Pengaruh Model Inkuiri Terbimbing Guided Inquiry Terhadap

The achievement gaps in science and the under-representation of minorities in science-related fields have long been a concern of the nation. This book examines the roots of this problem by providing a comprehensive, ‘state of the field’ analysis and synthesis of current research on science education for minority students. Research from a range of theoretical and methodological perspectives is brought to bear on the question of how and why our nation’s schools have failed to provide equitable learning opportunities with all students in science education. From this wealth of investigative data, the authors propose a research agenda for the field of science education - identifying strengths and weaknesses in the literature to date as well as the most urgent priorities for those committed to the goals of equity and excellence in science education.

Presenting an up-to-date discussion of the many aspects of teaching primary science, this best-selling book contains a strong focus on constructivist learning and the role of social interaction in learning.

A substantial update of the popular resource for the thinking skills movement offers new approaches to create schools and classrooms that truly challenge students to use their intelligence.

We are delighted to introduce the proceedings of the first edition of the 2019 International Conference on Advances in Education, Humanities, and Language (ICEL). The aim of ICEL (International Conference on Advances in Humanities, Education and Language) is to provide a platform for researchers, professionals, academicians as well as industrial professionals from all over the world to present their research results and development activities in Education, humanities, and Language. The theme of ICEL 2019 was “Mainstreaming the Influences on Higher Order of Thinking Skills in Humanities, Education, and Language in Industrial Revolution 4.0.” The technical program of ICEL 2019 consisted of 77 full papers, including invited papers in oral presentation sessions at the main conference tracks. Aside from the high quality technical paper presentations, the technical program also featured six keynote speeches, Hamamah, Ph.D (Universitas Brawijaya, Indonesia), Prof. Dr. Nuraihan binti Mat Daud (UILM, Malaysia), Dr. Edith Dunn (Conservator/Cultural Specialist, USA), Prof. Yoshikiko -Sugimura (university of Mizaki, Japan), Prof. Park Yoonho (Sunchon National University, Korea) and Prof. Su Keh Bow (Soochow University, Taiwan). We strongly believe that ICEL conference provides a good forum for all researchers, developers and practitioners to discuss various advances that are relevant to education, humanities, and language. We also expect that the future ICEL conference will be as successful and stimulating, as indicated by the contributions presented in this volume.

This practical, very effective resource helps middle and high school teachers and curriculum leaders develop the skills to design instructional tasks and assessments that engage students in higher-level critical thinking, as recommended by the Common Core State Standards. Real examples of formative and summative assessments from a variety of content areas are included and demonstrate how to successfully increase the level of critical thinking in every classroom! This book is also an excellent resource for higher education faculty to use in undergraduate and graduate courses on assessment and lesson planning.

Humans, especially children, are naturally curious. Yet, people often balk at the thought of learning science--the “eyes glazed over” syndrome. Teachers may find teaching science a major challenge in an era when science ranges from the hardly imaginable quark to the distant, blazing quasar. Inquiry and the National Science Education Standards is the book that educators have been waiting for—a practical guide to teaching inquiry and teaching through inquiry, as recommended by the National Science Education Standards. This will be an important resource for educators who must help school boards, parents, and teachers understand “why we can’t teach the way we used to.” “Inquiry” refers to the diverse ways in which scientists study the natural world and in which students grasp science knowledge and the methods by which that knowledge is produced. This book explains and illustrates how inquiry helps students learn science content, master how to do science, and understand the nature of science. This book explores the dimensions of teaching and learning science as inquiry for K-12 students across a range of science topics. Detailed examples help clarify when teachers should use the inquiry-based approach and how much structure, guidance, and coaching they should provide. The book dispels myths that may have discouraged educators from the inquiry-based approach and illuminates the subtle interplay between concepts, processes, and science as it is experienced in the classroom. Inquiry and the National Science Education Standards shows how to bring the standards to life, with features such as classroom vignettes exploring different kinds of inquiries for elementary, middle, and high school and Frequently Asked Questions for teachers, responding to common concerns such as obtaining teaching supplies.

Turning to assessment, the committee discusses why assessment is important, looks at existing schemes and formats, and addresses how to involve students in assessing their own learning achievements.

