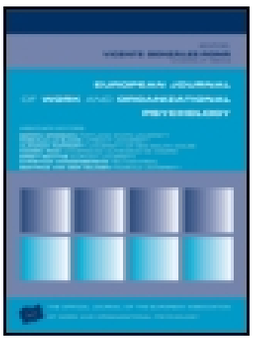

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Good work design for all: Multiple pathways to making a difference

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ABSTRACT

In the light of mental health issues amongst the workforce, as well as future of work challenges ahead, it is more important than ever to create well-designed work. In this article, as researchers and practitioners, we share our approaches to influencing work design practice and policy. We draw on research on the antecedents of work design to identify multiple pathways for achieving better quality work designs. We describe some practical materials and models that provide a foundation for our approach. We then discuss how we have sought to achieve impact at the individual level, the organizational level, and, increasingly, across multiple organizations, industries, and even the national level. Although we have often experienced challenges and setbacks in our quest to affect practice, we nevertheless remain optimistic for the future. We hope our article encourages expanded attention to translating and using research to make an "evidence-based difference" in work design for all workers.

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Research and theory on work design has always been strongly informed by practice. In the 1900s, early research on the topic emerged from observations that jobs designed on the basis of Tayloristic principles caused employee alienation and stress. The principle findings of these early studies informed theories that remain popular today, such as the Job Characteristics Model (JCM; Hackman & Oldham, 1976) and the demand-control model (Karasek, 1979). Both of these theories, and others since, propose that attributes of jobs – such as having reasonable levels of control and variety, as well as reasonable levels of work demands – affect psychological states such as meaning and psychological strain, and thereby affect worker behaviours (e.g., performance, attendance) and attitudes (e.g., job satisfaction). Meta-analyses (e.g., Humphrey et al., 2007) and reviews (e.g., Knight & Parker, 2019) show these core theories are largely supported. Thus, work design practice has undoubtedly informed research and theory, with the latter continuing to grow in scale and importance. For example, in our review on 100 years of work design research, we demonstrated that work design is a now major independent variable in the field of applied psychology, with more than 250,000 citations of over 5000 articles (Parker, Morgeson et al., 2017).

But how much does work design research and theory inform practice? In the 100 year review, on the one hand, Parker and Morgeson et al. (2017) showed evidence work design is being considered in practitioner outlets such as HBR and "airport" books, as well as positive views about the prevalence of positive work design according to surveys that target human resource managers and CEOs. On the other hand, these authors concluded a "less rosy picture" when examining how people who "do the work" perceive their jobs. For instance, the Sixth European Working Conditions Survey (Eurofound, 2016) of over 44,000 workers showed that 20% of workers had a job of "poor quality" (e.g., with low skill use, low autonomy, and poor work conditions), and an additional 13% had an "under pressure" job with excess demands. Similar statistics come from related studies across the world.

We see high-quality work for all as the holy grail application of work design research and theory. This is because when work is experienced as well designed, there are benefits all around; for workers, families, communities, and the wider economy. And yet it is clear from the large-scale studies cited in the paragraph above that, globally, we have some way to go to achieve this impact. We also face a mental health crisis in many countries (Patel et al., 2018), as well as threats to the quality of work as a result of new technologies such as AI and robots (e.g., Parker & Grote, 2020); both of which heighten the importance of a quest to achieve well-designed work.

Our aim in this article is to reflect on our own efforts to achieve "well-designed work" in policy and practice, coming from a career primarily as a researcher (in Sharon's case) and primarily as a practitioner (in Karina's case), albeit with both of us having experience in the synergy between research and practice. We reflect on some of our successes and challenges, based on our separate work in our earlier careers as well as our work together over the past 10 years. We hope to encourage more attention to getting research findings into practice, or making an evidence-based difference, consistent with many scholars' recommendations over the years (e.g., Antonakis, 2017).

Next, we summarize research on antecedents of work design that can be used to identify pathways for achieving better work design.

Antecedents of work design and pathways to impact

To support our agenda to improve the quality of work, in a synthesis of interdisciplinary literature, we draw on a model

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Supplemental data for this article can be accessed here.

of multilevel influences on work design (Parker, Van den Broeck et al., 2017). This model can be used to understand pathways of impact, as depicted in Figure 1.

Box A (Figure 1) shows how the informal actions of individuals and teams can shape their work design via emergent and social processes. An example is when a group develops norms of long working hours, which in turn affects the level of job demands of the workers. Another example is when an individual worker crafts his/her own tasks to better fit his/her abilities and strengths. Work redesign through this "bottom up" pathway flows from the actions of workers themselves, showing that better work design can be achieved through educating and encouraging individuals and teams to engage in job crafting, negotiating i-deals, or other forms of proactive work behaviour (Parker et al., 2010). Increasing workers' knowledge, skills, and abilities about work design (e.g., teaching them to craft) and/or to increasing their motivation for shaping their own work (e.g., boosting their self-efficacy) is thus one pathway to better work design.

As depicted by **Box B**, a further pathway for achieving better work designs for workers is to build the work-design-related knowledge, skills, and abilities, and motivation of those who have formal authority in the workplace. For example, educating managers about how work design affects workers' mental health, and then persuading them about the cost benefits of improving work design, would enhance their KSAs and motivation, respectively, and thus hopefully shape their work design decisions. Work redesign through this pathway is an example of a "top down" process in which the formal actions of managers or others in authority affect workers' work characteristics. For example, when a manager adopts a cost control strategy rather than an innovation strategy, this then drives standardization of work processes as a priority which, in turn, usually reduces the level of method autonomy in jobs.

It is relevant at this point to observe that designing enriched work with variety and autonomy does not always come "naturally" to those in authority. In a study in which we asked people to design work in a hypothetical case (Parker, Van den Broeck, & Holma, 2019), we showed that many of the designers created boring jobs with low task variety. Interestingly, people with higher quality work themselves (with autonomy in their own job) designed better work for others, perhaps unconsciously mimicking their own work. Individuals with more open, and less conservative values, also designed better work, as did those with expertise in work design theory. Managers, however, overall had a tendency to design poorer quality work. To help disseminate these ideas, we published an article about this work in HBR online, see: https://hbr.org/2019/06/why-managers-design-jobs-to-be-more-boring-than-they-need-to-be).

