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Affordances: Behaviors Encouraged by Desirable, High-Performance Work Environments

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Abstract

Work schedules and locations are changing, and modern workplaces must accommodate the multifaceted needs of employees by supporting them physically, emotionally, and cognitively. Interior designers often deliver this support intuitively, but what if spaces could be created by using scientifically backed principles that inform workplace design? This is where Haworth's Affordances framework comes in.

This whitepaper introduces Haworth's Affordances framework, developed by researchers to help organizations understand the interactions between workspaces and workers. The framework illustrates how design choices can afford behaviors that fulfill workers' physical, emotional, and cognitive needs, enabling them to thrive in their tasks. By diving deep into the Affordances framework, this paper provides a theoretical foundation for the "why" behind effective workplace design strategies.

Keywords

- Affordances
- Physical
- Emotional
- Cognitive
- Human performance
- Evidence-based
- Well-being

Takeaways

To maximize employee performance and well-being, the environment must meet a variety of human-centric needs.

The Affordances framework outlines 10 Affordances, backed by principles. These principles are derived from a wide range of scientific disciplines.

Space designers have the flexibility to address specific affordances based on their design objectives. It is not necessary to incorporate all possible affordances into every spatial design.

In the realm of workspace design, the environment has profound implications for human well-being and productivity. Consider two contrasting office settings:

The first is a space that bears the weight of neglect. Tightly packed cubicles leave little room for personal space or privacy. Collaboration areas are scarce, forcing colleagues to huddle in tight spaces or resort to virtual means. The lighting is dim, and the overall ambiance is one of confinement and monotony, lacking warmth and inspiration.

In stark contrast, the second office space is a thoughtfully crafted environment that prioritizes human well-being. An intentionally designed layout strikes a balance between focused work and collaborative endeavors. Dedicated areas for brainstorming and ideation foster creativity and innovation, while quiet nooks cater to those seeking solitude and concentration. Ergonomic furniture and biophilic elements, such as indoor plants and natural materials, contribute to a sense of comfort and well-being.

Which space would most people rather work in? The answer seems self-evident—an environment that nurtures the human spirit, promotes productivity, and encourages connection is undoubtedly the more desirable choice.

So, what exactly makes a workspace conducive to employee and organizational success? This is the question that Haworth's Affordances framework seeks to answer. As the framework contends, naturally appealing office design is not randomly achieved, but backed by scientific principles.

Affordances are opportunities or encouraged behaviors that are created when users and objects interact. A classic example of this is the design of a door handle. If designed well, the handle should subtly direct an individual to either push or pull the handle without requiring the individual to consciously think about it. If designed poorly, the handle could encourage an incorrect action—such as pushing when it should instead be pulled—resulting in confusion.

Furthermore, beyond the object level, the Affordances framework presents opportunities for action offered by entire spaces. At Haworth, our research has uncovered 10 Affordances that workspaces can incorporate to create environments that appeal to the users physically, emotionally, and cognitively.

The Affordances

Physical	Emotional	Cognitive
Anthropometrics	Authenticity	Embedding
Ambients	Well-being	Externalization
Movement	Affinity	Access
		Insulation

By understanding how these Affordances work, organizations can optimize their spaces to create natural appeal, backed by research that answers the “why” behind great space design.

Affordances Background

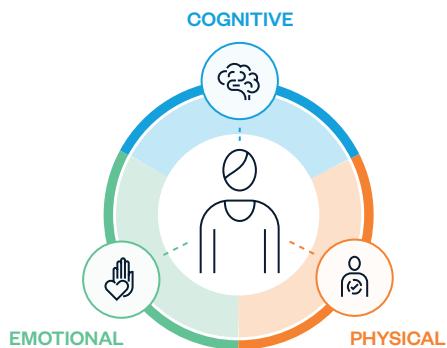
Researchers at Haworth created the Affordances framework by drawing from the scientific fields of cognitive psychology, social psychology, environmental psychology, ecological psychology, neuropsychology, sociology, and ergonomics. By incorporating knowledge from each of these fields, the Affordances framework provides a comprehensive portrait of how workers interact with their environments.