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In addition, this book discusses administrative assistance, communication with parents, appropriate teacher evaluation, and other avenues to promoting and supporting this new teaching paradigm. Recent government publications like "Benchmark for Scientific Literacy" and "Science for all Americans" have given teachers a mandate for improving science education in America. What we know about how learners construct meaning--particularly in the natural sciences--has undergone a virtual revolution in the past 25 years. Teachers, as well as researchers, are now grappling with how to better teach science, as well as how to assess whether students are learning. Assessing Science Understanding is a companion volume to Teaching Science for Understanding, and explores how to assess whether learning has taken place. The book discusses a range of promising new and practical tools for assessment including concept maps, vee diagrams, clinical interviews, problem sets, performance-based assessments, computer-based methods, visual and observational testing, portfolios, explanatory models, and national examinations.

Qualitative Social Research employs an accessible approach to present the multiple ways in which criticism enhances research practice. Packed full of relevant, 'real world' examples, it showcases the strengths and pitfalls of each research method, integrating the philosophical foundations of qualitative research with thoughtful overviews of a range of commonly used methods. This book is ideal for students and prospective researchers and explains what makes qualitative sociological research practical, useful and ethical. It's an essential guide to how to undertake research, use an appropriate research design and work with a range of qualitative data collection methods, and includes: detailed discussions of ethical issues references to new technologies in each chapter explanations of how to integrate online and visual methods with traditional data collection methods exercises to enhance learning The authors use their many years’ experience in using a range of qualitative methods to conduct and teach research to demonstrate the value of critical thinking skills at all stages of the research process.

Providing a selection of papers presented at ICECE 2018, a biennial conference organised by the Early Childhood Education Program, Universitas Pendidikan Indonesia. The conference's general theme was "Finding Alternative Approaches, Theories, Frameworks, and Practices of Early Childhood Education in the 21st Century." Distinct from other periods of time, the 21st century is characterised by so much knowledge -easy to access but hard to grasp, borderless and hyper-connected society mediated by the internet, high competitiveness -not only within scenery but across countries, high mobility, and widening economic discrepancy as neoliberalism has strengthened its influence on every sector of human life. The children of today will face many things that have not yet been invented or discovered, sometimes beyond expectations. Scholars and teachers of early childhood education need to be aware of these astonishing changes. The way children and childhood are seen cannot stay the same, and so does the way children of this century are educated. The conference opened a discussion about finding alternative approaches, theories, and best practices of early childhood education for a rapidly changing and globalised society.

The authors set forth the theory and rationale behind adopting a Guided Inquiry approach to PreK–12 education, as well as the expertise, roles and responsibilities of each member of the instructional team. As an annual event, The 3rd International Conference Community Research and Service Engagements (IC2RSE) 2019 continued the agenda to bring together researcher, academics, experts and professionals in examining selected theme by applying multidisciplinary approaches. In 2019, this event will be held in 4 December at Florida-Maryland Room, JW Marriott Hotel. The conference from any kind of stakeholders related with Education, Information Technology, Mathematics and Social Related Studies. Each contributed paper was refereed before being accepted for publication. The double-blind peer reviewed was used in the paper selection.

In this highly accessible book, Alec Fisher shows students how they can develop a range of creative and critical thinking skills that are transferable to other subjects and contexts. AISTSSE 2018Proceedings of The 5th Annual International Seminar on Trends in Science and Science Education, AISTSSE 2018, 18-19 October 2018, Medan, IndonesiaEuropean Alliance for Innovation

