

Using Blended Learning to Deliver Ergonomics Training



Introduction

Effective ergonomics improvement processes deploy people with specific roles in an organization to systematically assess, design, improve, and reassess the workplace. However, most people do not have the specific knowledge, nor the skills, to perform their role. Therefore, providing them with training in the application of risk assessment and design tools/methods is a core element of a successful ergonomics process. Several training methods can be used to develop these skills. One of these is blended learning.

Claim Sentence

We deliver ergonomics training classes as blended learning, as opposed to traditional classroom style training. In our experience, using a combination of online and on-demand instruction and hands-on application results in more effective and efficient development of skills and knowledge, and it helps sustain students' knowledge over time.

It is our position that delivering both skills and awareness training using the blended learning approach, leveraging the "flipped classroom," yields the best results. The training elements are based on principles of adult learning.

Blended Learning

Blended learning is a method of education in which content and instruction are delivered in a mix of two ways: online and hands-on.

Well-designed online training content allows each student to control the place, time, path, and pace of his or her learning. Today's computer technology allows training content to be updated, delivered, and tracked effectively and efficiently across multiple locations, geographies, and in different languages. This training is not driven by the instructor, but rather "pulled" by students as they work through the process

of learning concepts and information. The training is always available in cases when a refresher may be needed, or if turnover in a position requires another individual to fill a role. This self-paced learning aligns with two principles of adult learning: learn what they are internally motivated to learn, and learn informally.

Following an online training, hands-on application of learned information or skills enables participants to apply the concepts, information, tools, and methods in real workplace situations. We call this delivery the "Do" Workshop, in which a student completes risk assessments, applies ergonomics design criteria, enters information in ergonomics assessment software, and makes workplace changes. The workshop allows the instructor to evaluate how each student applies learned information; provide coaching, clarification and feedback; ensure learning verification; and address students' questions. Feedback and coaching further strengthen participant confidence in their ability to perform. Hands-on application aligns with several principles of adult learning: learn by doing, affected by experience, problem-based, and learning what is practical.

The Flipped Classroom

The flipped classroom is a form of blended learning that "flips" the order of traditional classroom training. In the flipped classroom, students first learn principles and information independently (the homework), and then work with the instructor to apply what they've learned (the classroom).

We provide instruction using the flipped classroom concept by first granting access to online training modules through Software as a Service applications. This virtual training is followed by the Do Workshop, in which participants apply what they have learned to find and fix conditions that pose musculoskeletal disorder risk in the workplace.



Adult Learning

In the workplace, ergonomics training must be designed to align with the principles of adult learning, as employees are mature adults. Adults learn differently than children do. The principles of adult learning have been described by many organizations. The Canadian Literacy and Learning Network defines the seven key principles of adult learning as follows:

1. Adults cannot be made to learn. They will only learn when they are internally motivated to do so.
2. Adults will only learn what they feel they need to learn. In other words, they are practical.
3. Adults learn by doing. Active participation is especially important to adult learners in comparison to children.
4. Adult learning is problem-based and these problems must be realistic. Adult learners like finding solutions to problems.
5. Adult learning is affected by the experience each adult brings.
6. Adults learn best informally. Adults learn what they feel they need to know, whereas children learn from a curriculum.
7. Children want guidance. Adults want information that will help them improve their situation or that of their children.

Blended training for ergonomics, when applied to the workplace, includes all of these principles.

Opposing Positions

One challenge with delivering blended learning and the flipped classroom is access to technology. Since both require computers to deliver online training, this presents a challenge for organizations that do not have computers, access to computers, or adequate connectivity or bandwidth.

Another challenge with blended learning is making time available for employees to step away from their jobs to complete online training modules. In our experience, online, self-paced training is a more efficient use of time than classroom training. Typically, it takes less time for an individual to complete a training module online, as opposed to in a classroom, and online training yields better retention.

In addition to time constraints, some employers and employees state that they are not comfortable using computers. This is less of a challenge today, but there are still those in the workforce who resist. We have found that online training programs that are designed for ease of use and navigation can reduce the learning curve and improve use. Designing online training programs to be more interactive also helps with the transition from instructor-led training.

Finally, there are still organizations that, hesitant to deviate from what is familiar, are resistant to changing from classroom training to online and virtual training. However, once employees and managers experience blended learning, they tend to prefer it over traditional classroom training.

Conclusion

Providing people with instructions and tools to help them fulfill their role in a company ergonomics process is essential for success. This is accomplished through training. The topics and learning objectives for each training class are based on the role and responsibility of each person.

The format of the training (how it is delivered) must be designed to fit the intended audience, and it must be delivered in an effective, efficient, and consistent way. To achieve this, our first choice is to provide online skills and awareness training blended with hands-on workshops.

Endorsement

This position statement was accepted by Senior Leadership on May 25, 2016.

References

Abeysekera, Lakmal, and Phillip Dawson (2015). "Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research." *Higher Education Research & Development* 34(1), 1-14

Canadian Literacy and Learning Network (2013). *Principles of Adult Learning*. Jossey-Bass.

Educause (2012). *7 Things You Should Know About Flipped Classrooms*.

Rosen, D and Stewart, J. *Blended Learning for the Adult Education Classroom*. Retrieved February 18, 2016, from <http://app.essentialed.com/resources/blended-learning-teachers-guide-web.pdf>

The Flip: Turning a Classroom Upside Down, *Washington Post*, 4. June, 2012.

