LA-UR-21-21668
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Title: Human Performance Improvement Task Group Task 21-1 Best Practice: Using virtual capabilities or options for HPI application (to reduce errors, strengthening defenses, strengthening the organization, and/or increasing capacity)

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Intended for: EFCOG Best Practice

Issued: 2021-02-22

# Human Performance Improvement Task Group

# Task 21-1

## Best Practice:

## Using virtual capabilities or options for HPI application

## (to reduce errors, strengthening defenses, strengthening the organization, and/or increasing capacity)

February, 12, 2021

**Background**

In 2020 the world was impacted by COVID-19. How work is done was dramatically changed for a large portion of the workforce. Many have made the abrupt shift to working from their home while others have adapted to COVID protocols (such as social distancing and wearing face-masks). Fundamentally, Human and Organizational Performance Improvement concepts and science did not change – only the delivery method changed (in some cases). The primary effect has been to accelerate dynamics already present in society – from e-commerce to online education to remote healthcare. Change is never easy for humans. However, remote work should be viewed as an opportunity; not a fix to a problem.

**Goal**

In this Best Practice paper, you'll get practical suggestions to help you reduce errors and improve Human Performance in remote, socially-distanced "work-from-home" environments.

**Remote Work**

Remote work is a working style that allows professionals to work outside of a traditional office environment. Think of it this way: instead of commuting to an office each day to work from a designated desk, remote employees can execute their projects and surpass their goals wherever they please. There is no one-size-fits-all formula for remote work. The forms it takes depend on the size, stage, and philosophy of each organization, and will change as a company grows and matures. Often, remote work is framed in the context of people working from home and not having to commute; however, any company that has multiple offices deals with many of the same challenges (and may more accurately be described as a distributed company). Once an office expands beyond a single floor, the nature of how people work together inherently changes. Remote work largely exaggerates those changes, and successful remote teams depend on more attention being paid to them; for example scheduling periodic interaction time.

In 2020 more than half of the global workforce transitioned to working remotely and as the pandemic continued to threaten health, organizations looked at (and in some cases transitioned to) a prolonged period of hybrid working – from home and office in different proportions.

Some lessons learned: we can accomplish most (knowledge workers) tasks remotely without significant drop in productivity or quality. Most employees appreciate flexibility, especially those with long commute times. Over time, however, face-to-face interaction is required to facilitate collaboration, build relationships, solve complex challenges and generate ideas. Continuous remote work *may* extend the work day, diffuse work-life boundaries and reduce mental wellbeing.

Given these pros and cons, organizations had to rethink their working arrangements. Enterprises adopting this new way of working – "virtual-first" – have these characteristics:

1. The workplace is distributed across home, office and satellite offices. Employees can choose to work remotely or face-to-face based on their nature of work and teams' preferences.
2. The teams are virtual ready. Managers know how to manage, coach, collaborate, evaluate performance and motivate their team remotely.
3. The technology enables multiple modes of working. Data is saved on cloud; access and security are tailored for different working modes; and applications allow seamless virtual collaborations.
4. The culture prioritizes trust and belonging. Interpersonal bonds are formed with intent and care.

Now that the world is familiar with video communications, the way businesses and individuals communicate and connect will be forever changed. Healthcare, education, finance and businesses large and small are growing and improving with the help of video communications. In 2020, hundreds of thousands of small business owners – yoga and piano instructors, therapists, accountants and others – maintained and even grew businesses using video to connect with customers.

In the near future, some organizations may adopt a hybrid-work model, with certain days in the office and others remote, and might align employees' in-office and remote schedules to create equity. Other companies will use video communications to be completely remote. Both models will enjoy increased productivity and deeper collaboration, and the ability to attract a more diverse workforce. The future of work will be distributed. There is going to be a big shift from office by default to remote by default.

Organizations are rethinking how they design and use office spaces – making them more about bringing the community in and placing an emphasis on virtual events. Remote by default will also force people to reframe the way they communicate and connect with people at work. Those whose superpower is connecting with people live and bringing energy to conversations will need to become good written communicators. And companies who do not have a strict need for physical interaction are going to have to operate more like open source communities – distributed, asynchronously and online.

Leaders will need to change the way they manage employees. No longer are the employees conveniently located near management. Organizations may need to permit employees more autonomy to work flex schedules to balance the realities of remote work (home schooling, pets, etc.) and still accomplishing tasks related to "work." Leaders may need to explore new methods to measure results.

