

## Thomas Wiegand Tu Berlin

This book provides an analysis of the treatment of impossibility in modern private law. The author explains the regulation of impossibility in German, Swiss and Turkish laws with a comparative analysis of the subject under (i) the United Nations Convention on International Sale of Goods (CISG), (ii) UNIDROIT Principles of International Commercial Contracts (PICC), (iii) Principles of European Contract Law (PECL also known as the Lando-Principles), (iv) Draft Common Frame of Reference (DCFR) and (v) Common European Sales Law (CESL).

This book discusses research, methods, and recent developments in the interdisciplinary field that spans research in visualization, eye tracking, human-computer interaction, and psychology. It presents extended versions of papers from the First Workshop on Eye Tracking and Visualization (ETVIS), which was organized as a workshop of the IEEE VIS Conference 2015. Topics include visualization and visual analytics of eye-tracking data, metrics and cognitive models, eye-tracking experiments in the context of visualization interfaces, and eye tracking in 3D and immersive environments. The extended ETVIS papers are complemented by a chapter offering an overview of visualization approaches for analyzing eye-tracking data and a chapter that discusses electrooculography (EOG) as an alternative of acquiring information about eye movements. Covering scientific visualization, information visualization, and visual analytics, this book is a valuable resource for eye-tracking researchers within the visualization community.

The improvement of exercise performance in sports not only involves the enhancement of physical strength, but also includes the development of psychological and cognitive functions. There is an increasing body of evidence to show that physical exercise is a powerful way to improve a number of aspects of cognition and brain function at the systemic and behavioral levels. Yet, several questions remain: What type of exercise program is optimal for improving cognitive functions? What are the real effects of certain innovative exercise protocols on the relationship between behavior and the brain? To what extent do ergogenic aids boost cognitive function? How efficient are neuromodulation techniques in relation to behavioral performance? The answers to these questions likely require multidisciplinary insights not only from physiologists and sports scientists, but also from neuroscientists and psychologists. The manuscripts published (16 research papers and one perspective article from various academic fields) in this Special Issue Book "Exercise: A Gate That Primes the Brain to Perform" bring together current knowledge and novel directions in human exercise-cognition research dealing with performance. This book showcases the various relationships between cognitive function, brain activity, and behavioral performance with applications in sports and exercise science.

Timber construction is one of the most prevalent methods of constructing buildings in North America and an increasingly significant method of construction in Europe and the rest of the world. Timber Engineering deals not only with the structural aspects of timber construction, structural components, joints and systems based on solid timber and engineered wood products, but also material behaviour and properties on a wood element level. Produced by internationally renowned experts in the field, this book represents the state of the art in research on the understanding of the material behaviour of solid wood and engineered wood products. There is no comparable compendium currently available on the topic - the subjects represented include the most recent phenomena of timber engineering and the newest development of practice-related research. Grouped into three different sections, 'Basic properties of wood-based structural elements', 'Design aspects on timber structures' and 'Joints and structural assemblies', this book focuses on key issues in the understanding of: timber as a modern engineered construction material with controlled and documented properties the background for design of structural systems based on timber and engineered wood products the background for structural design of joints in structural timber systems Furthermore, this invaluable book contains advanced teaching material for all technical schools and universities involved in timber engineering. It also provides an essential resource for timber engineering students and researchers, as well as practicing structural and civil engineers.

Source CodingPart I of Fundamentals of Source and Video CodingNow Publishers Inc

This volume contains the combined Proceedings of the Second International Meeting on Commutative Algebra and Related Areas (SIMCARA) held from July 22–26, 2019, at the Universidade de São Paulo, São Carlos, Brazil, and the AMS Special Session on Commutative Algebra, held from September 14–15, 2019, at the University of Wisconsin-Madison, Wisconsin. These two meetings celebrated the combined 150th birthday of Roger and Sylvia Wiegand. The Wiegands have been a fixture in the commutative algebra community, as well as the wider mathematical community, for over 40 years. Articles in this volume cover various areas of factorization theory, homological algebra, ideal theory, representation theory, homological rigidity, maximal Cohen-Macaulay modules, and the behavior of prime spectra under completion, as well as some topics in related fields. The volume itself bears evidence that the area of commutative algebra is a vibrant one and highlights the influence of the Wiegands on generations of researchers. It will be useful to researchers and graduate students.

