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#### Report from an ongoing project:

# Preparing Student Teachers to Teach Historical Thinking: Learning Trajectory Based Instruction – Development of Epistemic beliefs?

The epistemology of teaching and learning history has developed significantly during the last decades. The "codified" knowledge of the discipline has been formulated in sophisticated and abstract concepts – about not memorizing but "thinking history". The use of historical information for present and future has received increased attention in the 21<sup>st</sup> century. The curriculum of history in schools has become an important part of civic education. At the same time it is possible to observe an increased gap between this "codified" knowledge versus the "cultural" knowledge in schools – the epistemic beliefs of teachers and pupils. The school-subject has internationally a long history of memorizing data – not deconstruct or reconstruct the story. Purpose of the project is to address this problem in education of history-teachers: How to prepare student teachers to teach history in a complex epistemological context?

The current expected learning outcomes of history in schools are a challenge for teachers, pupils – and teacher students. The curricula in both Western Europe and North America contain long, detailed lists of contents and procedural knowledge to be mastered. It is a very slippery cognitive landscape in several dimensions: "understanding history", "historical literacy", "use of History", "Historical Consciousness" to mention some of the concepts. A traditional epistemology of history has been challenged by an even more over-loaded curriculum: The myriad of historical data, first-order concepts, has been supplemented with a lot of second-order concepts. Teachers, pupils and teacher students easily get lost in this jig-saw puzzle.

The aim of this project is to investigate the epistemic beliefs of history-teachers, their pupils and of teacher students. The hypothesis is that teaching and learning and epistemic beliefs interact and develop together. Epistemic stances enable or hinder understanding of "codified" knowledge. Another hypothesis is that *learning trajectory based instruction* is an efficient tool for making this process visible which enable development of epistemic beliefs.

# • Development of Epistemic Cognition in History. Cognitive Theory from Oscillation to interaction of corresponding Sub-operations. Epistemic Beliefs of Pupils and Teachers. Learning Trajectory Based Instruction

The cognitive theories of the mental operations for understanding, evaluating, assessing and judging the past, present and future have successively developed. The "cognitive revolution" during the 80's and its' progressive forerunners during the 60's and 70's opened up new ways of understanding also the subject of history. One important concept from the 80's dealing with the conditions of understanding the past was *frame of reference*. The individual use the frame as a cognitive tool when perceiving new information and create meaning. This is a mental operation

using the frame and new information in a swinging pendulum - an oscillation of repetitive variation (Halldén 1994).

The theory of *narrative frameworks* as cognitive tools for constructing different historical accounts of the past developed during the 1990's (Carretro & Voss 1994), (Wertsch 1998). Attention was also given to categorization of different levels of narrative frameworks. It was suggested an education in school using a "progression of narrative frameworks" in four "levels":

- 1. A chronologically ordered past
- 2. Coherent historical narratives
- 3. Multidimensional narratives
- 4. Polythetic narrative frameworks

Shemilt argued for a systematic use of such narrative frameworks throughout a pupil's historical education; "that link past with past and past with present in ways that are valid and meaningful, coherent, and flexible" (Shemilt 2000).

The idea of using a progression of frameworks in different levels announced that teaching and learning history in school had developed into an even more complex cognitive undertaking. In the first decades of the 21<sup>st</sup> century this development has continued. Drie and Boxtel has 2007 constructed a "Framework for Historical Reasoning". This framework had six components (not in sequence):

- Asking historical questions
- Using sources
- Contextualization
- Argumentation
- Using substantive concepts
- Using meta-concepts.

Despite this increased complexity of the theories it is however also possible to recognize a development towards a common ground. In both Western Europe and North America it is now possible to argue for a kind of established "paradigm" in cognitive theory of historical thinking (Seixas 2002, Vansledright 2006, Monte-Sano 2016). *The common feature* of this paradigm is that the cognitive operations in History are now generally recognized *as a interaction of corresponding sub-operations*. These operations are aiming at some sort of qualified Historical thinking or historical consciousness ("narrative competence" used synonymously) as an important part of orientation in civic education. A recent manifestation of this paradigm and maybe the best compilation is given in the anthology *New Directions in Assessing Historical Thinking* (2015). One representative example – building upon Rüsen, Jeisman and Körber – define "narrative competence as the interaction among four corresponding "sub-operations":

