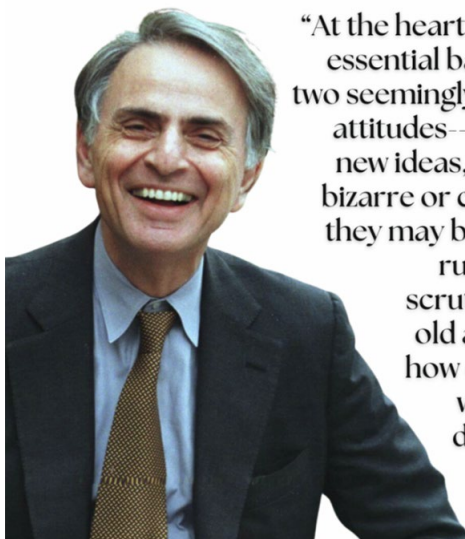


Evidenzinformierte Nachhaltigkeitsbildung: Mythen entlarven und als Lernchancen und -katalysatoren nutzbar machen



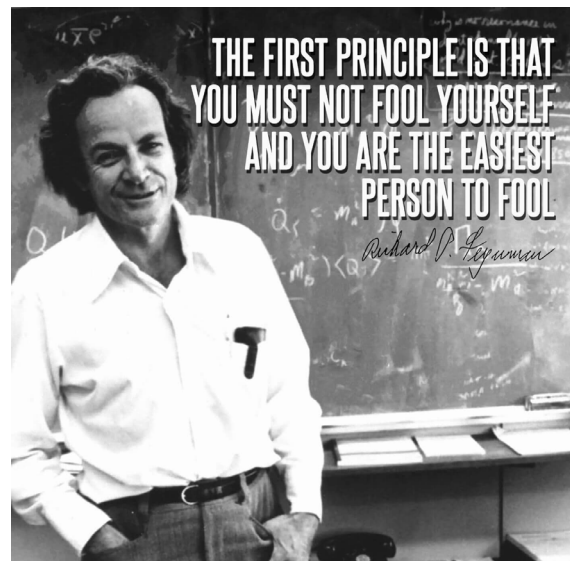
Dr. Stefan T. Siegel, Universität St.Gallen (HSG)

Zwei Leitsätze, die mich in meiner Arbeit leiten

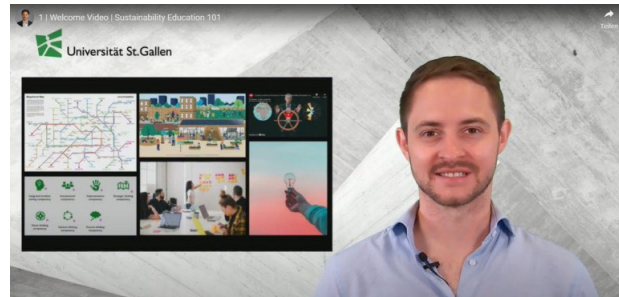


“At the heart of science is an essential balance between two seemingly contradictory attitudes—an openness to new ideas, no matter how bizarre or counterintuitive they may be, and the most ruthless skeptical scrutiny of all ideas, old and new. This is how deep truths are winnowed from deep nonsense.”

Carl Sagan



Zwei Gründe, warum ich heute hier bin:



Onlinekurse

- [Educational Myths Debunked 101 \(EMD101\)](#)
- [Sustainability Education 101 \(SE101\)](#)
- Zum **Nachlesen**: Siegel, S. T. (2025). Educational Myths Debunked. Insights into the Development, Implementation, and Evaluation of a Course for University Faculty. *Zeitschrift für Hochschulentwicklung*, 20(1). <https://doi.org/10.21240/zfhe/20-1/03>

Ein dritter Grund, warum ich vermutlich heute hier bin:

 **University of St.Gallen**
Institute of Business Education
and Educational Management

Project MYTHSE

Identifying, Understanding, and Challenging (Potential) Myths in and about Sustainability Education