A third implication of the model is that individual and contextual factors (**Box C, D**) shape work design. Individual factors (**Box C**), such as the personal attributes, demographics, or abilities of an individual, directly influence the work design of

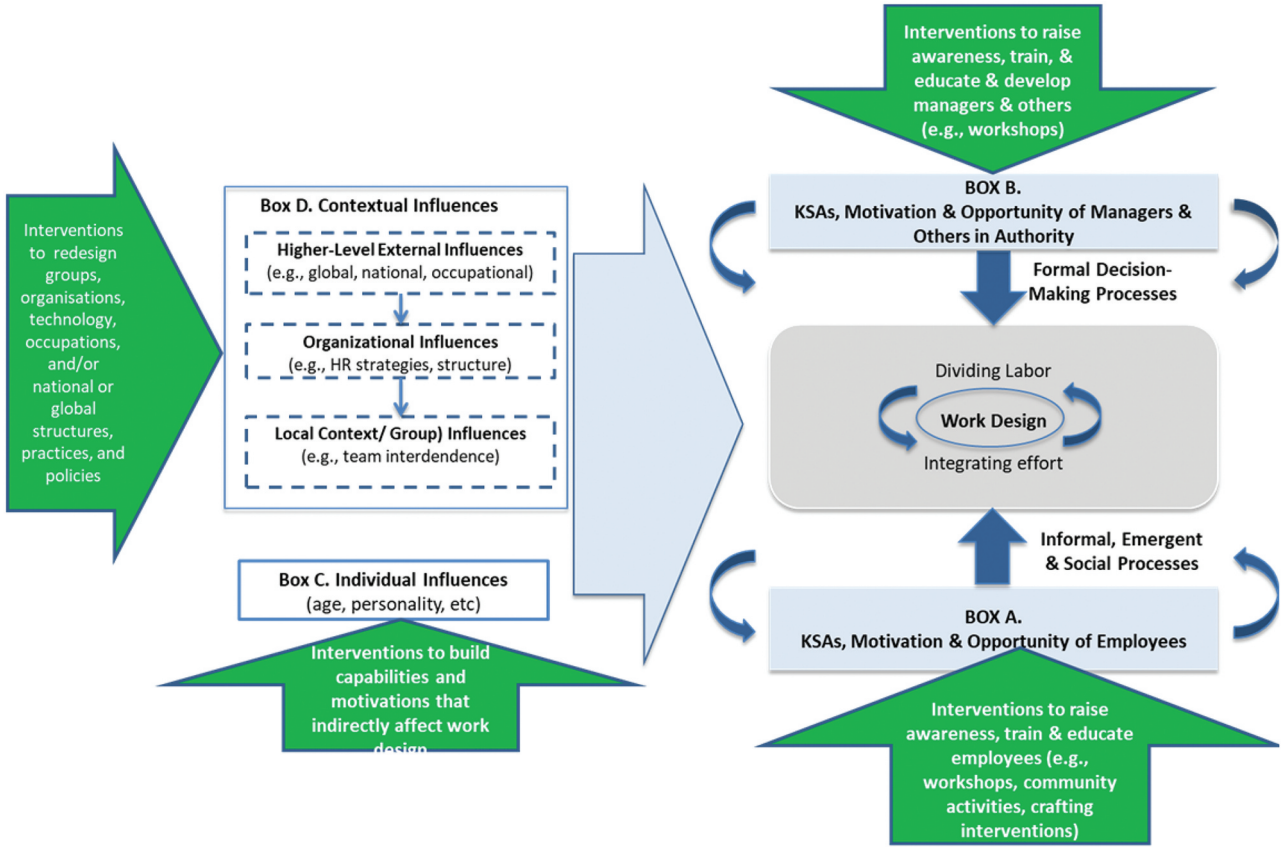

Figure 1. Model showing how the antecedents of work design (based on Parker, Van den Broeck, and Holman, 2017) can be influenced by various intervention strategies.

workers, such as when more optimistic individuals appraise their jobs more positively. These factors can also indirectly shape work design via formal processes, such as when the high level of skill of an employee motivates a manager to give him/her greater job autonomy; or via informal processes, such as when an individual's proactive personality leads to more job crafting. Better quality work can therefore be achieved by fostering the growth and development of worker capabilities.

Focusing on contextual factors, **Box D**, local work unit factors (e.g., team work design), organizational factors (e.g., culture, climate, information systems, technology, health and safety policies), occupational factors (e.g., role demarcations), national factors (e.g., policies, regulations) and international factors (e.g., globalization) all affect work design, For example, in a direct path at the national level, working time regulations affect the hours that junior doctors work, thereby affecting their job demands. Likewise, the way that technology is designed can affect opportunities for job autonomy directly, such as when automation allows little opportunity for human control. Contextual factors can also influence the formal, top-down influences above because they shape the knowledge, skills, abilities, motivation, and opportunities of managers. An example is when high levels of employment in the market increase managers' motivations to design engaging work as a way to attract and retain workers. Contextual factors can also influence the informal bottom-up processes, such as when national culture shapes workers' preferences to work in teams (or not), or when an organizational-level investment in skill development motivates individual job crafting. Changing the context – such as restructuring the organization, removing constraining demarcations in an occupation, or altering national work health and safety regulations – can be a powerful way to achieve better work design for workers.

Important implications flow from this model of changing work design. First, there are multiple pathways for having an impact on people's work design. These pathways vary on several dimensions, such as level, scope, and the stakeholders involved. A simple intervention might be to educate a team about how to manage their workload, which would influence work design through an informal bottom-up process, and have local impact. At the other extreme, a large-scale policy change – such as the introduction of regulations to limit the working hours of trainee doctors – might be a complex, political change process that affects organizations and individuals on a broad scale. This means that work redesigns can look very different, which is in part what we believe makes this topic both so interesting and challenging.

A second implication of the model is that many of the factors that shape work design interrelate, which means multiple processes often need to be considered simultaneously. For example, even if an individual manager has the knowledge and skills, and the motivation, to (say) empower their workforce, they can be severely constrained in their opportunity to do so by the context. Thus often, simply "training managers" is insufficient, and deeper, system-wide change is called for.

A third implication of this model is that, when a change is made in one aspect of an organizational system, it might well have unintended impacts on work design. Consequently, work design issues sometimes emerge when other apparently unrelated changes are introduced. For example, organizational restructuring, new technologies, alterations to financial systems, and changes to roster systems can all affect work design, often without these effects being explicitly recognized by leaders or change agents. This inter-linking of systems presents both risks for work design (e.g., when a new finance system is introduced that inadvertently constrains workers' decision making) and opportunities (e.g., when new technology enables workers to get detailed feedback on how they are performing). It also means these systems need to be considered, and aligned, in any work redesign.