The framework is not limited only to office workspaces, but is applicable to all work locations. Within the scope of the modern work from anywhere landscape, we have identified that affordances apply to other work arenas, such as the home office or a third space (e.g., coffee shop or airport lounge).

Just as the ways and places in which people work have evolved, so must our understanding of how spaces support workers. Therefore, we treat the Affordances as a “living framework.” The research informing it is not set in stone; rather, it is continually updated with the latest and best information regarding what elevates an employee’s potential.

The goal of this framework is to assist organizations in creating great spaces that empower people to thrive and work their best—physically, emotionally, and cognitively—thereby enhancing both well-being and performance.

With this in mind, we describe in further detail the 10 Affordances below, each of which is informed by several principles. Though many of these concepts have definitions that differ from ours, we define principles in terms of how spaces impact individuals.



Physical Affordances

At its most fundamental level, a workspace should fulfill the physical requirements of the worker. Basic biological needs such as clean air, thermal comfort, and shelter need to be fulfilled before humans can be motivated toward other tasks.¹

In the workplace, people can focus on their work more effectively when they feel their environment is physically accommodating in temperature, lighting, and space. As such, we propose that these factors are essential for human performance.

Anthropometrics

The word anthropometrics is derived from the Greek *anthropos* (human) and *metron* (measurement). Therefore, the Anthropometrics Affordance relates to how work products support the physical needs of a wide range of body sizes and mobility levels. Anthropometrics can be divided into two distinct categories.

Functional Anthropometrics

The measurement of movement-based abilities related to completing tasks such as reaching, maneuvering, and general mobility

The design of furniture and spatial applications should be matched to the typical human abilities in terms of motion. Functional anthropometrics describes the measurement of everyday movements and is an imperative consideration to make when designing human-centric spaces. An office that is designed with functional anthropometrics in mind would allow the widest range of people easy access to task-related movements, such as adjusting monitor arms, moving markerboard carts, and sliding conference room doors.

Static Anthropometrics

The measurement of bodies at rest when using objects such as chairs and tables

Objects in the work environment should afford people of a wide array of body sizes the opportunity to sit or stand in comfort throughout the workday. One way to accommodate for this wide variety is to incorporate adjustability into workplace settings. This includes adjustable task chairs, conference room seating, lounge space seating, and desks and tables throughout the office. If the objects are not adjustable, there should be a variety of furniture solutions available in each space (e.g., a bi-level conference room table with stools and chairs).

Ambients

The ambient qualities of the office are the attributes of the surrounding environment that are felt by the senses. On a day-to-day basis, these qualities (which we've dubbed "ambients") might not be top of mind for most workers—unless they aren't working properly (think of a flickering light, or an overly loud creaking door). In the case of poor ambients, it can be extremely hard for workers to focus and perform their duties. There are multiple factors to consider in terms of ambience.

Acoustics

The art and science of sound

In a recent Haworth survey, workers rated acoustics as the number one thing not working related to their current hybrid work policies.² In the modern work from anywhere ecosystem,³ auditory distractions from video calls are all too common. An increase in open seating and collaboration contribute to a greater need for acoustic privacy than ever. However, completely insulated, enclosed offices for every worker could be costly and result in fewer positive interactions among workers.⁴ As such, acoustic design requires a delicate balance where there is not a cacophony of sound nor a lifeless silence, but an office energy, or "buzz," that reflects a vibrant work environment.

