

# Researcher Hands-On Training in the Digital Humanities: The ACDH Tool Gallery as an Austrian Case Study

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## Abstract

In this paper we discuss practical experiences with hands-on training in the Digital Humanities based on an Austrian case study. We will present the “ACDH Tool Galleries”, an initiative organised by the Austrian Centre for Digital Humanities (ACDH) of the Austrian Academy of Sciences. This series of educational events aims to create a platform for developers and professionals to share their expertise and provide education and practical training opportunities for users of Digital Humanities tools. In order to give insight into the ways this initiative has been received by the community, we present survey data collected among the participants of these training courses.

## 1 Introduction

Although there is now a wide variety of computational tools and digital methods available for humanities scholars to use in their research, it has been observed that not all tools are adopted with equal enthusiasm by the researchers who would benefit most of them (Kemman and Kleppe, 2015). Considering that a lack of familiarity or practical know-how regarding the available options may lie at the root of this hesitance, researcher training can play an important role in promoting a more far-reaching utilisation of computational tools and digital methods in the humanities.

In this paper, we explore the potential of researcher training for spreading information about the available tools to potential users, making particular reference to an Austrian case study. After outlining the DH teaching and training landscape in Austria, we present a recently established hands-on researcher training series and discuss survey data collected among the participants of the training initiative.

## 2 Researcher training in the Digital Humanities

Given that the digital humanities are a fairly new field of research, one aspect of fostering the advance of the discipline is its inclusion in academic education at various stages and levels, be it BA, MA and PhD courses or summer schools (cf. Sahle, 2013). However, there are considerable disparities in the degree to which DH training programs have been cultivated in different countries. In Austria, for example, the first professorships for DH were appointed as late as 2016 and DH curricula at universities are still in their infancy<sup>1</sup>. As an interim solution, summer schools and workshops are useful and well-established formats for conveying skills in the digital humanities (Rehbein and Fritze, 2012). One example for a provider of summer schools is the international Digital Humanities Training Network, where several summer school organisers collaborate with each other (DH Training Network, 2016). A similar organisation offering workshops is the Digital Scholarship Training Programme of the British Library (McGregor et al., 2016). Summer schools and workshops are not only useful where there is a lack of university level courses, they can also have a more diversified target audience than university courses. For example, they can address established researchers in more advanced academic positions who are now confronted with new technologies and ways to carry out their research. Given the tight time schedule of researchers, one- or two-day workshops are preferable to training programs that require a long-term commitment, as a typical masters course in DH would. In the following section, we present

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<sup>1</sup> We have other offerings such as minors etc. For more information see <https://registries.clarin-dariah.eu/courses/courses/>.

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a case study of a hands-on training event series initiated in Austria. We use the term “series” because it is not a unique event and we use “hands-on” to acknowledge the fact that the practical application of digital methods and skills play an important role in DH.

### 3 The ACDH Tool Gallery – an Austrian case study

The idea of the ACDH Tool Galleries was to allow developers and professionals to share their theoretical knowledge on the tools designed for DH users and provide practical training in their use (Wissik and Resch, 2016). In order to reflect this two-pronged approach, we opted for a format that combined short lectures scheduled in the morning with hands-on training sessions scheduled in the afternoon. During these sessions, the experts lead the group step-by-step through the features and functionalities of various tools. Although one day is usually not sufficient to master the use of the tools or services in question, participants can use the opportunity to get an overview of their options as well as the potential benefits of using particular tools or services in their own field of research.

Considering that the institute is often confronted with very basic questions regarding the use of various tools, the training events offer a good opportunity to establish connections between tool developers and DH users and to initiate discussions regarding the scope of application in the respective fields. The hands-on part of the training session is particularly valuable as it gives the attendees the chance to immediately consult with tool experts if they encounter a problem during the workshop. This guarantees participants a safe and guided start in their exploration of new tools and services. Furthermore, the practical experience helps participants to evaluate the features and abilities of various tools and to become aware of difficulties or limitations.