Shortly, we draw on this model to provide examples of different levels of impact (individual, team, organizational, multi-organization/industry, national) that we have achieved, and/or seek to achieve, to create better work. Before we do so, however, we describe how we have sought to convey "what work design is" through the development of various practical materials. This is necessary because the term "work design" is rarely used amongst organizational practitioners or managers, even though there are several on-trend topics that are essentially work design (e.g., agile teams, flexible working) (see Parker, Morgeson et al., 2017 on this point). A further challenge is that work design is often a rather hidden cause of human attitudes and behaviour, with managers tending to attribute worker attitudes/behaviour as being caused by individual factors (e.g., personality) rather than being caused by the work (see Weber, 2019, for evidence of this tendency to overemphasize individuals as causes in other fields). This attribution problem can lead to a focus on "changing the individual" (e.g., "send Person X on resilience training"), rather than "changing the work" (e.g., "reduce the job demands of Person X"). We often depict this notion using the popular iceberg metaphor: work design is "under the iceberg" – an invisible yet important cause of important work attitudes and behaviours. Because of these challenges, we have created various "practically-oriented" models and materials to convey work design and that have different entry points into this topic. Here, we provide three examples (see *online supplementary material* for more detail).

First, with regard to core work characteristics, we have developed the SMART model of work design to convey five comprehensive higher-order work design concepts via a simple acronym. SMART refers to work that is Stimulating, Mastery-oriented, Agentic, Relational, and that has Tolerable demands (see transformativeworkdesign.com for free resources relevant to this model; see Parker & Knight, 2020, for the theoretical and empirical underpinnings of this model).

Second, we embed the SMART model within a "Thrive at Work" framework, which has a wider focus on mental health agenda (see www.thriveatwork.org.au for the framework and freely available resources). We use this framework to encourage organizations to shift from an often exclusive focus on detecting ill-health amongst employees and providing support for their recovery (which we call "Mitigate Illness") to additionally adopting a "Prevent Harm" focus that involves designing healthy work.

A further specific entry point for work design is the challenge of the ageing population. We developed the "3-I" model

of organizational meta strategies to attract and retain mature workers (see Parker & Andrei, 2020, for the academic article, and see https://matureworkers.cepar.edu.au for examples of how we use this model). Age is associated with changes in cognition, affect, motivation and physical abilities, yet the rate and extent to which individuals experience changes across the lifespan is not uniform (e.g., Fisher et al., 2017). The "Individualise" meta-strategy encourages organizations to tailor the work design to suit individual preferences and needs, such as by allowing flexible work arrangements so that mature workers can meet care needs, or reducing the physical demands of a job as mature workers' strength declines.

We use these practical materials in all of the various impact activities we engage in, as elaborated next.

Individual-level interventions: awareness-raising, education and training

In this section, we consider awareness-raising and education-oriented interventions that target individual employees, followed by those that target people in positions of authority.

Targeting individual workers

One way to achieve better work is through building the work-design-related knowledge, skills, and abilities (KSAs) and motivations[1] of individual workers (**Box A**) in the hope that this raised awareness, skill, and interest might motivate job crafting, promote individual advocacy for better quality work, and/or stimulate individuals to pursue higher quality work throughout their career. This sort of impact is achieved through awareness-raising strategies, as well as via education, training and development.

With respect to awareness-raising, like many research centres, we have invested in websites, twitter accounts, LinkedIn, and other such outreach activities. Regarding our websites (see above), most of our websites deliberately utilize development tools such as Wix because they are a very easy-to-use, relatively inexpensive way to put educational and outreach content online, and can be easily updated by any member of the team (we tend not to rely on the University-hosted websites as it is too difficult to regularly update the content). We use professional firms too on occasion when we have external funding to support building websites with accessible design (e.g., for www.thriveatwork.org.au). We encourage all members of our research centre to participate in posting material, supported by a marketing professional within our centre, although it can be challenging to maintain momentum and our staff do require "nudging" to provide content. Online content dissemination enables easy tracking of usage and reach. We currently see our websites average between 1000 and 4000 unique users per month (with a peak of nearly 10,000 unique users the first month we launched Thrive at Work website). An average of 25 – 50% of users are international.

Our efforts to get our research into the media have been aided by excellent support provided by our university. A central staff member with media expertise drafts a media release directly from a published paper, and this level of support reduces the workload for researchers and therefore increases the chance that it will happen. One of these media translations last year (based on Ouyang et al., 2019), for example, reached more than 300,000 people (with an advertising space value of more than $AUD 1,000,000). We also publish our work in practitioner outlets. As well as the HBR online article mentioned above, we have written and been interviewed for human resource/industry/generic magazines and media outlets both within Australia and overseas including Australian Financial Review, Rio Tinto's (2019) publication on "Work of the Future" in Australia, the Australian Council of Learned Academies' (2019) publication on Artificial Intelligence, Personal Quarterly (Germany), HR Monthly (AHRI, Australia), OverWerk (Belgium), and The Globe and Mail (Canada). Such awareness-raising activities can be feasible ways for individual researchers to achieve impact.

One of our more unusual strategies to promote work-design-related KSAs and motivation (and related topics) amongst the wider community has been through the introduction of "Psychology at Work", a free and publicly available "massive open online course" or MOOC. This online course provided a basic introduction to key concepts in work psychology, including sessions featuring work design. In the few years that we ran the programme[2], we had several thousand people complete the course, and the program was highly rated. Most exciting to us, testimonials and stories about personal impact came from participants, both local and global. For example, we met a participant when Sharon was giving a keynote talk at a safety conference – the participant stood up at the end of the talk to say how valuable the programme was (excellent marketing!). As an added bonus, we designed the programme to collect data about people's work design, which we use in our research.

A further somewhat unusual activity we have engaged in to enhance awareness of work design amongst the wider community is an initiative to sketch work design (see sketchingworkdesign.com for these sketches; see also the online supplementary materials). The idea behind the project was for an artist to draw people doing their work, whilst researchers interviewed them. We have found the resulting 44 sketches and stories to be powerful in conveying the importance of work design in a highly practical way. The stories give examples of how, when people love their work, it is often about work design; how work designs are changing; how people craft their work design; and how poor work design can create problems. We have displayed the sketches at the launch of our Centre, at an academic conference, and we use the materials in our training/education activities and presentations. We also ran a competition for other artists to sketch their work, which also yielded fascinating depictions of work design all around the world.

