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Web 2.0-Based E-Learning: Applying Social Informatics for Tertiary Teaching - Lee, Mark J.W. 2010-07-31
"This book deals with Web 2.0 and how social informatics are impacting higher education practice, pedagogical theory and innovations"--Provided by publisher.

Effective Peer Learning - Keith Topping 2017-03-31
Peer learning allows a positive use of differences between pupils, turning them into learning opportunities. Yet education professionals often remain unfamiliar with the principles necessary to guarantee its effectiveness. The aim of this book is to help practitioners establish well-structured and effective peer learning projects using a variety of methods. It introduces and defines cooperative learning (mutual peer interaction) and peer tutoring (directional peer interaction) – outlining general organisational principles that will help practitioners implement peer learning in either of these forms. The authors consider how to prepare and train learners to undertake their roles effectively, and how to organise and monitor the process of interaction as it is happening. They then look at how these systems actually operate in the classroom, exploring how the organisational principles work in practice and giving many practical examples. Subsequently three successive chapters consider how to structure peer interactions in cooperative learning, same-age peer tutoring and cross-age peer tutoring. Finally, the advantages and problems, and the potential and challenges, of peer learning are examined. The book should be read in stages, with each part being able to be read on its own – thus providing time for reflection. Within each part, readers can choose to focus on cooperative learning or peer tutoring. The successive focuses on definitions, general principles of implementation and practical issues of implementation should help practitioners build their skills and confidence. Many choices between methods are described, and when teachers are confident in one method they may then consider trying a new method. It is the authors' hope that the book will become a model for peer learning by sharing with readers the skills of other practitioners, and thereby helping all children to develop to their full potential.

Teaching Undergraduate Science - Linda C. Hodges 2015-08-18
This book is written for all science or engineering faculty who have ever found themselves baffled and frustrated by their undergraduate students' lack of engagement and learning. The author, an experienced scientist, faculty member, and educational consultant, addresses these issues with the knowledge of faculty interests, constraints, and day-to-day concerns in mind. Drawing from the research on learning, she offers faculty new ways to think about the struggles their science students face. She then provides a range of evidence-based teaching strategies that can make the time faculty spend in the classroom more productive and satisfying. Linda Hodges reviews the various learning problems endemic to teaching science, explains why they are so common and persistent, and presents a digest of key ideas and strategies to address them, based on the research she has undertaken into the literature on the cognitive sciences and education. Recognizing that faculty have different views about teaching, different comfort levels with alternative teaching approaches, and are often pressed for time, Linda Hodges takes these constraints into account by first offering a framework for thinking purposefully about course design and teaching choices, and then providing a range of strategies to address very specific teaching barriers – whether it be students' motivation, engagement in class, ability to problem solve, their reading comprehension, or laboratory, research or writing skills. Except for the first and last chapters, the other chapters in this book stand on their own (i.e., can be read in any order) and address a specific challenge students have in learning and doing science. Each chapter summarizes the research explaining why students struggle and concludes by offering several teaching options categorized by how easy or difficult they are to implement. Some, for example, can work in a large

lecture class without a great expenditure of time; others may require more preparation and a more adventurous approach to teaching. Each strategy is accompanied by a table categorizing its likely impact, how much time it will take in class or out, and how difficult it will be to implement. Like scientific research, teaching works best when faculty start with a goal in mind, plan an approach building on the literature, use well-tested methodologies, and analyze results for future trials. Linda Hodges' message is that with such intentional thought and a bit of effort faculty can succeed in helping many more students gain exciting new skills and abilities, whether those students are potential scientists or physicians or entrepreneurs. Her book serves as a mini compendium of current research as well as a protocol manual: a readily accessible guide to the literature, the best practices known to date, and a framework for thinking about teaching.

Physics for Scientists and Engineers - Douglas Giancoli 2008
This Value Pack consists of Physics for Scientists & Engineers, Vol. 1 (Chapters 1-20), 4/e by Douglas C. Giancoli (ISBN 9780132273589)and MasteringPhysics™ Student Access Kit for Physics for Scientists and Engineers, 4/e (ISBN 9780131992269)

