

Reading in a Digital Environment

Media Use, Functional
Literacies and Future
Challenges for Universities

November 8, 2019

Universität Regensburg

summerprogramm

Reading

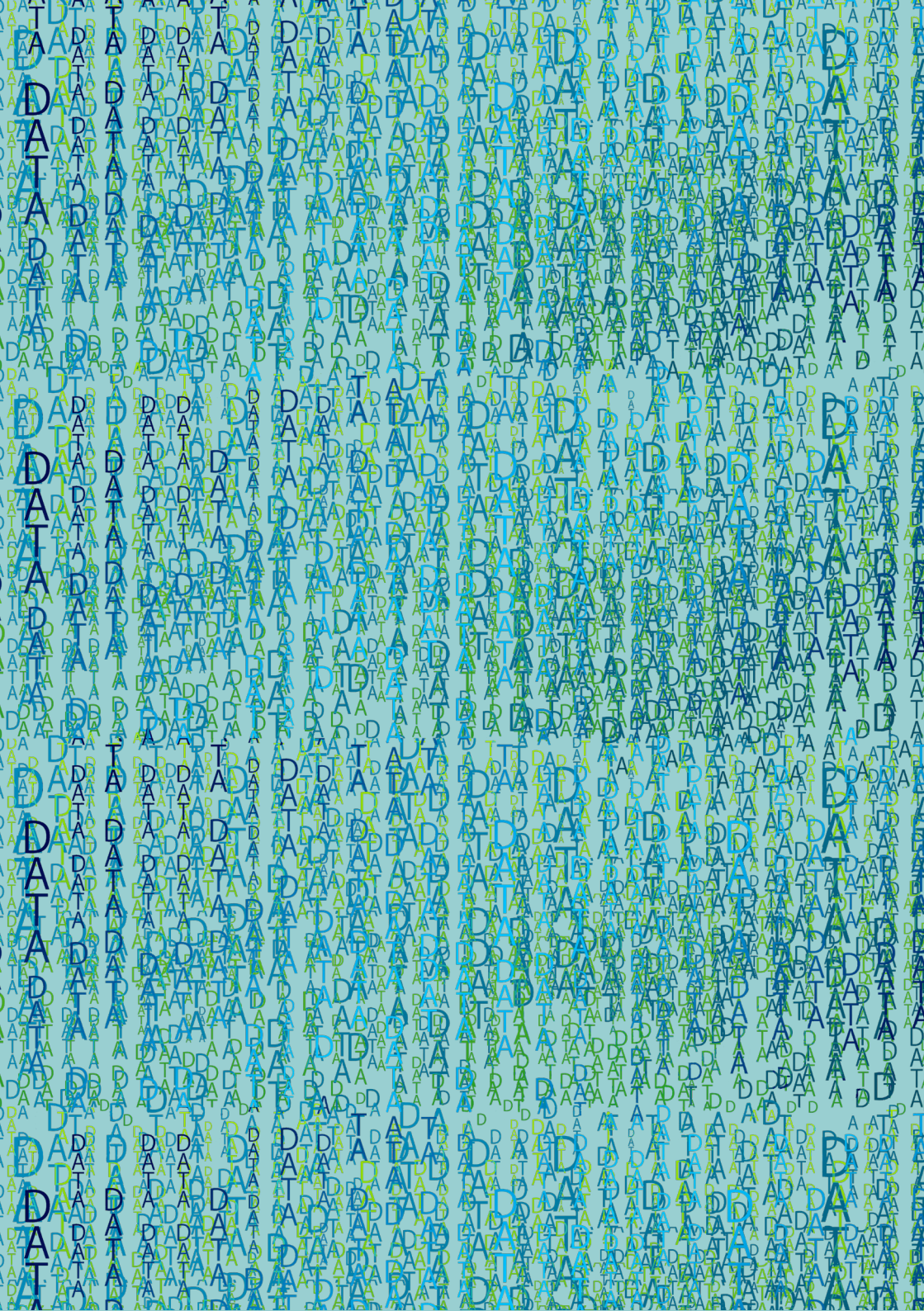


Universität Regensburg

Fritz Thyssen Stiftung
für Wirtschaftsförderung



Internationale
Buchwissenschaftliche
Gesellschaft



Reading in a Digital Environment: Media Use, Functional Literacies and Future Challenges for Universities

International Conference

Universität Regensburg, November 8, 2019



Universität Regensburg
Key Competencies Working Group
Universitätsstraße 31
93053 Regensburg

<https://go.ur.de/reading>

Contact
reading.conference@ur.de

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Greeting

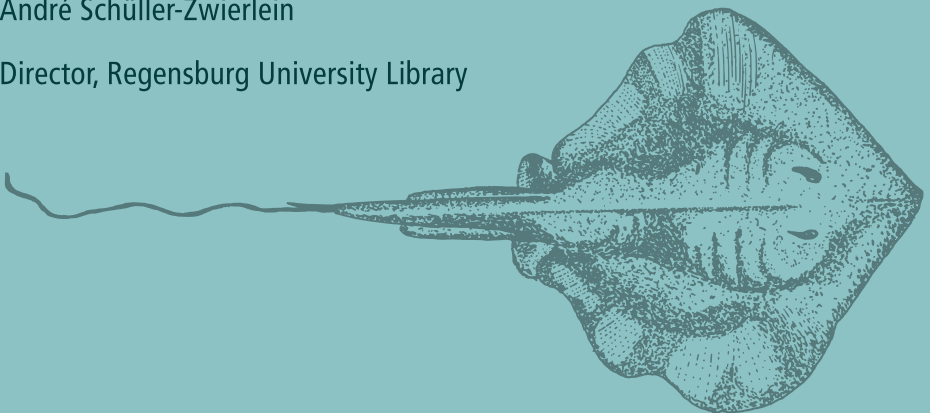
Dear participants,

a warm welcome to Universität Regensburg! With the University Library at its centre, the university is focused on reading – reading is at the centre of all research and study activities. Reading, however, goes beyond a single literacy. Reading processes serve different functions and have radically different goals. They require different literacies and competencies. This picture is further complicated by the continuous development of new reading media and forms of use in a digital environment. Very few studies have hitherto addressed this central concern for the university of the future. Our international conference “Reading in a Digital Environment” attempts to fill this gap by focusing on two key issues: 1. the importance of enhanced reading literacy for academic success; and 2. the cognitive impact of the use of digital media. Both issues are critically relevant with regard to the increasing digitization of higher education institutions. The conference will accordingly suggest strategic directions for the future development of universities and other higher education institutions. Meanwhile, Regensburg is famous for its hospitality and its spectacular historic city centre close to the Danube. My team and I hope you’ll enjoy the conference and its surroundings and wish you a very pleasant stay in our home town,

yours sincerely

André Schüller-Zwierlein

Director, Regensburg University Library



General Information

Conference venue

The conference takes place in the Vielberth Building (Universitätsstraße 31, 93053 Regensburg). The keynote and the talks are held in room H24, the poster session in the foyer of the Vielberth Building. Please refer to pages 8ff for detailed maps.

Conference office

On Thursday, November 7, 2019 the conference office can be found in the Vielberth Building in room VG 0.14 (behind H24). On Friday, November 8, 2019 it can be found in room VG 0.04 (to the left of room H24). It is open on Thursday from 3:00 to 5:00 p.m. and on Friday from 8:00 to 11:30 a.m.

