How much importance do prospective teachers attach to facts? Comments on empirical results at the University of Bielefeld (Germany) in the subject history

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Abstract:

What do history teachers think about hermeneutics? It is one of their main tasks to teach the handling with facts, historical sources and historiography. In particular, considering prominent forms like alternative facts or fake news, facts seem to be a really problematic item – not only in history classes. How severe are they? Do they represent the truth? With this in mind, it is important to check in how far students becoming teachers attach importance to this item. During empirical studies at the University of Bielefeld in researching students´ competencies in history (narrative and hermeneutic competencies) – part of the main project BiProfessional – we have received some interesting findings about defining and dealing with facts. Since 2016 we have been testing students enrolled in the Master of Education, who were prepared and attended academically while they completed their practical training at school. By attending them, we could manage to get some hints about their educational level in said competencies. Students´ thoughts about facts is one item of the testing design. The paper will present aspects of design and instrument in main focusing facts and report about previous results and consequences, which also will be discussed in the context of teacher training and the academic education of students.

Keywords: competencies, history, facts, teacher training, practical training, hermeneutics
Introduction

Fact is a momentous term that most people link to characteristics like stability, traceability, proof and resistance. With regards to the teaching of history, factual knowledge and its importance in school stays – as a countermovement to the current change to a competence- oriented teaching – a much discussed topic, not only in Germany. How much of it can or has to be expected from school students? (Sandkühler, 2016; Calder & Steffes, 2016). But what exactly are facts? In school, it is common that specific persons, dates and places are considered “facts” which have to be learned by heart to establish a historical knowledge base. However, can such an audience-oriented selection be seen as predetermining? Moreover, could it rule out reflective action as one of the most important tools of historians? In how far is it surprising that students and prospective teachers keep transmitting this attitude? In contradiction, we see reflective acting with regards to facts as well as critical questioning concerning histories as narrative constructions and sources as perspective and subjective insights in past times, as major qualities of the subject history. In this case, facts are not more than made and interpreted by people in a specific context – which again is a perspective. This is what we – simply put – find when historians follow the epistemological constructivism. Critical realists however question facts concerning their relevance, fewer their nature and genesis. Both commonly share the view that facts are by no means unquestionable items of history. Thus, how critically do students in history see facts?

This paper seeks to present results from an ongoing research at the University of Bielefeld (Germany), which is focusing on competencies of students during the practical parts of their academic education in becoming teachers in history. In this process, the question, in how far the students in question hold a critical attitude towards facts, sources and historiography is also to be answered. After brief remarks to the relevance of the object facts in current researches to the didactics of history, the description of methods, presentation and interpretation of previous findings with views on possible researching and curricular consequences follows. This project is part of the "Qualitätsoffensive Lehrerbildung", a joint initiative of the Federal Government and the Länder which aims to improve the quality of teacher training. The program is funded by the Federal Ministry of Education and Research. The authors are responsible for the content of this publication; Fördernummer: 01JA1908.
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Theoretical Approach

In trying to define the term fact selectively, it becomes obvious that it is by far not a simple task. Many synonyms and the usage of the term in different scientific disciplines make this task quite difficult. Encyclopedias often simply define it as circumstances, actuality and conditions, while humanities in following a long philosophical tradition set it towards assessments and theories and demand reliable, provable mental and material conditions and acts, which are set in (historical) contexts by being embedded in meaning; however, there are some different divisions between constructivism and realism (Mulligan & Correia, 2017; Görtz, 2004, p. 12; Rüsen, 2004, p. 24). Looking at the everyday slang in schools, it could be defined as proved knowledge of persons, dates and places. All of them have the characteristic of some kind of stability in common, the way of localization in historical statements remains questionable. What concerns the handling of facts, educational institutions and empirical researches seem to agree. Both invoke a critical look and usage as an important base to deal professionally with histories and further to get involved in the current culture of history in a responsible way. This has become a very relevant item in many researches in didactics of history. Nicola Brauch and her team explored factual knowledge in their testing competencies of students to prepare material und work orders for lessons (Brauch et. al., 2014), similar to Martin Nitsche and Monika Waldis, who analyzed historical texts of foreseen history teachers to measure their narrative competencies (Nitsche, 2016). Furthermore, Lendol Calder and Tracy Steffes have emphasized through their research to educational inputs for heuristics, methods and didactics in the subject history at universities that the initiation of a critical handling with facts, sources and historiography is much more important and has to be intensified in academic education of students studying history (2016).

