



COGNITIVE AND BEHAVIORAL DEMANDS OF WORK

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- **Cognitive demands.** Demands associated with work tasks that require thinking, information processing, learning, imagining, and anticipating.
- **Behavioral demands.** The actions, efforts, and interactions required to conduct work tasks.
- **Workplace contextual factors.** Aspects of the workplace environment that affect the way work may be performed, when it is performed, and under what conditions it is performed.
- **Work occupations.** Productive occupations, career, profession, or jobs that workers perform for monetary reimbursement.

- Understanding and differentiating cognitive and behavioral demands of work is a complex endeavor.
- difficult to separate
- psychology have examined cognitive workload from a human information processing perspective
- organizational psychologists have focus on positive psychology, “human strengths and optimal functioning”
- Job Demands and Control model
- Effort-Reward Imbalance model

- Tools are designed to study the relationship of workplace strain to outcomes such as back pain and cardiovascular disease, and human resource issues such as worker motivation and job satisfaction
- Growing acceptance for the use of a holistic approach to understanding factors that influence worker health and performance, including workplace factors
- Therapist must know what information is relevant to the case, situation, or problem, how to measure the demands of work

UNDERSTANDING COGNITIVE AND BEHAVIORAL WORK DEMANDS

- *Job demands and requirements* refer to the tasks and components of work
- *Worker skills and abilities* refer to the capacities and expertise of the person that are used in performing or executing job demands.

COGNITIVE DEMANDS

- Domain of human cognitive abilities is *short-term or long-term memory, problem solving, attention span, communication skills, and computational ability.*
- It enables workers to be productive and fulfill the demands of work.
- Each job can be thought of as having a particular physical or cognitive load
- Cognitive requirements of work must be fully understood in terms of their complexity,

Box 7-1 *Cognitive Demands of Work*

Cognitive Requirements of Job Tasks

Critical thinking (judgment, analysis, reasoning, calculation, manipulation, generation of knowledge and ideas)
Creative thinking using imagination and generating creative ideas
Information acquisition, searching, and retrieval
Information processing: assimilate, organize
Mental planning and scheduling
Learning
Communicating
Comprehending
Translating knowledge
Perceiving and interpreting interpersonal information
Using intuition—sensing or anticipating problems

Cognitive Resources

Memory (short-term, long-term)
Attention, visual and auditory concentration
Imagination
Communication skills (verbal, nonverbal), interpersonal skills, graphic expression, written skills
Vision
Visual processing
Visual perception
Auditory processing
Hearing and listening skills
Literacy and reading, writing, and documentation skills
Computer and technologic skills

- Take steps to identify cognitive performance strengths and weaknesses of the worker, acknowledge gaps or mismatches between the worker and the work requirements, and develop a comprehensive RTW intervention