The volume begins with an overview of POGIL and a discussion of the science education reform context in which it was developed. Next, cognitive models that serve as the basis for POGIL are presented, including Johnstone's Information Processing Model and a novel extension of it. Adoption, facilitation and implementation of POGIL are addressed next. Faculty who have made the transformation from a traditional approach to a POGIL student-centered approach discuss their motivations and implementation processes. Issues related to implementing POGIL in large classes are discussed and possible solutions are provided. Behaviors of a quality facilitator are presented and steps to create a facilitation plan are outlined. Succeeding chapters describe how POGIL has been successfully implemented in diverse academic settings, including high school and college classrooms, with both science and non-science majors. The challenges for implementation of POGIL are presented, classroom practice is described, and topic selection is addressed. Successful POGIL instruction can incorporate a variety of instructional techniques. Tablet PC's have been used in a POGIL classroom to allow extensive communication between students and instructor. In a POGIL laboratory section, students work in groups to carry out experiments rather than merely verifying previously taught principles. Instructors need to know if students are benefiting from POGIL practices. In the final chapters, assessment of student performance is discussed. The concept of a feedback loop, which can consist of self-analysis, student and peer assessments, and input from other instructors, and its importance in assessment is detailed. Data is provided on POGIL instruction in organic and general chemistry courses at several institutions. POGIL is shown to reduce attrition, improve student learning, and enhance process skills.

Model pembelajaran GO CAR (Guided Orientation Challenge Analysis Review) sebagai alternatif untuk meningkatkan kemampuan berpikir tingkat tinggi siswa. Model pembelajaran GO CAR diharapkan mampu meningkatkan imajinasi berpikir serta meningkatkan daya ingat siswa yang bertujuan untuk melatih kemampuan berpikir tingkat tinggi siswa. Imajinasi berpikir dan daya ingat dapat dibentuk dengan cara menghubungkan pelajaran dengan kehidupan sehari-hari, sehingga tidak mudah dilupakan. Selain itu melalui aktivitas belajar siswa dengan bertukar pikiran, diharapkan mampu meningkatkan daya ingat serta berani tampil menyatakan ide-ide dan pendapatannya.