- 1. A historical thought process begins with formulating historical questions. They are characterized by temporality in "that they take into account the connection between the interpretation of the past, an understanding of the present, and a future perspective".
- 2. In a second sub-operation, based on historical sources and accounts. Factual historical analyses are developed...historical facts must be substantiated by references to historical sources and has to take multiple perspectives into account. Historical facts remain falsifiable.
- 3. A third sub-operation focuses on developing or reviewing factual historical judgements.
- The forever temporary endpoints of historical thinking are historical value judgements. These reflect the norms, premises, and perspectives of historical evaluation (Waldis, Hodel, Thünemann, Zülsdorf-Kersting & Ziegler 2015)

A result of this development of the epistemology of historical thinking is that the curricula for history in schools since the 90's and later have expanded into long *lists* of learning goals and abilities to be mastered. The US federal standards are indeed an "impressive catalogue". The basic edition from 1996 describe five interconnected "dimensions" of historical thinking:

- 1. Chronological thinking
- 2. Historical comprehension
- 3. Historical analysis and interpretation
- 4. Historical research capabilities
- 5. Historical issues-analysis and decision-making (National Center for History in the Schools 1996).

Each of these is further specified into a number of abilities and every one of these requires specific historical content in order to function. This is made explicit in the following chapters resulting in 468 abilities in US history and 611 abilities in world history! The Swedish national agency for education has 2011 produced a similar curriculum with similar "long lists" of content knowledge and abilities. The pattern is similar in other curricula in Western Europe.

#### A Gap between "Codified Knowledge" and "Cultural Knowledge"

The development in epistemology of the discipline and the "codified knowledge" in curricula have resulted in an observable "gap" vis-à-vis the "cultural knowledge" in schools. The epistemic beliefs of history teachers and their pupils have obviously not always been in harmony with the increased sophistication of the discipline. Studies agree upon the significance of the epistemic beliefs underpinning teaching and learning history. To navigate in the complex cognitive terrain of historical thinking the individual need finely nuanced, consistent, and coordinated epistemic beliefs. Empirical studies show however inconsistence and cognitive dissonance among history-teachers, pupils and college students when it comes to historical thinking.

Studies by Shemilt, Lee and Ashby (2000, 2003) have identified different levels of epistemic beliefs of english pupils. *Figure 1* shows various aspects of learners' cognition in history placed on a developmental trajectory. The trajectory represent steps from an "objectivistic" stance to a "subjectivistic/relativistic" stance towards what may be aligned with the "codified knowledge" of the discipline: the "criterialist" stance. The categories have later also been used by VanSledright and Maggioni investigating American history-teachers and college students (VanSledright & Maggioni 2016).

At the least advanced level history is assumed to be one correct story and the individual therefore do not typically ask questions about the nature of historical statements or claims to knowledge. At a middle level learners have shifted to a realization that History can be understood as stories or testimonies. Different individuals may have different perspectives and everyone is entitled her opinion. At the most advanced level knowledge about history is considered an investigation with different hypothesis which may be verified or falsified. The individual need established criteria for this work.

The Criterialist stance is assumed to enable the process of teaching and learning the different sub-operations in historical thinking - the "codified knowledge". The other stances seems to create cognitive dissonance and this conflict may create a serious intellectual and pedagogical hurdle. Observations and interviews with teachers show on one hand a common schooling practice of teaching and learning the one correct answer were primary sources serve as curiosities or are intended to create interest and attention to a lesson otherwise driven by a lecture in powerpoint format. On the other hand teachers talked about "teaching critical thinking skills, getting kids to analyze materials;" "moving away from the textbook;" "use of more sources;" "to

let students investigate the past more;" "learning new strategies for teaching historical thinking;" and the like. But they would as quickly remark: "But...there's not enough time because there's too much to cover." (VanSledright, Maggioni, & Reddy 2011).

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#### Figure 1

Epistemic stances of pupils and History-teachers (Lee, Ashby, Shemilt, Sledright, Maggioni)

Criterialist Tools for analysis hypothesis and pragmatic truth. Useful Subjectivist Balance between objects of tentative knowledge understanding and the subject possible The knower must be constrained by the contexts where objects were constructed The knower has an important Copier role in interpreting History History is what we knowers make it to be - it's opinions Everyone entitled her opinion History as anything goes Past and History the same There is one correct story The knower is a passive reciever

These results may be compared with the assessment of the Swedish schools inspectorate in 2015 of history in grades 7-9. The results indicate that all teachers are engaged in teaching "the content

of history". The use of historical sources are normally used to illustrate the content or to raise interest. The historical method for analyzing historical sources are seldom used and pupils are allowed to make free interpretations about present and future without basing argumentation upon evidence of the past. Pupils may seldom reflect upon use of history – their own or others. Pupils may seldom or never use historical concepts for formulating questions and produce own historical knowledge from sources (Skolinspektionen (2015).

