Title: Coherence in teacher education: What, why and in recognition of complexity?
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Abstract
Previous research has shown that the concept coherence (without further definition) is used very frequently and with very positive connotations in discussions about teacher education (author, 2018). Apparently, coherence as a concept covers a central aspect in teacher educators’ beliefs (Morrison, 2016) which to some extend may stem from experiences with and concerns about complexity and uncertainty. The concept also appears in Danish curriculum analyses (Carlsen, 2016), and among international scholars in the field there is a call for more research. Grossman et al. (2008) for example conclude that despite the increasing emphasis on developing coherent teacher preparation programs the ingredients of coherence remain relatively underexplored. The overall purpose of the present research is to add analyses in the purpose of stimulating critical and collaborative learning conversations among teacher educators (Czerniawski, Guberman & MacPhail, 2017). The study is guided by the research question: Which meanings of the concept coherence appear in teacher educational discussions among Danish teacher educators, in policy documents and in the international research literature? Through new analyses of interviews with teacher educators and other qualitative data (author, 2018) we have identified six different meanings of the concept coherence as seen in a teacher education context. A, as a psychological and learning related concept, focusing on student teachers’ construction of meaning and understanding. B, as a didactical concept related to continuity and progression. C, as a construct to describe organisation and structure of the program. D, as construct to discuss connections between arenas, e.g. the campus-arena and placement schools. E, as an epistemological concept: the nexus between theory and praxis. F, as a concept to describe stable and permanent collegial relationships among teacher educators.

This typology is developed iteratively and is here used as a cross-reference discussing results from two concurrent lines of analyses. These are, a focused review of the international research literature, and analyses of policy documents. Based on narrative synthesis from the research literature we found four themes: 1) coherence seen in opposition to something else e.g. in existing programs, 2) coherence via student teachers’ practical synthesizes, 3) coherence in the curriculum, and 4) critical discussions of coherence in teacher education seen in a democratic society.
Analyses of two different policy documents, national law of teacher education and an evaluation connected to a 2017 reform of teacher education, have shown that two different orientations are dominating in the use of coherence as an educational concept in those two contexts. In the national law text, coherence primary appears as a didactical concept (B) and furthermore in a very specific way in the meaning of ‘intra subject connections’, e.g. the students’ competences to recognize connections in ecosystems in the subject biology. In the evaluation, coherence opposite to this primarily appears connected to the question of relations, or lack of relations, between educational arenas, and between teacher education and schools (D).

The analyses across data sources extend the variety and nuances of the way coherence is used in discussions about teacher education – often with implicit not expressed understandings of what coherence in teacher education is and has to be, and why. It becomes clear that the appeals for more
coherence in teacher education contain differences connected to the approach to the problem. Looking forward, this is a very relevant area for cross-fertilization of ideas in learning activities for teacher educators. This might involve discussions about how working with tensions is necessary and can be a fruitful part of qualification to be a teacher, and that student teachers’ experience of meaning might be stimulated by both patterns and loose ends (Hatlevik, 2014; Mausethagen & Smeby, 2017).

**Methods**
The present research started with new analyses of data from a previous project focusing on teacher educators’ beliefs and fundamental assumptions about the purpose and function of teacher education (author, 2018). This material consisted of eight qualitative interviews with teacher educators from two different programs sampled to represent both the pedagogical/psychological subjects and various fields of subject matter in the integrated Danish teacher education program. The findings from those interviews were validated through meetings with four extra teacher educators and leaders, and additional data sources included logbook reflections from the teacher educators. The six different categories in the framework were iteratively constructed through thematic analyses (Braun & Clarke, 2006), and by integrating inductive and deductive approaches. The micro-perspective from the empirical material (interviews etc.) was triangulated by a macro-perspective (Mausethagen & Smeby, 2017:204) from analyses of international research literature and national policy documents.

The qualitative systematic review looking for ‘themes’ or ‘constructs’ that lie in or across individual qualitative studies (Grant, Booth & Centre, 2009) started by searching Eric, Psych Info and Teacher Reference Centre with the search string ”coherence and teacher education or teacher training and teacher educator”. The search for peer-reviewed articles from 2000-2017 lead to an initial pool of 112 articles. Those were manual sorted after the criteria that `coherence´ as a concept were used to discuss teacher education. Data-analyses consisted of a narrative synthesis.

The policy-documents were sampled pragmatically as official documents very frequently referred to by leaders and teacher educators in Denmark. The selected policy documents are the official consolidation act for teacher education in Denmark, and an external evaluation from the policy level initiated in the frames of the 2017 reform of Danish teacher education (Andersen & Hansen, 2016). The analysis of the consolidation act was inspired by poststructural policy analysis (Bacchi & Goodwin, 2016). This is a critical approach to analysis of political steering and policy documents:”rather than focusing on how people make policy, attention turns to the way policy makes people” (Bacchi & Goodwin, 2016:8). This is referring to Foucault aimed to describe the constitutive power of social truisms. The analysis of the policy documents started by counting the use of “coherence” referred to by Mausethagen and Smeby (2017:211) as a simple but illustrative technique to indicate the use of certain concepts as a starting point for further analysis of how people creates meaning of reality through the use of language.

**Conclusions**
The theoretical and empirical analysis identify categorically different meanings of the concept coherence. One conclusion is that considerable differences are represented in the way the concept occur in different policy documents. In the official consolidation act a rather narrow and ‘internal subject oriented’ meaning (B) occurs while a broader, structural meaning (D) are found in an external evaluation.

Furthermore, differences occur in the way the concept is used and ascribed meaning by teacher educators and in the research literature. The analysis of interviews and logbooks pointed out a certain meaning of the concept expressed by the teacher educators. A meaning, which is not found elsewhere in our analysis. They call for stability and permanents in their work-relations and they see these kinds of relations as coherence (F). In addition, the policy documents express high professional standards in combination with expectations for the teacher educators being proactive in developing the cooperation with the school arena. Apparently, the question of coherence positions the teacher educators in a cross pressure and to some extend without organizational support. Analysis of the research literature show a more nuanced use of the concept coherence. The four themes identified expand the possible meanings of the concept and do only to some extend refer to or correlate with the meanings, that occur in the official documents and among teacher educators. Summing up, coherence appears as an ‘important’ but also as a very open concept. We see a situation calling for theoretical and practical attention. The attention could be in the form of promoting discussions with and about the student teachers’ perceptions of coherence in ways that address the complexity of both teacher education and teaching in schools and about the cross pressure, that teacher educators apparently are placed in, when it comes to frames and demands for coherence.

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