Since the inception of the program in 2015, two seasons of ACDH Tool Galleries have already been completed and a third is ongoing. Each season included three ACDH Tool Galleries: two ACDH Tool Galleries with morning lectures and a hands-on session in the afternoon and one ‘Extended Version’ of the ACDH Tool Gallery. The latter was embedded in the Digital Humanities Austria Conferences and featured a whole day of theoretical presentations followed by a day of hands-on sessions where the participants could experiment with different tools in a bazaar-like atmosphere. So far, the ACDH Tool Galleries have covered topics like handwriting recognition, linguistic annotation, semantic technologies, data management, text encoding with TEI as well as network and visualisation tools.

#### 3.1 Promotion and preliminary organisational efforts

While the Tool Galleries were originally conceived as a service for employees of the academy, the format was soon extended to a larger audience. This happened quite organically as the original recipients of the Tool Gallery newsletters forwarded and shared the announcements with their contacts. Additionally, the dates were made public via the academy’s event calendar and various mailing lists. Since July 2016, the ACDH has also been using Twitter to promote the Tool Galleries. The institute’s website was used both to promote the events and to publish presentation material, exercises and tutorials after the events.

By organising Tool Galleries three times a year, the ACDH hopes to achieve a certain regularity and continuity concerning the initiative. This objective is also reflected in the styling and appearance of the promotion material, where we aimed to establish a “brand” with a certain recognition value by using recurring design elements and a recognisable logo for each new event.



Figure 1: ACDH Tool Gallery Logo

As the number of available places was limited for organisational reasons, prospective participants were asked to register via an online form. To emphasize the educational character of the format, the ACDH also offered an official certificate of participation for those who wanted documentation of their attendance. So far, no ECTS credits have been assigned, but this might be an option up for consideration in the future.

### 3.2 ACDH Tool Gallery 1.2 on (basic) linguistic annotation

As mentioned above, each of the training sessions in the program was dedicated to a different digital research tool. The ACDH Tool Gallery 1.2, for instance, put its focus on (basic) linguistic annotation and was addressed to both linguists and professionals from all text-based disciplines. The first talk, given by Ulrich Heid (University of Hildesheim), introduced the audience to the relevance of linguistic annotation and was followed by two short project contributions that demonstrated the possibilities and challenges of automatic annotation. After Heid's presentation, annotation examples from two ACDH-based projects, the Austrian Baroque Corpus (*ABaC:us*) and the Austrian Media Corpus, were introduced. *ABaC:us* (<https://acdh.oeaw.ac.at/abacus/>), which is part of the CLARIN Centre Vienna and its Language Resource Portal, is a historical language resource containing Austrian literary sources from the 17<sup>th</sup> and 18<sup>th</sup> century. The Austrian Media Corpus (<http://www.oeaw.ac.at/acdh/de/amc>) is a large collection of media texts from Austrian newspapers and magazines as well as press releases and transcribed television interviews spanning the last three decades.

The second block of Tool Gallery 1.2 was presented by Marie Hinrichs and Claus Zinn of the University of Tübingen, who introduced the participants to *Weblicht*, a 'web-based linguistic chaining tool' (Hinrichs et al., 2010). We chose this app for being the most suitable research environment for demonstrating the automatic annotation of texts. Hinrichs and Zinn presented its fully functional processing chain, which features linguistic tools such as tokenizers, part of speech taggers, parsers etc., and showed how these services can be customised and combined by the user. While *Weblicht* is well known among linguists, the event was an occasion for those from other text-based disciplines to learn about the benefits and potentials of automatic basic linguistic annotation. The idea that participants should bring their own texts in order to annotate them and visualize the results in an appropriate way was set into practice under the guidance of the experts and made the hands-on session quite lively.

The Tool Gallery was concluded with a presentation by researchers from the institute itself. They presented the recently developed *tokenEditor* (<http://www.oeaw.ac.at/acdh/de/tokenEditor>), a web application for the manual annotation (or the manual review of automatic annotations) of texts.