Conference name badge

Participants are kindly asked to wear the conference badge at all times during the conference.

If you have any questions, you can recognize the staff by the colored name badges.

Certificate of attendance

The certificate of attendance will be provided on-site when registering for the conference in the conference office. It can be found in the conference folder.

WiFi internet access

Universität Regensburg provides free wireless internet access for conference participants.

WLAN Name: conference

Password: unirconf

Sponsors

Fritz Thyssen Foundation



International Book History Society



Internationale
Buchwissenschaftliche
Gesellschaft



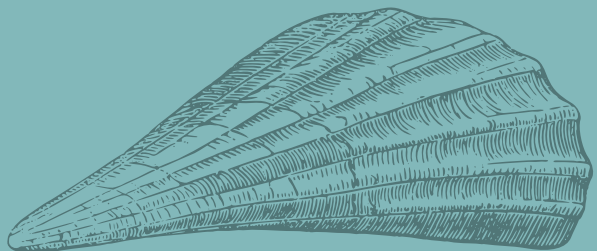
Organisers

Key Competencies Working Group, Universität Regensburg

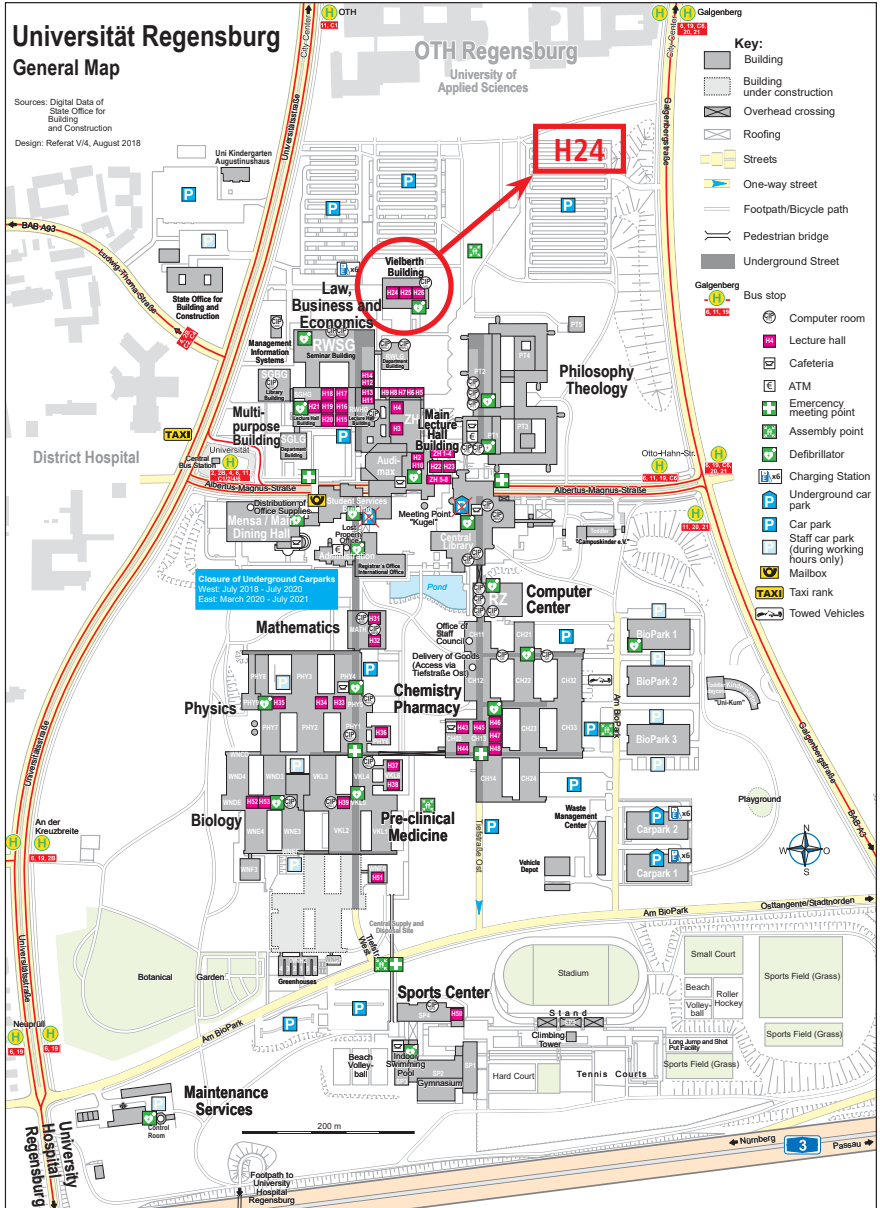
This unique working group combines academic research with the practice of information literacy and writing skills training in academic teaching, study guidance, and library practice. Members of the working group include the Chair of Social, Labor, Organizational and Economic Psychology (Prof. Dr. Peter Fischer), the Chair of Media Informatics (Prof. Dr. Christian Wolff), the Chair of Teaching and Learning German Language and Literature (Prof. Dr. Anita Schilcher), the Director of the University Library Regensburg (Dr. André Schüller-Zwierlein) as well as other relevant institutions of the university such as the Central Department for Course Counseling and the Center of Language and Communication. The aim of the working group is to incorporate aspects of current, multidisciplinary research into the practical teaching of academic competencies.

International Book History Society (Internationale Buchwissenschaftliche Gesellschaft, www.buchwiss.de)

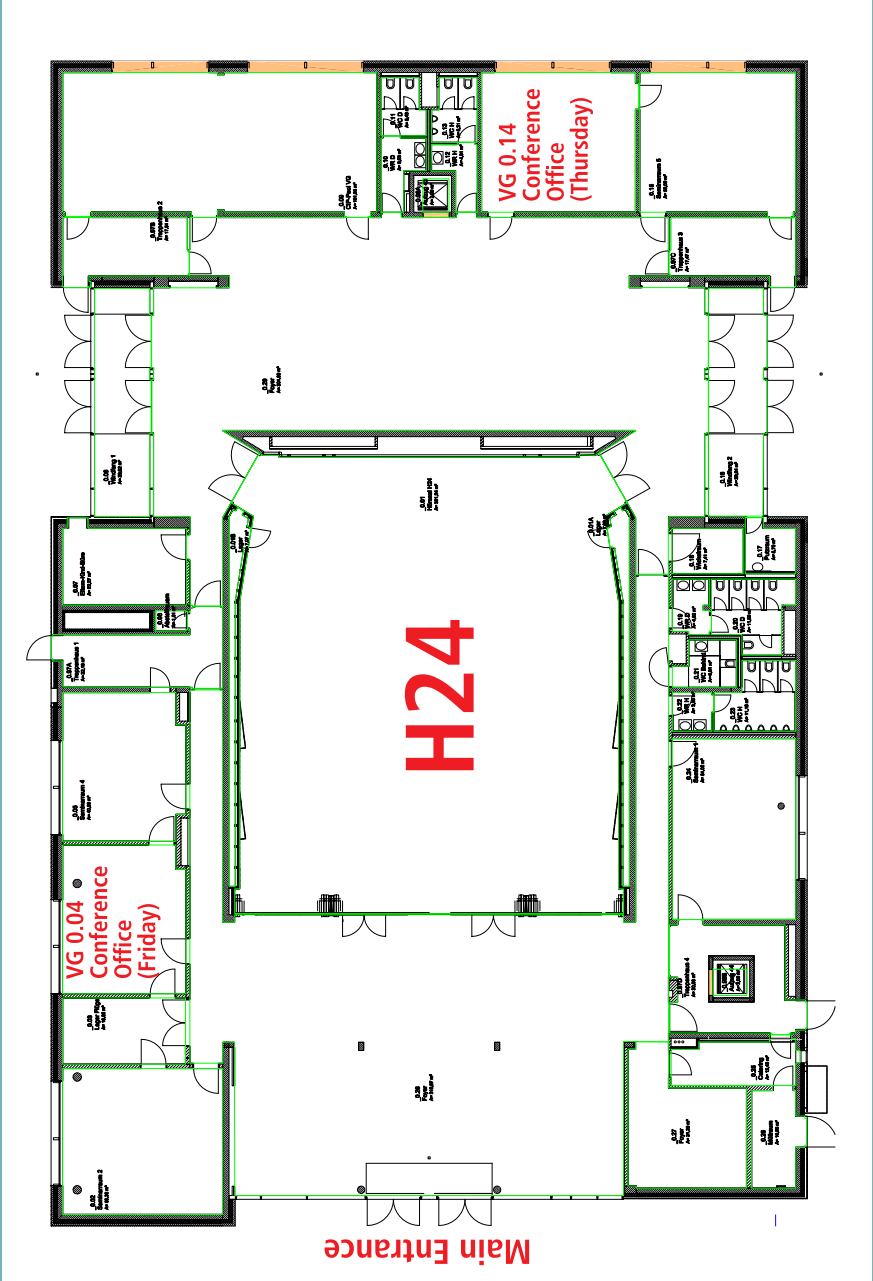
The focus of its programme and event activities is in contemporary issues relating to the book and book market since 1945. The IBG offers scholars, authors, publishers, IT and printing specialists and librarians a platform to consider the medium of the book in an interdisciplinary perspective. The book should be understood in the context of media culture in its entirety in order to grasp more precisely its forms and functions with regard to other media.