Like virtual reality, augmented reality is becoming an emerging platform in new application areas for museums, edutainment, home entertainment, research, industry, and the art communities using novel approaches which have taken augmented reality beyond traditional eye-worn or hand-held displays. In this book, the authors discuss spatial augmented r

The JPEG 2000 Suite provides a comprehensive overview of the baseline JPEG 2000 standard and its extensions. The first part of the book sets out the core coding system, additions to the standard and reference software. The second part discusses the successful deployment of JPEG 2000 in application domains such as video surveillance, digital cinema, digital television, medical imaging, defence imaging, security, geographic imaging and remote sensing, digital culture imaging and 3D graphics. The book also presents implementation strategies accompanied by existing software and hardware solutions. Describes secure JPEG 2000 (JPSEC), interactivity protocols (JPIP), volumetric image data compression (JP3D) and image compression in wireless environments (JPWL), amongst others. Uses a structure which allows for easy cross-reference with the components of the standard. Sets out practical implementation examples and results. Examines strategies for future image compression techniques, including Advanced Image Coding and JPEG XR. Includes contributions from international specialists in industry and academia who have worked on the development of the JPEG 2000 standard. Additional material can be found at [www.jpeg.org](http://www.jpeg.org). The JPEG 2000 Suite is an excellent introduction to the JPEG 2000 standard and is of great appeal to practising electronics engineers, researchers, and hardware and software developers using and developing image coding techniques. Graduate students taking courses on image compression, digital archiving, and data storage techniques will also find the book useful, as will graphic

designers, artists, and decision makers in industries developing digital applications.

knowledge in an unfamiliar field.

The anatomy theater is where students of the human body learn to isolate structures in decaying remains, scrutinize their parts, and assess their importance. Taking a new look at the history of anatomy, the author places public dissections alongside private ones to show how the anatomical theater was both a space of philosophical learning and a place where students learned to behave in a civil manner towards their teachers, their peers, and the corpse.

There are at least four reasons why a sleep clinician should be familiar with rating scales that evaluate different facets of sleep. First, the use of scales facilitates a quick and accurate assessment of a complex clinical problem. In three or four minutes (the time to review ten standard scales), a clinician can come to a broad understanding of the patient in question. For example, a selection of scales might indicate that an individual is sleepy but not fatigued; lacking alertness with no insomnia; presenting with no symptoms of narcolepsy or restless legs but showing clear features of apnea; exhibiting depression and a history of significant alcohol problems. This information can be used to direct the consultation to those issues perceived as most relevant, and can even provide a springboard for explaining the benefits of certain treatment approaches or the potential corollaries of allowing the status quo to continue. Second, rating scales can provide a clinician with an enhanced vocabulary or language, improving his or her understanding of each patient. In the case of the sleep specialist, a scale can help him to distinguish fatigue from sleepiness in a patient, or elucidate the differences between sleepiness and alertness (which is not merely the inverse of the former). Sleep scales are developed by researchers and clinicians who have spent years in their field, carefully honing their preferred methods for assessing certain brain states or characteristic features of a condition. Thus, scales provide clinicians with a repertoire of questions, allowing them to draw upon the extensive experience of their colleagues when attempting to tease apart nuanced problems. Third, some scales are helpful for tracking a patient's progress. A particular patient may not remember how alert he felt on a series of different stimulant medications. Scale assessments administered periodically over the course of treatment provide an objective record of the intervention, allowing the clinician to examine and possibly reassess her approach to the patient. Finally, for individuals conducting a double-blind crossover trial or a straightforward clinical practice audit, those who are interested in research will find that their own clinics become a source of great discovery. Scales provide standardized measures that allow colleagues across cities and countries to coordinate their practices. They enable the replication of previous studies and facilitate the organization and dissemination of new research in a way that is accessible and rapid. As the emphasis placed on evidence-based care grows, a clinician's ability to assess his or her own practice and its relation to the wider medical community becomes invaluable. Scales make this kind of standardization possible, just as they enable the research efforts that help to formulate those standards. The majority of Rating Scales in Sleep and Sleep Disorders: 100 Scales for Clinical Practice is devoted to briefly discussing individual scales. When possible, an example of the scale is provided so that readers may gain a sense of the instrument's content. Groundbreaking and the first of its kind to conceptualize and organize the essential scales used in sleep medicine, Rating Scales in Sleep and Sleep Disorders: 100 Scales for Clinical Practice is an invaluable resource for all clinicians and researchers interested in sleep disorders.