## 4 Survey data based on the ACDH Tool Gallery

In order to evaluate the new format and its reception, the ACDH undertook a survey of the participants. The survey takes into account online registration data (365 registered participants) as well as data collected via anonymous questionnaires from 188 participants of the six ACDH Tool Galleries that took place between 2015 and 2016. The questionnaires were handed out on site and were collected at the end of each of these events. We opted for paper questionnaires that were distributed during the events as opposed to online questionnaires. That way, we could ensure that they were filled out immediately after the workshop, when impressions were still fresh and organisers were on hand to provide clarification where needed. We also expected it to be easier to motivate participants to take the survey on site than via email communication. The questionnaires were divided into three sections: one reflected the topic of the given training event, a second concerned the specific format of the training event, and a third was designed to collect basic personal data (e.g. age, occupation). In the following section of the paper, we outline the general results of the survey and discuss, exemplarily, the results of the content section of the survey for the ACDH Tool Gallery 1.2 on (basic) linguistic annotation. We have chosen this specific event to show the relation and synergies between the training events and CLARIN.

### 4.1 General analysis

Since the ACDH Tool Gallery was initially conceived as an in-house training opportunity, it is not surprising that nearly half of the 365 registered participants, namely 48%, came from various departments of the Austrian Academy of Sciences. In addition to that, 21% came from the University of Vienna and 31% from other universities. Considering that the Tool Galleries are organised as a series of events and take place three times a year, it is also useful to look at the amount of repeat participants. Of the registered participants, 16% registered for two events, 13% registered for three or more events and 71% of the participants participated only once.

The age distribution of the 188 survey respondents was as follows: 67% of participants were between the ages of 20 and 40, 30% were between 40 and 60 and 3% were over 60 years old. For a subset of the questionnaires (154 questionnaires<sup>2</sup>) we could even make a more granular age analysis: Here, 40% of the participants were between the ages of 30 and 40, 27% were between the ages 20 and 30, 20% were between the ages 40 and 50, 11% between the ages 50 and 60, and 1% was over 60 years old. This shows that academics of all career stages attended the training events. Regarding their disciplinary background (Fig. 2), most of the participants were scholars in the humanities, followed by information scientists and archivists. The category “other” includes, for example, librarians, lexicographers and IT coordinators. Within the humanities, the participants came from a wide range of disciplines, such as archaeology, history studies, musicology, linguistics, literary studies and theatre studies.

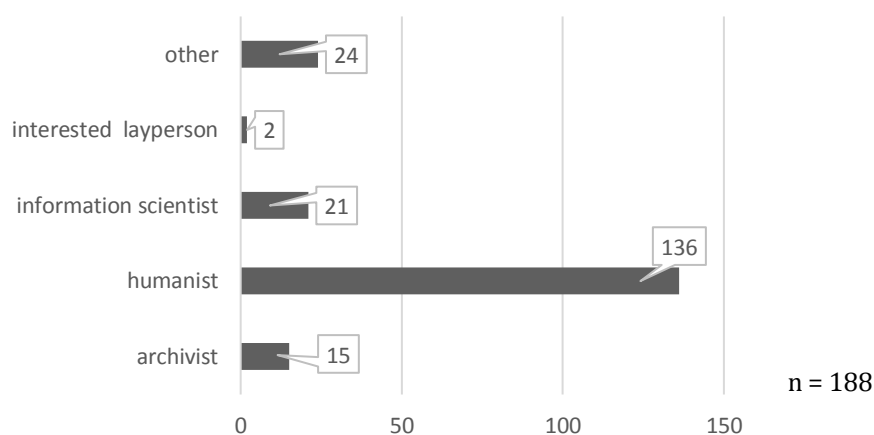


Figure 2: Occupation / disciplinary background

Having put a lot of effort in the advertising of the training events, we also wanted to obtain feedback on the effectiveness of the different communication channels used. As the survey showed, the majority of participants had heard about the event from colleagues or via one of the mailing lists. Other participants indicated that they got the information from the institute’s website or the academy’s calendar of events. In the category “other”, participants specified that they had seen the announcements on the respective conference websites (in cases where the ACDH Tool Gallery took place within the context of a bigger event) and on Twitter. As the ACDH Twitter presence was not launched before July 2016, only the last two ACDH Tool Galleries had been promoted actively via our own Twitter account. Nevertheless, even before that, the ACDH Tool Galleries were mentioned on the private Twitter accounts of staff members and participants.

