

Conceptions of Truth in Higher Education: A Pillar of Research-Teaching-Nexus

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Abstract

As future professionals, students in higher professional education are expected to learn to apply and create new knowledge. In deciding how to create an educational programme to result in these aims, not only conceptions of 'knowledge', but also the notion of 'truth' is an important part of the debate. In deciding how to connect research and teaching, 'research' can be considered a (but not the only) procedure to provide 'evidence' for the relation between reality and its reflections. This article reports the development and first results of an instrument to measure academics' conceptions of truth. Based on a newly developed measurement instrument academics were asked to share their perception on what can be considered 'true'. A combined PCA and PRINCALS analysis results in four latent factors on truth and three clusters of academics. Implications for the connection of research and teaching are discussed.

Introduction

As future professionals in the current era of 'supercomplexity', being able to gather, apply and create new knowledge can be considered a graduate attribute for students in Higher Professional Education ([Barnett, 2012](#); [Brew, 2010](#)). As an effect in the Dutch institutes for higher professional education there is an increased attention for the connection between research and teaching as a carrier to develop these knowledge related competences. With teaching being the traditional core activity, nowadays, research has an increased influence and importance, both as stand-alone activity, as well as part of the educational programs ([Griffioen & De Jong, 2014](#)).

The debate on what to aim for and how to go about connecting research and teaching in the educational programs is a complex one due to relevant conceptions of lecturers, managers and curriculum developers that often stay implicit. And students' conceptions are not often asked. A number of studies have been conducted on academics' and students' beliefs of knowledge, knowing, and knowledge application in specific fields ([e.g. Joram, 2007](#)), or in relation to student learning ([e.g. Tillema & Orland-Barak, 2006](#)). In addition to 'knowledge', the notion of truth is important as a foundation in the perspective of connecting research and teaching in higher education, since 'research' can be considered a (but not the only) procedure to provide 'evidence' for the relation between reality and its reflections; a justification of what can be considered 'true' ([Schommer-Aikins & Easter, 2006](#)). Hence, 'truth' *may be interpreted as reflections of reality based on evidence which is determined by an understanding of reality* ([Howell, 2014](#)). But one can still wonder: 'what reality', 'what evidence' and 'what reflections'? This implies that the role of research and the character of knowledge in teaching can be dependent on academics' conceptions of truth, as the more fundamental epistemological conditions underlying conceptions of research, teaching and knowledge ([Alexander, Winters, Loughlin, & Grossnickle, 2012](#)).

Where truth comes in play as part of previous studies, often 'knowledge' as a primary construct is considered ([e.g. Tillema & Orland-Barak, 2006](#)), or 'truth' is considered a unified entity ([e.g. Schommer-Aikins & Easter, 2006](#)), where one can presume that different beliefs on truth will imply different configurations of connecting research and teaching. For instance the more relativist belief of 'truth as consensus' will result in a very different curriculum for students than a more absolute belief of 'truth as corresponding to facts'. This article reports the development and first results of an instrument to measure academics' conceptions of truth.

Method

Research Question

What conceptions of truth can be distinguished among academics in higher professional education?
What are the similarities and differences between colleagues with similar conceptions of truth?

Sample

Academics of six Dutch institutes for professional higher education were asked to complete an extensive questionnaire on research-related topics ($N = 1424$).

Variables

The research instrument consisted of 22 binominal items and was newly developed based on six philosophical theories of truth (*example items*):

- a) Correspondence - *'What someone says is true if it is as things in the world actually are'*;
- b) Coherence - *'The truth of a statement is based on the coherence with other statements'*;
- c) Pragmatism - *'Something can be true in a context where it works, while untrue in another context where it does not work'*;
- d) Consensus - *'Something is true if it is agreed on (or could have been) by a specific group of more than a single person'*;
- e) Constructivism - *'Facts are created by social experience, human perception and contentions'*;
- f) Redundancy - *'It has no use to say something is true or untrue: it does not add anything'*.

Analysis & Findings

A Principal Components Analysis (PCA) with Oblique rotation in SPSS22 based on Maximum Likelihood, combined with item analysis and reliability analysis resulted in four latent factors on academics' truth conceptions:

- a) Pragmatic Constructivism (6 items; Cronbach's Alpha=.75) which combines several notions from Constructivism, added with some aspects of Pragmatism. In this factor something constructed by people can be considered true if it works in a certain context.
- b) Correspondence (4 items; Cronbach's Alpha=.68): something is true if it is verifiable with facts in the real world. The items show that scientific research is considered to play an important role in verification.
- c) Group-based Coherence (4 items; Cronbach's Alpha=.61): respondents consider beliefs to be important as foundation of truth, but add that there is a certain coherence needed for beliefs to result in truth.
- d) Redundancy (3 items; Cronbach's Alpha=.58): notions of truth can be considered redundant.

The last factor has a relatively low (internal) reliability of just below .6, although the factor analysis clearly shows a latent factor. Based on the fact that all items were scored on a binominal scale with less easily results in shared variance between items, chosen was to include this factor in further analysis. The four combined latent factors explain 49.6% of the variance and show a close model fit based on $\chi^2(df)=190.169(74)$; $p<.000$, and RMSEA=.033.

A Hierarchical cluster analysis on the respondents' scores on the four latent factors of truth, resulted in three distinguishable clusters. A PRINCALS procedure combined the clusters and the latent factors of truth and resulted in a two dimensions, explaining 86,6% of the variation in the data. The resulting two-dimensional manifold indicates how the clusters and the latent factors are related.

The Analysis of Variance (ANOVA) showed that the differences between three clusters on conceptions of truth show how cluster A base their conception of truth on a notion of facts related to an external world, while they have a lot smaller belief in truth based on constructivism and pragmatism, while they do consider truth to be an important issue. Cluster A contains a larger number of economics

and technical academics. Cluster B conceives as truth being more based on group-based coherent beliefs than on world-related facts, and has a relatively lower educational level. Cluster C – similar to Cluster A - base their conceptions of truth on the idea that truth is based on facts related to an external world, but different from Cluster A – additionally their conceptions of truth are influenced by what works in practice. Cluster C scores on average on all personal variables.

The implications of the characteristics of the latent factors of truth and the clusters of academics found in this study for the research-teaching-nexus will be discussed during the presentation.

References

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