Following on from the successful MPEG-2 standard, MPEG-4 Visual is enabling a new wave of multimedia applications from Internet video streaming to mobile video conferencing. The new H.264 'Advanced Video Coding' standard promises impressive compression performance and is gaining support from developers and manufacturers. The first book to cover H.264 in technical detail, this unique resource takes an application-based approach to the two standards and the coding concepts that underpin them. Presents a practical, step-by-step, guide to the MPEG-4 Visual and H.264 standards for video compression. Introduces the basic concepts of digital video and covers essential background material required for an understanding of both standards. Provides side-by-side performance comparisons of MPEG-4 Visual and H.264 and advice on how to approach and interpret them to ensure conformance. Examines the way that the standards have been shaped and developed, discussing the composition and procedures of the VCEG and MPEG standardisation groups. Focussing on compression tools and profiles for practical multimedia applications, this book 'decodes' the standards, enabling developers, researchers, engineers and students to rapidly get to grips with both H.264 and MPEG-4 Visual. Dr Iain Richardson leads the Image Communication Technology research group at the Robert Gordon University in Scotland and is the author of over 40 research papers and two previous books on video compression technology. Volume II of the handbook offers the state of the art on how body movements are used for communication around the world. Topics include the functions of body movements, their contexts of occurrence, their forms and meanings, their integration with speech, and how bodily motion can function as language. An interdisciplinary chapter on 'embodiment' explores the body and its role in the grounding of language from current theoretical perspectives.

Planungsaufgaben im Bestand gehören derzeit zu den häufigsten Auftragsarten und nahezu jedes Bauwerk stellt andere Anforderungen und weist individuelle Probleme auf. Analog dazu gibt es auf dem Markt eine fast unüberschaubare Anzahl Publikationen in meist sehr spezialisierter Form. Der Sanierungsatlas möchte Licht in diesen Publikationsdschungel bringen: Er definiert Begrifflichkeiten, vereint die fokussierenden Betrachtungsweisen der Fachleute und vermittelt konkrete Herangehensweisen an diese weit gefächerte Thematik. Der Sanierungsatlas schließt die Lücke zwischen grundlegender Baukonstruktions- und sehr einseitig spezialisierter Fachliteratur. Das Buch stellt eine praktische Planungshilfe zum Thema Sanierung dar – und zwar in Form von relevanter Grundlagenvermittlung zu Bauphysik, Brandschutz, Nachhaltigkeits- und energetischen Aspekten, Schadstoffen, Baustoffen im Innenraum und an der Fassade, zu Aspekten der Denkmalpflege ebenso wie zur technischen Gebäudeausstattung. Er liefert konkrete Hinweise zu Planungsschritten, Methoden der Bauanalyse und Kostenkennwerten sowie anschauliche Konstruktionslösungen am Beispiel gebauter Projekte. Einzigartig die speziell entwickelte Zeitschiene, mit deren Hilfe

eine konkrete Bauaufgabe schnell erfasst, kategorisiert und bewertet werden kann – dem Planer somit einen effizienten Planungsüberblick verschafft.

Assainissement, entretien, modernisation, restauration, transformation, réhabilitation, la liste des interventions sur l'existant paraît infinie. Cet ouvrage les présente cependant dans leur totalité. Il définit les concepts, propose des solutions concrètes, et se pose comme un outil de planification précieux pour les architectes, les concepteurs et les ingénieurs afin de leur permettre de mener à bien leur projet de rénovation. Ils y trouveront l'essentiel des techniques de réhabilitation, tant en matière de protection contre l'incendie, de réponse aux questions énergétiques ou de gestion des polluants, qu'en terme de choix et d'usage des matériaux intérieurs, ou des soins spécifiques à apporter aux monuments ou aux bâtiments techniques. Entièrement imprimé en couleur, riche de plus de mille dessins et photographies, une référence indispensable pour tous les acteurs de la construction [source : 4e de couv.]