Lighting

The role and quality of natural and artificial light in the workplace

Lighting is a critical element of an office's design. Not only does it enable us to see our work, but the right levels and qualities of lighting support improved performance and well-being. Daylight seen through windows and even some types of artificial light supply energy and improve mood and physical health.^{5,6} The intensity and quality (i.e., light temperature) of light should fit

1. Maslow, 1943
2. Haworth, 2023

3. Haworth, 2020
4. Boutellier et al., 2008

5. An et al., 2016
6. Kuller et al., 2006

the tasks that workers must do in each given space. For instance, a lounge area might have muted, warm light to promote relaxation, whereas a benching area might have cooler white overhead lighting for concentrated work. As with acoustics, lighting is a balance game—the key is figuring out what type and strength of lighting to supply to each room and workstation.

Air Quality

The subjective and objective level of air pollutants within a building as it relates to health and comfort of its occupants

Clean air is one of the most elemental necessities a workplace can have. Proper air quality is not only crucial for ensuring the health and safety of workers, but research has demonstrated that it can lead to enhanced productivity.⁷

Many commercial facilities produce large quantities of indoor pollutants such as volatile organic compounds (VOCs) from building materials, as well as biological materials like bacteria and mold. To supply well-circulated, filtered air to an entire facility, heating, ventilation, and air conditioning (HVAC) systems should be regularly inspected and maintained. Providing easy access to fresh air via outdoor areas such as patios or verandas can also offer improved air quality.

Thermal Comfort

Satisfaction with the thermal environment

Beyond the quality of the air in a building, the thermal comfort of the air is an important factor in terms of worker well-being and performance. Research indicates that task performance tends to decrease as temperatures deviate from about 72°F (22°C).⁸

Simply setting the thermostat to 72°F isn't enough, however. The circulation of the air within spaces is also critical. For example, you may have entered a conference room that feels unpleasantly stuffy after it has just been inhabited by a large group. An HVAC system that circulates fresh air into these spaces can alleviate this discomfort, making the room more comfortable for the next group of people, and allowing workers to focus on the task at hand.

Movement

It is no secret that sitting all day is bad for one's health. Still, it is remarkable how often we find ourselves hunched over and stationary as we squint at our computer screens. A well-designed office encourages movement throughout the facility and at individual workstations, and grants the opportunity to interact with coworkers.

Activity-Based

An office design characterized by a variety of task-oriented spaces rather than homogenous workstations from which workers are unlikely to move

Activity-based settings are characterized by a variety of space types such as individual touchdowns, group conference rooms, lounges, cafés, and lobbies.

This variety encourages more movement among employees, which has been tied to improvements in physical health such as a reduction in lower back pain.⁹ Though activity-based work is not free from problems (e.g., privacy, storage),¹⁰ it is beneficial in terms of creating more opportunities for mobility throughout the workday.

Proximity

How physical closeness impacts the ability and willingness for coworkers to interact face-to-face

Evidence suggests that proximity and design of spaces can impact the patterns of encounters in which employees engage.^{11,12} In general, the closer coworkers are to one another, the more likely they are to participate in face-to-face interactions, which can be catalysts for interdisciplinary collaboration.¹³ Other contributing factors include visibility of coworkers, accessibility to these coworkers, and the openness of the office plan.

Collaboration and face-to-face meetings can be critical for task performance, so an office should encourage communication among key members by creating sightlines and pathways between these employees.

Physiology

The assertion that exercise and sedentary behavior are not two ends of the same spectrum, and that exercise alone cannot fully combat the effects of sitting

Although regular physical activity has many health benefits, the remainder of a person's day still needs to be active to see the full effects. In other words, if someone exercises intensely for a half hour per day, but spends the remainder of their waking hours sitting, they are still susceptible to the harmful effects of sedentary behavior. Office layouts and products that encourage movement and postural shifts can contribute to the active lifestyle this science prescribes.

7. Wyon, 2004

8. Seppanen et al., 2006

9. Foley et al., 2016

10. Engelen et al., 2019

11. Grønbæk et al., 2017

12. Rashid et al., 2006

13. Paul, 2021

Emotional Affordances

Emotional Affordances describe how work environments influence how we feel at and about our work. Emotions occur in the body and brain and even precede deliberate assessment of space. Thus, positively impacting emotions serves as a foundation to perceptions and feelings regarding one's environment.