Methods

This paper presents a selected part of the whole research project. That is why the following explanations will focus on the methodical elements. Others may be considered if necessary. The project explores the quality and the progress of domain-specific competencies of students in becoming history teachers, particularly those who are in their practical phase of academic education. The whole project is based on a concept of
Jörg van Norden with the support of his assistant Lale Yildirim, who created and tested it in summer 2016 at the University of Bielefeld. Since the winter semester 2016/17 has begun, it was continually optimized and evaluated by a new assistance (Norden, 2018; Must, 2018a and 2018b). Van Norden has already run a very similar project with school students before and could prove most elements of the current study (Norden, 2014 and 2016).

**Design and sample**

At the majority of German universities, students (enrolled in the Master of Education), who want to become teachers, have to pass a practical semester (PS). That means they have to spend one semester at a German school where they shall, with the support of mentors (teachers at the school), collect experience about school routine and teaching. Before, while and after that practical phase they also have to pass special academic courses: a preparing (PC), an accompanying (AC) and a reflecting course (RC). For preparation the students discuss some empirical works which thematise the implementation of didactical theory and concepts in the practice of schools. On the other hand, they learn about current types and concepts of teaching (e.g. sources, narrations, media, methods). In the accompanying course the students, while spending their semester at a school, get support in discussing teaching problems and preparing lessons. The reflecting course offers them opportunities to discuss and reflect their teaching experience and their perception of how theory gets involved in practice in reality. In this process we look at the progression of the students’ competencies. What is the quality at the beginning and at the end of their practical phase? Will they improve by PC? Is there a development through the PS? To measure the quality we need to test these students as our experimental group three times, at the beginning (t1) and at the end (t2) of the PC, and later in the RC (t3), what made a type of pre-post-follow up-testing necessary.

Regarding the consideration of this paper, it is important to state the following question: What quality has heir handling with facts and can it be determined as progress? If we look at the curricula of the subject history at the University of Bielefeld (which is similar to a lot of universities in Germany; cf. modular descriptions in references), we can expect that the tested students have completed courses before, in which a critical handling with facts, sources and historiography was discussed and in some ways was
proved in different exams. However, it has to be noticed that explicit references on facts cannot be found in the modular descriptions. Here an interpretation by lecturers is necessary, if and in how far facts play a role in definitions like “high competencies in historical methods” or “high knowledge of chosen methods for scientific work in history and qualification to use them in dealing with historical questions”. Furthermore, the Kultusministerkonferenz demands or better recommends that students becoming teachers “master the access to original sources, the critical dealing with historical sources as well as with results of historical and didactical research and can teach them” at the end of their academic education (KMK, 2008/2017, p. 32). While a critical attitude can be filtered out from these recommendations, there is again no explicit reference on facts. But we can probably accept that facts are also included in “results of historical research”. From these demands, recommendations and aims the question, if students are indeed able to handle facts critically in their last phase (PS) of academic education in becoming teacher, becomes evident. This has to be tested. But, and this is important, we cannot prove – maybe only guess –, if they are also able to teach a critical attitude, how the KMK recommends. Nevertheless, it cannot be expected inevitably that someone, who has a critical attitude, also teaches in accordance to this attitude.

**Instrument**

To measure the quality of their competencies a test-sheet consisting several questions and tasks was designed. This sheet consists of four pages, where the subjects shall show narrative and hermeneutic skills (Norden, 2018; Must, 2018b). It has three pages with tasks and one page, where the subjects give – by uniform rules – an ID and information about their origin, languages and course of studies. The three task pages are constructed as follows: Part one demands the answering of a dilemma-story, which goes back to a story of Samuel Johnson and has already been used as testing item before (cf. Rüsen, 1987; Schmidt, 1987). In part two they have to answer questions concerning the handling and definition of facts, sources and historiography (see fig. 1), in three there is a sequence of pictures which has to be set in context by a narration. To clear the question, how critical the subjects look at facts, there is mainly only one relevant question, which has to be answered in an argumentation (task 4a, part two; see fig. 1). Although the other tasks can involve statements about facts, they do not require it like in 4a. Therefore, those tasks are not qualified to get valued
quantitatively in focusing meanings of facts. That is why we use – if needed – those statements to confirm or falsify findings valuated from task 4a.

**Figure. 1.** Test-sheet, part two

<table>
<thead>
<tr>
<th>Part Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please answer the following questions and explain your answers!</td>
</tr>
</tbody>
</table>

1. Is there a difference between the past and history?

2. Is it possible that the history of the French Revolution will change?

3. If you had a time machine, where and when in the past would you go? Why?

4. For our discipline of History how important are
   a) historical facts?
   b) written sources and artefacts?
   c) what historians write about them?