Teaching Chemistry in Higher Education - Michael Seery 2019-07-01
Teaching Chemistry in Higher Education celebrates the contributions of Professor Tina Overton to the scholarship and practice of teaching and learning in chemistry education. Leading educators in United Kingdom, Ireland, and Australia—three countries where Tina has had enormous impact and influence—have contributed chapters on innovative approaches that are well-established in their own practice. Each chapter introduces the key education literature underpinning the approach being described. Rationales are discussed in the context of attributes and learning outcomes desirable in modern chemistry curricula. True to Tina's personal philosophy, chapters offer pragmatic and useful guidance on the implementation of innovative teaching approaches, drawing from the authors' experience of their own practice and evaluations of their implementation. Each chapter also offers key guidance points for implementation in readers' own settings so as to maximise their adaptability. Chapters are supplemented with further reading and supplementary materials on the book's website (overtonfestschrift.wordpress.com). Chapter topics include innovative approaches in facilitating group work, problem solving, context- and problem-based learning, embedding transferable skills, and laboratory education—all themes relating to the scholarly interests of Professor Tina Overton. About the Editors: Michael Seery is Professor of Chemistry Education at the University of Edinburgh, and is Editor of Chemistry Education Research and Practice. Claire Mc Donnell is Assistant Head of School of Chemical and Pharmaceutical Sciences at Technological University Dublin. Cover Art: Christopher Armstrong, University of Hull

Increasing Student Engagement and Retention Using Classroom Technologies - Charles Wankel 2013-02-15
Classroom mediated discourse technologies are reshaping and reframing the practice of teaching and learning in higher education. This volume critically examines new research on how classroom mediation technologies like Learning Catalytics are being used in higher education to increase learner engagement and social leaning in the classroom.

The Dialogical Roots of Deduction - Catarina Dutilh Novaes 2020-12-17
This comprehensive account of the concept and practices of deduction is the first to bring together perspectives from philosophy, history, psychology and cognitive science, and mathematical practice. Catarina Dutilh Novaes draws on all of these perspectives to argue for an overarching conceptualization of deduction as a dialogical practice: deduction has dialogical roots, and these dialogical roots are still largely present both in theories and in practices of deduction. Dutilh Novaes' account also highlights the deeply human and in fact social nature of

deduction, as embedded in actual human practices; as such, it presents a highly innovative account of deduction. The book will be of interest to a wide range of readers, from advanced students to senior scholars, and from philosophers to mathematicians and cognitive scientists.

Information Security Education – Towards a Cybersecure Society - Lynette Drevin 2018-09-10
This book constitutes the refereed proceedings of the 11th IFIP WG 11.8 World Conference on Information Security Education, WISE 11, held at the 24th IFIP World Computer Congress, WCC 2018, in Poznan, Poland, in September 2018. The 11 revised papers presented were carefully reviewed and selected from 25 submissions. They focus on cybersecurity and are organized in the following topical sections: information security learning techniques; information security training and awareness; and information security courses and curricula.

Using the Engineering Literature, Second Edition - Bonnie A. Osif 2016-04-19
With the encroachment of the Internet into nearly all aspects of work and life, it seems as though information is everywhere. However, there is information and then there is correct, appropriate, and timely information. While we might love being able to turn to Wikipedia® for encyclopedia-like information or search Google® for the thousands of links on a topic, engineers need the best information, information that is evaluated, up-to-date, and complete. Accurate, vetted information is necessary when building new skyscrapers or developing new prosthetics for returning military veterans While the award-winning first edition of Using the Engineering Literature used a roadmap analogy, we now need a three-dimensional analysis reflecting the complex and dynamic nature of research in the information age. Using the Engineering Literature, Second Edition provides a guide to the wide range of resources available in all fields of engineering. This second edition has been thoroughly revised and features new sections on nanotechnology as well as green engineering. The information age has greatly impacted the way engineers find information. Engineers have an effect, directly and indirectly, on almost all aspects of our lives, and it is vital that they find the right information at the right time to create better products and processes. Comprehensive and up to date, with expert chapter authors, this book fills a gap in the literature, providing critical information in a user-friendly format.

Applied Pedagogies for Higher Education - Dawn A. Morley 2020-11-05
This open access book critiques real world learning across both the curriculum and extracurricular activities. Drawing on disciplines as diverse as business, health, fashion, sociology and geography, the editors and authors employ a cross-disciplinary approach to examine how this concept is being applied in higher education. Divided into three parts, the authors and contributors analyse broader applications of real world learning, student experience of practicing in a real world setting, and how learning strategies can be employed to engage students in real world learning. The editors and contributors provide up-to-date, cross-disciplinary and international insights into how real world learning could be integrated into the higher education curriculum to support effective, relevant and life-long learning for 21st century students.

