



SAARANSH SPAB Library Insight

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Welcome

SAARANSH is a SPAB Library bi-monthly digital digest to communicate new developments in the knowledge and showcasing the potential of existing content for knowledge creation and validation.

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Librarian pick for you

“Every Problem has a gift for you in its hands”
- Richard Bach

Compiler

Dr. Mukesh Pathak
Deputy Librarian

Problem Solving

(click on the red links for more details)

Problem solving refers to cognitive processing directed at achieving a goal when the problem solver does not initially know a solution method. A problem exists when someone has a goal but does not know how to achieve it. Problems can be classified as routine or non-routine, and as well defined or ill defined. The major cognitive processes in problem solving are representing, planning, executing, and monitoring. The major kinds of knowledge required for problem solving are facts, concepts, procedures, strategies, and beliefs. Classic theoretical approaches to the study of problem solving are associationism, Gestalt, and information processing. Current issues and suggested future issues include decision making, intelligence and creativity, teaching of thinking skills, expert problem solving, analogical reasoning, mathematical and scientific thinking, everyday thinking, and the cognitive neuroscience of problem solving. Common themes concern the domain specificity of problem solving and a focus on problem solving in authentic contexts.

[Content Credit: [Oxford Handbook Online](#)]

The concept of problem solving has slightly different meaning depending on the discipline. There are two different type of the approach to define problem i.e. ill-defined and well defined. Well defined problems have specific end goals and clearly expected solutions, whereas ill-defined lacks all such things. The ability to understand what the end goal of the problem is, and what rules could be applied represents the key to solving the problem is the process of problem solving.

[Content Credit: [Wikipedia](#)]

Problem Solving Steps

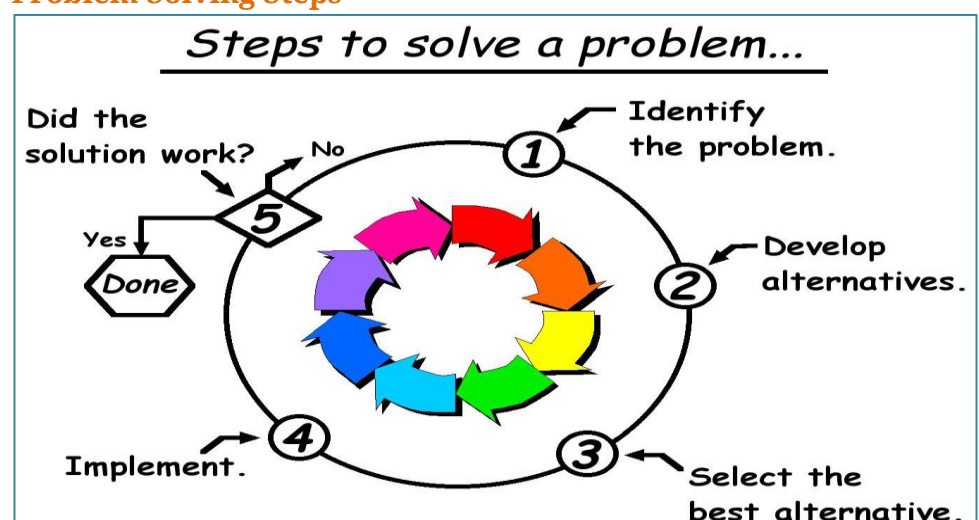


Image Credit (An analysis of the seven steps of problem solving cycle)

Library Links

- [Library OPAC](#)
- [IR@SPA Bhopal](#)

IR@SPA Bhopal is a digital repository with the objective to collect, preserve, and distribute the scholarly output of the SPA Bhopal and function as an important source of communication of the information generated through the day to day activities.

List & Links of Databases & Journals Subscribed by the SPAB Library

Full-text

- [ProQuest Dissertations and Thesis Global](#)
ProQuest Dissertations & Theses (PQDT) Global is the world's most comprehensive collection of dissertations and theses from around the world, offering millions of works from thousands of universities. Each year hundreds of thousands of works are added. Full-text coverage spans from 1743 to the present, with citation coverage dating back to 1637.

There are four basic steps in solving a problem:

1. Defining the problem.
2. Generating alternatives.
3. Evaluating and selecting alternatives.
4. Implementing solutions.

[Content Credit: What is Problem Solving?]

Problem Solving Methods

1. Honest Communication
2. Evaluating Alternatives
3. Comprehensive Thinking
4. Root-cause Analysis
5. Brainstorming
6. SWOT Analysis

[Content credit: What are Problem Solving Methods?]