Targeting managers and system designers

Enhancing the work-design-related KSAs and motivation of those in positions of authority who can directly shape workers' work design, such as managers and team leaders (**Box B**), potentially achieves even wider span impact. For example, if a manager implements better work design as a result of training, the work of multiple workers can be improved. Likewise,

just about every organizational system affects work design in some way – such as the human resource system, the finance system, the information system and technological systems (**Box D**). Broader regulations and policies around topics such as health and safety also affect work design. Therefore, awareness-raising and training interventions should also seek to enhance the KSAs and motivation of those who design systems, regulations, and policies that affect work design. Consequently, we aspire to find ways to raise awareness, educate and train business leaders, engineers, health and safety, human resources, occupational physicians, software designers, information technology managers, accountants, ergonomists, public administration leaders, and more.

One strategy to influence the work design KSAs and motivation of those who might be in a position to design work, or who design systems and policies that shape work, has been to accept invitations to deliver keynote addresses at practitioner conferences. Across our careers, we have delivered between us more than 100 talks to different industry groups, companies, professional and industry bodies, advisory group, and Australian state and national government agencies and regulators. At these talks, we seek to: motivate interest (or address the "why") by showing the relevance of work design to bigger picture issues (e.g., mental health, future work, innovation); we then seek to educate about work design principles, theories, and evidence (or the "what"), and finally, we usually describe longitudinal case studies because we want to show it is possible to redesign work (that is, the "how"), whilst also conveying the value of tracking change over time. We have even given talks to teenagers in which we do experiential exercises to help them think about work design (and not just money or status) when choosing a career.

We deliver accredited formal training and education through our own tertiary institution. Higher education is a powerful opportunity for building the KSAs and motivation of future work designers (and future workers). Whilst we have made local efforts to do this through our own teaching activities, we are keen to build these efforts to increase reach. One of the projects we are working on is the dissemination of freely available work design teaching materials (cases, activities, reading materials) that are targeted at different types of students (e.g., MBAs, organizational psychology, engineers) at different levels (undergraduate, postgraduate).[3] As we (Parker et al., 2019) lamented in our article that showed managers tend to design poor work, "one might question how much attention (relative to, say, leadership) the topic of work design gets in MBA programmes, executive development or leadership programmes, and even supervisory training courses. Our sense is that work design is relatively rarely the topic of such training and development programs" (Parker et al., 2019, p. 17). We hope that by helping to make material available for others to insert into their own teachings, this will help to address this lack. The changing trends in education, such as nanodegrees, micro-credentials, and cross-disciplinary degrees, and an increased interest from other disciplines (e.g., health and safety professionals requiring work design training, engineers requiring human-systems interaction training, general interest in "future of work") are also expanding education opportunities. Finally, we conduct work design workshops for professional membership bodies, as well as running open public training and customized in-house executive-education style training. With respect to the latter activities, due to the growth in our team, we have begun to professionalize these workshops, such as by standardizing content, enabling us to reach a wider audience.

With respect to the question of "does any of this actually improve work design?", we are confident that MOOCs, keynote industry presentations, professional training, and the like do raise awareness and build understanding of, and interest for, work design. Using the Kirkpatrick (1998) model of training evaluation, we always do well if we, or others, assess whether participants feel they have learnt from these activities. But, going to a deeper level of Kirkpatrick's model – do participants ever put the knowledge into practice to help create better work for themselves or others? We have often been remiss in neglecting to formally evaluate this question, although we do know from Campion and Stevens (1991) that training increases work design knowledge and changes behaviour in a simulation, and we know from some of our own simulation studies (Parker, Van den Broeck et al., 2017), that organizational psychologists appear to retain their knowledge about work design over time. We also often informally hear that our training activities have had an impact on the thinking and strategy behind particular professionals' and managers' approaches, such as a leader changing his/her team briefing approach, the establishment of communities of practice, and the inclusion of work design into the mental health and well-being strategies of organizations.

In sum, we should not underestimate the power of influencing individuals, especially if they are those that are in (or will be in) positions to affect the jobs of many others through management roles or system/policy design. We find that these activities increase our visibility and credibility and put us "on the radar" for further activities, sometimes in surprising ways. For example, several of our best research opportunities have emerged from a participant seeing us present at a practitioner conference. Nevertheless, building KSAs and motivation requires working on both the head (through compelling statistics, evidence, rigour) and the heart (through empathy, legacy, stories, etc), and benefits from both discipline and focus in our approach (e.g., in standardizing workshop materials) combined with creativity and exploration (e.g., the sketching initiative).

Organizational-level interventions: in-depth longitudinal change projects

The target for achieving well-designed work can also be a larger entity, such as a business unit or organization (**Box D**), with the goal being to redesign work from a "top down" perspective, through initiatives such as self-managing teams and job enrichment, changing work characteristics to address psychosocial risks, or monitoring work during technology implementation.

Although we engage with organizations in a number of different ways, for the most part, we prefer to establish longitudinal relationships that are closer to "partnerships" rather than one-off service delivery because we want to promote

and track "real change" in work design. Most of our (Sharon's) early research in the United Kingdom, was of this type, and it is a model she has tried to continue and refine. For example, Sharon's PhD research involved longitudinally tracking the implementation of self-managing teams and just-in-time management within an electronics company (relevant research publications include: Mullarkey et al., 1995; Parker et al., 1997). Further longitudinal intervention studies were funded by the United Kingdom's Health and Safety Executive and focused on the mental health outcomes and processes for redesigning work (Parker et al., 1998; Parker & Williams, 2001). To obtain "access" in these companies, and especially to maintain connection over time, as researchers, we were highly motivated to improve work design practices because that was important for the research, as well as for the well-being of the workers involved.