Integrating the Sciences and Society - Harriet Hartman 2008-10-01
Many people think of 'social problems' as involving poor and powerless individuals in society. This work seeks to improve the balance by adding a focus on important and powerful institutions. It discusses policy sciences, public policy analysis and public management. It addresses operations and design issues for government organizations.

Innovation for Sustainable Development - Jean-Yves Grosclaude 2014-02-20
Innovation has become the new buzzword across the globe. International organisations, governments, corporates, academia and society see it as the answer to the major economic, social and environmental transformations challenging the models of the 20th century. Innovations are occurring worldwide and alternative solutions to the existing problems are emerging in all sectors: electric cars, organic farming, renewable energy and e-learning are good examples. These alternatives can be ascribed with qualities such as decentralized frugal, flexible, smart and democratic, virtues that are lacking in conventional models. They are attributed with the potential to meet the overall global challenges such as climate change and the growing inequalities between and within countries. What is the real potential of innovation? Does the rapid deployment of innovations lead towards a more sustainable and inclusive society? Can innovations and the emerging alternatives replace conventional models? Beyond technologies, what institutional

innovations are required to support sustainable development? A Planet for Life 2014 aims to answer these questions and explore innovation in all its aspects, through a series of texts written by international experts. The objective of this book is to analyse experiences from across the world and the role of innovation in a variety of areas of development such as urbanization, agriculture and food, the mobility of people and freight, education and the provision of water and energy to all.

Conducting Educational Design Research - Susan McKenney 2013-06-19
"Among the wide variety of backgrounds, many of those active in defining and applying educational design research appear to have arrived through an interest in psychology, the learning sciences or instructional design. Although most design studies are carried out in multi-disciplinary teams, participants need to conceptually understand the marriage between the design discipline and scientific research traditions. Conducting Educational Design Research emphasises the application of design knowledge and skills in research programs, guiding readers through the various disciplinary backgrounds and scientific developments current today. Therefore, this book on design research will be especially useful for faculty and students in (a) graduate education programs where exposure to research methodologies is strong but exposure to design methodologies is limited; and (b) graduate programs in instructional design where participants have strong backgrounds in design, but may lack the scientific research orientation. In a time when design research is gaining momentum, it seems notable that educational research programs are being confronted with the randomized field trials movement; and educational design programs are at risk of diluting their design character as valuable curricular time is being usurped by more traditional research skills. This book not only offers an invaluable classroom resource, it also provides for the ongoing university dialogue on how to best prepare the next generation of educational researchers"-- Provided by publisher

McKeachie's Teaching Tips - Wilbert McKeachie 2013-01-01
This indispensable handbook provides helpful strategies for dealing with both the everyday challenges of university teaching and those that arise in efforts to maximize learning for every student. The suggested strategies are supported by research and adaptable to specific classroom situations. Rather than suggest a "set of recipes" to be followed mechanically, the book gives instructors the tools they need to deal with the ever-changing dynamics of teaching and learning. Available with InfoTrac Student Collections http://gocengage.com/infotrac. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Peer Review of Learning and Teaching in Higher Education - Judyth Sachs 2013-10-22
Incorporating both theoretical and practical perspectives, this volume of papers explores varied aspects of peer review of teaching in higher education. The section on theory features contributions from academics based in Europe, North America and Australia. It provides a number of models demonstrating ways in which collegial peer commentary can enhance the quality of learning and teaching. The chapters examine in detail the importance of communication and leadership, and deploy evidence from one-on-one interviews that evince the value of considering collegiality, emotions, attitudes, and spaces in peer review. The analysis shows how these factors are central to the ways in which lecturers and teachers communicate with each other to create constructive opportunities for learning. The chapters on practical considerations detail the peer review process and include case studies from institutions in Africa, Europe, North America and Australia, which focus on different areas of the topic, including peer review as a quality assurance mechanism, peer review in distance education, peer review in foundation courses, and peer review embedded within a department and across a university. The book ends with an international perspective on the role of peer review in ensuring a holistic approach to quality enhancement in learning and teaching.

Chemistry Education - Javier García-Martínez 2015-02-23
Winner of the CHOICE Outstanding Academic Title 2017 Award This comprehensive collection of top-level contributions provides a thorough review of the vibrant field of chemistry education. Highly-experienced chemistry professors and education experts cover the latest developments in chemistry learning and teaching, as well as the pivotal role of chemistry for shaping a more sustainable future. Adopting a practice-oriented approach, the current challenges and opportunities posed by chemistry education are critically discussed, highlighting the pitfalls that can occur in teaching chemistry and how to circumvent them. The main topics discussed include best practices, project-based

education, blended learning and the role of technology, including e-learning, and science visualization. Hands-on recommendations on how to optimally implement innovative strategies of teaching chemistry at university and high-school levels make this book an essential resource for anybody interested in either teaching or learning chemistry more effectively, from experience chemistry professors to secondary school teachers, from educators with no formal training in didactics to frustrated chemistry students.