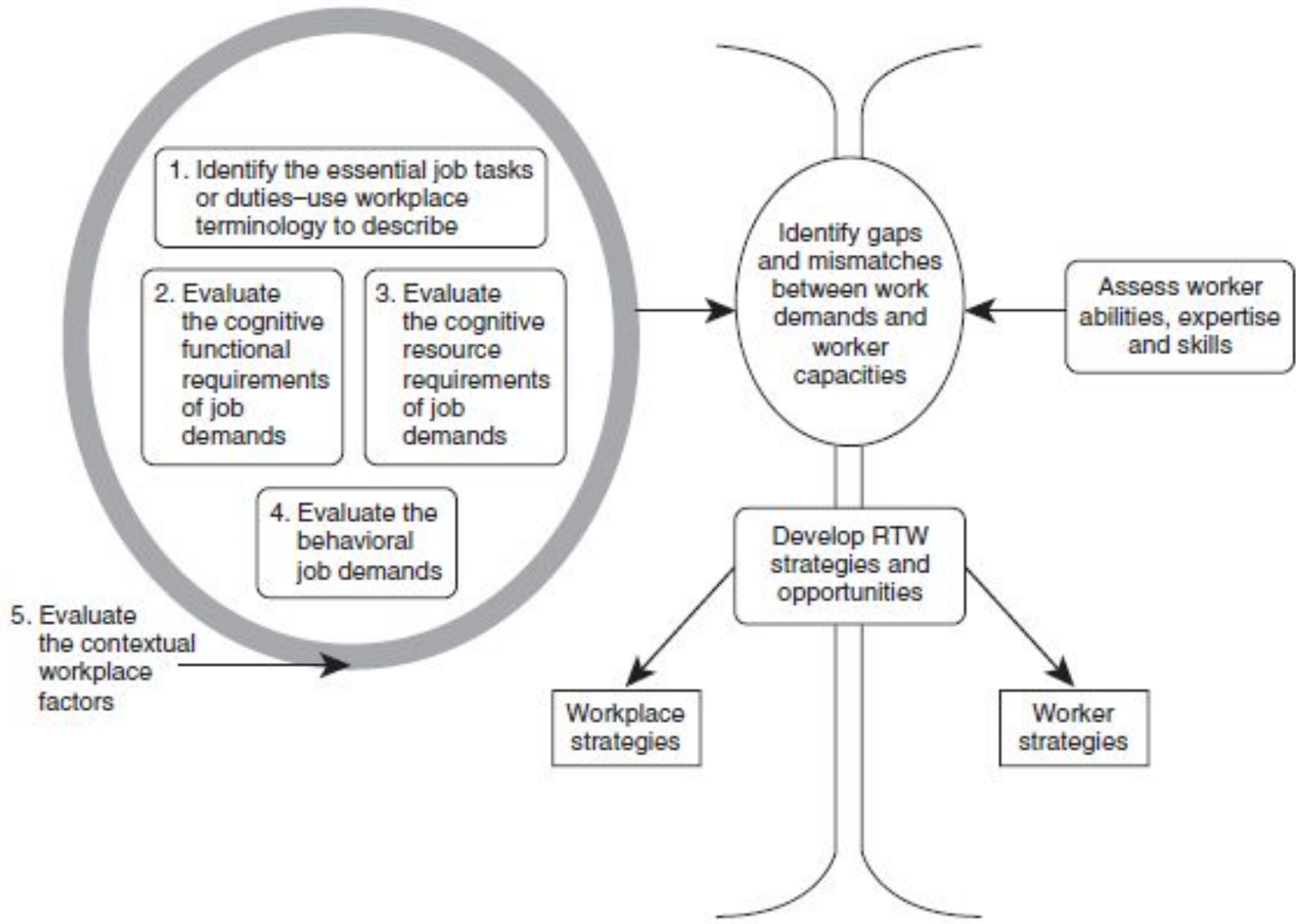


FIGURE 7-1 Process for evaluating cognitive and behavioral demands and the workplace context in developing an RTW plan.

BEHAVIORAL DEMANDS

- The actions and interactions a worker may encounter that require a specific response or subsequent set of actions to manage or perform duties and tasks in the workplace.
- Role of the therapist is to identify which demands are required and to determine the nature of these demands and how they unfold when work occupations are executed.

TABLE 7-1 Behavioral Components of Work

Component	Examples
Enactment of social processes, interactions, and relationships with others	<ul style="list-style-type: none">Interacting with supervisorInteracting with othersProviding supervisionManaging conflictWorking cooperatively with other employees or customersWorking in isolation from othersInterpreting and responding to nonverbal cues and gesturesProviding social support to co-workersImplementing a social interaction approach when working with others:<ul style="list-style-type: none">Using a friendly, congenial customer-oriented approachUsing a caring approachUsing a professional, expert-oriented approachUsing a collaborative-partnership, team-oriented approachUsing a business-oriented, networking approach
Enactment of worker responsibilities and requirements	<ul style="list-style-type: none">Exercising supervisionReceiving supervisionExercising self-supervisionTraining self and othersTaking initiativeWorking safelySocializing with othersNetworking with othersWorking independentlyWorking interdependentlyWorking cooperatively with others; using team workExercising independent control and autonomy over decisions and problem solvingExercising control over work paceSelf-directing schedule and prioritizing work tasksSolving problemsMaking decisions

Executing emotional
job demands

Exercising self-awareness; demonstrating a high self-regard and self-confidence
Exercising autonomy through reflection and action in midst of practice or performing duties
Exercising self-regulation of emotions (e.g., be calm in emotionally charged situations)
Exercising sensitivity toward others
Exercising or conveying compassion, empathy, sympathy
Executing a positive attitude
Conveying hopefulness
Acting in a courteous manner
Acting in a kind and thoughtful manner
Exercising emotional intelligence
Motivating self
Managing emotions of others

TABLE 7-1 Behavioral Components of Work—*cont'd*

Component	Examples
Enactment of management responsibilities and requirements	Managing material, financial, human resources, quality, and production of work Managing negative attitudes of others Managing and resolving conflict Managing cultural sensitivities Managing through training, instructing, negotiating, or persuading, giving feedback, coaching, mentoring Managing social and emotional needs Engaging a directive, supportive, participative, or achievement-oriented supervisory or leadership approach Solving problems Making decisions
Enactment of general competencies and accountabilities	Paying attention to detail Performing multiple tasks
Enactment of specific competencies	Operating lift truck Using statistical software Dispensing pharmaceuticals

CONTEXTUAL INFLUENCES ON COGNITIVE AND BEHAVIORAL WORK DEMANDS AND WORKER PERFORMANCE

- Workplace factors include the governance structures in a workplace, workplace culture, exposure to change, and risk concerns such as physical security and safety.
- For therapists, the consideration of the environment and how it shapes the way work unfolds in a given environment is essential

Box 7-2

Emotional, Cognitive, Security-Related, and Environmental Tasks

Time pressures

Deadline pressures

Safety pressures

Security pressures

Life and death pressures

Exposure to emotional situations

Exposure to confrontational situations

Exposure to high risk with regard to safety and physical well-being

Exposure to environmental stimuli (noise, people, machines, distractions)

Position status

Union status

Type of governance (style):

Authoritative

Directive

Supportive

Participative

Achievement-oriented

MEASURING THE COGNITIVE AND BEHAVIORAL DEMANDS OF WORK

- Many cognitive and behavioral demands are less observable than physical demands.
- Cognitive and behavioral ratings are often done by or with workers themselves so that a broad and inclusive spectrum of the job demands is considered.