Detailed map of the campus



Vielberth Building, H24 and Conference Office



Montag - Freitag		Samstag		Sonn-/Feiertag	
05	40		50		
06	00	20 40 50 58	20 50	20	
07	08	18 28 38 48 58	20 49	20	
08	08	18 28 38 48 58	09 29 49	20	
09	08	18 28 38 48 58 ^A	09 29 49	20	48
10	08	18 ^A 28 38 ^A 48 58 ^A	09 29 49	18	48
11	08	18 ^A 28 38 ^A 48 58 ^A	09 29 49	18	48
12	08	18 ^A 28 38 ^A 48 58 ^A	09 29 49	18	48
13	08	18 ^A 28 38 ^A 48 58 ^A	09 29 49	18	48
14	08	18 ^A 28 38 ^A 48 58	09 29 49	18	48
15	08	18 28 38 48 58	09 29 49	18	48
16	08	18 28 38 48 58	09 29 49	18	48
17	08	18 28 38 48 58	09 29 49	18	50
18	08	18 28 ^A 38 48 ^A 58	09 29 49	20	50
19	08 ^A	20 35 50	19 50	20	50
20	05 ^A	20 50	20 50	20	50
21	20	50	20 50	20	50
22	20	50	20 50	20	50
23	20	50	20 50	20	50
00					
01					

A = bis HBF/Alberstraße

gültig ab 10.09.2019

Fahrwege mit Fahrzeit in Minuten

- ↑ Klinikum
- ↑ Universität
- ↑ 2 Otto-Hahn-Straße
- ↑ 3 Tech/Campus/OTH
- ↑ 4 Haydnstraße
- ↑ 5 HBF Süd/Arcaden
- ↑ 7 HBF/Alberstraße
- ↑ 12 Justizgebäude
- ↑ 15 Bismarckplatz
- ↑ 18 Ostdeutsche Galerie
- ↑ 19 Gumpelzheimerstraße
- ↑ 20 Albertus-Magnus-Gymnasium
- ↑ 21 Josef-Adler-Straße
- ↑ 22 Buessenerstraße
- ↑ 23 Clermont-Ferrand-Allee
- ↑ 24 Wernerwerkstraße
- ↑ 25 Hermann-Köhl-Straße
- ↑ 26 Sparkasse
- ↑ 28 Roter-Brach-Weg

Montag - Freitag		Samstag	Sonn-/Feiertag
05	34 57		
06	23 43	35	
07	02 22 42	05 35 59	49
08	02 22 42	19 39 59	49
09	02 22 42	19 39 59	34
10	02 22 42	19 39 59	33
11	02 22 42	19 39 59	33
12	02 22 42	19 39 59	33
13	02 22 42	19 39 59	33
14	02 22 42	19 39 59	33
15	02 22 42	19 39 59	33
16	02 22 42	19 39 59	33
17	02 22 42	19 39 59	33
18	02 22 42	19 39	34
19	04 34	04 34	34
20	05 35	05 35	35
21	05 35	05 35	35
22	05 35	05 35	35
23	05 35	05 35	35
00	05 ^A 05 ^{FR}	05 ^A	

Am 24.12. und 31.12. Verkehr wie an Samstagen falls diese Tage nicht auf einen Sonntag fallen. Einschränkungen hierzu entnehmen Sie Gültig ab 13.04.2018
 bitte der Tagespresse oder unter www.rvv.de

A = bis HBF/Albertstraße **FR** = nur freitags

Info: RVV-Kundenzentrum, Hemauerstr. 1, 93047 Regensburg, 0941-601 28 88, www.rvv.de, Änderungen vorbehalten.

Fahrwege mit Fahrzeit in Minuten

- Hamm-Hichert-Straße
- Universität
- 1-OTH Regensburg
- 2-Oberer kath. Friedhof
- 3-Engp. Zentralfriedhof
- 6-HBF Süd/Arcafen
- 8-HBF Albersstraße
- 14-Dachauplatz
- 17-Thundorferstraße
- 18-Fischmarkt
- 19-Kepplerstraße
- 21-Arnulfplatz
- 23-Ostdeutsche Galerie
- 24-Hans-Sachs-Straße
- 25-Obermaierstraße
- 27-Domerstraße
- 29-Boesserstraße
- 30-Weinweg
- 31-Weslheim
- 33-Westbad
- 35-Wernerwerkstraße

Programme

Thursday, November 7, 2019

4:00 p.m., Meeting point: Vielberth Building, H24
Guided Tour Eye-Tracking-Classroom

6:00 p.m., Haus Heuport, Domplatz 7, 93047 Regensburg, first floor
Dinner at Haus Heuport

Friday, November 8, 2019

Vielberth Building, H24

from 8:00 a.m.

Registration and Coffee

9:00 - 9:30 a.m.

Welcome

Prof. Dr. Nikolaus Korber, Universität Regensburg, Germany

Dr. André Schüller-Zwierlein, Regensburg University Library, Germany

09:30 - 10:45 a.m.

Keynote Talk

**Reading on Paper and Screens: What Do We Know, and
What Should We Know More About?**

Prof. Dr. Anne Mangen, University of Stavanger, Norway

10:45 - 11:15 a.m.

Break

11:15 - 12:00 a.m.