STEM Education for the 21st Century - Bryan Edward Penprase 2020-04-07
This book chronicles the revolution in STEM teaching and learning that has arisen from a convergence of educational research, emerging technologies, and innovative ways of structuring both the physical space and classroom activities in STEM higher education. Beginning with a historical overview of US higher education and an overview of diversity in STEM in the US, the book sets a context in which our present-day innovation in science and technology urgently needs to provide more diversity and inclusion within STEM fields. Research-validated pedagogies using active learning and new types of research-based curriculum is transforming how physics, biology and other fields are taught in leading universities, and the book gives profiles of leading innovators in science education and examples of exciting new research-based courses taking root in US institutions. The book includes interviews with leading scientists and educators, case studies of new courses and new institutions, and descriptions of site visits where new trends in 21st STEM education are being developed. The book also takes the reader into innovative learning environments in engineering where students are empowered by emerging technologies to develop new creative capacity in their STEM education, through new centers for design thinking and liberal arts-based engineering. Equally innovative are new conceptual frameworks for course design and learning, and the book explores the concepts of Scientific Teaching, Backward Course Design, Threshold Concepts and Learning Taxonomies in a systematic way with examples from diverse scientific fields. Finally, the book takes the reader inside the leading centers for online education, including Udacity, Coursera and EdX, interviews the leaders and founders of MOOC technology, and gives a sense of how online education is evolving and what this means for STEM education. This book provides a broad and deep exploration into the historical context of science education and into some of the cutting-edge innovations that are reshaping how leading universities teach science and engineering. The emergence of exponentially advancing technologies such as synthetic biology, artificial intelligence and materials sciences has been described as the Fourth Industrial Revolution, and the book explores how these technologies will shape our future will bring a transformation of STEM curriculum that can help students solve many the most urgent problems facing our world and society.

The Pursuit of Possibility - Nigel Thrift 2022-10-31
Are British research universities losing their way or are they finding a new way? Nigel Thrift, a well-known academic and a former Vice-Chancellor, explores recent changes in the British research university that threaten to erode the quality of these higher education institutions. He considers what a research university has now become by examining the quandaries that have arisen from a succession of misplaced strategies and false expectations. Challenging both higher education policy and leadership, he argues that the focus on student number growth and a series of research policy missteps has upset research universities' priorities just at a point in the history of planetary breakdown when their research is most needed.

Syllabus - William Germano 2022-08-30
How redesigning your syllabus can transform your teaching, your classroom, and the way your students learn Generations of teachers have built their classes around the course syllabus, a semester-long contract that spells out what each class meeting will focus on (readings, problem sets, case studies, experiments), and what the student has to turn in by a given date. But what does that way of thinking about the syllabus leave out—about our teaching and, more importantly, about our students' learning? In Syllabus, William Germano and Kit Nicholls take a fresh look at this essential but almost invisible bureaucratic document and use it as a starting point for rethinking what students—and teachers—do. What if a teacher built a semester's worth of teaching and learning backward—starting from what students need to learn to do by the end of the term, and only then selecting and arranging the material students need to study? Thinking through the lived moments of classroom engagement—what the authors call "coursetime"—becomes a way of