Dr. Stefan T. Siegel, IWP-HSG

Background & Relevance

- **Relevance:** Growing importance of the hot topics: *sustainability education* (e.g., Jones et al., 2010) and *educational myths* (e.g., Christodoulou, 2014; de Bruyckere et al., 2020)
- **Research Gaps:** The field and phenomenon of myths in and about sustainability education (MYTHSE) remain largely unexplored with multiple research gaps (Miles, 2017) unaddressed (Siegel, i.p.)
- **Object of Research:** MYTHSE, i.e., a) misconceptions b) about teaching and learning phenomena concerning sustainability that are c) widespread, d) often persistent, however e) not backed by research and (scientific) evidence (Lilienfeld et al., 2010; Sinatra & Jacobson, 2019; Siegel, i.p.)
- **Examples:**
 - Sustainability (education) has nothing to do with me and my subject area (e.g., refutation by Sterling, 2012)
 - The Higher Educated People Are, the More They Act Sustainably (e.g., refutations by Berry, 1987; Orr, 1994)

Overall Aims:

- Developing a research agenda (Zawacki-Richter & Anderson, 2014) with multiple studies for generating evidence on the field and phenomenon of MYTHSE
- Effectively address MYTHSE by identifying, understanding, and challenging questionable beliefs using evidence-informed protocols and tools
- Create an SE-Mythology, i.e., a collection of MYTHSE and their refutations (e.g., Lilienfeld et al., 2010)

"Science must begin with myths and with the criticism of myths" (Popper, 1963, 63)

Identifying, Understanding, and Challenging (Potential) MYTHSE is Crucial for an Evidence-informed, Effective, and Ethically-responsible Sustainability Education



Studies of the Project MYTHSE

Study 1

- Preregistered scoping review to map, describe, and understand the field, identifying key publications, authors, and misconceptions.

Study 2

- Preregistered qualitative interviews with experts to explore the concept of MYTHSE and establish the research strand, including a podcast for data collection and analysis.

Study 3

- Development of a MYTHSE inventory through surveys with university instructors to assess psychometric properties and explore relationships with critical thinking and other relevant factors.

From Insight to Impact

- Establishing a new strand of research, providing insights into the landscape of educational myths in sustainability, and informing evidence-based practices for educators, researchers, and policymakers.
- Push the boundaries of theorizing (sustainability) education and expand educational myth research.

More Information



Selected References

De Bruyckere, P., Kordoun, P. & Haidich, C. (2020). *More Urban Myths About Learning and Education: Challenging Educators' Extraordinary Claims, and Alternative Facts Knowledge*. Lilienfeld, S. O., Lynn, S. J., Rancin, J., & Reysen, B. L. (2010). *50 great myths of popular psychology: Shattering widespread misconceptions about human behavior*. Wiley-Blackwell.

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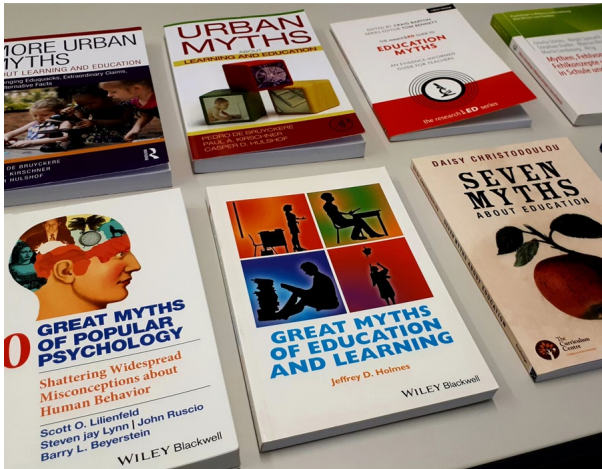
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Sterling, P. S. (2012). *The Future Fit Framework: An introductory guide to teaching and learning for sustainability*. 48.

Kontakt

Dr. Stefan T. Siegel, stefan.siegel@unisg.ch
Institut für Wirtschaftspädagogik (IWP), HSG

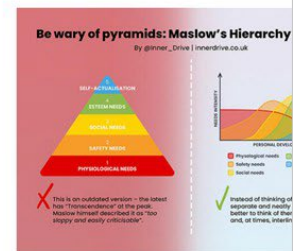
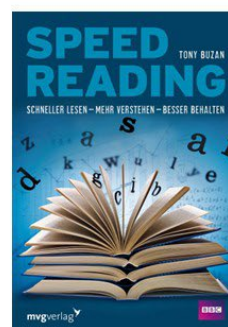
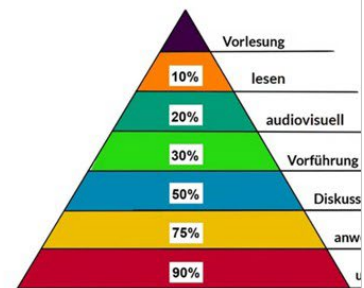
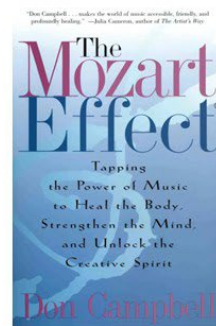
Bildungsmythen und Nachhaltigkeitsbildung (BNE) sind Hot Topics und Dauerbrenner zugleich