We decided to categorize the answers of the students in different types, which symbolize special epistemological forms: naive realism, critical realism and constructivism. Similar type-structures can also be found in previous works (Nitsche, 2016, pp. 168-180; Díaz & Shopkow, 2017). There will be – from normative state – made no gradual distinction between the critical realism and the constructivism, but a
distinction towards the naive one is desirable. The following in table 1 gives information about definition and assignment.

**Table 1.** Coding guideline for facts (in short; translated from German)

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>naive realism</td>
<td>F1</td>
<td>facts are true, indestructible particles of history; they needn’t be questioned</td>
</tr>
<tr>
<td>critical realism</td>
<td>F2</td>
<td>facts have a true nucleus we can find by critical examination and contextualization. Empirical cogency.</td>
</tr>
<tr>
<td>constructivism</td>
<td>F3</td>
<td>facts are artefacts made by people. Only the sequence is ontological. Empirical cogency.</td>
</tr>
</tbody>
</table>

In short: Somebody who sees facts as stable and truth wearing elements, will be coded F1, someone expressing that facts have to be proved by context and that they could change by newer research results gets category F2 and persons who interpret facts as construction which is subjective gets to F3.

Because we could notice before and in the beginning of the first tests a kind of uncertainty – mostly expressed by the students – in transferring new theoretical concepts into the practice of teaching, we decided to add another instrument in order to identify this possible disturbing variable. In the last years an intolerance among especially becoming and active teachers in managing uncertain situations regarding planning and running lessons was discovered. This intolerance often appears on the one hand in forms of rejections towards new knowledge that has been conveyed in educations and on the other hand by insisting on old, trusted methods and knowledge (Dalbert & König, 2007; Martinek, 2007; Dalbert & Radant, 2010; Reusser & Pauli,
This second instrument, a conception of Claudia Dalbert (1999), is a sheet of eight statements like "I only deal with tasks that are soluble", which have to be answered by signing a form of agreement or denial (a rating scale from "absolutely" to "definitely not"). It is always run once in t3, in addition to the third testing, and its rating results will be evaluated by numbers 1 (intolerant) to 6 (tolerant).

Findings

We could test three cohorts from the winter semester 2016/17, summer semester 2017 and winter semester 2017/18, with a normal group from 10 to 19 students per semester, who had to fill in the test-sheets at three times (t1, t2 and t3). After further selection because of cases in which some subjects could not pass the sheet at all three times (about 15-20%), we had a total group of 44 subjects with each three filled sheets (n=44), which were evaluated by transcription and coding in atlas.ti, to assign the single statements of the subjects to the types explained above (according to the qualitative content analysis by Mayring, 2015). The coding was also proved randomly by a second encoder (reliability from .62 to .82). Table 2 shows the findings of task 4a.

Table 2. Findings to facts (WS2016/SS2017/WS2017)

<table>
<thead>
<tr>
<th>test</th>
<th>allocated Codes</th>
<th>a (average)</th>
<th>sd (standard deviation)</th>
<th>m (median)</th>
<th>p (Wilcoxon)</th>
<th>d (Cohen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t1</td>
<td>F1 28 F2 11 F3 5</td>
<td>1.47</td>
<td>0.69</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f 13</td>
<td>1.48</td>
<td>0.66</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>m 15</td>
<td>1.48</td>
<td>0.71</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t2</td>
<td>F1 26 F2 10 F3 8</td>
<td>1.59</td>
<td>0.78</td>
<td>1.0</td>
<td>.32 (z=.99)</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>f 11</td>
<td>1.62</td>
<td>0.72</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>m 15</td>
<td>1.57</td>
<td>0.82</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t3</td>
<td>F1 26 F2 13 F3 4</td>
<td>1.47</td>
<td>0.66</td>
<td>1.0</td>
<td>.32 (z=.99)</td>
<td>-0.14</td>
</tr>
<tr>
<td></td>
<td>f 13</td>
<td>1.48</td>
<td>0.66</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>m 14</td>
<td>1.48</td>
<td>0.65</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: transcription Lukas Schmidt; evaluation Must; 2018.
First testing and starting quality (t1)

The findings displayed in the table above show really clearly that most of the subjects in the first testing phase are coded in type F1. In other words, they expressed a naive realistic position in their statements. By looking at the concrete statements, it becomes obvious that they are uncritical and assume truth in facts which are seen as stable points of orientation, as seen in table 3a.