striking a balance between improv and order. With fresh insights and concrete suggestions, Syllabus shifts the focus away from the teacher to the work and growth of students, moving the classroom closer to the genuinely collaborative learning community we all want to create.
Just-in-time Teaching - Scott Simkins 2010
Just-in-Time Teaching (JiTT) is a pedagogical approach that requires students to answer questions related to an upcoming class a few hours beforehand, using an online course management system. While the phrase 'Just in time' may evoke shades of slap-dash work and cut corners, JiTT pedagogy is just the opposite. It helps students to view learning as a process that takes time, introspection, and persistence. Students who experience JiTT come to class better prepared, and report that it helps to focus and organize their out-of-class studying. Their responses to JiTT questions make gaps in their learning visible to the teacher prior to class, enabling him or her to address learning gaps while the material is still fresh in students' minds - hence the label 'just in time'. JiTT questions differ from traditional homework problems in being designed, not only to build cognitive skills, but also to help students confront misconceptions, make connections to previous knowledge, and develop metacognitive thinking practices. Students consequently spend more time on course concepts and ideas, but also read their textbooks in ways that result in more effective and deeper learning. Starting the class with students' work also dramatically changes the classroom-learning environment, creating greater student engagement. This book demonstrates that JiTT has broad appeal across the academy. Part I provides a broad overview of JiTT, introducing the pedagogy and exploring various dimensions of its use without regard to discipline. Part II of the book demonstrates JiTT's remarkable cross-disciplinary impact with examples of applications in physics, biology, the geosciences, economics, history, and the humanities.
Principles & Practice of Physics - Eric Mazur 2014-06-30
Based on his storied research and teaching, Eric Mazur's Principles & Practice of Physics builds an understanding of physics that is both thorough and accessible. Unique organization and pedagogy allow students to develop a true conceptual understanding of physics alongside the quantitative skills needed in the course. New learning architecture: The book is structured to help students learn physics in an organized way that encourages comprehension and reduces distraction. Physics on a contemporary foundation: Traditional texts delay the introduction of ideas that we now see as unifying and foundational. This text builds physics on those unifying foundations, helping students to develop an understanding that is stronger, deeper, and fundamentally simpler. Research-based instruction: This text uses a range of research-based instructional techniques to teach physics in the most effective manner possible. The result is a groundbreaking book that puts physics first, thereby making it more accessible to students and easier for instructors to teach. Build an integrated, conceptual understanding of physics: Help students gain a deeper understanding of the unified laws that govern our physical world through the innovative chapter structure and pioneering table of contents. Encourage informed problem solving: The separate Practice Volume empowers students to reason more effectively and better solve problems.
Best Practices for Teaching Introduction to Psychology - Dana S. Dunn 2006-04-21
This new book provides a scholarly, yet practical approach to the challenges found in teaching introductory psychology. Best Practices for Teaching Introduction to Psychology addresses: • developing the course and assessing student performance • selecting which topics to cover and in how much depth • the effective use of teaching assistants (TAs) and efficient and fair ways to construct and grade exams • choosing the best textbook • assessment advice on how to demonstrate students are learning; • using on-line instruction, writing exercises, and class demonstrations • teaching majors and non-majors in the same classroom. This book will appeal to veteran and novice educators who teach introductory psychology as well as graduate students teaching the course for the first time. It will also serve as an excellent resource in faculty workshops on teaching introductory psychology.
Peer Instruction for Astronomy - Paul J. Green 2003
For courses in Introductory Astronomy. Peer Instruction is a simple yet effective method for teaching science. Techniques of Peer Instruction for introductory college Physics classes were developed primarily at Harvard, and have aroused interest and excitement in the Physics Education community. This approach involves students in the teaching process, making physics more accessible to them. Peer Instruction is a new trend in astronomy that is finding strong interest and is ideally

suited to introductory Astronomy classes. This book is an important vehicle for providing common ground for instructors using the method nationwide, and also provides a bridge to future collaborative efforts by instructors. It is key that the instructor has a large number of thought-provoking, conceptual short-answer questions aimed at a variety of class levels. While significant numbers of such questions have been published for use in Physics, Peer Instruction for Astronomy provides the first such compilation for Astronomy.

Distracted - James M. Lang 2020-10-20
Keeping students focused can be difficult in a world filled with distractions -- which is why a renowned educator created a scientific solution to one of every teacher's biggest problems. Why is it so hard to get students to pay attention? Conventional wisdom blames iPhones, insisting that access to technology has ruined students' ability to focus. The logical response is to ban electronics in class. But acclaimed educator James M. Lang argues that this solution obscures a deeper problem: how we teach is often at odds with how students learn. Classrooms are designed to force students into long periods of intense focus, but emerging science reveals that the brain is wired for distraction. We learn best when able to actively seek and synthesize new information. In Distracted, Lang rethinks the practice of teaching, revealing how educators can structure their classrooms less as distraction-free zones and more as environments where they can actively cultivate their students' attention. Brimming with ideas and grounded in new research, Distracted offers an innovative plan for the most important lesson of all: how to learn.