**Examining Print and Digital Reading: The Importance of
Readers' Individual Differences**

Prof. Dr. Peter Afflerbach, University of Maryland, Washington
D.C., USA

12:00 a.m. - 1:00 p.m.
Lunch

1:00 - 1:45 p.m.
**Why Reading Multiple (Digital) Documents Is That Complicated –
and What Remedies This Pain: Proven Methods to Enhance
Processes of Integration and Sourcing**
*Prof. Dr. Maik Philipp, Zurich University of Teacher Education,
Switzerland*

1:45 - 2:30 p.m.
**Fostering Undergraduate Students' Information Evaluation
on the Internet**
Prof. Dr. Ladislao Salmerón, University of Valencia, Spain

2:30 - 3:15 p.m.
Coffee Break and Poster Session

3:15 - 4:00 p.m.
Disrupted Reading
*Prof. Dr. Ulrich Johannes Schneider, Leipzig University Library,
Germany*

4:00 - 4:15 p.m.
Summary & Future Challenges

Saturday, November 9, 2019

9:00 - 10:30 a.m., Meeting point:
Haus Heuport, Domplatz 7, 93047 Regensburg
City Tour "Regensburg - Experience a Historic City"

Guided Tour – Eye-Tracking-Classroom at Universität Regensburg

Guided Tour: November 7, 2019, 4:00 p.m.

Meeting point: Universität Regensburg, Vielberth Building, H24

On October 18, 2019, an Eye-Tracking Laboratory was opened on the Regensburg campus, which houses a new research infrastructure at Universität Regensburg with around 15 networked high-performance Eye Trackers. The interdisciplinary institution is an inter-university project of Universität Regensburg and OTH Regensburg (Ostbayerische Technische Hochschule Regensburg).

The laboratory is operated by the Software Engineering Laboratory for Safe and Secure Systems (LaS3) of the OTH Regensburg and the Chairs of Learning and Instruction (Pedagogy III) and Media Informatics of Universität Regensburg. The Eye-Tracking-Classroom offers with the synchronization of the Eye-Tracker a new, very efficient research infrastructure, which can be used in a variety of ways.



Postersession (Vielberth Building, Foyer, 2:30 – 3:15 p.m.)

No.	Title	Presenting author
1	Influence of textmedia on different reading metrics	Michael Hebeisen
2	Effects of reading media on affective responses toward literature	Nikoletta Alexandri
3	A Proposed Reading Event Analysis Model (REAM) for Determining Likely Reading Format Preferences	Dr. Diane Mizrachi Dr. Alicia Salaz
4	Content and medium. Reading experience and immersion in books and e-readers	Roland Mayrhofer Ferdinand Kosak Helene Niederfeilner
5	Getting immersed in a story: reading fiction in paper- and ebooks.	Ferdinand Kosak Roland Mayrhofer Laura Ziegltrum
6	The role of querying and navigation behavior in learning during multimodal Web search	Dr. Yvonne Kammerer
7	Inhibitory control and reading comprehension: is that open Facebook tab distracting you?	Priscila Borba Borges Irina Chupina
8	Human-Text Interaction: Study of scientific annotation practices	Dr. Michal Lorenz
9	People don't read books on the web	Mgr. Jan Martinek
10	A Mixed Methods Study of Shakespearean Intertextuality. - Limits and Possibilities of Digital Humanities	Dr. des. Johannes Molz
11	Digital Practices. Reading, Writing and Evaluation on the Web	Dr. Piroska Lendvai
12	"Do you seriously expect me to read all that?" - Why the classics of business administration are worth reading	Dr. Christian Brabänder Dr. Maximilian Lukesch

Abstracts Talks

Reading on Paper and Screens: What Do We Know, and What Should We Know More About?

Prof. Dr. Anne Mangen, University of Stavanger, Norway

With digital technologies, we probably read more than ever, but the ways in which we read have changed quite dramatically in a very short time – whether we talk about reading for study or reading for pleasure. This talk will give some highlights from current research on the effect of medium on cognitive and emotional aspects of reading. Based on empirical research, what can we say about the role of the substrate – paper and screens – for e.g. reading comprehension, recall, and immersion? What are the still unanswered questions in this area? And, is the “P vs E” still a relevant question to ask?

Dr. Anne Mangen is Professor of Literacy at The Norwegian Reading Centre, University of Stavanger, Norway. Her research interests include the role of medium materiality for reading comprehension and engagement, and she has done research comparing the reading of literary and expository texts on laptops, tablets, e-readers and on paper. She is currently involved in experiments using a combination of eye tracking measures, rating scales and textual analyses for measuring aspects of mental imagery during the reading of different types of literary prose. Prof. Dr. Mangen was Chair for the European research network (COST Action) E-READ: Evolution of Reading in the Age of Digitisation (2014-2018), an interdisciplinary network involving about 200 researchers from 33 countries, focusing on empirical research on reading and digitization. In 2013-2016 she was in charge of developing the National reading tests for fifth graders in Norway.

Her research is published in journals such as *Journal of Research in Reading*, *Frontiers in Psychology*, *Literacy*, *Trends in Neuroscience and Education*, and *Scientific Study of Literature*.

Personal web page: www.researchgate.net/profile/Anne_Mangen

Examining Print and Digital Reading: The Importance of Readers' Individual Differences

Prof. Dr. Peter Afflerbach, University of Maryland, Washington

Reading is complex, as are readers. When readers succeed, they do so in relation to the cognitive, affective and conative aspects of their reading development. The past three decades have witnessed burgeoning research on digital reading that disrupts the century-old focus on traditional print. The majority of this research investigates cognition—how readers perceive and process text in traditional or electronic forms, how readers navigate simple or complex reading venues, and how multimodal reading enhances or challenges comprehension. While the focus on cognitive strategies is appropriate, it is not sufficient to explain single acts of reading, nor the cumulative reading experiences that contribute to development in traditional and digital forms of reading. This presentation describes readers' cognitive, affective and conative individual differences and proposes that our attention to these differences will enhance theoretical models of digital reading, and related instruction and learning.

Dr. Peter Afflerbach is Professor of Education at the University of Maryland. Prof. Dr. Afflerbach's research interests focus on individual differences in reading, the differences and similarities of reading comprehension strategies for print and digital reading, reading assessment, and the verbal reporting methodology. Prof. Dr. Afflerbach serves on the Reading Committee of the National Assessment of Educational Progress (NAEP), and is Chair of the Literacy Assessment Task Force of the International Literacy Association. He has also served on the National Academy of Education and National Academy of Science committees related to literacy, and the migration of large scale tests from traditional to digital formats. Prof. Dr. Afflerbach was elected to the International Literacy Association's Reading Hall of Fame in 2009. He is the editor of the *Handbook of Individual Differences in Reading: Reader, Text, and Context* (2016), and co-editor of the *Handbook of Reading Research*, 4th Edition (2010) and 5th Edition (in press). He has published in

numerous theoretical and practical journals, including Reading Research Quarterly, Cognition and Instruction, Elementary School Journal, Journal of Adolescent and Adult Literacy, Language Arts, Theory into Practice, and The Reading Teacher.

Why Reading Multiple (Digital) Documents Is That Complicated – and What Remedies This Pain: Proven Methods to Enhance Processes of Integration and Sourcing

Prof. Dr. Maik Philipp, Zurich University of Teacher Education, Switzerland

Comprehending multiple documents is considered as a complex interaction of several processes. Two of them tackle two major challenges. On the one hand, integration processes are necessary in order to create inferences and build a coherent intertextual mental model of the content stemming from multiple documents. On the other hand, processes of sourcing (i.e. recognizing and evaluating metadata) are required to evaluate the usability and credibility of documents – especially when it comes to intertextual conflicts. A lot of intervention studies have been conducted in order to clarify what helps students to achieve better integration and sourcing outcomes. The talk presents selected results from a quantitative and qualitative re-analysis of 24 intervention studies. The findings indicate some guiding principles for successful instruction.