To promote both well-being and performance, a workplace should evoke a range of emotions. The emotional Affordances are divided into three categories.

Authenticity

Authenticity is the degree to which one's external expressions reflect their internal states. Related to workspace design, authenticity describes how a space reflects the values and expressions of the organization and people to which it belongs.

Balance

Striking an equilibrium in interacting with people, technology, and nature

Although digital technologies can complement human interaction and experiences in nature, they cannot totally replace them. In recent years, the office has emerged with a new purpose—to act as a hub for purposeful collaboration and spontaneous interaction.

Still, the modern office needs technology such as virtual collaboration software and hardware to enable hybrid meetings. Occupancy and utilization sensors are also encouraged so that facility and real estate personnel can monitor their effective use of space.

To create balance with nature, spending time outdoors or experiencing biophilic architecture can boost well-being, reduce stress,¹⁴ and restore attention.¹⁵ The key is to find the right balance for the organization in terms of digital, face-to-face, and human-nature interactions.

Grounding

An emotional connection to the history, legacy, mission, and brand of an organization

Expressing the history and values of one's organization through space design can create a connection between coworkers and the brand, and thus raise employee motivation.¹⁶ For example, displaying a timeline of the organization's history in the main lobby could evoke the sense of connection to the legacy of the values the pioneers of the company instilled.

Furthermore, building community history into space design can be a powerful way to evoke grounding. For example, Haworth's headquarters has a wooden column that connects all three floors of the building. The wood was reclaimed from the logging of late 1800s furniture manufacturers, which reminds employees of our company's heritage in West Michigan—a former hub for the lumber industry.

Interest

How visual complexity of designs can shape preferences and attention

Visual interest relates to preferences for how objects and spaces appear, and it can affect moods such as excitement or relaxation.¹⁷ One way objects and spaces can draw interest is by varying the level of visual complexity the object shows. One method for achieving visual complexity is through the use of fractals, or patterns that repeat the same shape at different scales. Fractals occur naturally in objects such as trees, snowflakes, and mountains, exhibiting varying levels of complexity.

A study on visual interest found that the medium level of complexity exhibited by fractals was the most desired,¹⁸ suggesting that designs could benefit from targeting moderate complexity—not too simple, not too complex.

Legibility

A measure of the ease of navigating through interior spaces and the ability of the space to represent its own utility

Enhancing the legibility of a space aids users in better navigation, alleviating potential stress that may arise from disorientation or confusion while accessing desired locations.¹⁹

Consider the scenario of entering an unfamiliar airport and then attempting to find the location of security lines. Certain environmental factors, such as adequate signage, logical pathways, and landmarks like colored columns, can facilitate easier navigation.

These principles extend to the workplace as well—a sea of cubicles with no differentiating landmarks could impede even the most experienced workers when attempting to find a colleague. Consequently, incorporating design elements that create differentiation, in conjunction with strategic signage and landmarks, could benefit any workplace.

Well-Being

Well-being is a subjective state of overall mental and physical health. In the workplace, well-being is facilitated through factors

14. Ulrich et al., 1991
15. Kaplan, 1995

16. Smith & Steadman, 1982
17. Abboushi et al., 2019

18. Abboushi et al., 2019
19. O'Neill, 2016

such as autonomy over one's work, feeling inspired, using the environment for mental fatigue recovery, and feeling secure.

Autonomy

The feeling that you can choose where and how you work

As many organizations switch to more flexible work models,²⁰ an increase in user choice has emerged as a vital amenity. Activity-based work, as noted above, gives users the ability to select appropriate space types for their various tasks. Providing users with choice empowers and engages them, enabling them to do their best work.²¹ Autonomy could also encompass using room booking software to reserve a workspace, as well as the availability of adjustable furniture, allowing maximum flexibility and accessibility for users.