**Recommended Considerations:**

1. Use Change Management when considering or implanting a remote work force

   Recognition of the fundamental problem (COVID-19 organizational change impacts) using Change Management techniques is crucial in identifying organizational effectiveness performance shortfalls that require preventative and corrective action implementation. By asking critical change management questions the appropriate corrective actions are identified to address the performance shortfalls. COVID-19 created a systemic change in the way communication is occurring across organizations through both the DOE and commercial nuclear industry. To understand how these changes impact each organization the following questions are a sample of how effective programmatic change can be recognized and instituted:

   1. What is the change?
   2. What departments were impacted by the change?
   3. Has the change resulted in a different approach to how the organization/department conducts business?
   4. Which job positions have been impacted by the change?
   5. How is the organization/department conducting business differently?
   6. What new knowledge, behavior, and/or skill is required for each job position that was impacted by the change?

   As one can see, these questions result in a multitude of answers depending on the job position impacted by the changes. For example, COVID-19 has resulted in many organizations conducting business remotely. However, this is a broad description of the change that requires a deeper and systematic analysis to understand and correct the performance shortfalls. By performing sound Change Management, the performance shortfalls attributed to knowledge, skills, and behavior weaknesses can be readily identified and addressed with effective corrective actions.

   Organizational behaviors indicating the need to conduct Change Management analysis include the following:

   1. Multiple departments continue to claim they need more training
   2. Multiple departments exhibit the same challenges or gaps
   3. Training appears to be the only solution for all problems across all departments
   4. Organizations start looking upwards for help (CEO, etc.)
   5. Skill level appears to be depleting across all organizations due to a systemic change

   It is important to recognize that simply creating corrective actions to address performance shortfalls as they arise during a systemic wide change can be counterproductive and harmful to an organization. Ultimately, this behavior can put a company into a state of “firefighting” as the systemic change outpaces the performance of the workers. Strong leadership is required at the highest levels in the organization to both recognize the change and act upon it with a strategic plan to ensure the organization’s overall knowledge, skill, and ability level are maintained at the levels required to sustain safe and reliable operations. Additionally, organizations and departments with an aging workforce are likely more susceptible to system-wide changes that involve relatively new technologies and may be more severely impacted by these changes. This

warrants a higher level of urgency in these instances for developing and implementing a sound change management plan.

2. Keep employees in mind

    - Organizations and staff may need to take in to account that remote workers do not experience all the senses (they are not "there"). Virtual work may need to be more interactive by engaging all participants; having them verbalize what they are experiencing. Take time to engage all, thru dialog, to improve engagement and remove the temptation to multi-task. AI software will also highlight who is speaking (their video feed enlarges).
    - Remote training may also be different and instructors may need additional skill training. Trainers should recognize that engagement techniques may be different. There are Artificial Intelligence software solutions that recognize a student is no longer engaged; (AI software will highlight that participant) driving the instructor to purposefully engage that student.

3. The remote work environment and COVID-19 protocols introduces new error likely situations. In addition to the Common Error Precursor Descriptions found in DOE-HDBK-1028-2009, Volume 1: Concepts and Principles, Chapter 2, Attachment B, consider these additional descriptions:

    Task Demands:

    - **Simultaneous, Multiple Tasks**: Performance of two or more unrelated tasks; such as housework, caregiving, etc. at the same time as teleworking meetings, computer work, etc.
    - **Lack of or unclear standards:** Presumption that procedures and policies are adequate as written. These may have been designed for work from the company location. Remote workers requirements may not be fully explored, understood, or defined.
    - **Excessive communication requirements**: There is a time delay when communicating virtually; two people talking at once and only one is heard.

    Work Environment:

    - **Distractions / Interruptions:** Examples would be expanded to include pets, housework, children, easy access to television, etc.
    - **Unexpected equipment conditions:** The variability and unpredictability of technology. For example: internet outages, computer/software locking up, bandwidth limitations (a slow internet connection causing buffering), etc. This may require unique contingencies (e.g., a meeting co-host) be pre-planned.

    Individual Capabilities:

    - **New technique not used before:** Even though the technology for remote working has existed and was readily available, for some this is a first time evolution using that technology. Examples include VPN, Remote Desktop applications, G-Suite, Microsoft Teams, Virtual meeting applications (Webex, Meet, Skype, Blue Jeans, Zoom, etc.). Evaluate if current training needs to be modified for the new work environment.