The Swedish schools Inspectorate draw the conclusion - from observations of lessons and interviews - that the approach risks to "cement" a traditional conception of the school-subject; that the aim is to reproduce facts about the past rather than appropriation of abilities. The Inspectorate explain the situation with the history-teachers' lack of understanding of the aims of the curriculum in history. Obviously the results of this investigation of the Inspectorate further strengthen the picture of a "gap" between the "codified knowledge" in curricula of history vis-àvis the "cultural knowledge" in schools. There seems to be an "inconsistence" in the epistemic beliefs of Swedish history-teachers resulting in a teaching not aligned with curriculum (Skolinspektionen (2015).

### Learning Trajectory Based Instruction. Progressions in teaching and learning

Obviously the development of the epistemology of teaching and learning history and curricula in history are dealing with some kind of "*hypothetical learning trajectory*" – but without making it visible. In both the US standards and in Swedish curriculum 1<sup>st</sup> and 2<sup>nd</sup> order concepts are *interconnected* but there is *no progression* stated for the lists of learning goals – the procedural knowledge – to be achieved. The *cognitive process* is assumed but not made visible.

It has been observed that identifying central aspects of teaching is important to clarify the "pieces of the puzzle," but also to understand of "how the pieces fit together" into an explanatory framework. The need for a descriptive framework has been emphasized – a theory that brings the pieces together. The idea of *learning progressions* appears to have emerged first in the context of science education and is now virtually synonymous with learning trajectory *conceptual progressions* and sequences of conceptual progressions. The term "*learning trajectory*" appears to have been first used the discipline of Mathematics in 1995 in the paper: "Reconstructing Mathematics Pedagogy from a Constructivist Perspective" (Empson, 2011).

A Learning trajectory is made up of three components:

- 1) the learning goal (the desired direction of teaching and learning)
- 2) activities (to be undertaken by the teacher and students)
- 3) *a cognitive process* (hypothetical and/or actual)

During the 21st century there has been an increase of research that explicitly identifies itself as concerned with learning trajectories or progressions in learning.

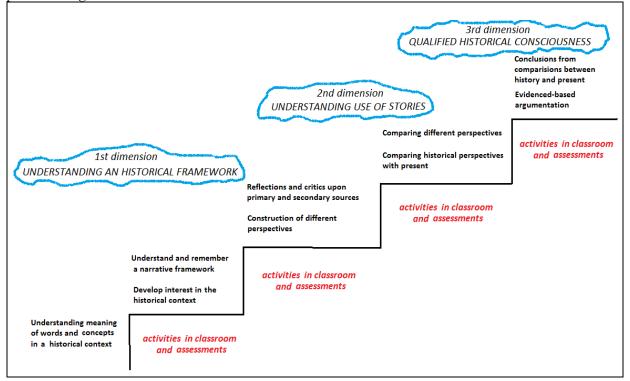
The concept of "Learning trajectory based instruction" has been formulated in order to provide an integrated explanatory framework for teaching. It has been defined as "teaching that uses students' LTs as the basis for instructional decisions....task analysis, discourse facilitation practices, and formative assessment" (Sztajn et al 2011, Wilson et al 2015).

I propose that the concept of learning trajectories may provide a framework for combining the 1<sup>st</sup> and 2<sup>nd</sup> order concepts and the procedural knowledge in history – *a plea for a visible sequence* of teaching and learning history. My hypothesis is that both teachers and students need a common tool *integrating the sequence of activities and assessments*. This integration will develop epistemic beliefs and decrease the "inconsistence" and "cognitive dissonance" of the stances hold by teachers and students.

### • Closing the Gap with Learning Trajectory based Instruction in History? Development of epistemic beliefs - the "Personal knowledge" - of Teacher students?

Facing the problems above in education of teacher students I have during 2013-18 used a "Learning trajectory in history" as a frame of reference for teaching in school – see figure 2. Below I will give a brief description.

Figure 2. Learning trajectory for a history assignment – learning goal, activities and cognitive process. Cognitive tool used in education of teacher students



<u>Use of a Learning Trajectory as a Frame of reference for Education of Teacher students</u> The tool we have used – the learning trajectory – consists of tree "dimensions" in a hypothetical *cognitive process* with specific *activities* aiming for the *learning goal*. The intention is that the teacher student shall appropriate the figure – the tool as a frame of reference – and use it for own teaching in any historical theme during the following training placement in school (VFU). Returning to university the student writes a self-evaluation of the process. These reports have been supplemented with my interviews of pupils and teacher-supervisors in the schools. Here follows first a brief description of the parts of the tool.