Model pembelajaran merupakan representasi metode pembelajaran yang berisii seperangkat cara melaksanakan praktek pembelajaran. Model menjembatani antara teori dengan praktek, artinya model bersifat menerjemahkan dari teori kedalam dunia konkrit dan praktek. Lingkup model pembelajaran adalah lingkup mikro, bagaimana sebuah metode pembelajaran dengan segenap prosedur strateginya diaplikasikan dan dilakukan secara detail. Adapun lingkup model pengembangan pembelajaran adalah lingkup makro, bagaimana sebuah metode pembelajaran, dipilih melalui serangkaian proses analisis, dirancang, dikembangkan, diuji, diaplikasikan, diuji ulang dan dihasilkan sebagai bagian proses pengembangan pembelajaran. Berkembangnya beragam model-model pembelajaran menunjukkan semakin berkembangnya konsesi teknologi pembelajaran yang seiring dengan berkembangnya teori belajar dan pembelajaran. Hal ini berarti teori serta praktik dalam teknologi pembelajaran,
mengandung pengertian terus-menerus dibangun dan diperbaiki melalui kegiatan penelitian dan praktek reflektif, dimana istilah tersebut juga tercakup sebagai makna dari studi, yaitu studi yang mengacu pada kegiatan pengumpulan informasi dan analisis melampaui konsep tradisional penelitian. Hal tersebut mencakup penelitian kuantitatif dan kualitatif serta bentuk-bentuk lain dari disiplin metode penelitian lainnya. Tegasnya, kegiatan penelitian memiliki kebiasaan yang baik dalam memunculkan ideide baru dan proses evaluatif untuk membantu meningkatkan kualitas praktik. Kegiatan Penelitian dapat dilakukan berdasarkan berbagai konstruksi metodologis yang sama baiknya dengan konstruksi teorets. Keberadaan model-model pembelajaran menunjukkan bahwa bidang teknologi pembelajaran telah berkembang dari penelitian yang mencoba untuk "membuktikan" bahwa media dan teknologi adalah alat yang efektif untuk pengajaran, menu ke formulasi penelitian guna memeriksa dan menguji pendekatan aplikasi proses dan teknologi dalam rangka meningkatkan pembelajaran. Pengembangan suatu model pembelajaran merupakan salah satu contoh terobosan baru dalam menciptakan formulasi penelitian dibidang teknologi pembelajaran untuk meningkatkan kualitas pembelajaran ke arah yang lebih baik. Pengembangan model pembelajaran dan kebijakan pembelajaran yang telah dipengaruhi oleh perkembangan dan perubahan dalam teori belajar, pengelolaan informasi, komunikasi dan dari bidang lainnya. Perkembangan teori behaviorisme, kognitivisme dan konstruktivisme telah mengubah penekanan dalam bidang belajar mengajar. Perhatian terhadap perspektif peserta didik, karakteristik dan kepemilikan proses pembelajaran telah tumbuh dan berkembang dengan terciptanya model-model pembelajaran yang baru dan inovatif. Multimedia-Based Instructional Design is a thoroughly revised and updated second edition of the best-selling book that provided a complete guide to designing and developing interactivemultimedia training. While most training companies develop their training programs in many different technological delivery media—computer-based, web-based, and distance learning technologies—this unique book demonstrates that the same instructional design process can be used for all media. Using just one process reduces cycle time for course development—and also reduces costs. Thinking Skills, second edition, is the only endorsed book offering complete coverage of the Cambridge International AS and A Level syllabus. This updated resource offers ten models that allow teachers to work together to create learner-centered classrooms by grouping elements from various content areas into a coherent, standards-based curriculum. The standards-based lessons in this slim volume serve as an introduction to environmental science for young learners. Hop Into Action helps teach children about the joy of amphibians through investigations that involve scientific inquiry and knowledge building. Twenty hands-on learning lessons can be used individually or as a yearlong curriculum. Each lesson is accompanied by detailed objectives, materials lists, background information, step-by-step procedures, evaluation questions, assessment methods, and additional web resources. The activities can be integrated into other disciplines such as language arts, physical education, art, and math and are adaptable to informal learning environments. From publisher description. Prosiding ini memuat 67 makalah yang disajikan dalam Seminar Nasional Pendidikan Biologi (SNP BIO) 2019 yang mengangkat tema "Biologi dan Pembelajaran di Era Revolusi Industri 4.0". Seminar dilaksanakan di Kendari pada 12 Oktober 2019. This book contains the proceedings of the The 5th Annual International Seminar on Trends in Science and Science Education (AISTSSE) and The 2nd International Conference on Innovation in Education, Science and Culture (ICIESC), where held on 18 October 2018 and 25 September 2018 in same city, Medan, North Sumatera. Both of conferences were organized respectively by Faculty of Mathematics and Natural Sciences and Research Institute, Universitas Negeri Medan. The papers from these conferences collected in a proceedings book entitled: Proceedings of 5th AISTSSE. In publishing process, AISTSSE and ICIESC were collaboration conference presents six plenary and invited speakers from Australia, Japan, Thailand, and from Indonesia. Besides speaker, around 162 researchers covering lecturers, teachers, participants and students have attended in this conference. The researchers come from Jakarta, Yogyakarta, Bandung, Palembang, Jambi, Batam, Pekanbaru, Padang, Aceh, Medan and several from Malaysia, and Thailand. The AISTSSE meeting is expected to yield fruitful result from discussion on various issues dealing with challenges we face in this Industrial Revolution (RI) 4.0. The purpose of AISTSSE is to bring together professionals, academics and students who are interested in the advancement of research and practical applications of innovation in education, science and culture. The presentation of such conference covering multidisciplines will contribute a lot of inspiring inputs and new knowledge on current trending about: Mathematical Sciences, Mathematics Education, Physical Sciences, Physics Education, Biological Sciences, Biology Education, Chemical Sciences, Chemistry Education, and Computer Sciences. Thus, this will contribute to the next young generation researches to produce innovative research findings. Hopely that the scientific attitude and skills through research will promote Unimed to be a well-known university which persist to be developed and excelled. Finally, we would like to express greatest thankful to all colleagues in the steering committee for cooperation in administering and arranging the conference. Hopefully these seminar and conference will be continued in the coming years with many more insight articles from inspiring research. We would also like to thank the invited speakers for their invaluable contribution and for sharing their vision in their talks. We hope to meet you again for the next conference of AISTSSE. Provides information, case studies, and cameos for teachers on how to conduct research in their classroom. This book synthesizes current literature and research on scientific inquiry and the nature of science in K-12 instruction. Its presentation of the distinctions and overlaps of inquiry and nature of science as instructional outcomes are unique in contemporary literature. Researchers and teachers will find the text interesting as it carefully explores the subtleties and challenges of designing curriculum and instruction for integrating inquiry and nature of science. Buku ini berisi tentang hasil penelitian penulis mengenai efek model pembelajaran discovery dan kreativitas terhadap kemampuan berpikir tingkat tinggi fisika. Kemampuan berpikir tingkat tinggi dapat dilatihkan dengan pembelajaran berbasis aktivitas salah satunya dengan menggunakan model pembelajaran discovery, namun bagaimana kreativitas terhadap kemampuan berpikir tingkat tinggi dan apakah keduanya saling berinteraksi dalam melatih kemampuan berpikir tingkat tinggi siswa? Anda dapat menemukannya di dalam buku ini. Dengan memaparan secara lengkap, buku ini cocok dan perlu dibaca oleh kalangan guru SMA khususnya guru mata pelajaran fisika yang ingin memperbaiki proses pembelajaran. Thematic learning can be strengthened by research based learning such as inquiry, so that collaboration can contribute to one another in building active and student-centered learning, and can have a positive influence on students' social attitudes. Based on the description, a study was conducted with the aim of: (1) knowing the implementation of thematic learning with the guided inquiry model; and (2) knowing students' social attitudes on thematic learning with the guided inquiry model. This study uses a qualitative approach, with field research designs. Data collection techniques using interviews, observation, and field notes. The results showed that: (1) teachers and students could carry
out the thematic learning stages with guided inquiry models in learning 1 to 4 very effectively; and (2) students' attitudes towards thematic learning with guided inquiry models experience positive development. In learning 1, students' social attitudes are still dominant. While in learning 2, social attitude began to develop. Continued in learning 3 and 4, most of the social students begin to develop and culture, and in learning 5 and 6 the majority of students have a social attitude.