Principles & Practice of Physics, Volume 2 (Chs. 22-34), Global Edition - Eric Mazur 2022-03-11

Building Knowledge in Higher Education - Christine Winberg 2020-05-27
From pressures to become economically efficient to calls to act as an agent of progressive social change, higher education is facing a series of challenges. There is an urgent need for a rigorous and sophisticated research base to support the informed development of practices. Yet studies of educational practices in higher education remain theoretically underdeveloped and segmented by discipline and country. Building Knowledge in Higher Education illustrates how Legitimation Code Theory is bringing research together from across the disciplinary map and enabling practical change in a rigorously theorized way. The volume addresses both students and educators. Part I explores ways of supporting student achievement from STEM to the arts, from introductory courses to doctoral training, and from using new digital media to reflective writing. Part II focuses on academic staff development in higher education, reaching from curriculum design to pedagogic practices. All chapters focus on issues of contemporary relevance to higher education, showing how Legitimation Code Theory enables these issues to be understood and practices improved. Building Knowledge in Higher Education brings together internationally renowned scholars in higher education studies, academic development, academic literacies, and sociology, with some of the brightest new researchers. The volume significantly extends understandings of teaching and learning in changing higher education contexts and so contributes to educational research and practice. It will be essential reading not only to scholars and students in these fields but also to scholars and educators in higher education more generally.

ECEL 2018 17th European Conference on e-Learning - 2018-11-01
The European Conference on e-Learning was established 17 years ago. It has been held in France, Portugal, England, The Netherlands, Greece and Denmark to mention only a few of the countries who have hosted it. ECEL is generally attended by participants from more than 40 countries and attracts an interesting combination of academic scholars, practitioners and individuals who are engaged in various aspects of e-Learning. Among other journals, the Electronic Journal of e-Learning publishes a special edition of the best papers presented at this conference.

Creative Teachers - Dennis Sale 2020-03-05
This book offers teaching/training professionals an evidence-based pedagogic guide to teaching effectively, efficiently and creatively – also known as Creative Teaching Competence. Firstly it summarizes the extensive research on human psychological functioning relating to learning and how this can be fully utilized in the design and facilitation of quality learning experiences that maximize attainment and engagement opportunities. Secondly, it demonstrates what creativity actually 'looks like' in terms of specific teaching practices, modeling the underpinning processes (syntax) of creative learning design. It then establishes

Metacognitive Capability as the superordinate twenty-first century competency; in that this unique human attribute can significantly enhance the cognitive and motivational strategies essential for facilitating self-directed learning and wellbeing. The book helps teaching/training professionals to thoughtfully apply evidence-based knowledge and strategies to today's challenges, such as developing self-directed learners, enhancing intrinsic motivation, utilizing technology for learning and teaching, developing curricula for twenty-first century competencies and optimally framing and developing the heightened teacher expertise required today.

Using Paired Constraints to Solve The Innovation Problem - Patricia D. Stokes 2019-10-18
This book defines innovation as both a problem and a problem-solving process. It allows readers to approach innovation as a straight-forward problem solving process, and teaches them the paired constraint process to solve specific innovation problems. The authors have used their experience working in creative industries, combined with their academic perspective to create a formal, teachable tool for solving innovation problems. This consists of a formal structure (the problem space), a functional strategy(the paired constraints) and process. (solution by substitution). This book provides a practice section, allowing anyone interested in solving the problem of innovation to learn and develop their skills.

Active Learning: Theoretical Perspectives, Empirical Studies and Design Profiles - Robert Cassidy 2019-07-11
This book represents the emerging efforts of a growing international network of researchers and practitioners to promote the development and uptake of evidence-based pedagogies in higher education, at something a level approaching large-scale impact. By offering a communication venue that attracts and enhances much needed partnerships among practitioners and researchers in pedagogical innovation, we aim to change the conversation and focus on how we work and learn together – i.e. extending the implementation and knowledge of co–design methods. In this first edition of our Research Topic on Active Learning, we highlight two (of the three) types of publications we wish to promote. First are studies aimed at understanding the pedagogical designs developed by practitioners in their own practices by bringing to bear the theoretical lenses developed and tested in the education research community. These types of studies constitute the "practice pull" that we see as a necessary counterbalance to "knowledge push" in a more productive pedagogical innovation ecosystem based on research-practitioner partnerships. Second are studies empirically examining the implementations of evidence-based designs in naturalistic settings and under naturalistic conditions. Interestingly, the teams conducting these studies are already exemplars of partnerships between researchers and practitioners who are uniquely positioned as "in-betweens" straddling the two worlds. As a result, these publications represent both the rigours of research and the pragmatism of reflective practice. In forthcoming editions, we will add to this collection a third type of publication -- design profiles. These will present practitioner-developed pedagogical designs at varying levels of abstraction to be held to scrutiny amongst practitioners, instructional designers and researchers alike. We hope by bringing these types of studies together in an open access format that we may contribute to the development of new forms of practitioner-researcher interactions that promote co-design in pedagogical innovation.