The Learning Goal of the LT: "Qualified Historical Consciousness"

"Qualified Historical Consciousness" (3<sup>rd</sup> dimension of the cognitive process) is the Learning Goal for the Historical Assignment. The operationalization of this goal has been formulated as abilities to reason and make evidenced-based arguments from different contexts and concepts in history and present.

Activities in the tree dimensions of the LT

Activities in the "1st dimension": construction of the Narrative framework

In the first dimension students and teacher need to establish the narrative framework: the *actors*, the *situation/problem*, the basic *events* and *results*. These *four concepts* of the narrative are also *the criteria* used for assessment of the tasks on this basic level.

The narrative is an "open framework" stimulating interest, imagination and questions.

<u>Activities in the "2<sup>nd</sup> dimension": deconstruction and reconstruction of the narrative framework</u> The next steps in the 2<sup>nd</sup> dimension of the trajectory involve activities of constructing *alternative narratives* with *different perspectives* upon the narrative framework. This work include use of different primary and secondary sources. The tools (criteria) for evaluating and assess the use of sources are most important in these activities (Identification of sources, perspective assessment, assessement of reliability et cetera). Using the open narrative framework students have constructed different perspectives evolving from actors and problems. Different perspectives of past and present are assessed.

<u>Activities in the "3<sup>rd</sup> dimension": evidence-based Synthesis about Past and Present Society</u> In the final steps of the trajectory the student will use the results from these comparative activities and construct an evidenced-based argumentation of relevance for present and future.

### Hypothetical cognitive process in the LT

Following these activities the student will hypothetically – step by step – qualify Historical understanding and consciousness. The activities are aiming for a *systematic* understanding of the process of historical thinking. The tools used in the three dimensions enable understanding of how to – step by step – qualify historical understanding and consciousness. Mastery of this cognitive process follows hypothetically from appropriation of the tools used in the process. The process is not random but following a *visible sequence* using specific criteria for construction, deconstruction and reconstruction.

The methods used in each dimension will simultaneously address the epistemic questions of this process. The teacher student using the tools will also develop the epistemic beliefs. The use of procedural knowledge and Historical content will become a systematic process and the student will hypothetically become a nuanced, consistent "criterialist".

# • Preliminary results. Use of Learning Trajectory Based Instruction in Education of Student Teachers in History at Stockholm University 2013-2018

Does the student teacher appropriate the idea of the tool? Will the concept of a LT support teaching during the training placement in school? Will the concept of a learning trajectory develop epistemic beliefs? Some preliminary results of "putting the pieces of the puzzle together" may be discussed.

Enquiries has been done with students finishing the first semester of education in the Historical department at Stockholm University. The image of the subject and the expectations of the profession in this group of "novices" is quite "traditional": the opinion is that discipline consists of "facts" and "method" and the students look forward "applying" this in school. The courses from university shall be "applied" in the schools. *"To be a good teacher: present information and rate the pupils*" is a typical answer from one of the students. The basic concepts of the curriculum in swedish schools – *"historical literacy", "understanding use of history"*, or *"historical consciousness"* – are on this level still *not used by any* of the students. Some find "historical method" is unnecessary for teachers but none find any of "the facts of history" to be without relevance for teaching in school. There is obviously *a big gap* between the student teachers image of the subject in school

and the learning goals expressed in the curriculum (Enquiries of 75 student teachers in History, first semester of education, 2015-2016).

Obviously the novice student teacher has appropriated some kind of "cultural knowledge" as a pupil in school and even in Historical Department at University. Anyway there is in general a deviation between the expectations of the profession expressed in the survey and the concepts in the discipline and curriculum as described above.

These studies of the perspectives of the students will continue during the process of teachereducation. One focus will be about the development of this gap between "codified knowledge" and "cultural knowledge". The students will during periods leave the university and meet supervisors in their training placement in schools (VFU). Which impact will the supervisors have? What kind of "personal knowledge" will the Teacher-student acquire? As Eraut (2007) has shown in research in studies of students learning from professionals in health, engineering and business sectors the learning affordances will vary considerably according to the local context. The learning trajectories show variations over time and will depend on a set of different local factors. One result of this research is that trainees developed stronger commitment to their work teams and colleagues than to their employing organization. Eraut emphasize: "one of the most striking features is the wide range of people from whom those working in supportive environments are able to learn". Students receive many different experiences from meeting many different professionals in their working places.