(e.g., De Bruyckere et al., 2020) (e.g., Macintyre et al., 2025)

Viele bunte Bildungsmythen...

But there are many more...



(Screenshots)

(aus EMD101)

Bildungsmythen a) sind prävalent, b) haben verschiedene Ursachen, c) potenziell negative Konsequenzen für verschiedene Stakeholder d) und sind leider extrem hartnäckig, e) aber es gibt Gegenmittel!



(Siegel, 2024)

Solche Mythen gibt es auch in der und über Nachhaltigkeitsbildung

 **University of St.Gallen**
Institute of Business Education
and Educational Management

Exploring Experts' Perspectives on the Field and Phenomenon of Myths in and About Sustainability Education: A Problem-centered, Podcast-based Interview Study

Dr. Stefan T. Siegel, IWP-HSG

Background & Relevance

- Relevance:** Growing importance of the hot topics: sustainability education (e.g., Macintyre et al., 2025) and educational myths (e.g., Christodoulou, 2014; de Bruyckere et al., 2020)
- Research Gaps:** The field and phenomenon of myths in and about sustainability education (MYTHSE) remain largely unexplored with multiple research gaps (Miles, 2017) unaddressed (Siegel, i.p.)
- Object of Research:** MYTHSE, i.e., a) misconceptions b) about teaching and learning phenomena concerning sustainability that are c) widespread, d) often persistent, however e) not backed by research and (scientific) evidence (Lilienfeld et al., 2010; Sinatra & Jacobson, 2019; Siegel, i.p.)
- Examples:**
 - Sustainability (education) has nothing to do with me and my subject area (e.g., refutation by Sterling, 2012)
 - The higher educated people are, the more they act sustainably (e.g., refutations by Berry, 1987; Orr, 1994)

Overall Research Objectives

- This study aims to explore the emerging field of myths in and about sustainability education (MYTHSE), examining their characteristics, causes, consequences, and strategies for addressing them.
- Developing a research agenda (Zawacki-Richter & Anderson, 2014) with multiple studies for generating evidence on the field and phenomenon of MYTHSE
- Create an SE-Mythology, i.e., a collection of MYTHSE and their refutations (e.g., Lilienfeld et al., 2010)

Methods

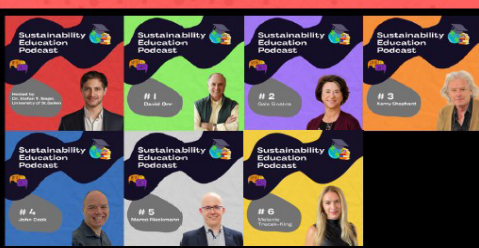
Data Collection

- Pre-registered, problem-centered, podcast-based qualitative interview study (Döringer, 2021; Witzel & Reiter, 2012) currently 7 international experts in among others sustainability education, cognitive psychology, and misinformation research

International Experts from Different Disciplines Agree:

Myths in and about Sustainability Education (MYTHSE)

a) Have Various Causes
b) Are Prevalent
c) Can Do Harm
d) Should Be Challenged



Listen to the Podcast



<https://sustainabilityeducation.captivate.fm/>



Contact
Dr. Stefan T. Siegel, stefan.siegel@unisg.ch
Institut für Wirtschaftspädagogik (IWP), HSG

Data Analysis

- Qualitative content analysis, employing a mix of inductive and deductive coding to identify recurring themes (Kuckartz & Rädiker, 2023)

Preliminary Results

- Diverse expert perspectives on the nature of MYTHSE
- Experts point to the importance of investigating MYTHSE but also significant conceptual, methodological, and practical challenges
- Causes of MYTHSE include e.g., cognitive biases, logical fallacies, and cultural narratives, i.e., *foundation myths*.
- Detrimental consequences of MYTHSE, such as perpetuating ineffective teaching practices and/or resistance to integrating sustainability into curricula.
- Strategies addressing MYTHSE include enhancing educational research, improving (teacher) education, and fostering mental immunity (Norman et al., 2024) and critical thinking in educators and learners.