Reform in Undergraduate Science Teaching for the 21st Century - Dennis W. Sunal 2006-05-01
The mission of the book series, Research in Science Education, is to provide a comprehensive view of current and emerging knowledge, research strategies, and policy in specific professional fields of science education. This series would present currently unavailable, or difficult to gather, materials from a variety of viewpoints and sources in a usable and organized format. Each volume in the series would present a juried, scholarly, and accessible review of research, theory, and/or policy in a specific field of science education, K-16. Topics covered in each volume would be determined by present issues and trends, as well as generative themes related to current research and theory. Published volumes will include empirical studies, policy analysis, literature reviews, and positing of theoretical and conceptual bases.

Teaching with Classroom Response Systems - Derek Bruff 2009-10-22
There is a need in the higher education arena for a book that responds to the need for using technology in a classroom of tech-savvy students. This book is filled with illustrative examples of questions and teaching

activities that use classroom response systems from a variety of disciplines (with a discipline index). The book also incorporates results from research on the effectiveness of the technology for teaching. Written for instructional designers and re-designers as well as faculty across disciplines. A must-read for anyone interested in interactive teaching and the use of clickers. This book draws on the experiences of countless instructors across a wide range of disciplines to provide both novice and experienced teachers with practical advice on how to make classes more fun and more effective."--Eric Mazur, Balkanski Professor of Physics and Applied Physics, Harvard University, and author, Peer Instruction: A User's Manual "Those who come to this book needing practical advice on using 'clickers' in the classroom will be richly rewarded: with case studies, a refreshing historical perspective, and much pedagogical ingenuity. Those who seek a deep, thoughtful examination of strategies for active learning will find that here as well—in abundance. Dr. Bruff achieves a marvelous synthesis of the pragmatic and the philosophical that will be useful far beyond the life span of any single technology." --Gardner Campbell, Director, Academy for Teaching and Learning, and Associate Professor of Literature, Media, and Learning, Honors College, Baylor University

Embodiment and Professional Education - Stephen Loftus 2022-01-01
This book draws attention to the ways in which an awareness of, and sensitivity to, embodiment can enlighten educational practices. It explores discourses from a range of thinkers, including Merleau-Ponty, Gadamer, Bakhtin, Haraway and Ahmed to name a few. The book argues that attention to embodiment can help us to reimagine the goals of education in ways that fit more coherently with human concerns and that offer the chance to provide education that is more holistic and grounded in our corporeality. Theories of embodiment can be used to modify education at the level of curriculum and at the level of pedagogy. This can help us design educational interventions that fit more naturally with how humans are inclined to learn and thus make educational experiences more meaningful. Attention to embodiment allows us to appreciate the extent to which the body appropriates a professional practice and the extent to which a professional practice appropriates the body of the learner. It shows how greater sensitivity to the body can enliven and enlighten our educational practices, especially in professional education.

Blended Learning: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources 2016-08-18
Traditional classroom learning environments are quickly becoming a thing of the past as research continues to support the integration of learning outside of a structured school environment. Blended learning, in particular, offers the best of both worlds, combining classroom learning with mobile and web-based learning environments. Blended Learning: Concepts, Methodologies, Tools, and Applications explores emerging trends, case studies, and digital tools for hybrid learning in modern educational settings. Focusing on the latest technological innovations as well as effective pedagogical practice, this critical multi-volume set is a comprehensive resource for instructional designers, educators, administrators, and graduate-level students in the field of education.

Active Learning in College Science - Joel J. Mintzes 2020-02-23
This book explores evidence-based practice in college science teaching. It is grounded in disciplinary education research by practicing scientists who have chosen to take Wieman's (2014) challenge seriously, and to investigate claims about the efficacy of alternative strategies in college science teaching. In editing this book, we have chosen to showcase outstanding cases of exemplary practice supported by solid evidence, and to include practitioners who offer models of teaching and learning that meet the high standards of the scientific disciplines. Our intention is to let these distinguished scientists speak for themselves and to offer authentic guidance to those who seek models of excellence. Our primary audience consists of the thousands of dedicated faculty and graduate students who teach undergraduate science at community and technical colleges, 4-year liberal arts institutions, comprehensive regional campuses, and flagship research universities. In keeping with Wieman's challenge, our primary focus has been on identifying classroom practices that encourage and support meaningful learning and conceptual understanding in the natural sciences. The content is structured as follows: after an Introduction based on Constructivist Learning Theory (Section I), the practices we explore are Eliciting Ideas and Encouraging Reflection (Section II); Using Clickers to Engage Students (Section III); Supporting Peer Interaction through Small Group Activities (Section IV); Restructuring Curriculum and Instruction (Section V); Rethinking the Physical Environment (Section VI); Enhancing Understanding with Technology (Section VII), and Assessing Understanding (Section VIII).

