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8 Principles to Transform Your Way of Learning.

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Inspiration : How Learning Happens: Seminal Works in Educational Psychology and What They Mean in Practice, par Paul A. Kirschner et Carl Hendrick

8 Principles to Transform Your Way of Learning

1. The capacity of working memory is limited

2. We learn better by making sense of the information

3. Connecting new information to existing knowledge strengthens learning

4. Novices think differently from experts

5. To remember, we must forget

6. Learning ≠ Performance

7. Success leads to motivation

8. Learners often don’t know how to learn effectively

1. The capacity of working memory is limited

Working memory, essential for retaining and processing information, has a limited capacity. This limitation means that when learners are exposed to large amounts of new information at the same time, they may have difficulty processing it efficiently. It is crucial to focus attention as distractions or overload can lead to cognitive fatigue, thereby reducing learning capacity.

Implications

- It is crucial to structure and pace the information to avoid overloading the learners' working memory.
- It is essential to implement training governance, as training initiatives often come from multiple departments. Without this structure, content multiplies in a disorganized way, and microlearning loses its coherence, becoming a mere accumulation of modules without logical sequencing or continuity for the learner.

Solutions

- ❑ Break information into small segments
- ❑ Use task aids
- ❑ Promote breaks and reflection times
- ❑ Highlight key concepts
- ❑ Apply spaced repetition
- ❑ Adapt the pace of the training
- ❑ Simplify technical explanations to avoid cognitive fatigue
- ❑ Reduce the number of training sessions

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2. We learn better by making sense of the information.

Learning is more effective when there is a concrete reason to assimilate information. When new knowledge is presented based on the real needs of the organization or the current challenges of employees, it helps make learning relevant and engaging.

Implications

- When content is relevant and meaningful, learners pay more attention to it, which is crucial for effective encoding.
- The perception of value and meaning often triggers a positive emotional response. Emotions play an important role in the memorization process, as they help anchor information more deeply in memory.
- Content with perceived value fosters intrinsic motivation, encouraging learners to invest more effort in the learning process.

Solutions

- ❑ Align content with concrete objectives
- ❑ Create practical activities that demonstrate results
- ❑ Show the potential impact of new knowledge
- ❑ Regularly remind learners of the importance of the content

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3. Connecting new information to existing knowledge strengthens learning.

Learning is optimized when new information integrates with already acquired knowledge. By linking new content to elements that learners already master, they build a stronger foundation for retention and comprehension. This process, called schema construction, helps make sense to complex concepts by integrating them into a pre-existing structure. Prior knowledge is stored in long-term memory in the form of schemas, which are organized structures of knowledge. These schemas group information by connecting it to other related knowledge.

Implications

- Knowing the prior knowledge level of your audience allows you to tailor your training to their needs, facilitating the construction of accurate and usable schemas.
- When prior knowledge is inadequate or incorrect, learning and comprehension become more difficult.
- The more complete, accurate, and easily usable our schemas are, the simpler it becomes to apply them in work situations.

Solutions

- ❑ Assessment of prior knowledge
- ❑ Bridging the knowledge gaps
- ❑ Using concrete and familiar examples.
- ❑ Utilizing analogies
- ❑ Encouraging personal reflection

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4. Novices think differently from experts.

Novices often approach tasks using trial-and-error methods, simple analysis, or basic strategies, as they lack the knowledge to recognize patterns or use advanced approaches. In contrast, experts rely on solid mental models and proven techniques, acquired through their experience, to solve problems more efficiently.

Implications

- This means that novices need structured guidance to develop these mental models.
- It is important to introduce complex concepts gradually, starting with the basics, to allow learners to strengthen their foundations before tackling advanced strategies.

Solutions

- ❑ Introduce concepts gradually
- ❑ Use concrete and guided examples
- ❑ Provide models and mental frameworks
- ❑ Encourage reflection and aalysis of errors
- ❑ Offer regular feedback
- ❑ Structure the progression of skills

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5. To remember, we must forget.

The strength of storage measures how deeply information is anchored in long-term memory, indicating its durability over time. Retrieval strength, on the other hand, represents how easily information can be extracted from memory at a given time, which varies depending on recent usage and context. Unlike storage strength, retrieval strength is influenced by context and interference of other information.