- **Imprecise communication habits:**
    - Communicating on conference calls and virtual meetings is different than in-person conferences.
        - There is a time-delay which can result in simultaneous speaking.
        - Announce your name when entering room (conference calls)
        - Eye contact during virtual meetings is just as important as during in-person meetings; and sets the tone of the interaction
        - Lack of camera use can cause feedback issues because you cannot "see" reactions
        - Participants may have difficulties paying attention and may be tempted to multi-task instead of focusing on the meeting
    - Face-masks (COVID-19) impede verbal communication. Receivers cannot view the sender's lips (lip-reading can assist in understanding what the person is saying). Masks obstruct sound clarity.
    - Electronic communication (chat, text, emoji's) that can be misinterpreted.
    - Virtual meetings require unique behaviors. Such as; raising your hand to speak (to avoid simultaneous conversations), using virtual backgrounds (to avoid viewer distractions and/or provide a professional appearance), and understanding the technology (to manage breakout sessions and sharing your screen)
- **Lack of proficiency / Inexperienced:** As with any new software program there is a learning curve. Secondly, when returning to work people will have lost proficiency or "at work" practices (such as cell phone use restrictions, and other security protocols)
- **Personality conflict:** attempting to do remote team work with people you have not worked with before, therefore we had not developed team norms or communication rhythms

Human Nature:

- **Inaccurate Risk Perception:** Cybersecurity and other trade secrets or national security implications may exist when working remotely when compared to in the office. Hardware vulnerabilities when connected to a personal internet connection (VPN) vs. company LAN.

4. Identify or modify Human Performance Tool practices found in DOE-HDBK-1028-2009, Volume 2: Human Performance Tools for individuals, work teams, and management.

   Most HPI tools were designed for a traditional workplace setting. Traditional examples include operating and maintaining equipment, conducting hands-on research, engineering practices, job-site observations of work in progress, etc. HPI tools need to be modified so that they still work remotely and under COVID-19 protocols. Examples include:

   - **Three way communication:** Remote working needs to include a confirmation / feedback leg in the communication. Replies to emails, chat, text messages, needs to be practiced similar to verbal 3-way communication practices.

- **Pre-Job Briefings**: Some team members may be joining from a remote location. Sharing of information may require the use of technology (simultaneously sharing computer screen, photos, illustrations, etc. in Webex as well as on the conference room display). Go-Pro cameras or webcams may be necessary for some to "view the job site" or other participants.
- **Peer Checking**:
    - Remote peer checking using "sharing applications" may be required when co-workers are not in the same location. Examples would be the sharing of one workers computer screen with a second employee as the first employee discusses, and then takes the intended action as the second person observes remotely.
    - Remote peer checking may require the use of a portable video device, such as a cell phone video call or GoPro camera.
    - Maintaining social distancing protocols may require the peer to "observe/view from a distance."
- **Peer Review**: Collegial review meetings, which were previously conducted in a conference room, may need to be conducted virtually (or a hybrid meeting). Sharing of information may require the use of technology (simultaneously sharing computer screen in Webex as well as on the conference room display).
- **Post-Job Reviews**: Some team members may be joining from a remote location. Sharing of information may require the use of technology (sharing screen, photos, illustrations, etc. in Webex and in the conference room). Go-Pro cameras, webcams, or cellular services such as FaceTime and video calls, may be necessary for some to "view the job site."
- **Observations**: Webcams (GoPro cameras) may be necessary for remote observations.
- **Vendor Oversight**: Oversight activities may need to be remote. Go-Pro cameras, webcams, or cellular services such as FaceTime and video calls, may be necessary for some to participate from remote locations.
- **Self-Assessments**: Self-Assessment activities may have to be modified from face-to-face to a remote method. Remote interviews, team discussions, document reviews, etc. may be necessary. It may be necessary to have "eyes and ears" team members on location who do observations and reported results
- **Independent Oversight**: Innovative methods to conduct oversight without ever being at the job site may be required.
- **Investigations triggered by Human Error**: Investigators may have to adapt to virtual interviews, virtual job site observations, and virtual team meetings (including use of virtual whiteboards, and Event and Causal Factor Charts, etc.).
- **Change Management:** Review policies to ensure trigger points receive the proper attention as changes to work environment occur. Specifically, this may capture training program changes to tasks related to communication across the company. This presents a potential vulnerability from an organizational effectiveness standpoint and should be a flag to review and shore up any outstanding issues with Change Management policies.

- **Reporting Errors and Near Misses**: Employees need to understand that the work environment has expanded to include remote locations. Clarity in what would be considered an "at home" vs, a "remote work" accident, near-miss, etc., need to be defined and understood.