A pilot-survey of history-teacher students during their 5<sup>th</sup> semester of education shows a complex "personal knowledge" combining elements of "codified" and "cultural knowledge". Students have written self-evaluations of their second training-placement in school teaching history for a period of five weeks. These texts have been compared with interviews of their teacher-supervisors in school and groups of their pupils. Perspectives from three different levels of the teaching and learning-process have in this way been established. The perspectives shows the complexity of "putting the pieces of the puzzle together" – for both the teacher-supervisors, the pupils and the student-teachers. Here will be given just a few preliminary observations.

The teacher-supervisors are aware of the many learning goals of the curriculum in history. There is obviously an "awareness" of the complex epistemology. Their description of their own teaching-sequence may be summarized as:

- 1. The content-knowledge of some historical theme
- 2. Abilities that "match" the content-knowledge.

The "time-line" of the content-knowledge (basically "1<sup>st</sup> order concepts") is the *visible* sequence when the teachers describe their teaching. The abilities (basically "2<sup>nd</sup> order concepts") is mixed with the content-knowledge in a way the teacher seems appropriate. The sequence of using these  $2^{nd}$  order concepts seems to be invisible (Interviews of 6 history-teachers teaching in grades 7-12).

The pupils of the teacher-supervisors, in the age 13-17, are also "aware" of the basic idea of the learning goals in the curriculum: to master abilities – not the content-knowledge. When they describe the learning goals it is however in a vaguely and fragmented way: "Ability to reason about events and consequences...critically...comparing history and present...make own conclusions...use knowledge...connecting...use concepts...avoid mistakes...analyze...different perspectives..." (14 focus-interviews with 58 pupils).

The pupils use concepts from the curriculum in history randomly and they express confusion and frustration speaking about *assessment* and *grading* of the abilities: *"What is the difference between simple and well developed reasoning?"* et cetera.

The student teachers coming to these training-placement schools try to implement "the codified knowledge" acquired at university. The theory of "formative assessement" and the learning trajectory (figure 2) are the starting points for their planning of lesson-sequences. In their self-evaluations the students describe intentions – not unexpectedly – according to "the codified knowledge". They want to give the pupils "*a road map*" or "*a gps*" for learning and assessements. The idea of "a visible pathway" and "progression" in learning history towards a systematic learning of procedural knowledge is in the forefront when the student teachers making the lesson-plan. The teaching-process and the meeting with teacher-supervisors and pupils create however a complex situation: "School and supervisors have focus upon content-knowledge…abilities appear only now and then – a great difference" (written self-evaluation from student teacher).

The consequences are described by one student: "The progression of my teaching is not visible for the pupils, they walk in a mist rather on a road". One student teacher wants to qualify the procedural knowledge and the abilities in one historical theme – but the supervisor demand instead further content-knowledge for the summative assessment and grading. The student teacher: "the learning process is broken too early, instead I must introduce a new sequence of content knowledge". One conclusion of the teaching-process is given by the student: "There seems to be two roles for the teacher: 1. Teaching for abilities. 2. Testing for content-knowledge – the pupils become confused" (written self-evaluation from student teacher).

These pilot-surveys will be extended. The preliminary results shows however the fruitfulness of using "learning trajectory based instruction" in teacher education and the need for making the progression, the pathway of teaching and learning, visible. Student teachers use the tool and develop reflections upon epistemic beliefs.

## • Project description

The methods which will be used is a combination of quantitative and qualitative approaches in a trajectory following the education of student teachers in history at Stockholm university:

1) Before 1<sup>st</sup> course in "history didactics" at Stockholm university :

First BHQ (Beliefs about History Questionnaire). *BHQ (Beliefs about History Questionnaire)*. This measure samples the teacher students' level of agreement-disagreement on 22 statements. It gives an understanding of participants' epistemic beliefs about history and ways of teaching it. It samples the degree to which Teacher students identify with what I refer to as Copier, Subjectivist, and/or Criterialist beliefs (VanSledright, Maggioni, & Reddy (2011). Interviews of student teachers.

2) First period of training placement in schools (VFU):

Interviews of supervisors (history-teachers) and focus-interviews of pupils. Self-assessments of the student teachers after the same period.

3) Before 2<sup>nd</sup> course in "history didactics" at Stockholm university:

Second BHQ (Beliefs about History Questionnaire). BHQ (Beliefs about history questionnaire). See above. Results will be compared and analyzed.

4) Second period of training placement in schools (VFU):

Interviews of supervisors (history-teachers) and focus-interviews of pupils. Self-assessments of the student teachers after the same period.

5) After Second period of training placement in schools (VFU):

Final BHQ (Beliefs about history questionnaire). BHQ Interviews of student teachers.

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