The book's final section (IX) is devoted to Professional Issues facing college and university faculty who choose to adopt active learning in their courses. The common feature underlying all of the strategies described in this book is their emphasis on actively engaging students who seek to make sense of natural objects and events. Many of the strategies we highlight emerge from a constructivist view of learning that has gained widespread acceptance in recent years. In this view, learners make sense of the world by forging connections between new ideas and those that are part of their existing knowledge base. For most students, that knowledge base is riddled with a host of naïve notions, misconceptions and alternative conceptions they have acquired throughout their lives. To a considerable extent, the job of the teacher is to coax out these ideas; to help students understand how their ideas differ from the scientifically accepted view; to assist as students restructure and reconcile their newly acquired knowledge; and to provide opportunities for students to evaluate what they have learned and apply it in novel circumstances. Clearly, this prescription demands far more than most college and university scientists have been prepared for.

Lecture-free Teaching - Bonnie S. Wood 2009

Schooling by Design - Grant P. Wiggins 2007
The authors of Understanding by Design share a compelling strategy for creating schools that truly fulfill the central mission of education: to help students become thoughtful, productive, and accomplished at worthy tasks.

Handbook of College Science Teaching - Joel J. Mintzes 2006
The Handbook offers models of teaching and learning that go beyond the typical lecture-laboratory format and provides rationales for new practices in the college classroom. It is ideal for graduate teaching assistants, senior faculty and graduate coordinators, and mid-career professors in search of reinvigoration.

Handbook of Research on Applied Learning Theory and Design in Modern Education - Railean, Elena 2015-11-09
The field of education is in constant flux as new theories and practices emerge to engage students and improve the learning experience. Research advances help to make these improvements happen and are essential to the continued improvement of education. The Handbook of Research on Applied Learning Theory and Design in Modern Education provides international perspectives from education professors and researchers, cyberneticists, psychologists, and instructional designers on the processes and mechanisms of the global learning environment. Highlighting a compendium of trends, strategies, methodologies, technologies, and models of applied learning theory and design, this publication is well-suited to meet the research and practical needs of academics, researchers, teachers, and graduate students as well as curriculum and instructional design professionals.

eService-Learning - Jean R. Strait 2015-06-11
This book serves as an introduction to using online teaching technologies and hybrid forms of teaching for experiential learning and civic engagement. Service-learning has kept pace neither with the rapid growth in e-learning in all its forms nor with the reality that an increasing number of students are learning online without exposure to the benefits of this powerful pedagogy. Eservice-learning (electronic service-learning) combines service-learning and on-line learning and enables the delivery of the instruction and/or the service to occur partially or fully online. Eservice-learning allows students anywhere, regardless of geography, physical constraints, work schedule, or other access limitations, to experience service-learning. It reciprocally also equips online learning with a powerful tool for engaging students. In eservice-learning, the core components of service, learning, and reflection may take a different form due to the online medium—for example, reflection often occurs through discussion board interactions, journals, wikis, or blogs in an eservice-learning course. Moreover, the service, though still community-based, creates a world of opportunities to connect students with communities across the globe—as well as at their very own doorstep. This book introduces the reader to the four emerging types of eservice-learning, from Extreme EService-Learning (XE-SL) classes where 100% of the instruction and 100% of the service occur online, to three distinct forms of hybrid where either the service or the instruction are delivered wholly on-line – with students, for instance, providing online products for far-away community partners – or in which both are delivered on-site and online. It considers the instructional potential of common mobile technologies – phones, tablets and mobile reading devices. The authors also address potential limitations, such as

technology challenges, difficulties sustaining three-way communication among the instructor, community partner, and students, and added workload. The book includes research studies on effectiveness as well as examples of practice such drafting grants for a community partner, an informational technology class building online communities for an autism group, and an online education class providing virtual mentoring to at-risk students in New Orleans from across the country.