Table 3a. F1-quotes to facts in t1 (in selection; translated from German)

<table>
<thead>
<tr>
<th>subject</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS2017_VPS_Joc170Hun_w_T1_A2.4</td>
<td>“Without them, there would be only assumptions but no ‘true’ histories” (F1)</td>
</tr>
<tr>
<td>WS2017_VPS_Ver180Orc_w_T1_A2.4</td>
<td>“because only by them our history can be organized” (F1)</td>
</tr>
<tr>
<td>WS2017_VPS_Ker187Pfe_w_T1_A2.4</td>
<td>“central element, because they verify past history and help to understand and comprehend it” (F1)</td>
</tr>
</tbody>
</table>

About one third of the group takes a critical position (F2 and F3) and asks for the relevance of facts. Only a few of them go further and question facts themselves as perspective objects (F3), see table 4a.

Table 4a. F2- and F3-quotes to facts in t1 (in selection; translated from German)

<table>
<thead>
<tr>
<th>subject</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoSe2017_VPS_BeX170KaX_w_T1_A2.4</td>
<td>“Historical facts can be changed depending on research status, so such an attribution [truth, stability etc.] has to be handled carefully” (F2)</td>
</tr>
<tr>
<td>WS2016_VPS_Ute173Hun_w_T1_A2.4</td>
<td>“Facts were made by historians to be facts, so that they are always subjective” (F3)</td>
</tr>
</tbody>
</table>

Remarkable differences between female and male subjects have not yet been discovered, as table 2 shows. Already at an early stage of evaluating the statements of t1, we realized that there are some limits in coding the subjects´ performance. Even though the students usually give reasons for their statements (how the corresponding
question of the task required in the test-sheet), that happens, however, only in short, mostly within half a sentence. Here another – till now a small – problem has appeared. Quite a few statements of the students are really vague, or their connotation is not clear. While type F1 usually could be coded clearly, a distinction between F2 and F3 was more difficult. That could explain why the intercoder-reliability sometimes differs and never reaches 100%. We are continuously clearing our coding guideline.

A problem of definition?

Furthermore, the testing cannot always settle detailed thoughts or the concrete understanding of facts the students have. Most frequently, facts are seen as dates and setting of certain events (see table 3b).

Table 3b. F1-quotes to facts in t1 (in selection; translated from German)

<table>
<thead>
<tr>
<th>subject</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoSe2017_VPS_Fra186Hun_m_T1_A2.4</td>
<td>“mark the frame of events” (F1)</td>
</tr>
<tr>
<td>WS2016_VPS_Cla161Ele_w_T1_A2.4</td>
<td>[by them we could] “assign historical events”; [we are aware of] “the temporal distance to today” (F1)</td>
</tr>
</tbody>
</table>

Here again, we find a strong functional attribution as orientation and structuring. Occasionally, some students express in their statements a problem with just a concrete definition of that term, like table 4b shows. Sometimes there is even a fundamental questioning of the nature of facts.

Table 4b. F2- and F3-quotes to facts in t1 (in selection; translated from German)

<table>
<thead>
<tr>
<th>subject</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoSe2017_VPS_Mar177Hun_m_T1_A2.4</td>
<td>“it has been defined very carefully, what ultimately can be seen as fact” (F2)</td>
</tr>
<tr>
<td>WS2016_VPS_Ral180Hun_m_T1_A2.4</td>
<td>[it is questionable,] “when something is proved historically, so that it is a fact” (F2)</td>
</tr>
<tr>
<td>WS2016_VPS_Jör177Hun_m_T1_A2.4</td>
<td>“are there some?” (F3?)</td>
</tr>
</tbody>
</table>

From the state of different definitions of facts (see again Mulligan & Correia, 2017), a different relevance of that element for the discipline of history in according to the results
follows. Students, who look at that term critically, usually tend to give relevance to facts in depending on the specific historical problem they deal with and give no blanket rating. Consequently, a missing dealing with the different meanings of that term within the academic education could be a disturbing variable and has to be considered in following tests and optimizations of the relevant courses.

*Indications from other test items*

Also, other items of the test-sheet (task 4b and 4c; see fig. 1) show this most uncritical attitude, e.g. towards historical sources. Those findings are confirmed additionally. With regards to the added information, we also need to mention that most of the students are very critical towards historiography and often see it as narrative construction and (individual) perspective (Must, 2018a/b). Furthermore, findings from evaluation of task 1 and 2 (see fig. 1) suggest that the students do not consider facts as questionable items of constructing history, because they do not use them for their argumentation in answering the questions. In responding to the said questions, they mostly write about the re-analyzing and proving of historical sources. By contrast with their answers in task 4b, they seem to show a more critical handling.