Document Review

- Job descriptions provided by a company or work unit can provide useful background information, responsibilities, physical risks, hours of work, and specific knowledge or preparation required

Observation

- Observational analysis is generally done in conjunction with other information sources

Worker Interviews

- Job incumbents possess the most in-depth knowledge of a job and are an invaluable source of information concerning job demands.

SUPERVISOR INTERVIEWS

- Expectations of worker performance in such functions as customer service, emergency preparedness, and cooperation with other workers may be best identified by a person with a broad, supervisory perspective
- Cognitive and behavioral job rating tools must satisfy basic standards for reliability and validity.

- **Clear definitions:** The levels of an item and their meaning must be clearly stated and defined for the rater.
- **Training:** Training is generally enhanced by providing detailed documentation as to how to use the tool, along with sample cases.
- **Experience:** Observers are more able over time to differentiate among levels of cognitive and behavioral demand than when few reference points are available.

RATING SYSTEMS

- A number of approaches to identifying the cognitive and behavioral demands of work are available in the literature.

TABLE 7-2 O*NET Skill Requirements Categories

Skills	Developed Capacities
Basic Skills	Capacities That Facilitate Learning or the More Rapid Acquisition of Knowledge
Active learning	Understanding the implications of new information for both current and future problem solving and decision making
Active listening	Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times
Critical thinking	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
Learning strategies	Selecting and using training or instructional methods and procedures appropriate for the situation when learning or teaching new things
Mathematics	Using mathematics to solve problems
Monitoring	Monitoring and assessing performance of one's self, other individuals, or organizations to make improvements or take corrective action
Reading comprehension	Understanding written sentences and paragraphs in work-related documents
Science	Using scientific rules and methods to solve problems
Speaking	Talking to others to convey information effectively
Writing	Communicating effectively in writing as appropriate for the needs of the audience
Complex Problem-Solving Skills	Capacities Used to Solve Novel, Ill-Defined Problems in Complex, Real-World Settings
Complex problem solving	Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions
Resource Management Skills	Capacities Used to Allocate Resources Efficiently
Management of financial resources	Determining how money will be spent to get the work done and accounting for these expenditures
Management of material resources	Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work
Management of personnel resources	Motivating, developing, and directing people as they work, identifying the best people for the job
Time management	Managing one's own time and the time of others
Social Skills	Capacities Used to Work with People to Achieve Goals
Coordination	Adjusting actions in relation to others' actions
Instructing	Teaching others how to do something
Negotiation	Bringing others together and trying to reconcile differences

TABLE 7-2 O*NET Skill Requirements Categories—cont'd

Skills	Developed Capacities
Persuasion	Persuading others to change their minds or behavior
Service orientation	Actively looking for ways to help people
Social perceptiveness	Being aware of others' reactions and understanding why they react as they do
Systems Skills	Capacities Used to Understand, Monitor, and Improve Sociotechnical Systems
Judgment and decision making	Considering the relative costs and benefits of potential actions to choose the most appropriate one
Systems analysis	Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes
Systems evaluation	Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system
Technical Skills	Capacities Used to Design, Set up, Operate, and Correct Malfunctions Involving Application of Machines or Technologic Systems
Equipment maintenance	Performing routine maintenance on equipment and determining when and what kind of maintenance is needed
Equipment selection	Determining the kind of tools and equipment needed to do a job
Installation	Installing equipment, machines, wiring, or programs to meet specifications
Operation and control	Controlling operations of equipment or systems
Operation monitoring	Watching gauges, dials, or other indicators to make sure a machine is working properly
Operations analysis	Analyzing needs and product requirements to create a design
Programming	Writing computer programs for various purposes
Quality control analysis	Conducting tests and inspections of products, services, or processes to evaluate quality or performance
Repairing	Repairing machines or systems using the needed tools
Technology design	Generating or adapting equipment and technology to serve user needs
Troubleshooting	Determining causes of operating errors and deciding what to do about them

TABLE 7-3 Work Characteristics Included in the Canadian Union of Public Employees Gender-Neutral Job Evaluation Plan

Characteristic	Examples	Characteristic	Examples
Responsibility	Accountability Safety of others Supervision of others Contacts with others	Skill	Knowledge Experience Judgment
Effort	Concentration Physical effort Dexterity	Working conditions	Disagreeable working conditions

USING JOB DEMANDS ANALYSIS TOOLS: CITY OF TORONTO JOB DEMANDS ANALYSIS INSTRUMENT

- One example of a JDA tool that addresses physical, cognitive, and behavioral aspects of work is the City of Toronto Job Demands Analysis Tool (CoT)



THANK
YOU

REFERENCE

**Ergonomics for the
therapist by Karen Jacobs
3rd edition mosby and
Elsevier publishers**