



The What, Why and How of Good Work Design: The Perspective of the Human Factors and Ergonomics Society of Australia

Nektarios Karanikas^{1,2(✉)}, Sara Pazell^{1,3}, Andrew Wright^{1,4}, and Elise Crawford^{1,5}

¹ Human Factors and Ergonomics Society of Australia, Norwest, NSW 2153, Australia

² Queensland University of Technology, Kelvin Grove, QLD 4059, Australia

³ ViVA Health at Work, Teneriffe, QLD 4005, Australia

⁴ Segula Technologies Australia, Neutral Bay, NSW 2089, Australia

⁵ Central Queensland University, Norman Gardens, QLD 4701, Australia

Abstract. This paper communicates the position of the Human Factors & Ergonomics Society of Australia (HFESA) on Good Work Design (GWD). It is based on the fundamental principle that GWD is a human-centred approach that ensures that good work is available to workers. We explain the iterative process of GWD with reference to the three phases of Discovery, Design and Realisation. In the former, we outline the need to engage early the individuals and teams who drive and are the receivers of GWD, and we highlight the necessity to study and understand the context, task, work and jobs. In the Design phase, we address the co-solution of problems and co-creation of opportunities through participative and collaborative concept designs, simulations, iterations of prototype trials and agreeable trade-offs. The last phase, Realisation, refers to the tangible deliverables and outcomes leading to the optimum level and balance between productivity, health, well-being, and safety of employees.

Keywords: Good work · Human factors · Ergonomics · Human centred design · Good work design

1 Introduction

Considering the various discussions about the meaning and aims of Good Work Design (GWD), the Human Factors and Ergonomics Society of Australia (HFESA) initiated and guided a project involving 15 committee members with the aim to synthesise the current evidence, clarify and communicate the principles, processes and benefits of GWD. The project was run between mid-2019 and mid-2020, and its goal was to establish a common understanding of what GWD entails and inform the professional, academic and broader communities accordingly.

The authors of this paper and the other committee members, who are acknowledged in the respective part of this document, are experienced professionals in human factors and ergonomics and other related disciplines (e.g., health, social, safety and design sciences, multi-media, user experience and work systems analysis). The committee members also

represented various Australian organisations, including a Workplace Health & Safety regulator, legal, consultancy and engineering services, and universities and research institutions.

The following sections of this article share the results of multiple meetings and peer-reviews of documents amongst the project members and collectively represent the perspectives of HFESA who approved this work after an internal peer-review. Although the literature references in this paper cannot cover exhaustively the vast number of publications related to the topics covered below, this work comprehensively presents the essential aspects of GWD. It provides a framework for further reading and exploration. Additional material created by HFESA about GWD, including recorded video clips, can be accessed freely on its official website [1].

2 Good Work

In general, good work involves activities that are purposeful, fortify and condition the worker, engage workers, create positive impact and are meaningful to those who do the work [2]. Moreover, if work is agile, adaptable, and flexible, it advances the organisational strategy while promoting and protecting worker health [3]. Under those conditions, good work helps people participate, contribute, and achieve great things [4] while operating at the peak of their performance curve [5]. Also, within such an environment, the work expectations are transparent and manageable, and the activities can be achieved by the physical, cognitive, social skillsets, and capacities of workers [6]. Furthermore, good work means that work organisation has been designed to provide adequate support and technology. The systems in place enable a reasonable and manageable degree of autonomy in decision-making. The conditions above create a work environment that is enterprising and conducive to health and happiness [7].

Hence, based on the literature discussed above, good work is work (mental, social, and physical activity) that offers additional benefits and:

- involves co-design with consultative and participative practices among workers; maintenance staff; team leaders; associated business unit managers; suppliers; project partners, such as human factors and ergonomics specialists, engineers, or interior and urban designers; and, at times, regulators.
- can be graduated and progressed or regressed to accommodate varied work capacity.
- has been designed for diversity.
- is cognitively challenging to the “just-right” degree, where workers are inspired and continually learning through shared problem-solving.
- is expressed through engagement in meaningful tasks; socially constructive team development activities; or activities of a higher order that align with personal values, such as the advancement of animal welfare or environmental sustainability.

3 Good Work Design

Good Work Design (GWD) is a human-centred approach to ensure that good work is available to workers [6], meaning that it focuses on people at work. GWD is a holistic

and inclusive process that considers all aspects of human performance at work and enables prosperous working conditions. Since ergonomics is the study of human-system interactions, the two concepts, people and work, are a central focus when considering tasks, equipment interface, job roles, environments, and systems [8]. The goal of GWD is to enhance productivity, health, well-being, and safety of employees within existing legal frameworks. It relates to good business and generates wider benefits for the industry and society since it contributes to sustainable economies, healthful living, and positive environments. GWD does not mean increasing production costs because it mainly affects the most price-elastic component of our workplaces: the people.