Fit for Competition - mit den richtigen Antworten auf die entscheidenden Fragen zum Start in den Beruf: Welche Qualifikationen sind gefragt? Wo gibt es die besten Ein- und Aufstiegschancen? Was macht eine Bewerbung erfolgreich? Wie überzeugen Sie in Vorstellungsgespräch und AC? Wie kommen Sie an wichtige Kontakte? Der Gabler/MLP Berufs- und Karriereplaner Life Sciences bietet mit exklusivem Insiderwissen Antworten, Orientierung und Hilfe. Zahlreiche Hinweise, Tipps und Kontaktadressen machen den Leitfaden zum unverzichtbaren Handbuch und Nachschlagewerk für Studium, Berufseinstieg und Karriere. Ein besonders umfangreicher Adressenteil und ausführliche Firmenprofile sichern Ihnen den entscheidenden Vorsprung beim Start in den Beruf. Extra: Großes Themen-Special: + Pharma-Industrie +

This book describes a pathway for sustainable phosphorus management via the Global Transdisciplinary Processes for Sustainable Phosphorus Management project (Global TraPs). Global TraPs is a multi-stakeholder forum in which scientists from a variety of disciplines join with key actors in practice to jointly identify critical questions and to articulate what new knowledge, technologies and policy processes are needed to ensure that future phosphorus use is sustainable, improves food security and environmental quality and provides benefits for the poor. The book offers insight into economic scarcity and identifies options to improve efficiency and reduce environmental impacts of anthropogenic phosphorus flows at all stages of the supply and use chain. The series Handbooks of Linguistics and Communication Science is designed to illuminate a field which not only includes general linguistics and the study of linguistics as applied to specific languages, but also covers those more recent areas which have developed from the increasing body of research into the manifold forms of communicative action and interaction.

This book gives an interdisciplinary overview on urban ecology. Basic understanding of urban nature development and its social reception are discussed for the European Metropolitan Area of Berlin. Furthermore, we investigate specific consequences for the environment, nature and the quality of life for city dwellers due to profound changes such as climate change and the demographic and economic developments associated with the phenomena of shrinking cities. Actual problems of urban ecology should be discussed not only in terms of natural dimensions such as atmosphere, biosphere, pedosphere and hydrosphere but also in terms of social and cultural dimensions such as urban planning, residence and recreation, traffic and mobility and economic values. Our research findings focus on streets, new urban landscapes, intermediate use of brown fields and the relationships between urban nature and the well-being of city dwellers. Finally, the book provides a contribution to the international discussion on urban ecology.

Emphasizes source coding techniques that have become relevant for video coding in recent years. For illustrating the concepts and efficiency of the basic sources coding techniques, the authors provide numerous examples and experimental results for simple model sources.

Describes the basic structure of video codecs, discusses the fundamental concepts of video coding, and highlights their application in modern video coding standards.

A long-time chief data scientist at Amazon shows how open data can make everyone, not just corporations, richer Every time we Google something, Facebook someone, Uber somewhere, or even just turn on a light, we create data that businesses collect and use to make decisions about us. In many ways this has improved our lives, yet, we as individuals do not benefit from this wealth of data as much as we could. Moreover, whether it is a bank evaluating our credit worthiness, an insurance company determining our risk level, or a potential employer deciding whether we get a job, it is likely that this data will be used against us rather than for us. In *Data for the People*, Andreas Weigend draws on his years as a consultant for commerce, education, healthcare, travel and finance companies to outline how Big Data can work better for all of us. As of today, how much we benefit from Big Data depends on how closely the interests of big companies align with our own. Too often, outdated standards of control and privacy force us into unfair contracts with data companies, but it doesn't have to be this way. Weigend makes a powerful argument that we need to take control of how our data is used to actually make it work for us. Only then can we the people get back more from Big Data than we give it. Big Data is here to stay. Now is the time to find out how we can be empowered by it.

Giant vesicles are widely used as a model membrane system, both for basic biological systems and for their promising applications in the development of smart materials and cell mimetics, as well as in driving new technologies in synthetic biology and for the cosmetics and pharmaceutical industry. The reader is guided to use giant vesicles, from the formation of simple membrane platforms to advanced membrane and cell system models. It also includes fundamentals for understanding lipid or polymer membrane structure, properties and behavior. Every chapter includes ideas for further applications and discussions on the implications of the observed phenomena towards understanding membrane-related processes. The *Giant Vesicle Book* is meant to be a road companion, a trusted guide for those making their first steps in this field as well as a source of information required by experts. Key Features • A complete summary of the field, covering fundamental concepts, practical methods, core theory, and the most promising applications • A start-up package of theoretical and experimental information for newcomers in the field • Extensive protocols for establishing the required preparations and assays • Tips and instructions for carefully performing and interpreting measurements with giant vesicles or for observing them, including pitfalls • Approaches developed for investigating giant vesicles as well as brief overviews of previous studies implementing the described techniques • Handy tables with data and structures for ready reference

This book collects the articles published in the Special Issue "Polymeric Materials: Surfaces, Interfaces and Bioapplications". It shows the advances in polymeric materials, which have tremendous applications in agricultural films, food packaging, dental restoration, antimicrobial systems, and tissue engineering. These polymeric materials are presented as films, coatings, particles, fibers, hydrogels, or networks. The potential to modify and modulate their surfaces or their content by different techniques, such as click chemistry, ozonation, breath figures, wrinkle formation, or electrospray, are also explained, taking into account the relationship between the structure and properties in the final application. Moreover, new trends in the development of such materials are presented, using more environmental friendly and safe methods, which, at the same time, have a high impact on our society.