Dr. Maik Philipp is Professor of German Didactics with a focus on writing skills at the Zurich University of Teacher Education. He obtained his doctorate in 2010 with an empirical longitudinal study on peer effects in reading socialization.

His research interests include reading and writing skills, motivation and socialization, evidence-based literacy and material-based writing and reading skills in multiple documents.

Prof. Dr. Maik Philipp is one of the leading German-speaking researchers in the field of reading strategies and self-regulated reading (see Philipp 2015; Philipp/Schilcher 2012).

Fostering Undergraduate Students' Information Evaluation on the Internet

Prof. Dr. Ladislao Salmerón, University of Valencia, Spain

In the current digital world, undergraduate students need increased literacy skills to benefit from the unprecedented access to information on the Internet. Still, the open editorial policy of the Internet means that anybody can post information regardless of their level of expertise or their motives. Thus, to avoid misinformation, students need to take a critical stance while gathering information from the Internet, particularly when they want to learn about a topic for which there are several conflicting views. But as recent research has demonstrated, even digitally savvy undergraduate students tend to be rather credulous about information online, as they rarely consider information about source characteristics to access and use information from the Internet (McGrew, Breakstone, Ortega, Smith, & Wineburg, 2018).

There have been increased efforts during the last decade to develop instructional programs aimed to enhance students' critical reading (Brante & Strømsø, 2018). Most intervention programs tend to request students' to solve an inquiry task by using multiple webpages that provide different perspectives of the topic. Guidance to source is usually provided via scripts or prompts. Overall, students profit from instruction to a certain degree, with big variations between studies. Of note is that the majority of studies measure the effectiveness of the programs by using offline tests, and thus there is no evidence that students change the way they evaluate the information while reading.

In this study we tested a short instructional program aimed at fostering undergraduate students' critical reading on the Internet, and we measure their progress by tracking their eye-movements both at pre and post test. To model critical reading, we used Eye-Movements Modelling Examples (EMMEs), which consisted of a set of videos that characterized how expert students visually read web pages while learning about a controversial topic (e.g. a video showed a student reading all snippets from a Search Engine Results Page (SERP) before proceeding to read the first web page).

Initially, 64 participants from a large Spanish university read a set of multiple webpages from sources of different trustworthy levels. Pages provided different solutions to climate change, and they wrote an argumentative essay to discuss the pros and cons of the proposed solutions. Then, half of the students watched the EMMEs, while the other half watched other videos about the content covered at pre-test. Finally, at post-test students read a different set of web pages about the pros and cons of genetically modified food, and wrote an essay. Eye-movements analyses revealed that from pre to post test, that the instructional group increased their visual inspection of the SERP, of the source information within the pages, and reduced their reading time of texts from less trustworthy sources (e.g. commercially biased or unedited forums). The control group didn't change their reading behavior from pre to post test. Media-tion analyses indicated that increased SERP inspection at the instructional group resulted in a higher number of source citations in the essays, and on the inclusion of a higher percentage of ideas from trustworthy web pages.

In sum, our study indicated that EMMEs can be a quick and easy way to foster students' critical reading behavior. As EMMEs consist of short videos, they can be easily integrated in online courses or class sessions.

Dr. Ladislao Salmerón is Associate Professor in the Department of Developmental and Educational Psychology at the University of Valencia. He received his Ph.D. from the Department of Experimental Psychology at the University of Granada, and was a Fulbright Scholar at the Institute of Cognitive Science from the University of Colorado at Boulder, USA. His research focuses on the study of reading comprehension in digital texts, with an emphasis on assessment and intervention. Specifically, he has investigated students' navigation strategies in hypertexts with on-line methods (e.g. eye-tracking, think aloud protocols), multiple-document reading on the Internet, and the differences between print and digital reading. Recently, he published a comprehensive meta-analysis on the effects of reading media on reading comprehension.

Disrupted Reading

Prof. Dr. Johannes Schneider, Leipzig University Library, Germany

Reading is emphatically understood as a unified process, often charged with inner energy. This happens in theories about both the receptivity of reading and its productivity. What is missing is a pragmatics of reading in terms of its disruptibility. In reality, reading is a dissected process in everyday life and also in professional milieus. Like other intellectual activities, reading has temporal limits and separate stages. This has nothing to do with inattention and nothing with new media, such as reading on a screen. We live within a culture of reading which is voluntarily and involuntarily interrupted, and this culture has its history.

Prof. Dr. Ulrich Johannes Schneider studied Philosophy, German Philology, Musicology. He was awarded his Habilitation in Philosophy. Since 2006 he is Director of the Leipzig University Library and since 2007 Professor of Philosophy at the Institute of Cultural Studies of the University of Leipzig.

Prof. Dr. Ulrich Johannes Schneider is, inter alia, Member of the Media Expert Committee of the German Cultural Council and Chairman of the Subcommittee for Supraregional Literature Supply of the German Research Foundation (DFG).



Effects of reading media on affective responses toward literature

Nikoletta Alexandri

Psychology, Languages And Cultures, Lancaster University, UK

Nowadays, digital media have changed the reading experience and empirical research has shown that the type of medium affects people's experience. In particular, Mangen and Kuiken (2014) have shown that paperbooks increase transportation into a story more than iPads. However, it is of paramount importance to investigate the effects of additional reading technologies. Kindle devices may even provide better legibility than paperbooks due to the e-ink technology. Additionally, Amazon's Audible service is providing more than 200,000 audiobooks at a very low price and listening while engaging in other activities has become popular. However, reading comprehension, transportation and empathy may be negatively affected by the affordances of audiobooks.

Furthermore, media effects may differ between fiction and non-fiction texts, for example, transportation into a story world is deeper with fiction narrative (Mar & Oatley, 2008).

Therefore, this project investigates the effects of paperbooks, Kindle devices, iPads and audiobooks on comprehension, transportation and empathy. In addition to the inclusion of further reading media and their effects on comprehension and transportation, we measure both trait and state empathy, to securely argue that there is an increase in empathy after reading. Moreover, we will investigate the long-term effects of the media on empathy and comprehension, in addition to immediate effects. Furthermore, considering that scrolling in digital media is detrimental for reading comprehension (Singer & Alexander, 2017), we will use longer stories that will elicit scrolling behaviour. Finally, audiobooks are chosen to examine the effects of multitasking.

Our main hypotheses are:

1. Reading paperbooks will lead to increased transportation and empathy in comparison to reading Kindle, iPad or listening to audiobooks.

- 1a. Kindle use will increase transportation and empathy compared to iPad and audiobook use, with audiobooks scoring lowest.
2. Reading paperbooks will lead to better comprehension than reading from other media.
3. Comprehension is better when reading a paperbook than using other media.
- 3a. Kindle use will increase comprehension compared to iPad and audiobook use, with audiobooks scoring the lowest.
4. Reading comprehension will affect empathy and transportation.
5. Fiction reading will evoke stronger empathy than non-fiction reading, but this difference will be smaller when reading from other media than paperbooks.
6. The effects of reading on empathy and comprehension after two weeks will decrease less with paperbooks than with other media. Empathy and comprehension will decrease more two weeks after reading from digital media in comparison to two weeks after reading from paperbooks.