<sup>2</sup> In this analysis, the 34 questionnaires from the first ACDH Tool Gallery 1.1 were excluded, because they did not contain a more granular age information.

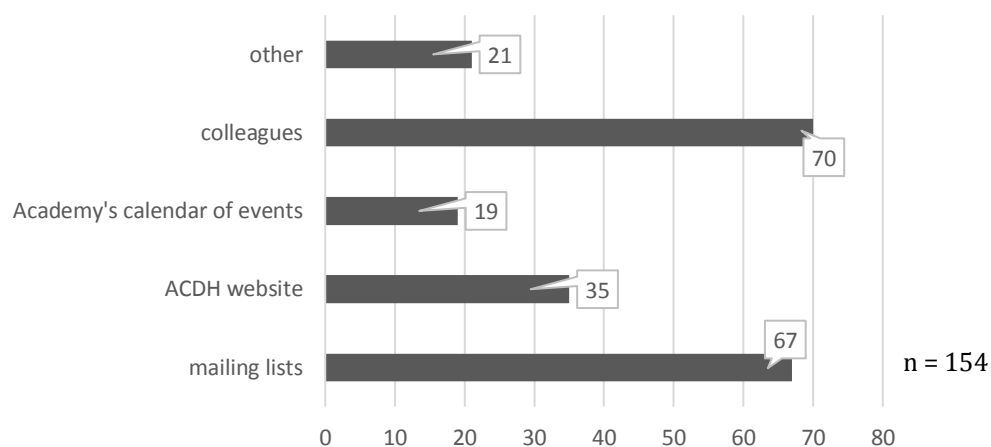


Figure 3: Dissemination channels<sup>3</sup>

One section of the questionnaire inquired how useful the participants found the combination of lecture and hands-on session in these training events. Of the 188 respondents, 185 respondents generally or fully agreed that the combination of lectures and hands-on session was useful; only three participants did not find it useful and one person did not specify (see figure 4).

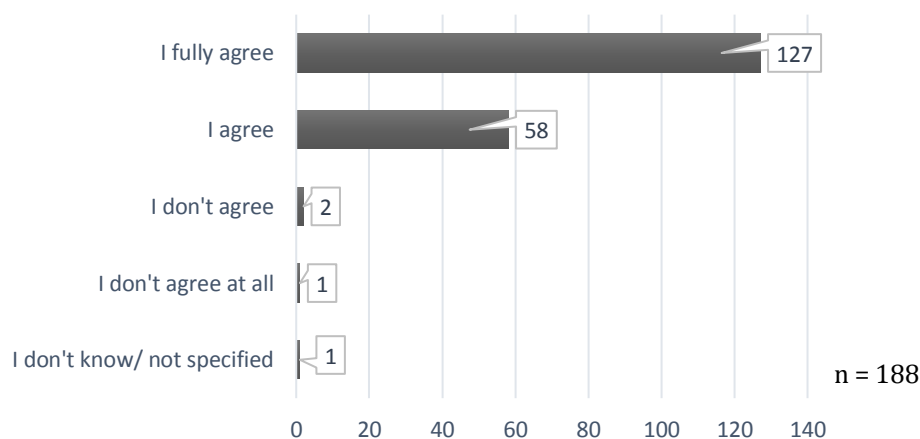
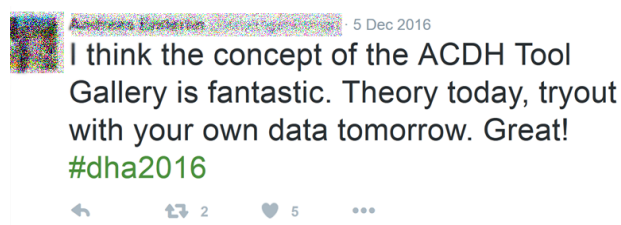


Figure 4: Usefulness of combined lecture & hands-on training

Participants also had the opportunity to leave feedback via the free commentary field in the questionnaire or via Twitter (see figure 5). Feedback received this way was generally laudatory. This positive reception is also reflected in the answers regarding the question “Would you recommend and re-attend an ACDH Tool Gallery event?”: 40% agreed or 5% fully agreed with the statement, 4% did not know if they would recommend or re-attend it and 1% stated they would not recommend and re-attend the ACDH Tool Gallery.