It is with great pleasure that we present the proceedings of the 4th International Symposium on Visual Computing (ISVC 2008) in Las Vegas, Nevada. ISVC offers a common umbrella for the four main areas of visual computing including vision, graphics, visualization, and virtual reality. Its goal is to provide a forum for researchers, scientists, engineers and practitioners throughout the world to present their latest research findings, ideas, developments and applications in the broader area of visual computing. This year, ISVC grew significantly; the program consisted of 15 oral sessions, 1 poster session, 8 special tracks, and 6 keynote presentations. The response to the call for papers was very strong; we received over 340 submissions for the main symposium from which we accepted 102 papers for oral presentation and 70 papers for poster presentation. Special track papers were solicited separately through the Organizing and Program Committees of each track. A total of 56 papers were accepted for oral presentation and 8 papers for poster presentation in the special tracks. All papers were reviewed with an emphasis on potential to contribute to the state of the art in the field. Selection criteria included accuracy and originality of ideas, clarity and significance of results, and presentation quality. The review process was quite rigorous, involving two to three independent blind reviews followed by several days of discussion. During the discussion period we tried to correct anomalies and errors that might have existed in the initial reviews.

This book provides developers, engineers, researchers and students with detailed knowledge about the High Efficiency Video Coding (HEVC) standard. HEVC is the successor to the widely successful H.264/AVC video compression standard, and it provides around twice as much compression as H.264/AVC for the same level of quality. The applications for HEVC will not only cover the space of the well-known current uses and capabilities of digital video – they will also include the deployment of new services and the delivery of enhanced video quality, such as ultra-high-definition television (UHDTV) and video with higher dynamic range, wider range of representable color, and greater representation precision than what is typically found today. HEVC is the next major generation of video coding design – a flexible, reliable and robust solution that will support the next decade of video applications and ease the burden of video on world-wide network traffic. This book provides a detailed explanation of the various parts of the standard, insight into how it was developed, and in-depth discussion of algorithms and architectures for its implementation.

Die Tagung des Jungen Forums der ARL vom 6. bis 8. Juni 2012 in Hannover setzte sich mit dem Leitgedanken „Raumentwicklung 3.0 – Gemeinsam die Zukunft der räumlichen Planung gestalten“ auseinander. Ziel war es, Perspektiven für die Zukunft der räumlichen Planung aufzuzeigen. Der Hintergrund für die thematische Ausrichtung der Jahrestagung ist, dass sich digitale soziale Netzwerke und zahlreiche andere Möglichkeiten der Interaktion im Web immer stärker auf die Raumentwicklung auswirken. Die neuen Möglichkeiten der Information, Kommunikation und Partizipation verändern das Verhalten der Menschen und infolgedessen auch die Raumentwicklung in ihrer Mehrdimensionalität in erheblichem Maße. Die Folgen der neuen Informations- und Kommunikationstechnologien sind aber nur eine von vielen aktuellen und zukünftig absehbaren Herausforderungen, die Auswirkungen auf die räumliche Planung und Entwicklung haben werden. Daher sind nicht nur die Neuen Medien Thema, sondern auch die Zukunft der Raumentwicklung sowie der räumlichen Planung selbst und die Chancen, diese Zukunft mitzugestalten. Ausgangspunkt der Beiträge in diesem Band sind folgende Leitfragen: – Was sind die Herausforderungen und Chancen, vor denen die Raumentwicklung in Zukunft stehen wird? Welche Trends reizen Planerinnen und Planer zu ungewöhnlichen Herangehensweisen und zur Entwicklung unkonventioneller Lösungswege? – Welche (normativen) Konzepte der räumlichen Planung sind geeignet, um einerseits die heutigen Anforderungen zu erfüllen und andererseits den künftigen Herausforderungen gewachsen zu sein? Wie sollten und könnten Prozesse der räumlichen Planung künftig gestaltet werden, um die anstehenden Herausforderungen bewältigen zu können? – Warum überhaupt planen? Was ist der Zweck der räumlichen Planung? Welchen Leitvorstellungen und Planungsmaximen soll und kann sie folgen? Diese Fragen bildeten den Schwerpunkt des gemeinsamen Austauschs auf der Tagung des Jungen Forums in Hannover, mit denen sich die Teilnehmer in ihren Vorträgen und in anschließenden Diskussionen auseinandersetzten. Die Ergebnisse der Tagung fließen in die Beiträge dieser Veröffentlichung ein.