A Proposed Reading Event Analysis Model (REAM) for Determining Likely Reading Format Preferences

Diane Mizrachi, Ph.D. University of California Los Angeles, USA

Alicia Salaz, Ed.D. Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

In this poster we propose a model to illustrate the primary factors and contexts that affect readers' format choices, whether print or electronic. Because it shows dimensions influenced by classroom educators, publishers, interface designers, institutional, national or economic policies or practice, we believe these agencies can take proactive measures to help ensure that every reader has the opportunity to access their preferred format for optimal outcomes.

We created the Reading Event Analysis Model (REAM) based on our analysis of data from the Academic Reading Format International Study (ARFIS), which surveyed 21,266 students in 33 countries over three years on their preferred format for engaging with academic material. Each of the 16 Likert-style survey questions included spaces for open comments, which were also included in the analysis. Patterns and factors found in ARFIS are integrated with other studies performed on student preferences and behaviors over last 20 years. We believe that REAM may be applicable to the analysis of reading events and contexts beyond tertiary academic reading, including non-academic reading in general leisure, public, or workplace settings.

REAM incorporates three pedagogical theories:

- 🧠 Cognitive Load as presented by Chandler and Sweller, which “suggests that effective instructional material facilitates learning by directing cognitive resources toward activities that are relevant to learning rather than toward preliminaries to learning.” (p. 293)
- 🧠 Marton and Säljö’s Learner Approach which posits that students strategically take different approaches to learning tasks resulting in an array of learning outcome depths.
- 🧠 Zipf’s Principle of Least Effort in which humans will naturally choose the path of least resistance or effort.

We expand the Cognitive Load and Learner Approach by considering the nature of learning goals associated with reading in non-academic settings, in addition to tertiary students engaging with academic texts.

Throughout our analysis, we used an inductive process to establish factors and their components, and then illustrated these factors on weighted continuums (if/then). REAM factors are Reader objectives; Difficulty of learning from the text; and Access. Defining components within these factors include reading length, level, learning goal, task importance, cost, and convenience.

This early model incorporates theories of learning and decision-making behavior and attempts to integrate and synthesize disparate empirical

data. However, it requires additional empirical testing, feedback, and revision. We look forward to discussions and input from our colleagues at this conference on REAM and its potential for practical application.

Content and medium. Reading experience and immersion in books and e-readers

Roland Mayrhofer, Ferdinand Kosak, Helene Niederfeilner
Universität Regensburg, Germany

For about 500 years all written content was conveyed via the medium of paper, i.e. books and newspapers. The availability of only one medium for every kind of text precluded any discussion if the tangible medium affects the intangible content of the text. However, digitalization and the availability of e-readers have created a situation where texts can be read on two different media. Therefore, this development raises the question of the nature of the relationship between medium and content (Kurlansky, 2017; Martin, 1996).

In this study we investigate the relationship between medium – book and e-reader – and reading experience and immersion for works of fiction which portray ‘old-fashioned’, ‘traditional’ or ‘modern’, ‘technical’ events and worlds. Based on the assumption that books are commonly considered as ‘traditional’ and e-readers as ‘modern’ and ‘technical’, we hypothesize that the – although not necessarily consciously – perceived nature of the medium exerts a direct influence on the reading experience and immersion, i.e. how deep the reader dives into the depicted world and events and how ‘real’ they seem to them.

E-readers are a comparatively recent development – the first modern e-reader with E Ink technology was released in 2004 –, and they are ‘technical’ devices, sharing many features with computers, smartphones, and other modern electronic devices such as a display screen, operating controls or the need for electrical power. These physical characteristics convey a ‘modern’ and ‘technical’ feeling and atmosphere.

We use a mixed-design experiment to investigate the effect of the medium – book vs. e-reader (between subjects) – on the reading experience of a ‘traditional’-themed fantasy and a ‘modern’-themed science-fiction story (within subjects). In order to keep potential confounding variables such as the style of an author or the length and the topic of a story at a minimum we employ two stories by the same author (Angela Stoll), which deal with the ‘worth’ of ‘imperfect’ human life. The story “Andro- idendämmerung” is set in a future dominated by technology, androids, and supercomputers, whereas “Das Weibsstück” takes place in an unde- fined pre-modern world without technology, which also features emis- saries of various gods with supernatural abilities. Therefore, an ‘unreal’ fantastic element is present in both stories and none depicts the real, contemporary world.

Based on Haddock and colleagues (2019), who found a similar effect for reading comprehension, we hypothesize that reader immersion is highest in congruent combinations (science fiction on the e-reader and fantasy in the book), and lowest in incongruent combinations (vice versa). This would corroborate the theory that the tangible medium affects how the intangible content is experienced.

The acquisition of data is presently underway and all analyses will be completed by the time of the conference.

Getting immersed in a story: reading fiction in paper- and ebooks.

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Reading on digital devices has become a very common practice through- out the last decades with i.e. about a quarter of Germans regularly rea- ding e-books (Bitkom, 2016). Consequently, a field of research has been established studying possible consequences of reading on these relatively new media. A number of studies found advantages of paper compared to digital devices concerning emotions (Mangen, 2016),

comprehension (Mangen, Walgermo, & Brønnick, 2013; Ziegler, 2019) or localization in the text (Hou, Rashid, & Lee, 2017; Mangen, Olivier, & Velay, 2019).

However, in most of the conducted research digital devices with multiple functions such as computers (Mangen, Walgermo, & Brønnick, 2013) or tablets (Hou, Rashid, & Lee, 2017; Mangen, 2016; Mangen, Olivier, & Velay, 2019) were used. In contrast to these devices – and thus more similar to a book – an eReader has only one single function: providing text to read.

Since it has been shown that smartphones just being present in a room can impair cognitive performances (Ward, Duke, Gneezy, & Boz, 2017), possible influences implemented by the multi-function-character of tablets and computers should be ruled out by using eReaders.

Furthermore, most of the research has focused on informative literature and only few studies investigated whether there is a difference in immersion and/or transportation when reading fiction. Although some evidence suggests the superiority of paper as well, the digital device used in the regarding studies were multi-function devices (iPads, Mangen & Kuiken, 2014) and one case investigated a comic (Hou, Rashid, & Lee, 2017), which has several unique characteristics.

Thus, we conducted an experiment with 106 participants (Mean-age = 26.71, SD = 10.17, 77.4% female). They read the fictional short story "Charly, 1962" (Cailloux, 2016) either in a book or on a Sony PRS-T2 eReader. All visual characteristics of the devices, and the according text (font, page-settings, etc.) were matched as closely as possible. Subsequently, participants filled out a questionnaire including the immersion questionnaire (Busselle & Bilandzic, 2009), PANAS (Janke & Glöckner-Rist, 2014) and the Interface Interference Scale (Mangen & Kuiken, 2014)

Our results indicate no significant differences between the two groups considering state emotions, immersion (neither analyzing all subscales separately nor the whole questionnaire) or Interface Interference.

Summarized it seems possible that some of the disadvantages of reading on digital devices compared to reading on paper may vanish when using single-function devices such as eReaders instead of tablets or computers.