This early work conducted in the United Kingdom was a time in which we learnt several lessons that continue to ring true, such as the importance of fully understanding the technical detail of the work (Sharon was once quite the expert in steel making). Also important is the need to build the trust of both managers and workers, the need to understand and manage the diverse interests of all stakeholders (unions, supervisors, specialists, production workers, managers), and the necessity for success of opportunities for genuine participation of workers in any redesign. There was no way that unionized Sheffield steelworkers, for example, were going to accept (say) team working if they thought it was just management wanting to "screw more work out of them". At the same time, there was no way that the managers were going to do positive things for workers unless they saw productivity benefits. This was therefore fertile training ground for learning how to design work to achieve positive synergies for both parties, as well as how to bring research and practice together, and how to achieve publishable work at the same time as delivering value to the organizations. From a practical perspective, we made a difference locally (as evidenced by changes in participants' work characteristics). We also produced research papers, several of which we still draw on today, given the continued paucity of longitudinal work redesign studies. We unfortunately less often published studies on the process of change (with one exception being Nadin et al., 2001; another being the final two chapters in our book Parker & Wall, 1998; and a more recent exception being; Boeing et al., 2020).

We continue to conduct such in-depth, longitudinal projects in which we fully immerse ourselves with a company and then either design the change and track it, or, more simply, track a change already being implemented. The latter approach has the advantage of being less time-consuming for us, as well as allowing us to have a more independent role in change evaluation. As an example, in one study, we tracked the impact of a relational work design intervention amongst junior doctors (Parker et al., 2013). This study is one in a larger programme of longitudinal research led by A. Johnson and H. Nguyen that was recently awarded an Australian Business Deans Council award for its high impact on health care (abdc.edu.au). As a further example, in another study, we evaluated and supported the successful redesign of a work system for diagnosing rare diseases, which involved an analysis of enabling factors (Hay et al., 2020a) as well as intensive observations of the team work processes involved (which led to the design of a new app for observing interactions, Klonek et al., 2020). We deliberately published a practically oriented version of this work in a genetics journal to expand the impact of the work beyond our discipline, including the genetics professionals as co-authors to help us get the style right (Hay et al., 2020b). Crucial to both projects has been the ability to work alongside other experts.

One question concerns how to get companies motivated to change work design. Organizations rarely, if ever, come to us saying that they want work redesign – partly because this is not a common term used in practice, and partly because of the iceberg issue discussed above. Nevertheless, there are many different, and mostly indirect, entry points into organizations when it comes to work design. Organizations' motivations for projects include: the anticipation of technological disruption, with some recognition that human consideration is needed, and some recognition of possible work design issues (see, for example, Boeing et al., 2020); the emergence of negative reactions from workers and/or productivity/safety issues after technological change; a desire to be an Employer of Choice, coupled with some recognition that well-designed work motivates and attracts staff; problems with employee mental health issues and/or a desire to comply with work health and safety policies that include designing work that minimizes psychosocial risk; a fiscal need to increase employee innovation and proactivity, in a traditionally bureaucratic organization with highly controlling management practices; an ageing work force and uncertainty about how to deal with this challenge; and interest in popular management initiatives (such as agile teams) that involve work design issues.

In early conversations with organizational stakeholders, it is important to understand what the particular agenda is, how a potential project fits the organization's mental model, and how it might meet their goals. Different stakeholders within an organization also have their own agendas, and it is important to work out what those are, and to be able to relate work design to those issues. Depending on the agenda of the organization, and the type of opportunity presented, we then try to carve out whether the opportunity is best positioned as a PhD oriented research project, or is more at the other commercial end of the spectrum (i.e., short term, solution-implementation focused, with no opportunity for diagnosis or evaluation), or is somewhere in between. Increasingly, we have the luxury of being able to decline involvement if looks like a poor fit, such as a "one off" survey (of less research value) or if the apparent "opportunity" is mostly a consultant looking to legitimize their products through claiming university endorsement.

We also rarely find that engaging with human resources roles is sufficient. Indeed (depending, of course, on the specific situation) human resource managers sometimes struggle to perceive any need for work redesign. This can be because they have an overly positive perception of the existing work design of their staff (in essence, they tend to believe their own rhetoric), and/or because they have low positional power relative to management and therefore do not feel empowered to champion work design interventions that will involve changes to operational practice. It is often those who either do the

actual work (i.e., the workers) or those who closely engage with the actual work (such as the production managers or the health practitioners) who live the mismatch between rhetoric and reality, and who directly feel the consequences of poor work design, who are the most receptive. Ultimately, the best outcome tends to come from engaging human resources, those close to the work, *and* any other relevant stakeholders. A broad group of stakeholders speaks to the systemic nature of work redesign, and the likely need for multiple departments to amend their systems. In addition, the usual challenges of managing longitudinal relationships, such as the regular turnover of managers, suggest the good sense of a broad base of engagement. Indeed, our Thrive at Work audit process explicitly draws on this notion of engaging multiple stakeholders that all coalesce around the topic of worker mental health.

Other aspects that we have found important in gaining commitment to work redesign include having clear frameworks (such as the SMART and Thrive at Work models described above; see also the online supplementary materials), being able to refer to successful case studies of redesign (especially within the same industry), and being able to provide compelling statistics relevant to the issue at hand. For example, in terms of workplace mental health, we often cite a professional consultancy firm's analysis showing that – for every dollar spent on successfully implementing an appropriate action to create a mentally health workplace – there is on average 2.30 USD in benefits to be gained by the organization in terms of improved productivity and lower numbers of compensation claims (PwC, 2014). One of our team's recent paper that systematically reviewed the effect of work redesign intervention studies on performance (Knight & Parker, 2019) has also been useful for providing quantifiable effect sizes of workplace interventions. In another project, incorporating an additional analysis undertaken by a health economist, we showed the efficiency gains from a redesign in surgical teams (introducing multi-professional team briefs) conservatively saved over three million dollars per year (Parker, Griffin et al., 2018). These sorts of data and examples help, and sometimes (depending on the audience), can be more useful than talking about correlations or statistically significant effects, which sometimes do not resonate with managers and business leaders.

Well-designed work is good for the organization *and* the person – we genuinely believe that, and there is a lot of evidence this is so. We advocate for this synergy, so we are essentially on both "sides" (that is, managers and workers). Despite this, we have frequently found ourselves having to advocate for, and represent the voice of the employee more often, because this is a voice that is often not heard, and we, as external advisors, help give legitimacy to that voice. We rarely undertake projects that do not bring in the employee perspective at some point – ideally, it is the dominant perspective because it is the enacted and experienced work design that is most relevant. Undertaking human resource practice audits, for example, against the Thrive at Work framework are a great way to get people from across functions around the table – but these audits do not include the views of employees, so we would always push for including employee views as a crucial stp. Employee perspectives can come from interviews, running focus groups with employees, and/or conducting employee perception surveys (which also provide research data). Of course, we need to remain focused on the organizational goals too, and it requires skill to navigate the different perspectives.