Blended learning merupakan salah satu model pembelajaran terpadu yang termasuk dalam bagian kegiatan pembelajaran dengan pendekatan kontekstual. Dalam kegiatan pembelajaran blended learning perlu adanya proses belajar dengan model guided inquiry yang digunakan untuk memberikan rangsangan atau stimulus pada suatu permasalahan yang akan diselesaikan oleh peserta didik dalam suatu bentuk diskusi belajar serta memberikan arahan dan aturan yang telah ditetapkan oleh pengajar dalam proses pembelajaran. Dalam buku blended learning berbasis guided inquiry ini dapat meningkatkan pengetahuan mengenai pembelajaran blended learning, bagaimana peneparan dengan mengkombinasikan model guided inquiry, dan kendala yang mungkin terjadi pada proses pembelajaran, sehingga pembaca yang khususnya pengajar dapat menambah wawasan dan mengatasi permasalahan yang terjadi pada saat menerapkan pembelajaran blended learning berbasis guided inquiry dalam kelas yang diajar.


This book is devoted to the Metacognition arena. It highlights works that show relevant analysis, reviews, theoretical, and methodological proposals, as well as studies, approaches, applications, and tools that shape current state, define trends and inspire future research. As a result of the revision process fourteen manuscripts were accepted and organized into five parts as follows: · Conceptual: contains conceptual works oriented to: (1) review models of strategy instruction and tailor a hybrid strategy; (2) unveil second-order judgments and define a method to assess metacognitive judgments; (3) introduces a conceptual model to describe the metacognitive activity as an autopoietic system. · Framework: offers three works concerned with: (4) stimulate metacognitive skills and self-regulatory functions; (5) evaluate metacognitive skills and self-regulated learning at problem solving; (6) deal with executive management metacognition and strategic knowledge metacognition. · Studies: reports research related to: (7) uncover how metacognitive awareness of listening strategies bias listening efficiency; (8) unveil how metacognitive skills and motivation are achieved in science informal learning; (9) tackle stress at learning by means of coping strategies. · Approaches: focus on the following targets: (10) social metacognition to support collaborative problem solving; (11) metacognitive skills to be stimulated in computer supported collaborative learning; (12) metacognitive knowledge and metacognitive experiences are essential for teaching practices. · Tools: promotes the use of intelligent tutoring systems such as: (13) BioWorld allows learners to practice medical diagnostic by providing virtual patient cases; (14) MetaHistoReasoning provides examples to learners and inquiries about the causes of historical events. This volume will be a source of interest for researchers, practitioners, professors, and postgraduate students aimed at updating their knowledge and finding targets for future work in the metacognition arena.