Inspiration

Being mentally stimulated to do or feel something, especially something creative

Not only does inspiration drive design, but design itself can be a source of inspiration. Elements within space design that can evoke feelings of fascination and wonder include natural elements such as plants,²² displays showcasing the organization's historical elements, which can motivate employees,²³ and cultural elements that reflect the traditions and values of an organization. Even architectural features like high ceilings can influence the way individuals process information, evoking feelings of freedom and enhanced creativity.²⁴ The more a space can elicit these inspirational feelings, the more likely it will be to inspire workers to create.

Recovery

The capacity to restore an individual's depleted physical or cognitive resources

An often-overlooked aspect of workspace design is its ability to foster mental and physical recovery for employees. Workplace stress depletes cognitive resources such as attention and decision-making abilities.²⁵

To restore these faculties, office spaces should incorporate comfortable lounge and retreat areas, separate from main work areas, that enable relaxation and rest for both the physical and mental aspects of the worker. Additionally, simply viewing natural elements through a window for a short time has been shown to facilitate soft fascination, a gentle capturing of attention that allows sufficient mental space for resolving unaddressed thoughts that might otherwise diminish attention.²⁶ This enjoyable state requires minimal mental

effort, allowing for restoration of depleted cognitive resources. As such, providing ample opportunities for natural views is a recommended feature for any office environment.

Security

The sense of having sufficient protection from physical and/or psychological harm

To perform well at work, it is essential for employees to feel safe.²⁷ Aspects of workplace design can contribute to these feelings of security. Even in the absence of immediate threats, humans have an innate drive to feel safe when performing their daily activities.

One example of this need for security is the concept of prospect and refuge, which are instinctive human desires to inhabit spaces that provide a wide perspective of the surrounding area, and are enclosed and safe from intrusion, respectively. From this perspective, an ideal seating area could be an enclave that provides protection from behind (e.g., a high back couch or partition) with a wide view of the surrounding office.

Affinity

A major component of emotional flourishing at work is the ability to connect with coworkers and feel engaged with one's work. Spaces can foster affinity in multiple ways, from facilitating belonging and interactions, to promoting a high caliber organizational culture and engagement with the job.

Belonging

The sense of being a member or part of a particular group, organization, or class

Having a sense of belonging to a group, department, or organization at work contributes to employee well-being.²⁷ Conversely, being ostracized or left out can be stressful and damaging to both mental health and productivity.

Spaces can foster a sense of belonging through informal, conversational furniture products and arrangements. One Haworth study found that adding soft, interactive seating at the end of workstations, as well as a warm color palette, increased feelings of belonging in participants.²⁸ This suggests that inviting, informal seating that promotes conversations can contribute to a greater sense of belonging in the workplace.

Engagement

Being absorbed in and enthusiastic about one's work

20. Haworth & Novotny, 2023

21. Johannsen & Zak, 2020

22. Kaplan, 1995

23. Smith & Steadman, 1982

24. Lidwell, Holden, & Butler, 2010

25. Girotti et al., 2008

26. Kaplan, 1995

27. Kaplan, 1995

28. Knox et al., 2020

Engagement is effective at driving both employee-level and organizational-level outcomes.³⁰ Employees who are engaged with their work are healthier and more satisfied with their lives, and engagement contributes to increased performance at the organizational level. Providing workers with a variety of workspaces, such as activity-based work zones, is one way in which space design can improve engagement.³¹

Interaction

An exchange between two or more individuals governed by institutions, systems, or self-created rules

Effective connections are a cornerstone of high-quality collaborative work. However, the nature of interactions desired by workers may vary depending on the type of work that needs to be accomplished. While focus work might require minimal interaction, collaborative efforts necessitate engagement with others. To accommodate for both scenarios, offices should provide a variety of spaces and products that facilitate minimizing or encouraging interactions as needed.