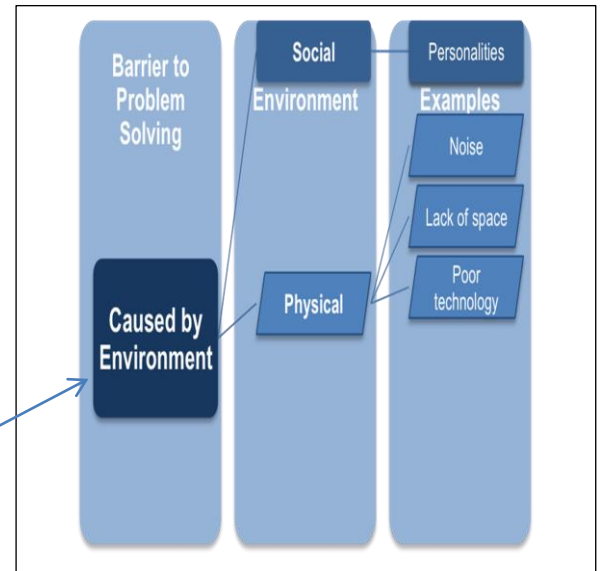
Barriers of Problem Solving

Key Barriers

1. Confirmation Bias
2. Mental Set
3. Functional Fixedness
4. Unnecessary Constraints
5. Irrelevant Information

Causes of the barriers

1. Perspective
2. Emotion
3. Intellectual
4. Expression
5. Environment
6. Culture



[Image & Content credit: Barriers to Problem Solving]

What is Problem-Solving?

FREE RESOURCE

“When you absolutely positively have to know ask a librarian”
- American Library Association

[Image credit: What is problem solving?]

- **Art & Architecture Complete**

This collection covers nearly **360 full-text periodicals** (Journals and Magazines) & **220 full-text books** in the area of Architecture, Conservation, graphic arts, Archeology, Sculpture, etc. and Cover-to-cover indexing and abstracts for 790 academic journals, magazines and trade publications with collection of over 63,000 images.

- **Sage Planning Coll...**

A Collection of 33 peer reviewed journals in the area of Planning are the part of this collection.

- **Bloomsbury Design Library**

Bloomsbury Design Library provides online access to unparalleled resource for anyone working across the broad field of design and craft studies. It contains dynamic collection of text and image content from 1500 BCE to the present day. Bloomsbury Design Library covers text books on design, major reference works, thousands of images from museums and archives, and resources for instructors and students. Bloomsbury

Further Readings on the topic Resources Available Online (Open Access)

Blog / Articles / Research papers/ Books (online) please click on red link for full-text

- **Theory of Problem Solving** / Jiri Dostal ([Procedia: Social and Behavioral Science, 2014](#))
- **A Problem with Problem Solving: Teaching Thinking Without Teaching Knowledge** / Jamin Carson ([The Mathematics Education, 2007](#))
- **A Critical Review of Theories of Problem Solving and Decision Behavior** / Peer Soelberg ([Sloan School of Management, MIT](#))
- **Principles of Teaching Problem Solving** / Rob Foshay and Jamie Kirkley ([2003](#))
- **Social Problem-Solving Skills Training for Adults with Mild Intellectual Disability: A Multiple Case study** / Gillian Anderson and Nikolaos Kazantzis ([2015](#))
- **Top 5 Problem Solving Tools** / Paul Newton and Helen Bristoll
- **Problem Solving for Managers** / Paul Newton and Helen Bristoll
- **The Impact of Engineer's Skills and Problem-solving Abilities on Process Innovation** / Yasushi Ueki and Jose Manuel Guaita Martinez ([Economic Research-Ekonomiska Istrazivanja, 2020](#))
- **Analysis of Science Teacher Candidates' Relation Between Scientific Creative Thinking Skills, Creative Problem Solving and Project Development Skills** / Demir Kacan and Fatma Sahin ([SHS Web of Conference, 2018](#))
- **Is There a Right Way? Productive Patterns of Interaction During Collaborative Problem Solving** / Noreen M. Webb, Marsha Ing, Eric Burnheimer, Nicholas C. Johnson, Megan L. Franke and Joy Zimmerman ([Education Sciences, 2021](#))
- **Effect of Positive Mood on Generative and Evaluative Thinking in Creative Problem Solving** / Jennifer Politis and John C. Houtz ([Sage Open, 2015](#))
- **Complex Problem Solving: What It Is and What It Is Not** / Dietrich Dorner and Joachim Funke ([Frontiers in Psychology, 2017](#))
- **Innovative Bike-Sharing in China: Solving Faulty Bike Sharing Recycling Problem** / Shan Chang, Rui Song, Shiwei He and Gou Qiu ([Journal of Advanced Transportation, 2018](#))
- **Enhancing the Effectiveness of Problem-Solving Processes through Employee Motivation and Involvement** / Andrea Chlpekova, Pavel Vecera and Yulia Surinova ([International Journal of Engineering Business Management, 2014](#))

Design Library offer academics and student's high-quality, intuitive tools for research.