Larger-scale interventions: scaling up and influencing policy

We are now seeking to achieve a larger-scale impact by influencing the work design within multiple organizations and by shaping and supporting national-level policy.

Multi-organization impact

With respect to multi-organization impact, as a case in point, we recently conducted a large-scale project to investigate the mental health risks associated with fly-in-fly-out (FIFO) work (Parker, Fruhen et al., 2018). FIFO workers (mostly miners and construction workers) fly to their work sites, and typically spend between 1 and 4 weeks away from home. This work – initiated by the Western Australian government in response to high levels of suicide amongst this workforce – was carried out by a multidisciplinary academic team involving ourselves and other academic experts (e.g., clinical psychologists with experts in suicide, social workers), and aided by a multi-stakeholder advisory group. The opportunity to focus on a specific industry allowed us to provide more tailored findings and industry-specific recommendations to compel companies to change behaviour, and has informed wider industry developments (e.g., a FIFO Code of Practice), and led to us having a greater engagement with regulators.

This larger-scale approach differs from, or extends, our organizational-level work in various ways. First, the multi-organizational or industry-level approach means working with bodies that represent organizations, rather than just the organizations per se. In the case of the FIFO work, for example, the project was governed by an advisory group involving representatives from key unions, regulators, industry chambers, as well as mental health associations. Similarly, in our Thrive at Work initiative, it has been necessary to work with regulators, mental health bodies, and industry chambers. Often these stakeholders have very diverse perspectives. For example, in the context our Thrive at Work initiative, differences particularly centred around the required levels of prescription. On the one hand, individual organizations (and therefore the industry bodies or chambers that represent them) often sought industry-specific guidance for their members to address psychosocial risks so as to ensure legal compliance, as well as to manage growing workers' compensation claims. On the other hand, organizations and their representatives resisted guidance documents and frameworks from regulators or guidance bodies being overly prescriptive as they feared being constrained in their business practices as well as the legal ramifications of non-compliance. This tension resulted in us frequently having to tread the delicate balance of bringing together different organizations to share lessons learned (through communities of practice or other discussion forums) without the formality that might highlight a consistency of findings across organizations (e.g., task forces or summits) which industry bodies fear might then lead to the

development of new industry requirements. We have observed that successful cross-organizational sharing has often been within industries that have clear and publicly understood drivers for change, such as emergency services agencies, in which there is evidence of very high psychological distress (Beyond Blue, 2018). Another similar case in which there is a strong case for change is our public sector, with 56% of mental health stress claims in Western Australia lodged with public sector agencies, despite public sector employees only accounting for 10% of Western Australia's workforce (Insurance Commission of Western Australia, 2018, 2019).

A second feature of multi-organizational impact is that, whilst we have traditionally fought against having ready-made models and services (advocating for the importance of contextual understanding for shaping methodology and measurement), the more that we have tried to collectively influence and engage multiple organizations concurrently, and the more our team has grown, the greater our move in that direction. To some extent, organizations also expect this more standardized approach as they are used to seeing a suite of products and services when working with consultants. Our starting point has been the development of our practical models, as described above, and these are then accompanied by various measurement methods and processes, such as a "SMART" assessment of work design, a "Thrive" audit of practices relevant to mental health, and a "3-I" survey of aged worker experiences. We then curate statistics and case studies around key elements in these models.

As an example of how having such processes can help, we recently worked with a police department who were wanting to understand how to improve their return to work processes after an officer is injured. In talking to case managers about various successful return to work cases, it was clear that these cases often involved changing the work in order to accommodate the officer's injury and to ensure the work is well designed. It was relatively straightforward to introduce the idea that individuals need to return to "SMART" work, and to collect examples of how, for example, a supportive sergeant could come up with ways to create "stimulating" work that was nevertheless "tolerable" (i.e., addressing the "S" and "T" elements of the SMART model).

Third, we increasingly realize the need to develop a business model that can be scaled. As interest in our work has grown, and with the help of some government funding, we have been in the fortunate position to employ practitioner-oriented staff in our team. These staff are mostly qualified organizational psychologists who work with us to help enhance our impact beyond academia. Members of our "Collaboratory" engage in a wide range of activities, including working concurrently with multiple organizations within and across industries. Sometimes these projects are applied research projects like the FIFO study described above, but sometimes they are commercially focused at the outset with research being drawn on to do the work, rather than the initial goal to generate research data. These latter projects expand the reach of our impact, increase our funding for both research and impact, and build our capability. With respect to the latter, these projects often allow us to test and refine new methods and tools we are developing, which builds our resources and reputation, which then creates yet more opportunity for impact, in a positive spiral.

We nevertheless anticipate having to grow our team further, or develop "train the trainer" models, to achieve scale. This is because, despite the fact we have made a great deal of our material freely available, we still find that there is a need for detailed facilitation and in-depth organizational work in many cases. For example, whilst the Thrive at Work framework and implementation resources are publicly available on the Thrive at Work website, and we know some organizations have independently used these resources to develop a mental health strategy, many organizations still seek our input in facilitating these processes. Reasons for involving us varies. Sometimes organizations lack the skills or time to undertake the activities themselves; sometimes it is because they value the independence and expertise we offer. From our perspective, too, in-depth, longitudinal projects in which we immerse ourselves with a company are important for achieving impact. Typically, the buy-in and advocacy from organizations stakeholders is not immediate and is not earned until we have undertaken work that provides company-specific data and evidence. For instance, in one construction company, only after we conducted a survey and then statistically modelled the effect of work factors on mental health did we shift the managers' focus from tertiary interventions, such as mental health awareness training, to primary interventions involving work redesign. In another case, only when we gave the customized example of pre-start safety briefings being a way to increase "mastery" at work did the senior leadership understand that work design is relevant to their blue-collar workers. Models, case studies and educational resources only go so far. One-on-one, and longitudinal connections, are often necessary for achieving real change in work.