<sup>3</sup> The total number of questionnaires for this question was 154 because in the questionnaires during the first event the question regarding the dissemination channels was not included yet.

Figure 5: Comment via Twitter

For the organisation of the most recent Tool Gallery events, we also aimed to take into account the needs and wishes of our participants. For this purpose, we included a section in the surveys to inquire what kind of tool they would be most interested in exploring. Some suggestions were provided by us, but participants were also given the opportunity to additionally propose tools they had heard about or wanted to get a deeper understanding of. The analysis of these questionnaires has repeatedly shown that there is still a strong demand for tools used for processing and encoding textual sources. With this information in mind, the last two Tool Galleries of the third season will focus on the features of the XML editor Oxygen and text encoding according to the TEI guidelines.

In the course of the almost three seasons of Tool Galleries that have so far been organised, we have also observed that there is continuous interest in topics that nearly every researcher is concerned with when working with original source material: Questions such as how to store, structure, manage and share data. In reaction to this insight, we have also offered a course introducing various tools for creating a data management plan. Finally, a Tool Gallery dedicated to the topic of licensing will complement these items in the program. Its focus will lie on providing information on existing guidelines and directives as well as advice in handling legal issues.

#### 4.2 Specific analysis from ACDH Tool Gallery 1.2 on (basic) linguistic annotation

As has been mentioned, the ACDH Tool Gallery 1.2 was dedicated to the presentation of tools for the support of text annotation, particularly linguistic annotation. De Jong et al. (2011) observed that, “[h]umanities researchers can hardly be indifferent to the promise of innovative tools for the support of content exploration and content annotation. Both are key elements in their daily research practice and as such can be considered the alpha and omega of their analytical and comparative work.” While we have records of some computer scientists attending the workshops, in our case, most of the participants were indeed researchers from the humanities, more precisely from history, history of art, musicology, Indology, literary studies, Slavic studies and English studies.

In the ACDH Tool Gallery 1.2, we counted 43 registered participants and received 22 survey responses. On the basis of these 22 questionnaires it could be observed that the majority of workshop participants (77%) had prior experience with the use of digital tools and methods in their research, while 23% stated they were interested in using them in the future. Going into more detail, 45% of the respondents had already used (linguistic) annotation tools, and 55% had no prior experience with them. A breakdown of these figures according to age groups can be seen in figure 6.

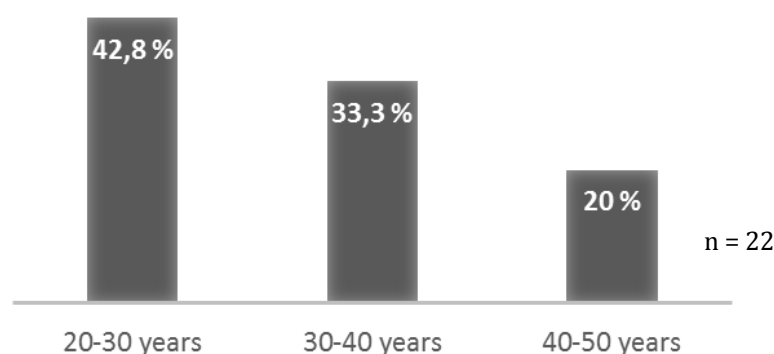


Figure 6: Percentage of respondents from ACDH Tool Gallery 1.2 using digital methods according to age groups

Of those with prior experience, several respondents mentioned *TreeTagger*, but none had any prior experience with *Weblicht*. Hence, we assume that the Tool Gallery was a good opportunity to make the *Weblicht* application better known in Austria and advertise it outside the CLARIN community, especially among historians and literary scholars.