The Language of Science Education: An Expanded Glossary of Key Terms and Concepts in Science Teaching and Learning is written expressly for science education professionals, and students of science education to provide the foundation for a shared vocabulary of the field of science teaching and learning. Science education is a part of education studies but has developed a unique vocabulary that is occasionally at odds with the ways some terms are commonly used both in the field of education and in general conversation. Therefore, understanding the specific way that terms are used within science education is vital for those who wish to understand the existing literature or make contributions to it. The Language of Science Education provides definitions for 100 unique terms, but when considering the related terms that are also defined as they relate to the targeted words, almost 150 words are represented in the book. For instance, “laboratory instruction” is accompanied by definitions for openness, wet lab, dry lab, virtual lab and cookbook lab. Each key term is defined both with a short entry designed to provide immediate access following by a more extensive discussion, with extensive references and examples where appropriate. Experienced readers will recognize the majority of terms included, but the developing discipline of science education demands the consideration of new words. For example, the term blended science is offered as a better descriptor for interdisciplinary science and make a distinction between project-based and problem-based instruction. Even a definition for science education is included. The Language of Science Education is designed as a reference book but many readers may find it useful and enlightening to read it as if it were a series of very short stories.
We are delighted to introduce the Proceedings of the Second International Conference on Progressive Education (ICOPE) 2020 hosted by the Faculty of Teacher Training and Education, Universitas Lampung, Indonesia, in the heart of the city Bandar Lampung on 16 and 17 October 2020. Due to the COVID-19 pandemic, we took a model of an online organised event via Zoom. The theme of the 2nd ICOPE 2020 was “Exploring the New Era of Education”, with various related topics including Science Education, Technology and Learning Innovation, Social and Humanities Education, Education Management, Early Childhood Education, Primary Education, Teacher Professional Development, Curriculum and Instructions, Assessment and Evaluation, and Environmental Education. This conference has invited academics, researchers, teachers, practitioners, and students worldwide to participate and exchange ideas, experiences, and research findings in the field of education to make a better, more efficient, and impactful teaching and learning. This conference was attended by 190 participants and 160 presenters. Four keynote papers were delivered at the conference; the first two papers were delivered by Prof Emeritus Stephen D. Krashen from the University of Southern California, the USA and Prof Dr Bujang Rahman, M.Si. from Universitas Lampung, Indonesia. The second two papers were presented by Prof Dr Habil Andrea Bencsik from the University of Pannonia, Hungary and Dr Hisham bin Dzakiria from Universiti Utara Malaysia, Malaysia. In addition, a total of 160 papers were also presented by registered presenters in the parallel sessions of the conference. The conference represents the efforts of many individuals. Coordination with the steering chairs was essential for the success of the conference. We sincerely appreciate their constant support and guidance. We would also like to express our gratitude to the organising committee members for putting much effort into ensuring the success of the day-to-day operation of the conference and the reviewers for their hard work in reviewing submissions. We also thank the four invited keynote speakers for sharing their insights. Finally, the conference would not be possible without the excellent papers contributed by authors. We thank all authors for their contributions and participation in the 2nd ICOPE 2020. We strongly believe that the 2nd ICOPE 2020 has provided a good forum for academics, researchers, teachers, practitioners, and students to address all aspects of education-related issues in the current educational situation. We feel honoured to host such a conference.

In our contemporary learning society, expectations about the contribution of education and training continue to rise. Moreover, the potential of information and communication technology (ICT) creates many challenges. These trends affect not only the aims, content and processes of learning, they also have a strong impact on educational design and development approaches in research and professional practices. Prominent researchers from the Netherlands and the USA present their latest findings on these issues in this volume. The major purpose of this book is to discuss current thinking on promising design approaches and to present innovative (computer-based) tools. The book aims to serve as a resource and reference work that will stimulate advancement in the field of education and training. It is intended to be useful in academic settings as well as for professionals in design and development practices.

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