For example, offering mobile and adjustable workstations could allow workers to orient towards one another (a “sociopetal” arrangement) when collaborating, but orient away (a “sociofugal” arrangement) when focusing.³²

Organizational Culture

The system of shared assumptions, values, and beliefs that governs how people behave in organizations

An organization’s culture influences both its larger focus and the behavior of its workers. The Competing Values Framework contends that most companies fall into one of four general culture type categories.³³ These include Compete culture (focused on fast-paced results), Control culture (focused on process and consistency), Collaborate culture (focused on long-term development), and Create culture (focused on innovation and doing things first).

The ways people work within these cultures are related to the layout of spaces. For instance, a Collaborative culture might thrive more with an open plan featuring a variety of spaces, whereas a Control culture would excel with structured and consistent spaces. Understanding one’s organizational culture is thus helpful for understanding how the spaces need to support them.

Trust

A belief about another person’s trustworthiness with respect to

a particular matter at hand that emerges under conditions of unknown outcomes³⁴

Trust is a complex concept that exists on multiple levels. First, the above definition applies to relational, or interpersonal trust. At the organizational level, trust refers to the degree of confidence one has that their organization will act in their best interest, or vice versa.³⁵ Space can impact trust on each of these levels. As one example, leadership’s trust in subordinates might be represented by executives inhabiting accessible, transparent offices near their employees. Transparency and accessibility to leaders have been shown to lead to trust and higher engagement.³⁶

Cognitive Affordances

The cognitive Affordances represent the workplace’s capacity to facilitate optimal mental performance for workers. This entails providing spaces that can enhance focus, improve memory through external methods, and assist workers in uncovering new knowledge. The brain’s functioning need does not occur in isolation—the environment can support and augment its cognitive capabilities in many areas.

Embedding

The external environment can support cognition using artifacts that store information. Rather than trying to retain information in our brains, we can off-loading information to whiteboards, Post-it notes, or digital devices. These artifacts serve as external hard drives for our memories and future reminders.

Off-Loading

Using artificial devices to maintain, display, or utilize information

The ability to off-load information from the brain onto external devices is crucial for information maintenance, storage, and retrieval. Human cognitive capacity is limited, and off-loading helps reduce this load by freeing up resources that would have previously been dedicated to remembering information.

Off-loading could be as simple as using as a Post-it note or a notepad, but recent technology such as Miro or Bluescape visual collaboration and online white boarding allow teams to visualize and manipulate files, pictures, and text all in one virtual space, offering an enhanced means to off-loading information intuitively and collaboratively.

Persistence

Continued exposure to mnemonic (memory-enhancing) devices to retain information over time

Mnemonic devices are strategies people develop to enhance memory. By repeatedly exposing one's mind to such mnemonic devices, the likelihood of committing information to long-term memory increases.

One mnemonic technique related to space is the method of loci. This classic technique involves visualizing a well-known space, taking a mental walk through that space, and associating memories with specific locations in the space. Then, when one wishes to recall the information, they can take another mental walk and retrieve the information as needed. Repeating this behavior will solidify the memory further. Here we can see how space is closely tied to memory, especially when experienced repeatedly.

Recall

Extending our limited memory for past people, places, events, things, or ideas from the past (also called retrospective memory)

Retrospective memory is the ability to remember past events, facts, and people, and is critical for decision making and problem solving. Space can be used to enhance this type of memory. A phenomenon called context-dependent memory is the idea that it is easier to recall information when one is in the environmental context in which they initially learned it.

Applying this to work environments could suggest that teams might have enhanced memory and performance if they use the same space to learn information as when applying it later.

Reminding

Extending our limited memory capacity for planned future action (also called prospective memory)

In contrast to recall, which focuses on the past, reminding involves planning for future actions. One's surrounding environment can be used to place reminders that will trigger the thought and behavior needed to carry out the task at hand.³⁷

A commonly used form of reminding is the employment of either a physical or online calendar tool to plan meetings, appointments, and individual work sessions in advance. Similarly, providing employees with whiteboards for recording content can serve as an additional memory aid.