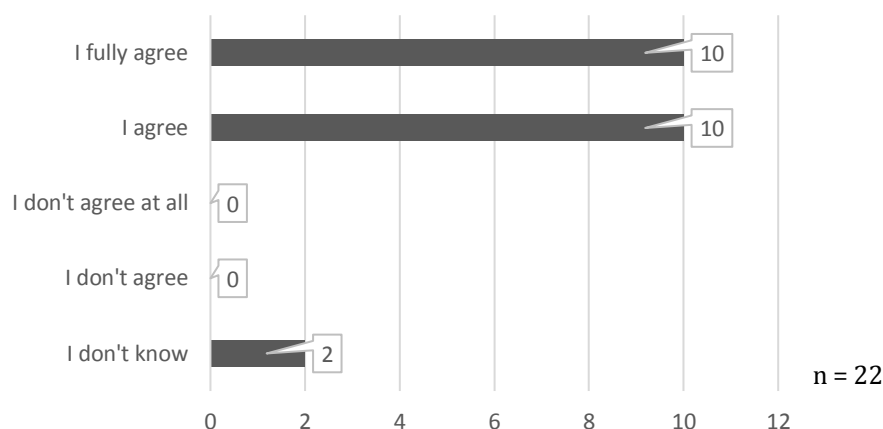


Figure 7: Use of linguistic annotations in further research

Despite the lack of prior familiarity with (linguistic) annotation tools at the beginning of the training event (roughly half of the participants had no prior experience), all of the respondents agreed or fully agreed that they got an overview of the use of linguistic annotation and of what research questions could be answered with the help of linguistic annotation. Furthermore, nearly all of them (20 out of 22) agreed or fully agreed that they would be interested in linguistically annotating their research material in the future (see figure 7). Moreover, nearly all the participants (21 out of 22) agreed or fully agreed that additional linguistic annotation would make their resources more interesting for other research disciplines. However, 19% of the participants agreed or fully agreed that the linguistic annotation of their own resources would be too time-consuming, particularly if the computer-generated annotations needed further manual correction. Participants' opinions were split concerning their faith in their ability to undertake these manual revisions themselves: 47% agreed that they would have to be done by linguists, while 48% disagreed and 5% did not have an opinion.

The ACDH Tool Gallery has demonstrated the importance of linguistic annotation in DH projects, since linguistic annotation can serve as a starting point for the further annotation or processing of texts. It facilitates information extraction and allows for the calculation of frequencies and distributions. For example, when studying historical correspondences, changing power structures may be observed through varying forms of address. In linguistically annotated text, address patterns can be searched systematically (e.g. adjective noun combinations) and their frequencies and variation over time can be measured. Historical texts, in particular, might need additional lemma information in order for full-text searches to turn up all instances of a term despite the existence of orthographic variants.

## 5 Conclusion

In this paper, we have presented the ACDH Tool Galleries, a new research training event series for the digital humanities. As the survey results show, the events were very well received among members of the Austrian Academy of Sciences but also in other Austrian academic institutions. Our analysis shows that there is active demand for training events for researchers in the humanities at all career stages. Moreover, the format of the Tool Gallery can be used for the dissemination of tools and resources developed by research infrastructure consortia such as CLARIN, which could complement the CLARIN user involvement group's efforts on a national level (Wynne, 2015) and would be in accordance with the User Engagement Handbook (Wynne, 2015a). One of our goals for the future is to apply our experiences to a wider European context and to share our knowledge with other CLARIN members who intend to offer similar courses. To facilitate this exchange we plan to prepare a concluding report based on our experiences. At the same time, we are considering new approaches and strategies for conveying particular elements of the courses, for instance through short video introductions or webinars.

In order to make training events such as the ACDH Tool Galleries successful and effective, careful and anticipative organisation is needed. We agree with Rehbein and Fritze (2012) that the organisational effort is higher than in "traditional" seminars and the technical set up takes longer. Furthermore, we find it very important to foster interaction between persons from different disciplines. For the training event

series, it is essential to invite ICT experts and researchers who have experience with the application of the tools in their own research and allow more inexperienced researchers to benefit from their expertise. This is in line with the idea that “[h]umanities scholars, and ICT-developers and students should all learn about the principles, challenges and biases of each other’s discipline” (de Jong et al., 2011).

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