Discussion

- Despite its limitations (e.g., cross-sectional study, selective sample), this study underscores the importance of addressing MYTHSE as an own research agenda (Zawacki-Richter & Anderson, 2014).
- Experts advocate for moving beyond debunking myths toward prebunking, i.e., inoculation strategies (van der Linden, 2023) that cultivate resilience against misinformation.
- The findings call for a systematic taxonomy of MYTHSE (which is part of another study and work in progress, rigorous educational research, and professional development.

Selected References

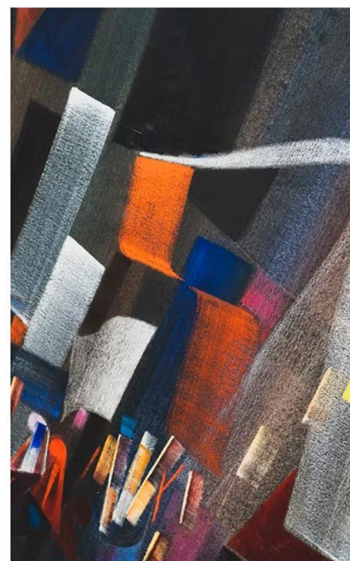
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- Macintyre, T., Tilley, G., & Hays, A. E. J. (2025). Education and learning for sustainable futures: 20 years of learning for environmental and global knowledge. *Knowledge*.
- Norman, A., van der Linden, S., & Johnson, L. (2024). On Media Health Immune System? (2024). *Scholarly Paper No. 4881150*. Social Science Research Network.

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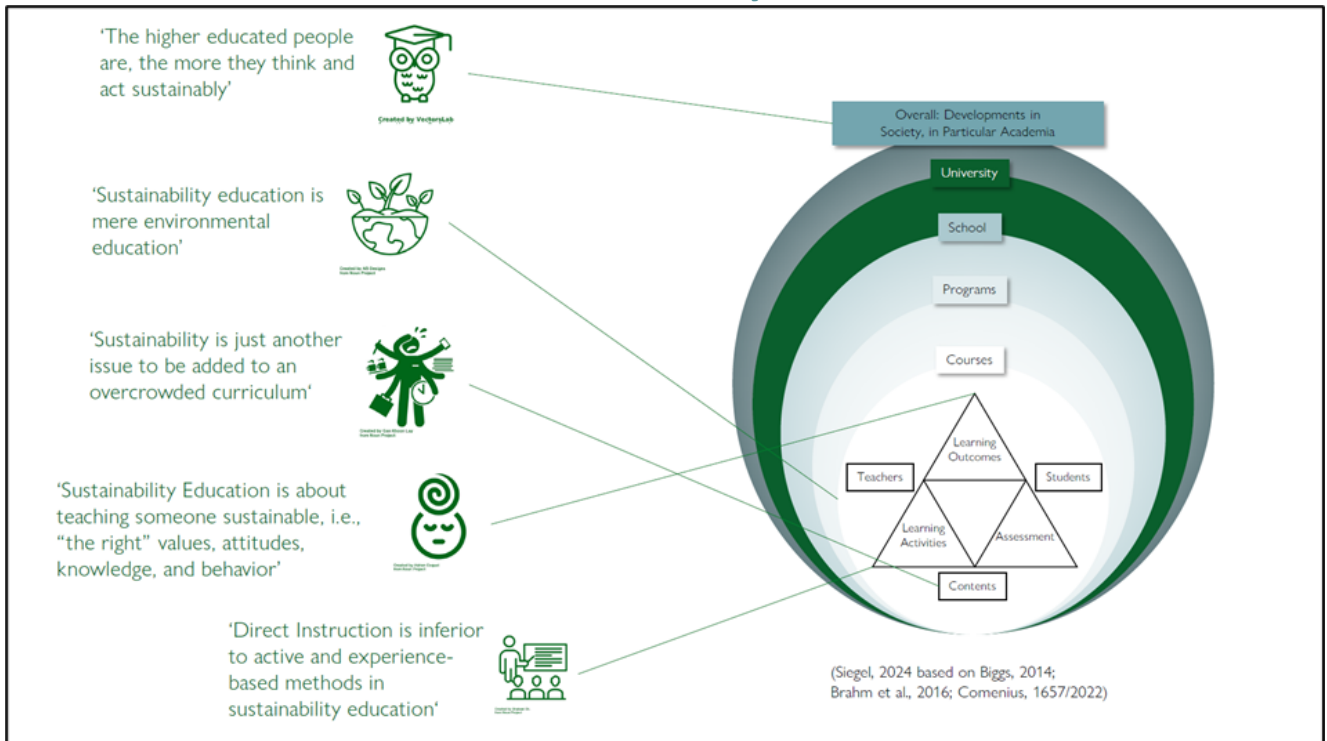
(Siegel, 2025; <https://www.alexandria.unisg.ch/handle/20.500.14171/122053>)