Externalization

Externalization is the use of space to aid cognition. It centers around transforming thoughts into an external form

to improve creativity, project planning, problem-solving. An effective externalizing environment will involve various channels through which to communicate thoughts and share ideas with teammates.

Communication

The translation of thought into words, symbols, or pictures

Effective communication is one of the most important skills a team can share. In face-to-face (FtF) conversations, communication involves the exchange of words and nonverbal signals such as gestures, postures, body orientations, proxemics (i.e., interpersonal distance), and many other cues.

FtF has been called “the surest way to establish and nurture the human relationships underlying business relationships”³⁸—so office layouts need to support FtF interactions by ensuring clear sightlines and proximity between coworkers.

When it comes to virtual communication, several communication cues can be lost among remote teams. A virtual call where some teammates have poor technology setups can create challenges in conversational turn-taking, which partially relies on subtle nonverbal cues.³⁹

An office equipped with high-quality virtual collaboration technology, which might include high resolution room cameras, large displays, and whiteboard capture technology, could encourage better remote communication by enabling the visibility of more nonverbal cues.

Interpretation

The alternative explanations and understanding by others of an externalized representation

Externalizing information onto a shared medium (e.g., a whiteboard) allows for the communication of ideas and the alternative interpretations of those ideas.

By representing an idea visually, teammates can better understand each other's perspectives and engage in brainstorming different interpretations of the presented information. Externalizing ideas also frees the mind from having to hold and process the idea internally, enabling greater cognitive capacity for making interpretations.

Mode Switching

Changing the area of the brain involved in the cognitive activity

Different methods of externalizing thoughts can change the modes in which our brains operate. For example, while drawing and handwriting involve similar sensorimotor brain regions,

37. Vemuri & Bender, 2004

38. Nardi and Whitaker, 2002

39. Wiemann & Knapp, 2017

drawing also involves brain regions associated with spatial processing, like gesturing. Switching between these modes may allow us to creatively problem solve in diverse ways.

You may have experienced this in your own work; if you are trying to solve a problem, sometimes standing up and drawing out potential solutions might reinvigorate your thought process. As such, a space should offer multiple means of expressing thoughts: speaking, writing, drawing, or moving.

Uncovery

The detection of one's own cognitive omissions—finding out what you do not know

Not only can externalizing thoughts show us what we know, it can help us uncover things we *think* we know, but do not.

We often exhibit a cognitive bias where we overestimate our abilities or knowledge on a given topic—known as the Dunning-Kruger effect.⁴⁰ In the United States, most individuals would say they know what a penny looks like, but would they be able to accurately recreate one from memory? Which way does Lincoln's portrait face? What text is written, and where?

Without a visual representation, people might be unaware of their cognitive omissions—the things they do not know. Externalizing ideas into the environment helps individuals see gaps in their knowledge and fill in those gaps accordingly. By drawing a concept diagram (think boxes and arrows) for instance, one might begin to uncover relationships between ideas that they did not even know they were missing.

Access

Everyone has their own set of knowledge, but to flourish at work, we must regularly acquire new knowledge. Access refers to how attainable and available information is, and how we store and retrieve it. Sources of knowledge include our interactions with other people, experiences, and media.

Exchange

The process of sharing knowledge, skills, or expertise among people and organizations

A powerful aspect of collaboration is that everyone possesses unique expertise that can contribute to a team's effectiveness. To promote the exchange of expertise, office spaces can be designed to allow leaders easy access to their employees to provide mentorship opportunities. Previous research suggests

that physical proximity to coworkers improves rates of knowledge exchange.⁴¹ As such, office layouts should strive to co-locate those who would benefit most from exchanging knowledge among themselves.

