engravings from different centuries and from different parts of the world. Such collections are important for telling public histories of education, but not until a systematic analysis of the material has been carried out. In other words, the public historian will not only have to immerse him or herself in historical methods but will also need a toolbox with social science research methods and techniques. This will certainly be necessary if new sources of data are to be tapped, such as educational engravings.

31 See also the concept psychologisation, or the debodiment of the disciplinary regime in schools: Frederik Herman, Marc Depaepe, Frank Simon, and Angelo Van Gorp, "Punishment as an Educational Technology: A Form of Pedagogical Inertia in Schools," in *Educational Research: Networks and Technologies*, eds. Paul Smeyers and Marc Depaepe (Cham: Springer, 2007), 203–219.

Only then can we move from the phase of collecting to that of storytelling. A story about hand gestures that were used in the past, but still seem to appear in images of teachers in the present. A story that can and should be expanded to include multiple stories about the power of the hand in education. The opportunity for this exists if our private collection is shared publicly in a project where a broad audience gets “hands-on” exposure to the engravings.

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