Mein Aufgabe des Mythbusting verstehe ich als Wissenschaft, Handwerk und Kunst



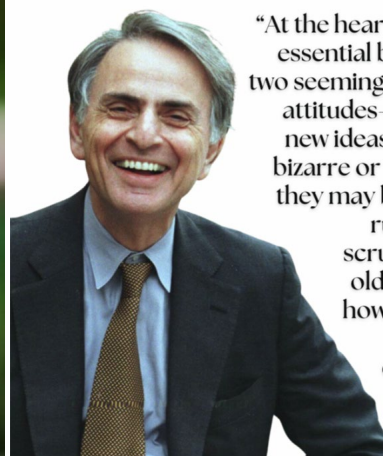
- Zum Nachlesen:** Siegel, S. T. (2024). The science, craft, and art of mythbusting. *Journal Trends und Themen aus der Wissenschaftskommunikation*. <https://www.wissenschaftskommunikation.de/the-science-craft-and-art-of-mythbusting-79205/>

Heuristisches Rahmenmodell hilft, BNE-Mythen zu klassifizieren



(Siegel, 2025, accepted)

Leitend in Forschung und Lehre Arbeit *Intellektuelle Bescheidenheit und Kritisches Denken*



"At the heart of science is an essential balance between two seemingly contradictory attitudes--an openness to new ideas, no matter how bizarre or counterintuitive they may be, and the most ruthless skeptical scrutiny of all ideas, old and new. This is how deep truths are winnowed from deep nonsense."

Carl Sagan

(Siegel, i.p.)

Warum Mythen besser als ihr Ruf sind und wie ich sie in der Lehre einsetze



- **Zum Nachlesen:** Siegel, S. T. (2025). When Educational Myths Are Better Than Their Reputation. Harnessing Misconceptions as Learning Opportunities and Catalysts. *Evidence-informed Sustainability Education (EvSusEd)*. <https://doi.org/10.58079/13h49>

Welche potenziellen BNE-Mythen sehen Sie (bei sich oder) bei anderen im Lehralltag?

Oder: Wo spüren Sie kognitive Dissonanz? Wo gibt es Kontroversen und Debatten?



Ich freue mich sehr über Vernetzung und Austausch zu BNE

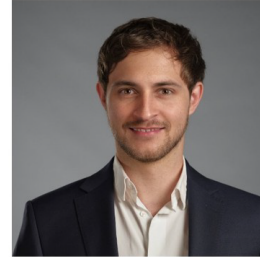


Institute of Business Education
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Dufourstr. 40a
9000 St Gallen, Switzerland