When employing principles of human factors and ergonomics, GWD identifies opportunities to be realised or problems that can be addressed and leads to improvements to job tasks, equipment, tools, the working and technical environment, activities, relationships, roles, and/or responsibilities [3]. Therefore, GWD involves the (re)design of work (i.e. what we do) and job (i.e. how we do), such as the tools and equipment with which workers interface or maintain, the computer software with which workers engage, the learning and development strategies, the communication strategies at work, the schedules and rosters, the workflow and allowances for rest and recovery, or the social and physical environment in which work occurs [9]. It is a systematic approach (i.e., follows specific stages customised to each workplace) and is based on systems thinking (i.e., considers interactions and dependencies among all workplace elements such as staff, technology, and the environment).

GWD draws on a broad and diverse range of scientifically established design principles to achieve its objectives [10–16], and its three principal stages are (1) Discovery, (2) Design, and (3) Realisation of tangible outcomes towards good work. Those stages necessitate collaboration among all stakeholders, and the results of GWD are communicated and celebrated to acknowledge the success that was achieved. Notably, GWD is a continuous endeavour embedded in organisational activities, embraced by leaders and managers, and its effectiveness can be monitored through health, safety, and productivity outcomes [6]. Additionally, GWD contributes to organisational resilience that renders individuals and teams capable of dealing successfully with demands as work evolves. A corporate culture that supports changes and values workers and public health, typically through a human factors and ergonomics program that is embedded in their operations, is most likely to contribute to the success of GWD initiatives.

4 How Good Work Design Is Achieved

Good Work Design is an iterative process which, as outlined above, involves three phases: Discovery, Design, and Realisation. It applies to existing workplaces and activities as well as new job tasks and equipment or product interface (Fig. 1).

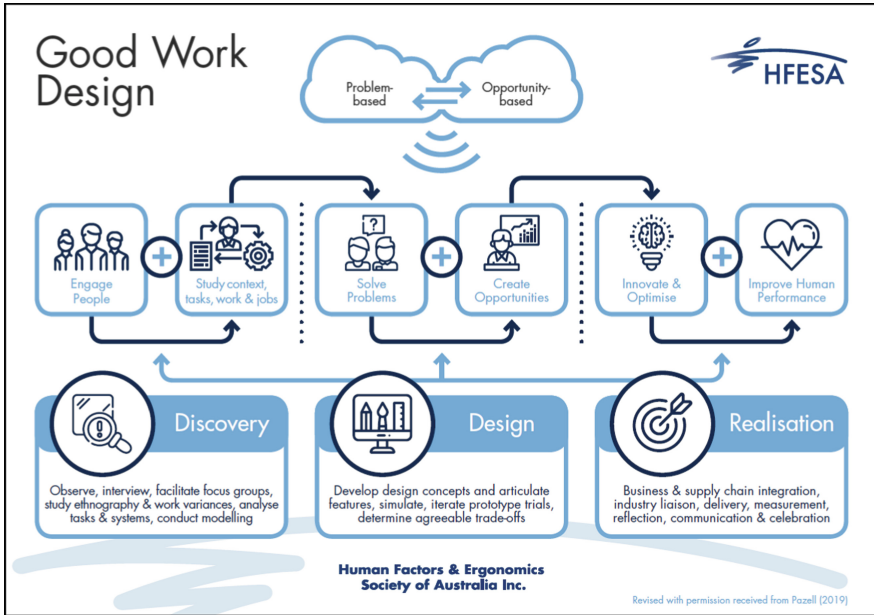


Fig. 1. Good work design phases.

4.1 Discovery

Good Work Design starts with identifying the context of work (e.g., the location, physical environment, limitations and constraints, workforce composition, and background). This step is followed by studying the tasks performed by workers and the variety of work undertaken. GWD considers the entire operating envelope (i.e., execution of tasks under different conditions) to uncover the reasons behind possible gaps between the work as imagined (i.e., work described/prescribed in documents or communicated verbally), and work as done (i.e., work executed in real operating conditions) [17]. A significant work improvement opportunity may arise when work adaptations and variations (i.e., “workarounds”) are proven beneficial and can lead to revising standard procedures with recognition of field experience and knowledge. Similarly, when work-related hazards are identified, and the interaction of these factors are found to impact productivity, well-being, health, and safety, GWD aims to optimise work or job design [3, 18].

Once tasks are identified, the resource requirements of work (i.e., task components) are analysed and studied by considering the physical and mental capabilities of workers as well as their preferences and emotional needs. Human mental models (i.e., thinking of how something works), tactics (i.e., work approaches), and interactions with tools, equipment, and the social, physical, and technical environment can be examined. Depending on the scale and scope of the analysis, GWD practitioners can consider system-level components (i.e., ones outside the workplace of interest) and ethnographic research of the workforce (i.e., the study of people, culture, and habits or tactics).