Finally, a challenge we are now confronted with is how to measure the impact of our work as it scales. Impact is often very indirect, slow to emerge, and multifaceted. Furthermore, as we now begin to see positive spirals emerging, measuring impact becomes even more challenging. For example, if we set up a community of practice, how would we track the impact of this? Often the members of these communities of practice have several contact points with us, possibly being alumni of our education programmes, having been in the audience of keynotes we have delivered, and having colleagues who have participated in our applied research projects, if not personally. We are in the midst of exploring new techniques to capture larger scale impact, like social network analysis, more market-research style assessments of stakeholders' awareness of work design, and pre- and post-surveys that track not work design per se but participants' attitudes and knowledge about work design.

Shaping and supporting national-level policy

An important approach to getting better work design for all is to influence relevant national-level policies, which is recognized as an increasingly important role for organizational psychologists (see, for example, Steve Kozlowski here https://www.youtube.com/watch?v=8dpepxpYa6M). Our early longitudinal

Figure 2. Why, what, and how principles of good work design (source: https://www.safeworkaustralia.gov.au/good-work-design).

research informed the United Kingdom's Health and Safety Executive agenda to prevent harm through addressing psychosocial risks. For example, our work on work design and especially the "high quality case study material" was identified by MacKay et al. (2004) as influencing how the UK "management standards" for work stress were developed.

More recently, we have contributed to the development of a work design model and guidance by Comcare, the national work health and safety authority, and Safework Australia, a government body that develops work health and safety policy. Through synthesis of research (see Parker, 2015), as well as drawing on our expertise with organizational change, we helped these bodies to develop the "Good Work Design" principles to help organizations to prevent psychosocial risks through good work design (see Figure 2);[4] materials that have been widely used across Australia. It is significant to note with this piece of work that we almost failed to put in an application when the project was advertised because "it did not seem a priority" to the team at the time. In hindsight, it was a terrific way to get national-level attention for our research. Other examples of our efforts in this space include our participation in national working party alliances on the topic of mental health and contribution to national policy-oriented documents such as discussions on the future of work (ACOLA, 2019).

In these broader policy-oriented activities, the ability to work with people from other disciplines (e.g., health and safety, epidemiology, industrial medicine, IT) becomes increasingly important. Broader methods of evaluating impact are also required, such as national public opinion/stakeholder surveys (for an example, see Di Tecco et al.'s, 2017 evaluation of the impact of policy change on Italian work design). Finally, we acknowledge the scope for much more action with regard to shaping and supporting policy than we have hitherto engaged in, especially given the large scale and transformative impact of digital technologies that is ahead of us. We absolutely concur with Grote and Guest (2017), who argued that work design efforts need to go beyond consideration of the organization-level per se, with more serious attention to bigger picture macroeconomic and policy issues, at the same time as maintaining a clear focus on worker interests.

Summary, recommendations, and conclusions

Our analysis shows there are multiple paths to achieving better work for all, varying in scope and target, and affecting work in different ways. Although we presented the different levels of impact separately, in practice, they often operate simultaneously, and they feed each other. For example, work at the policy level enhances our reputation, which can fuel keynote invitations, which then often spark interest from a particular organization. Likewise, many of the lessons at one level apply at another level, such as the idea that, across the board, establishing relationships is vital. Table 1 provides a summary of our recommendations and shows links with the existing research on impact in applied psychology and related fields.

It is important to set these recommendations for impact in context. First, our achievements have involved many beyond us, not only academics we have worked with over the years, but also practitioners. Our current team involves approximately six full-time masters-trained organizational psychologists who are now self-funding. We are currently well supported within our

Table 1. Summary of pathways to impact, example strategies, and articles making similar or related recommendations.

Pathway	Strategies	Articles
Practical models and materials	• Develop clear, simple & creative models and materials for conveying your topic (e.g., use images, metaphors, acronyms, case studies). • Identify different "entry points" into organizations for your topic and create messages for each entry point.	Bartlett and Francis-Smythe (2016); DeNisi et al. (2014); Kulik (2020)
Individual level impact (awareness raising, education and training)	• Raise awareness of the topic via websites (which can be readily updated) and via social media. • Publish research translations in practitioner outlets (e.g., podcasts, industry magazines) and release findings to the media. • Consider creative ways to raise awareness (e.g., via a Massive Open Online Course, or using art, such as sketchingworkdesign.com). • Speak at practitioner/industry events/deliver podcasts, seeking to both inspire interest and educate. • Develop and deliver training/executive education on your topic. • Educate students from other relevant disciplines (e.g., engineering, health) on the topic given they are potential practitioners of the future. • Evaluate the impact of outreach activities using multiple methods.	Aguinis et al., 2014; Bartlett and Francis-Smythe (2016); Cascio and Aguinis (2008); DeNisi et al. (2014); Kulik (2020)
Organizational-level impact (in-depth longitudinal change interventions)	• Create a project model that fits the needs of both parties; a longer-term partnership with an organization is often preferred to a one-off service delivery model. • Understand constraints and motives of key stakeholders. • Develop relationships with multiple stakeholders within an organization due to the risks of turnover & the value in securing a broad base of commitment. Recognize the value of links beyond those with one professional group (e.g., HR). • Learn about the organization and its work in depth (e.g., the strategy, competitors, the work processes). • Recognize that organizational partners will want to know what others in the industry are doing (even if you are agnostic to industry). • Customize your research to fit the goals of the organization (e.g., ask what strategic goals your work can help to deliver). • Share statistics, case studies, etc, to help build a business case for the research. • Work with employees and managers, but especially recognize that the employee voice is often not well represented. • Publish practical case studies based on your research. • Be prepared to walk away when a relationship with an organization is not meeting your needs.	DeNisi et al. (2014); Grote and Guest (2017); Rousseau (2007)
Multi-organization/industry-level impact	• Understand the industry. • Involve industry representatives/bodies/unions/chambers etc, who might have different and conflicting agendas • Develop forums to bring together multiple organizations to facilitate knowledge-sharing e.g., communities of practice, joint training programmes. • Identify ways to operationalize and implement research findings "at scale", which might require new models, e.g.,, collaborate with practitioners to do the delivery work or design "train the trainer" models • Develop appropriate ways to measure broad-level impact e.g., social network analysis.	Boulding et al. (2020)
National-level impact e.g., influencing policy	• Work with national-level bodies and organizations if possible. • Submit contributions to government inquiries and other policy-oriented documents. • Release "white papers" on your research topics. • Use public opinion/national surveys to evaluate large-scale impact of policy. • Educate and train policymakers, and students in a range of disciplines, about the importance of work design	Di Tecco et al., 2017; Grote and Guest (2017) Leka et al., 2011, Leka et al., 2015)

research institute by a dedicated marketing and communications officer, as well as other forms of operational support (e.g., for practical launches). We operate within a university that, due to its history as a technical institution, has an exceptionally strong focus on "demand-driven research" and impact beyond academia, which has meant it has provided additional funds to support impact activities. Just as important, senior leaders within the university have supported us psychologically, giving us decision-making latitude, encouraging our activities (e.g., suggesting we go for awards), and advocating our work to industry and government. This level of support for impact is not always present, and it might sometimes be necessary to move Universities (as we did) to find a good fit.