- **Journals & Magazines**
Subscribed Journals and Magazines can be viewed on clicking above link

Statistical Databases

- **Indiastat.com**
Indiastat.com is a cluster of 56 associate sites and perhaps the most comprehensive e-resource for accessing the secondary level socio-economic statistical information about India, its 6 geographical regions, 31 states and 19 sectors on various socio-economic parameters. These parameters are Administrative Units, Demographics, Economy, Agriculture, Civil Supplies and Consumer Affairs, Environment and Forest, Industries, Infrastructure, Companies, Education, Health, Housing, Labour & Workforce, Polity, Media, Insurance, Tourism, Crime & Law, Social Welfare & Developmental Schemes etc.

Websites

- [Mindtools](#)
- [Very Well Mind](#)
- [Management Help](#)

Videos

- [Problem Solving Process](#) / MIT OpenCourseWare
- [How to Solve Problems like a Designer](#) / Vox
- [How Do Architects Solve Design and Planning Problems?+ Tips to be a better Problem Solver!](#) / Arkishare

Resources Available in the SPAB

Library

Books

- [McKinsey mind: understanding and implementing the problem-solving tools and management techniques of the world's top strategic Consulting](#) / Firm Ethan M Rasiel and Paul N Friga (OPAC)
- [Wicked Problems in Design Thinking](#) / Richard Buchanan (Bloomsbury Design Library, e-book) (To Read this use login ID and password as shared)
- [Weaving Together Creative Problem-solving and Design Thinking in an MBA Class](#) / Amy Zidulka (Bloomsbury Design Library, e-book) (To Read this use login ID and password as shared)
- [Thinker's toolkit: 14 powerful techniques for problem solving](#) / Morgan D. Jones (OPAC)

Journals/ Magazines (Subscribed & Open Access)

- [The Journal of Problem Solving](#) (Purdue University)
It was a multidisciplinary that published empirical and theoretical papers on mental mechanism involved in problem solving. [This journal is no longer accepting submissions.](#)
[Archives from 2006-2018 (Vol.1 to 11) are available online]
- [Future Cities and Environment](#) (Ubiquity Press)
Future Cities and Environment publishes high quality multi-disciplinary research which aims to reduce the environmental impact of cities. Considering research in the areas of transport, urban planning, architecture and design, and energy and infrastructure, it publishes fundamental and applied research, critical reviews and case studies. This includes experimental development, demonstration and computer modeling.

Links of Open Access Contents

- National Digital Library of India
- Directory of Open Access Journals
- Directory of Open Access Books
- Architecture Commons
- Planning Architecture Design Database Ireland (Paddi)
- Open Government Data
- Networked Digital Library for Thesis and Dissertations
- ARCHNET Resources
- Asian Historical Architecture

Contact Us

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Librarian Pick for you

- **Handbook on Problem-Solving Skills / Centre for Good Governance, Govt. of Telangana**

This book focuses on how to identify, define and solve the problem in following contents:

- Introduction
- Causes of Poor Problem-Solving
- Key Approaches to Problem-Solving
- Problem Solving Process
- Personality Types & Problem-Solving Orientations
- Personality Types & Problem Solving Techniques
- Problem Solving Tools
 - Causes-and-Effect Diagram
 - Pareto Chart
 - Flow Charts
 - Histogram
 - Check Sheet
 - Scatter Diagram
 - Brainstorming

Future Topics for Saaransh

Smart Cities	Creativity
Intercultural competence	Servant Leadership
Cultural Landscape	Experiential Learning
International politics	Adaption to change
Global policies for conservation	Complex problem solving
Cities and Big Data	People management
Social Sciences	Coordinating with others
Negotiation	Emotional intelligence
Cognitive flexibility	Judgment and decision making
Climate Change	Service orientation
Ecological Intelligence	Contemporary Architecture in India
Urban Poverty	

Important Notice

SPAB Library invites suggestions and small articles on above topics for this digest, please contact us and give your valuable insights to make it important resource of information for SPAB community.

Thanks & Regards

Dr. Mukesh Pathak
Deputy Librarian