The discovery phase concludes with identifying key concepts and features and, thus, lead indicators and measurements to evaluate outcomes. Methods often used in the

discovery phase of GWD include interviews and direct observations, task analyses, modelling, and qualitative or quantitative measurements through standardised or unique approaches and tools.

4.2 Design

The development of solutions may range from convergence (i.e., inclusion and reconciliation of different ideas) to divergence (i.e., pulling ideas apart to explore pioneering avenues). The GWD practitioner maps the conditions for optimum human work and system performance and facilitates a co-design process with the engagement of workers, team leaders, and any other relevant stakeholders. Similar to the discovery phase, the design phase of GWD brings people and teams together to determine solutions that are widely accepted and supported by empirical evidence [19]. This phase necessitates partnerships among relevant staff and departments (e.g., engineering, facilities management, finance and procurement, human resources, training departments) to achieve robust and sustainable outcomes that unify business objectives and convince leadership to invest in the initiatives.

In this phase, participative and collaborative co-design approaches are undertaken to empower a workforce to become architects and owners of improved work design. This participatory approach extends to testing and trials during the (re)design process where workers become part of the solution by helping to establish acceptance/rejection criteria and providing feedback. Through trials of design versions, the discovery journey continues throughout this phase via the collection and analysis of data and information. Various models of work can be tested through simulation and micro-experiments to gain an initial understanding of what might work well or not and how it may be accepted. Drawings of concepts and ideas, prototypes, draft documents or computer programs are some of the methods and tools used in this phase.

4.3 Realisation

This phase of Good Work Design refers to tangible deliverables and outcomes leading to work improvements. Improvements are identified in the discovery phase, tested in the design phase, and deemed suitable to achieve the optimum level and balance between productivity, health, well-being, and safety of employees. Examples of how GWD may be realised include (1) energy optimisation that prevents or delays cognitive and physical fatigue, (2) manual tasks that are suitable for diverse populations, (3) social systems that encourage teamwork and support problem solving with a 'just-right degree' of challenge, (4) enhanced learning via immersive experiences with high-fidelity (like reality), (5) spatial collaboration systems that are accessible and easily translated (helping people imagine and relate to spaces and scenarios that are true), (6) notable appreciation and inclusion of job experience and actual work (so workers have a voice and it is known how work is actually performed), and (7) improved health through agile work environments that cater to diverse ways of making sense of the world (such as catering to our neurological needs).

The positive effects and outcomes of GWD may take time to be realised. Time might be needed for staff to adapt to the new or modified work elements, whether it be through

physical, cognitive, and/or affective conditioning. Well-executed discovery and well-thought and tested design processes are expected to generate accepted, suitable, and sustainable GWD deliverables and outcomes. However, the reality of the ever-evolving work environment (e.g., a workforce composition change, pandemics, or an introduction of new technology and embedding new work models) means that designing good work is a continuous journey. Good work design requires astute leadership of organisations prepared to continually investigate, reflect, and develop resilient operating strategies.

5 The Position of HFESA

Work that lacks the principles and considerations of Good Work Design can lead to risks of reduced accessibility of services, products or systems; poor usability of tools, devices or systems; costly product and system failures; ineffective training and engagement initiatives; fractured or inauthentic support for diversity and positive safety culture; increase of musculoskeletal disorders; low levels of workforce competence; compromise of safety and/or security; psychosocial hazards and occupational stressors; low-levels of change-readiness; and adverse environmental impact [6, 20–24].

It is the position of the Human Factors and Ergonomics Society of Australia (HFESA) that workplaces that implement good work design will be uniquely positioned for competitive, reputable, and resilient operations. The design of good work contributes to health, engagement, and productivity. Good work design extends beyond a health and safety agenda and is most effective when implemented as a whole-of-business strategy. Professionals certified by HFESA have expertise in facilitating, coordinating, and advancing good work design. Similar expertise is expected from persons holding equivalent professional certifications issued by other relevant and recognised bodies, agencies and institutions worldwide.

A certified professional in the fields of Human Factors and Ergonomics is deemed credible to consider human factors and systems in design: addressing the cognitive, physical, organisational and environmental influences that can affect human performance and system outcomes. The human factors specialist/ergonomist may help facilitate team engagement; provide training and coaching; serve as a catalyst to design-thinking; stimulate creativity and innovation to help organisations or design teams “think outside the box”; determine risk or identify opportunities; develop design philosophy, principals, concepts, and features; test ideas; liaise with other design faculty; employ scientific evidence to establish design principles; and facilitate the realisation of new products, systems, or work methods.

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