Second, getting to this point has taken many years and has involved quite some degree of luck. Even though we had both strived to have an impact throughout our careers, the award of some large-scale funding in 2017 (Sharon's ARC Laureate Fellowship award, co-supported by our University) provided the opportunity for a step-change in activity because of the increased level of resourcing (e.g., the grant funded not only multiple post-doctoral positions but also seed funding for the organizational psychology positions noted above, as well as for

marketing/administrative support). The funding also created a strong concentration on one topic (work design); which internally has helped to direct and focus attention in the face of multiple competing goals, and externally helps to establish a clear "niche".

Third, there are different perspectives on achieving impact, and we recognize that our approach is not the only one and will no doubt be subject to criticism. For instance, critical management and labour process theory perspectives would likely see our approach as managerialist (e.g., Legge, 2005), and others would argue we are too heavily focused on evidence-based management (e.g., Morrell & Learmonth, 2015). We indeed are strongly motivated by the vast quantitative evidence linking good work design to positive individual outcomes (some of this evidence being our own!), but we are also open to other forms of evidence (most crucially, the voices of employees themselves), and we do not believe we are naïve to power and control issues in organizations. Others also advocate for much greater engagement of stakeholders in research itself (e.g., Huzzard, 2020). Whilst we seek to engage practical stakeholders in the research, we also believe we sometimes do "know best", and that the expertise we bring to a problem is valuable beyond the received wisdom or intuitions of organizational stakeholders. For example, in the FIFO project, we welcomed our diverse stakeholders' perspectives on topics like how to get buy in to the survey, and what sorts of issues should be assessed, but we also were also clear that decisions like research design, measures, and sample were for us to make.

Fourth, as well as progress, we have had many disappointing experiences, missed opportunities, and failures over the years. We have worked with companies who want to treat us as "cheap consultants", or who simply do not "get us". Some organizations struggle to know how to work with us (and we with them) because our value sets are so different. In a meeting recently, our colleagues described how they were grilled by a senior human resources executive who could not fathom why we cared about research and assumed our "real" motive must be money. We have grown so frustrated on occasion with companies that will not act on our recommendations, filling us with guilt at having participated in raising expectations of workers that are then not met. We have sometimes (perhaps often) wasted time pursuing opportunities that do not come to fruition. We have frequently missed the boat – discovering consultants or others have secured a project or opportunity that we should have been ideally placed to do, but we just could not persuade the stakeholders we were right for the job or we did not have the time and capacity to respond. We have given away intellectual property and seen it reappear in consulting companies. We have failed to extract good research from commercial/applied projects when we should have. Vice versa also applies – we have often not translated and disseminated good research into practical guidance. For example, several years ago, Sharon set a goal to "translate" every academic paper accepted into a practical article, but this goal is not being met; and Karina has struggled to keep up with writing case studies for our case library because the next "live" case is always more pressing. Our local TEDx committee has been uninterested in having us present. We have been slow to target HBR and other such outlets, and when we do, getting traction has not been easy. Our work is often not as "attention grabbing" as cool social psychology experiments, and it appears harder to get into high profile practitioner outlets if you are situated at a remote Australian university. As noted already, our impact on policy is (thus far) relatively light.

We could go on with this list of mistakes and regrets! The point we are wanting to make is that seeking to have an impact is not easy. For a researcher, trying to influence practice on top of the excruciatingly difficult demands of producing high-quality research (as well as doing editing, reviewing, teaching, etc), can be too much, especially in an educational sector that has traditionally not valued or supported impact. For a practitioner, it is challenging to influence practice within the constraints of a bureaucratic higher education institution that often has other priorities, and there is uncertainty in carving out a career in a research-oriented context.

Finally – and perhaps this is the biggest lesson and the most important message we have to give – despite our many "failures" and challenges, we keep trying, and we are optimistic. We are excited by the tremendous opportunities we see ahead for our field. Not only is there much wider recognition of the role of good work design for mental health, but technological change means work design is a crucial topic (Parker & Grote, 2020). The traditional data modelling skills of organizational psychologists also mean that we are comfortable with big data, and therefore readily able to interact with data scientists and others, which in turn creates opportunities. The ability of organizational psychologists to consider multiple levels of influence (individual, team, organizational), as well as to consider both business and human issues, allows a unique contribution that is distinct from other professions. We also observe that many universities are understanding more than ever the importance of impact of research beyond academic impact, which hopefully translates into better support for this type of activity. The opportunity for impact is greater, and perhaps more important, than ever.

We both have a deep commitment to making work better, and when we find out we have done that, strong intrinsic motivation is generated by this "task significance". Our jobs and lives are more meaningful when we make a difference. We also have witnessed how impact outside of academica leads to opportunities for interesting and relevant research. For these reasons, we encourage researchers who have to date not engaged much externally to have a go. Although we see that senior researchers whose careers are established are best placed to lead larger-scale impact endeavours, even junior researchers can take small steps to achieve impact beyond academia, such as by translating their findings into simple language for practitioners to use. In the words of Helen Keller, "*the world is not moved only by the mighty shoves of the heroes, but also by the aggregate of the tiny pushes of each honest worker*." We hope this article on our tiny pushes helps us to create better quality work for all.

Notes

1. "Opportunity" of individuals is likely to be mostly affected by changing broader and more systemic factors, such as the technology they use or the systems they operate within, so we discuss this aspect in other sections.

2. We closed the programmes when we moved to a new university but are currently designing a work-design specific MOOC.
3. This material will be available on transformativeworkdesign.com.au/teaching from approximately July 2020. Sign up to the website and we will advise you.
4. For the principles, see https://www.safeworkaustralia.gov.au/system/files/documents/1702/good-work-design-handbook.pdf For a video of Sharon describing these principles, see https://www.safeworkaustralia.gov.au/media-centre/good-work-design-and-applying-it-psychosocial-risks

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