5. Identify opportunities to establish new (different) ways of doing business. Most people have become used to technological solutions – the time is right for the shift. Examples include:

    - **Hybrid meetings**: Meetings can be conducted with some team members in attendance and other joining virtually. This can save travel time (or avoid difficulties finding parking) or travel costs (workers can join from long distances, such as from another state).
    - **Utilize sharing applications**: Expand the use of software that permits simultaneous editing, sharing, and collaboration from remote locations. Examples include G Suite, Microsoft Teams, Webex, Skype, etc.
    - **Utilize remote participation applications**: Integrate virtual applications (such as whiteboarding, polling, chat, etc.) into current practices. Denote what is an acceptable alternative to being in person for an activity (such as remote auditing, remote self-assessments, remote inspections, etc.).
    - **Remote Training**: Explore remote training platforms. Benefits include larger attendance (hundreds instead of 15-20), simultaneous responses by utilizing features such as chat, hand raise, Q&A features, and polling. Drawbacks include internet connection issues, not "seeing" student reactions, difficulty conducting group and hands-on activities, etc. Confirming student knowledge may need to change from direct/open questions (in a classroom) to a virtual form of a knowledge check (Google Form, polling, etc.). Breakout rooms may be used for small group discussions. Case Studies may prove difficult to facilitate in a virtual environment.
    - **Augmented and Virtual Reality**: Virtual reality software programs can be accessed from anywhere (with the right equipment). Virtual reality software can be used for job planning, training, as well as other applications. See EFCOG HPI Task Group *Task 20-1* for more information on the application of *technology to reduce errors*.
    - **Communicate differently**: Remote teams don't have the benefit of simply turning to a colleague for a quick chat or exchange thoughts as they would in a traditional office (or job site). Encourage employees to talk often with each other. Using online chat software is one way to manage projects and keep everyone in the loop. This way there is always a running list of what needs to be done. People can make comments or inform mangers of delays, needs, and problems.
    - **Hardware and physical resources**: Organizations may incur costs need to provide individuals with computers, software, ergonomic accommodations etc. However, these costs may be offset by reducing office and parking facility costs.

- **Quality Assurance/Assessments/Inspections**:
    - Send, or identify shared storage locations, for documents, drawings, pictures, reports, etc. for evaluators to pre-read, review, and to have access to during the evaluation.
    - Use programs like Webex, Zoom, Meets, Team, etc. to set up virtual conference centers. Utilizing a host that can schedule, coordinate and facilitate sending participants and evaluators to breakout rooms as well as large meeting platforms.
    - Utilize webcams, GoPro cameras, etc. where "visual" inspection is required.
    - Minimize on-location visits in accordance with COVID-19 protocols.
- **LinkedIn Learning**: Multiple courses available to transition employees to remote workers. Example include:
    - Courses:
        - Remote Work Foundations (By: Mike Gutman – Released Oct 30, 2018)
        - Tips for working remotely (By: Todd Dewett - released September 28, 2015)
        - Working from Home: Strategies for Success (By: genConnectU – Release Sept 2020)
        - Working and Collaborating Online (By: Garrick Chow – Released Aug 21, 2020)
        - Time Management: Working from Home (By: David Crenshaw – Released Feb 7, 2018)
        - Building Relationships While working from Home (By Dave Crenshaw – Released Sept, 2020)
        - Leading Virtual Meetings (By: Phil Gold – Released Feb 26, 2020)
        - Executive Presence on Video Conference Calls (By: Jessica Chen – Released Mar 4, 2019)
        - Leading at a Distance (By Kevin Eikenberry – Released April 30, 2019)
        - Managing Virtual Teams (By Phil Gold – Released May 15, 2019)
    - Videos
        - Skills and qualities needed for remote work (Release May 13, 2016)
        - Challenges of virtual collaboration (Released June 21, 2019)
        - Remote Working Challenges (Released May 9, 2019)
    - Learning Paths:
        - Becoming a Successful Remote Worker
        - Remote Working: Setting Yourself and Your Teams Up for Success

**References:**


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    a. Volume 1: Concepts and Principles
    b. Volume 2: Human Performance Tools for Individuals, Work Teams, and Mangement
2. Coronavirus: How the work of work may change forever https://www.bbc.com/worklife/article/20201023-coronavirus-how-will-the-pandemic-change-the-way-we-work. , BBC Worklife: *This series is produced by: Philippa Fogarty, Simon Frantz, Javier Hirschfeld, Sarah Keating, Emmanuel Lafont, Bryan Lufkin, Rachel Mishael, Visvak Ponnavolu, Maddy Savage and Meredith Turits*
3. How to Reduce The Possibility Of Human Error In Remote Teams, Incentria, Ryan Goldberg, https://incentria.com/how-to-reduce-the-possibility-of-human-error-in-remote-teams/


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**Thank you** to the following for their contributions, comments, and recommendations:

- Brian Baskette, Black Dog Associates
- Earl Carnes, ResilientGrid
- Jake Mazulewicz, PH.D., JMA High Reliability Strategies
- Tony Muschara, CPT, Muschara Error Management Consulting