Sourcing

The process of obtaining information relevant to a particular need from a collection of information resources

Access to information not only stems from exchanges with other people, but from text, auditory, or video-based media. This wide variety of resource types demands tools and technology that allow easy access. A workplace should provide both physical and electronic libraries, journal subscriptions, printing and scanning capabilities, and storage for these resources.

Insulation

Insulation refers to how the workplace can allow workers to focus their attentional resources without distractions or interruptions derailing them. This involves ensuring the worker is comfortable, focused, able to isolate meaningful stimuli in their environment, and able to filter out distracting stimuli.

Focus

The ability to attend to a given task; when optimized, it is also known as a flow state

In a world increasingly saturated with stimuli and information, the ability to establish and maintain focus is an asset in a worker. A heightened state of focus known as *flow* occurs when a task strikes a balance between challenge and an individual's skill level, leading to complete immersion in the work at hand. Facilitating flow states leads to optimal performance. Therefore, workplaces should provide distraction-free spaces, such as enclosed unassigned workstations or booths, to enable workers to achieve flow and perform at their best.

Comfort

The lack of discomfort that allows an individual to stay on task

Physical comfort is conducive to maintaining focus on work.⁴² While sedentary work is well-known for its negative impacts on musculoskeletal health, it can also impair cognitive function. Research has shown that prolonged discomfort in the low back and hip, thigh, and buttock areas when sitting can increase creative problem-solving errors.⁴³ Therefore, to promote both physical health and cognitive performance, it is imperative to offer ergonomic task seating that provides optimal posture support and seat comfort. Beyond seating,

adjustable workstations and monitor arms enable users to work in postures that are tailored to their individual body sizes and types.

Meaning

The capacity to react to certain stimuli selectively while ignoring others when several occur simultaneously

In terms of attention, assigning meaning to stimuli in our environment involves selectively attending to a given stimulus and ignoring irrelevant stimuli in the process. Without this ability, humans would be overwhelmed by the influx of sensory information coming from their surroundings, rendering them unable to process or focus on pertinent information. Instead, we combine experience with expectations to determine whether a stimulus has meaning for us.

To facilitate meaning, a space should be free of objects irrelevant to the individual and should possess meaningful objects instead, such as family photos, calendars, and to-do lists. Assigned workstations can help in this regard, as unassigned workstations may not give as much choice in terms of personal objects.

Stimulus Control

Purposeful management of stimuli based on task, activity, or timing

The ability to control which stimuli enter one's environment is ideal for entering a focused workflow. Though distractions can clearly interrupt and negatively affect work, in some contexts they can be helpful.

With divergent thinking, characterized by a ground-up, creative thought processes, some research indicates that unexpected distractions can provide useful information or a creative break.⁴⁴ Convergent thinking, on the other hand, involves narrowing down the best ideas from a larger pool of knowledge, and benefits more from a lack of distractions. The key is to identify the type of thinking your task needs, and to choose spaces that either encourage or inhibit distractions accordingly.

Conclusion

The Affordances framework offers a set of opportunities to enhance the functionality of spaces for their users. It may not be feasible for an office to incorporate every Affordance into a space's design—in fact, they can sometimes conflict (e.g., communication and privacy). The goal, however, is to provide a set of suggestions that can be tailored to a given space according to the activities it is designed to support.

By supporting workers' physical, emotional, and cognitive needs, workspaces can be designed not only to accommodate work, but to foster the overall well-being of the whole individual.

Contributor



Eric Novotny holds a PhD in Communication from Michigan State University. As a Research Specialist for Haworth's Workplace Research and Insights Team, Eric applies quantitative and qualitative behavioral science to examine the impact of workspace design on employee behavior, attitudes, and emotions. Specifically, he investigates how office space and furniture can be designed to promote well-being, performance, and belonging. This research informs our design process for future Haworth solutions and helps customers create more impactful workspaces.

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