The role of querying and navigation behavior in learning during multimodal Web search

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The World Wide Web has become a major knowledge resource, not only to retrieve simple unambiguous facts, but also to learn about more complex scientific concepts. Assisted by search engines like Google, learners can easily retrieve vast amounts of information presented in various modalities (e.g., text, images, and videos). According to recent survey data, apart from reading text-and-image-based websites, students also increasingly use online videos (e.g., from YouTube) for learning purposes. However, previous research that examined learning during Web search has mostly focused on text-based documents. The goal of the present exploratory research, thus, was to examine how individuals search on the open Web to learn about a complex scientific issue. Specifically, we aimed at answering the following two research questions: First, how much time do learners spend on text-and-image-based websites and on videos, respectively (RQ1)? Second, do particular querying and navigation strategies during Web search predict individuals' learning outcomes over and above prior topic knowledge and cognitive prerequisites (RQ2)?

Overall, 130 university students from different majors participated in our study. Complete data sets were obtained for $N = 115$ students (84.3% female; $M=22.8$ years, $SD=2.9$). Participants were asked to conduct a free Web search task in order to learn about how thunderstorms and lightning form. Search time was limited to a maximum of 30 minutes. During Web search, participants' query and navigation logs were recorded. Prior to the

search task, among other variables, participants' working memory capacity and offline reading comprehension skills were assessed as indicators of cognitive prerequisites. Furthermore, to assess participants' prior topic knowledge they were asked to write down everything they knew about how thunderstorms and lightning form (t1). To measure their learning outcome, after their web search they were asked to do this a second time (t2). All essays (from t1 and t2) were coded according to a coding schema consisting of 20 critical concepts about thunderstorms and lightning formation. Two independent raters coded 55 essays, achieving an overall agreement of 95.8 %. One rater coded the remaining essays. Participants' query and navigation logs were analyzed regarding the time spent reading text-and-image-based websites, the time spent on videos (i.e., YouTube videos and videos provided on websites), and the overall number of unique search queries entered (in Google, YouTube, or in search boxes in websites).

Regarding RQ1, descriptive results revealed that participants on average spent $M=13.6$ minutes ($SD=7.3$) with reading text-and-image-based websites, but also $M=8.6$ minutes ($SD=6.4$) with watching videos. During their Web search they entered, on average, $M=3.2$ ($SD=2.0$) unique queries. With regard to RQ2, results of generalized linear models revealed that working memory capacity and offline reading comprehension skills, but also the number of unique queries and the time spent reading text-and-image-based websites significantly positively predicted students' learning outcomes (i.e., the number of concepts included in t2). In contrast, the time watching online videos was unrelated to their learning outcomes. Future research is needed to corroborate these exploratory findings both with the same as well as with other learning topics.



Inhibitory control and reading comprehension: is that open Facebook tab distracting you?

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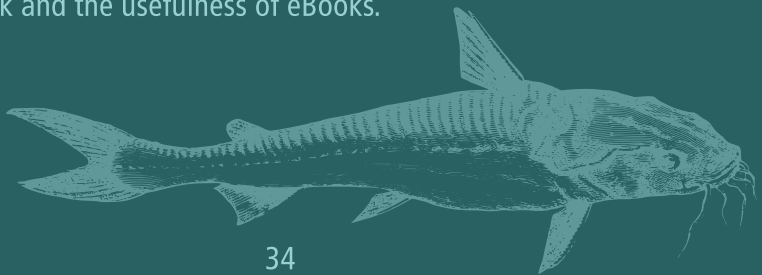
Academic reading has migrated from paper to screen over recent years, giving rise to new challenges associated with this new medium. One such challenge concerns the presence of distracting stimuli such as tabs, which might affect performance on a variety of tasks, including reading comprehension. Individuals' responses to these stimuli may depend on their levels of inhibitory control, an essential component of executive functions. However, these hypotheses have not been explored in previous research. Therefore, this study aimed to examine 1) the impact of screen condition - fullscreen or tabs showing popular websites - on reading comprehension, and 2) the potential moderating role of inhibitory control in the relationship between screen condition and comprehension scores. To this end, 17 non-native English-speaking students (female = 15, Mage = 25) read a text and answered multiple-choice questions from the IELTS academic module to provide a measure of comprehension and completed the Flanker test to provide an index of inhibition. This index comprised the average difference in reaction times between incongruent and congruent trials. Participants' language proficiency - self-reported scores on IELTS, CAE or TOEFL -, demographic information, and online reading habits were collected via Google Forms. Multiple linear regression analyses showed that full screen condition was associated with better reading comprehension scores, as well as with higher levels of inhibitory control. However, inhibition levels did not moderate the relationship between screen mode and comprehension scores. Additionally, language proficiency, topic familiarity and online reading exposure were linked to improved reading comprehension. Results are discussed considering the role of different comprehension components, L1-L2 differences, effect size of screen mode, and statistical power of the current investigation.

Human-Text Interaction: Study of scientific annotation practices

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We will present the research design of annotation practices of scientists working with printed scientific documents. The research is focused on the usefulness and usability of the types of annotations generated by interactions of the scientist with the text. The aim of the accomplished empirical research was to identify the limitations of cognitive work during annotating and to deduce consequences for the ecological interface design of web-based format of eBook. The poster presents the current state of complex research, which is still in the implementation phase and some of the first results of the study. To date, 20 scientists, representatives of humanities, social and natural sciences (linguistics, psychology, geography respectively), as well as scientists active in interdisciplinary research, have participated in the research. The study is based on the formative paradigm of HCI design and the socio-cognitive paradigm of information behavior. Ecological interface design (EID) and cognitive work analysis (CWA) were used as the theoretical framework guiding the research. In carrying out the task scientists read scientific papers, books and diploma theses. They talk aloud about their work and identified cognitive functions activated in the process of interacting with text by categories. The audio and video recordings acquired were processed using verbal protocol analysis and abstract hierarchy analysis. The results obtained indicate a topological tension between cognitive functions and note-taking tools. Underestimating the importance of space, haptics and perception in electronic texts, which are typical for human-printed text interaction, leads to the disembodied design of the reading software interface. Disembodied design emphasizes deep cognitive control instead of perceptive and activity surface control, which has a negative impact on the effectiveness of cognitive work and the usefulness of eBooks.



People don't read books on the web

Mgr. Jan Martinek, Mgr. Josef Kocurek, Mgr. Lukáš Porsche, PhD.,
Mgr. Matěj Málek
next-book, Brno, Czech Republic

When we discuss and research e-reading, we mostly think of Kindle, iPad, or some other e-ink devices — and formats such as PDF, MOBI, and EPUB. This poster presents an alternate vision of an open digital book format rooted in an already open platform — the World Wide Web. We want

1) to reframe the discussion from hardware to software and 2) to provide an open standard (Using the browser capabilities in concord with The Extensible Web Manifesto; see <https://github.com/extensibleweb/manifesto>), not a product.

Stavanger declaration (see <http://ereadcost.eu/stavanger-declaration/>) presents a meta-research of digitization that claims that where *“digital reading environment was carefully designed with the reader in mind”*, *“[b]enefits for comprehension and motivation have been demonstrated”*. However, *“paper remains the preferred reading medium for longer single texts, (...) [and it] best supports long-form reading of informational texts.”* The authors of the declaration leave the reader with a final question: *“What can be done to encourage deeper processing of texts in general and, in particular, of texts read on screen?”*

We present one possible answer: a lean platform that aims 1) to provide a system of affordances for comfortable long-form reading and 2) to enable the development of textual and social interactions (both *old* — hindered by current technology — and *new* — impossible with the old technology). It's called *next-book* (see <https://next-book.info>), and it's built with readers and researchers in mind.