*Second and third testing and progression (t2 and t3)*

The same test-sheet was used at t2 at the end of the PC (cf. table 2). Do the PC motivate a critical attitude or its development? The findings show a clear no, there can be rarely find a significant development from t1 to t2. The PC seems to be inefficient, farther the students express very similar positions like in t1 and stay with about 60% mostly uncritical.

At the end of the PS the students filled in the same test-sheet for the last time at t3 (cf. table 2). Once again, we find no significant development from t2 to t3, the values remain unchanged. The practical experiences in school do not seem to affect the students’ perspective on facts. The differences between female and male subjects are not remarkable. In its entirety, meaning from t1 to t3 as well as in the beginning and at the end of this academic, practical oriented year, the students seem to show no progress and above all, a questionable level of defining facts.
Attempts of interpretation and discussion

If we compare the results with the recommendations of the KMK, we need to question the curricular conditions: Has the academic education till that point failed? Or should we go further and ask for personal characteristics of the students? Are there special beliefs which have been manifested (cf. Reusser & Pauli, 2014, pp. 646-647; Nitsche, 2016, p. 166)? If historiography can be seen as possible reconstructions of past events and sources as subjective perspectives on events, it is not really surprising that facts are just seen and consequently used as last structuring element to get a stable base for research and reconstruction – so to say an anchor for own narrations. And further, what does happen in the PS? The students take the role of a teacher and have not only to handle facts by routine but also have to teach their definition, nature and handling. Is it possible that in such a situation the belief on stability and truth of facts gets stronger again? Is there possibly a connection to the intolerance of uncertainty mentioned before?

The results of testing the cohorts in t3 give us a hint, but not more. By an average of 3.34 (sd: 0.79 m: 3.31) the subjects tend to be classified as intolerant, what is – proved by the research of Claudia Dalbert – a frequent characteristic of teachers (Dalbert & König, 2007; Dalbert & Radant, 2010). So it might have some effect on our results, but probably an impact not as large as this. Currently, we guess the reasons for that development can be found in the routine of school’s life. If the students see teachers managing their classes successfully, they could get the impression that this way of teaching is the best one to survive school day and try to adapt this way (Norden 2017; implied by Hascher 2012, p. 112). Some reflections and statements of our students after their PS give us some reasons to think that way, but has not be proved so far.

Conclusion and prospects

Up to now the results are very limited because of the small experimental group and the local limitation, even though you find some similar results in other works (Norden, 2018; Must, 2018a/b). But tendencies can be identified which should motivate an optimization of the relevant courses and educational conditions. While we cannot easily change
elements of the practical phase, because it depends almost completely on the schools and their teachers, we decided to implement some changes in the PC and the AC.

From the summer semester 2018 we have – in a first attempt – taken special inputs (in two meetings) to reflect and discuss the items of getting information in history (facts, source and historiography) and the construction of narrations. To understand and to transfer this information into teaching at school, we use examples from schools (products of school students, tests, working materials) and train preparing lessons focussing those items. Beyond question one of our most difficult aims is not to indoctrinate the students (cf. Golser, 2015, pp. 65-66.) and getting a learning-to-the test-atmosphere. Because by using the same test-sheet and the same design we will see, if that can produce better results.

First findings (t1 and t2) of a cohort in summer semester 2018 (n= 24) are already available and give us – for the first time in our previous research – a significant positive progression in the item facts (p=.03). About 50% of that group seems to look critical at facts. But to be sure, that this result is neither coincidental nor affected by other variables, we must wait for the next months and cohorts. They will show if our implements are successful and motivation for a critical attitude towards facts will be necessary. Nevertheless, we can carefully derive some important guides for educating prospective teachers in history from those first experiences. Firstly, questioning historical facts cannot be presumed. Secondly, having a critical attitude should not be equated with having the competence to teach it. Prospective teachers need to obtain a critical attitude towards history. Respectively, they need opportunities to see facts as perspective items, and learn how they could put this attitude in practice in school (e.g. questioning historical information from school and history books).

Despite the limitation of the results, further interesting questions and careful speculations emerge (also beyond the subject history). It may be asked how academical education works, what it achieves and not least what students think about it. Do they always trust in facts doubtlessly? Concerning this, is it not an essential aspect of every academical work to reflect and question facts continuously? Further testing should aim to clarify, if this presents a genuine problem of studying history, or if it can also be observed in other subjects or as a general issue of the academical education. Does science and its results represent a kind of overwhelming authority (implied in
Must, 2018a, pp. 308-309, hinted to other researches at the University of Bielefeld)? Or is it an acquired attitude from the past school time? By slightly changing the design it is envisaged to test other subject groups, e.g. students of other disciplines and other universities and especially student teachers to get more insights in the second phase of the teacher education at school.

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