The development of “intelligent” systems that can take decisions and perform autonomously might lead to faster and more consistent decisions. A limiting factor for a broader adoption of AI technology is the inherent risks that come with giving up human control and oversight to “intelligent” machines. For sensitive tasks involving critical infrastructures and affecting human well-being or health, it is crucial to limit the possibility of improper, non-robust and unsafe decisions and actions. Before deploying an AI system, we see a strong need to validate its behavior, and thus establish guarantees that it will continue to perform as expected when deployed in a real-world environment. In pursuit of that objective, ways for humans to verify the agreement between the AI decision structure and their own ground-truth knowledge have been explored. Explainable AI (XAI) has developed as a subfield of AI, focused on exposing complex AI models to humans in a systematic and interpretable manner. The 22 chapters included in this book provide a timely snapshot of algorithms, theory, and applications of interpretable and explainable AI and AI techniques that have been proposed recently reflecting the current discourse in this field and providing directions of future development. The book is organized in six parts: towards AI transparency; methods for interpreting AI systems; explaining the decisions of AI systems; evaluating interpretability and explanations; applications of explainable AI; and software for explainable AI.

This book contains selected papers from the 7th International Conference on Information Science and Applications (ICISA 2016) and provides a snapshot of the latest issues encountered in technical convergence and convergences of security technology. It explores how information science is core to most current research, industrial and commercial activities and consists of contributions covering topics including Ubiquitous Computing, Networks and Information Systems, Multimedia and Visualization, Middleware and Operating Systems, Security and Privacy, Data Mining and Artificial Intelligence, Software Engineering, and Web Technology. The contributions describe the most recent developments in information technology and ideas, applications and problems related to technology convergence, illustrated through case studies, and reviews converging existing security techniques. Through this volume, readers will gain an understanding of the current state-of-the-art information strategies and technologies of convergence security. The intended readers are researchers in academia, industry and other research institutes focusing on information science and technology.

Filling the gap in the market for comprehensive coverage of this hot topic, this timely book covers a wide range of organic transformations, e. g. reductions of unsaturated compounds, oxidation reactions, Friedel-Crafts reactions, hydroamination reactions, depolymerizations, transformations of carbon dioxide, oxidative coupling reactions, as well as C-C, C-N, and C-O bond formation reactions. A chapter on the application of zinc catalysts in total synthesis is also included. With its aim of stimulating further research and discussion in the field, this is a valuable reference for professionals in academia and industry wishing to learn about the latest developments.

Durchgängige Sprachbildung zu gewährleisten wird seit einigen Jahren zunehmend als Aufgabe aller LehrerInnen angesehen. Voraussetzung dafür ist eine eingehende Auseinandersetzung damit, welche fachlichen und sprachlichen Anforderungen SchülerInnen im Unterricht meistern müssen. Grundlegend ist also zu untersuchen, wie Sprache im Fach beschaffen ist. Die vorliegende Arbeit geht daher u.a. folgenden Fragen nach: Welchen (fach-)sprachlichen Input erhalten SchülerInnen? Welche Gemeinsamkeiten und Unterschiede lassen sich hinsichtlich des schriftlichen fachlichen Inputs in Form des Schulbuchs und hinsichtlich des mündlichen fachlichen Inputs in Form von Lehrer- und Schüleraussagen feststellen? Die Untersuchung dieser Fragen erfolgt an einer videographierten Unterrichtseinheit von sieben Stunden zum Thema Blut und Blutkreislauf in einer 8. Klasse im Fach Biologie. Den theoretischen Rahmen für die Untersuchung liefert der konzept-orientierte Ansatz, wobei ein für das Unterrichtsthema zentrales Konzept – das von Raum und Bewegung – ausgewählt, modelliert und analysiert wird. Die Ergebnisse zeigen auf, welches Potential die Kombination einer sprach- und fachdidaktischen Perspektive für die Gestaltung von sprachsensiblen Fachunterricht hat.

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