Current technologies do not allow much experimentation or development — PDF was built for printing, EPUB3 adoption has been very slow, and MOBI is kept under wraps by Amazon. Reading devices frequently adopt print-based affordances — such as PDF annotation tools, fixed layout

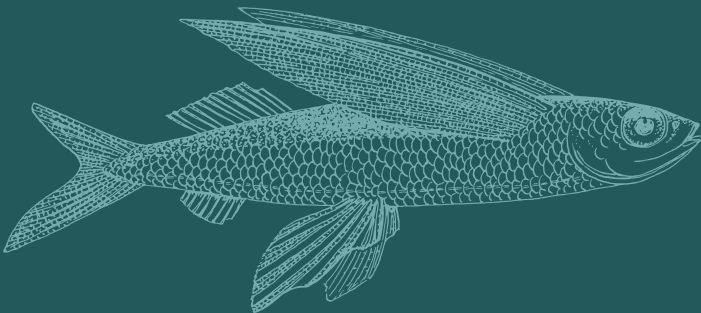
magazine readers, paginated media, etc. These are short-term solutions, though. Over more extended use, the differences between paper and digital media become apparent, clashing with the originally paper-based workflows, increase the cognitive load when reading, and are perceived as shortcomings of digital technologies.

The Open Web, on the other hand, grew with its users on various digital platforms (Further, we expect that computing will change our environments in ways hardly imaginable now — with new device classes, augmented and virtual reality, ambient computing such as in “computer-house” Dynamicland (see <https://dynamicland.org>), etc.). The browser provides a powerful platform for interface design and allows its users to access both the computing power of their own device and the global network when needed.

We believe that building an open platform on the Open Web will provide reading literacy research with a rich resource for experimentation and development — making the field more proactive than reactive, deepening the conversation between academia, publishers, and book technologists. It follows that common reading practices will benefit from such change immensely.

Wider adoption of such a platform could also produce a re-balancing of what people expect on the Web — where, as it was fashionable to say in the 00s, people don’t read. People now spend several hours a day reading the Web content on their mobile devices — mostly just not books or other long-form content.

Let’s change that — *carefully and with the reader in mind.*



A Mixed Methods Study of Shakespearean Intertextuality. Limits and Possibilities of Digital Humanities

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This study is an attempt at tracing and understanding Shakespearean intertextuality with the help of both qualitative and quantitative methods. I am looking for (near-)verbatim quotations of Shakespeare's works in contemporary British novels. The references I find are organised and interpreted in order to answer my central questions: *How is Shakespeare referenced by those who came after him? How can text mining and computational methods facilitate the search for these references?*

My study consists of two parts: The qualitative part collects references to Shakespeare found manually in 200 contemporary British novels. This search delivers an Excel file containing almost 3000 instances of (near) verbatim intertextuality, varying in length from a single word to 203 words. These references are catalogued, categorised and interpreted according to their level of verbatimity. Salient patterns in the usage of Shakespeare's words are described for the respective author, genre and time frame.

A problem remains: the references to Shakespeare in Western culture are practically limitless and any manual study can but examine an infinitesimal sample of the whole. A second, quantitative reading of digitalised versions of the texts allows for a significant extension of the corpora and a comparison of the methods involved.

The quantitative part of this study mirrors the qualitative part with methods provided by the ever-emerging Digital Humanities. A selection of the novels and a selection of the ten most-quoted plays by Shakespeare are mined by algorithms for exact matches. The findings of both approaches are juxtaposed, and problems and possible solutions are discussed, in order to expand the methodological toolbox of intertextuality studies.

A digital reading of a corpus of literary texts demands both technical and literary expertise; the implementation of the automated searches asks for a skill set usually not taught in humanist studies and the interpretation of the results is not possible without an understanding of the literary contexts in which they have to be read. This necessitates either a collaboration of the disciplines or a different, additional education of both in order to appropriately explore the place where they meet.

Digital Practices. Reading, Writing and Evaluation on the Web

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The research cluster of the SNSF “Digital Lives” projects at the University of Basel aims to examine digital discourses from the perspectives of Digital Humanities, Literary Studies, and Language Technology. Its three projects focus on digital reading and writing practices online, and explore different facets of digital discourse:

1. The reader’s view of literature by undertaking exploratory empirical literary research into online social reading platforms, with a special focus on the effects these platforms have on adolescents’ reading practices, reading motivations and rewards.
2. The epistemological assessment of research practices of text-based digital humanities after the machine learning turn, running two parallel case studies on online evaluation in literature reviews and cooking recipes. This project explores the interaction of philological enquiry with computational methodology.

Interim results indicate the establishment of a middle ground at the level of tool-based annotation and corpus linguistic search, which facilitates that valuation practices are getting jointly defined by theory and data.

3. Data-driven specification and identification of the affective state of reading absorption. The project aims at semi-automatic development of a large qualitative corpus of reader reviews collected from an online social reading community. The user reviews report about individual experiences in a non-elicited way, typically serving multiple intents such as evaluation, recommendation, socializing.

We trained five annotators for labeling reading absorption in terms of a taxonomy of roughly 40 fine-grained absorption concepts, grouped under broad categories such as Attention, Transportation, Emotional Engagement, Mental Imagery, Disconnection from reality, etc. taken from Kuijpers et al. (2014) and Balint et al. (2016).

This project also targets the mining of absorption mentions and trends, i.e. expressions of experimental states describing immersive experience, transportation to the fictional world, altered sense of time during reading, emotional engagement, and others. Computational identification of reader absorption has so far been unaddressed, except for our initial text similarity based approach to detect story world absorption (Rebora et al., 2018). We will present the corpus construction effort, the results of the first experiments as well as processing resources: a distributional language model and base classifiers.

It is the intention of the research cluster “Digital Lives” at the University of Basel to ensure that working with (near) real time data of culture is a new way to explore reading.

The projects apply a mix of methods to investigate complementary levels of reading via use case studies - algorithmically as well as discourse-analytically, looking at symbolic levels of semiotic as well as actual behavior, at forms as well as functions.

We are also working out an integrated theoretical model of literary appreciation in online readers that combines approaches from analytical philosophy, usage-based discourse analysis, and media studies, and aim to initiate collaboration with publishing houses.

A main innovative property of the research cluster is to connect traditional concepts of evaluation to people's online behavior, thereby putting a focus on investigating participatory cultural practices.

“Do you seriously expect me to read all that?”

Why the classics of business administration are worth reading

Dr. Maximilian Lukesch, Dr. Christian Brabänder

Chair of Controlling and Logistics, Universität Regensburg, Germany

This presentation serves as a reminder of the epistemic value of classic books and articles to the science of management. It illustrates the importance of reading skills for academic success in business administration. Classics are defined as contributions characterized by their timelessness, originality, and lasting success. It is useful to read and comprehend classics because they raise fundamental questions and outline insights, which enhance students' subject-specific and methodological competences. Reading classic contributions allows them to view fundamental problems of business administration in a new light. Furthermore, it helps them to create and evaluate different courses of action. The importance of this insight is exemplified through various illustrative contributions (Simon, Ohno, Goldratt etc.).