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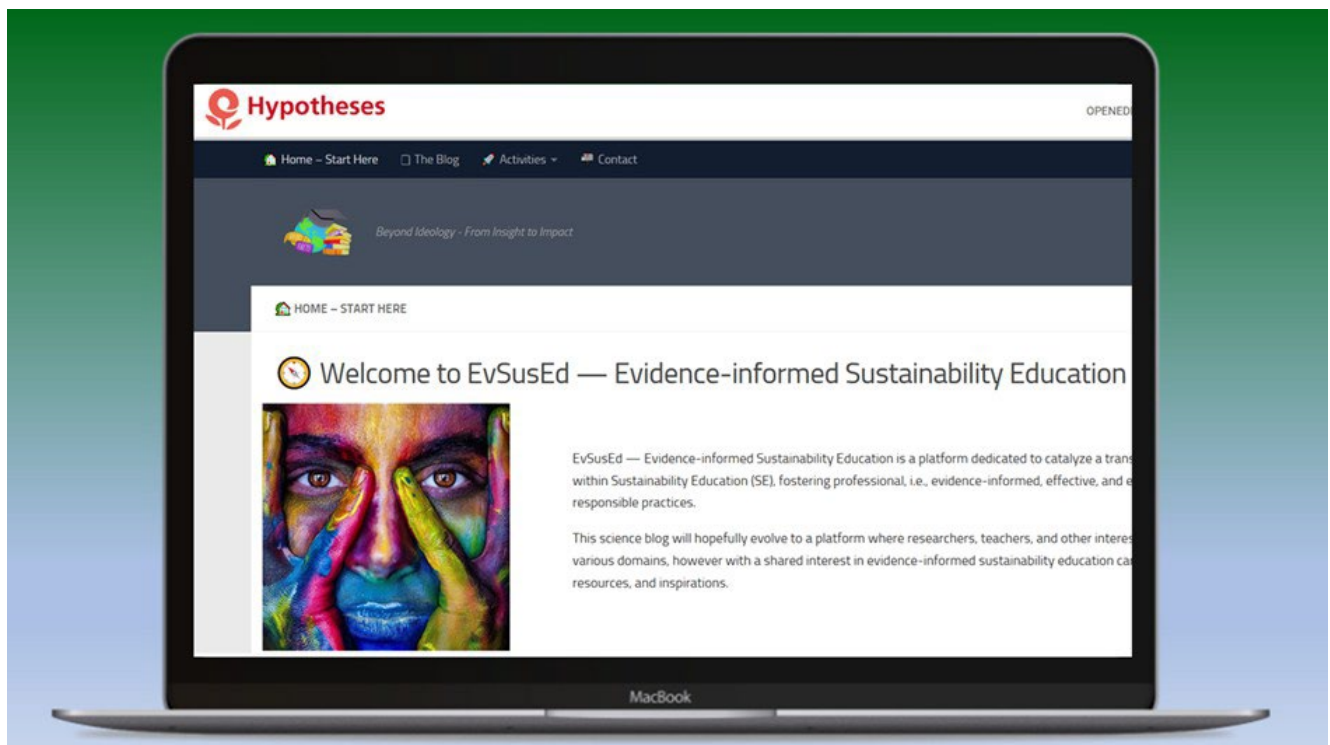
Dr. Stefan T. Siegel

✉ stefan.siegel@unisg.ch

☎ +41 71 224 75 91

📧 [@StefanTSiegel@bildung.social](https://www.bildung.social/@StefanTSiegel)

Mehr Informationen auf meinem Wissenschaftsblog Evidence-Informed Sustainability Education (EvSusEd)



Abstract

Die Bewältigung der aktuellen, globalen und verzwickten Probleme erfordert unter anderem transformative Ansätze in der Hochschulbildung. Mythen zu Nachhaltigkeitsbildung behindern oft ihre wirksame Umsetzung. Dieser Vortrag widmet sich der evidenzinformierten Nachhaltigkeitsbildung, entlarvt verbreitete Mythen und zeigt, wie diese als Lernchancen und -katalysatoren nutzbar gemacht werden können. Der Vortrag verbindet wissenschaftlich fundierte Erkenntnisse mit praxisorientierten Beispielen und bietet Impulse für eine kritisch-konstruktive Nachhaltigkeitsbildung in der (Hochschul-)Lehre.

Informationen zum Referenten:

Dr. Stefan T. Siegel ist Forscher und Dozent am Institut für Wirtschaftspädagogik (IWP) an der Universität St. Gallen (HSG). Er ist Autor (inter)nationaler Artikel und Bücher und verfügt über mehrjährige Berufserfahrung in Forschung und Lehre im (Hochschul-)Bildungsbereich. Für seine Arbeit wurde er mit mehreren Preisen ausgezeichnet. Seine aktuellen Arbeitsschwerpunkte sind erziehungswissenschaftliche Theorien, Bildungsmythen, Bildungsmedien, Wissensmanagement und Nachhaltigkeitsbildung. Kontakt: stefan.siegel@unisg.ch