Implications

- To retain information long-term, it is essential to increase retrieval strength, which can be achieved by actively recalling the information.
- Aknowledge that your learners will forget. Do everything in your power to help them forget as little as possible.

Solutions

- ❑ Practice active recall
- ❑ Use spaced repetition
- ❑ Interleave different topics
- ❑ Create contextual links
- ❑ Encourage practical application

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6. Learning ≠ Performance.

A good result on an evaluation or satisfactory performance in training does not necessarily mean that real learning has occurred. By "satisfactory performance," we refer to results or behaviors that seemingly meet training expectations but may be superficial. For example, an employee may succeed in performing a task or answering a questionnaire correctly without understanding the underlying concepts, simply by applying temporarily memorized procedures. This distinction highlights the difference between temporary performance and deep, lasting learning.

Implications

- Effective evaluation must go beyond numerical results to measure real understanding. The frequency of evaluations is crucial, which is why regularly checking for understanding is important.
- Positive evaluation results do not guarantee a deep understanding of the concepts, which can be risky if employees cannot apply this knowledge independently and sustainably.
- Training outcomes should be measured along with the transfer of new knowledge to performance.

Solutions

- ❑ Integrate reinforcement actvities
- ❑ Apply concepts in real-world situations
- ❑ Evaluate deep understanding
- ❑ Measure transfer
- ❑ Vary evaluation methods
- ❑ Use robust evaluation models

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7. Success leads to motivation.

Even modest success in learning can create a positive cycle where self-confidence, self-efficacy, and motivation mutually reinforce each other. When learners achieve their goals, even small milestones, they feel more capable and motivated to succeed in future tasks. This sense of accomplishment encourages them to take on new challenges and persevere through difficulties. Trainers can foster this cycle by setting realistic goals, providing regular feedback, and celebrating progress, which strengthens learners' confidence and engagement.

Implications

- Realistic goals help create a sense of achievement from the start.
- Providing regular feedback promotes continuous progress and improvement.
- Celebrating progress, even small victories, boosts self-confidence.
- Maintaining a positive cycle of engagement helps support learners' motivation.

Solutions

- ❑ Set realistic goals
- ❑ Provide regular feedback
- ❑ Acknowledge and celebrate small victories
- ❑ Offer opportunities for progressive success
- ❑ Encourage perseverance in the face of challenges
- ❑ Use data to demonstrate progress
- ❑ Leverage AI to keep learners motivated

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8. Learners often don't know how to learn effectively.

Many learners are unaware of effective learning strategies and rely on passive techniques such as re-reading, highlighting, or last-minute cramming. These methods may seem productive in the short term but are less effective for long-term retention. Evidence-based strategies, such as active recall, spaced learning, and interleaving, have been shown to improve memory and comprehension. However, learners may need support and guidance to adopt these strategies.

Implications

- Without guidance, employees risk using ineffective learning methods, compromising the retention of key information.
- Trainers and instructional designers must integrate effective learning strategies to ensure better long-term application of skills.

Solutions

- ❑ Train and raise awareness among employees about effective learning techniques
- ❑ Design learning solutions based on science
- ❑ Encourage application in real-world contexts
- ❑ Create an environment conducive to continuous learning

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How does the B12 application facilitate the application of these principles?

Learning Principle	B12 Features
1. Limited capacity of working memory	Spaced microlearning and just-in-time training in the workflow to avoid cognitive overload and facilitate retention.
2. Making sense of the information	Practical activities, impact data, and continuous reinforcement to maintain relevance.
3. Connecting new information to existing knowledge	Assessment of prior knowledge and personalized training paths.
4. Différences entre novices et experts	Progressive paths tailored to the learner's level, with data on difficulty level of activities to adjust learning from foundational concepts to advanced ones.
5. Power of storage and retrieval	Spaced repetition techniques, just-in-time training in the workflow, and retrieval practice to reinforce long-term memory.
6. Learning vs. Performance	Data on knowledge evaluation up to practice, and evaluation templates to measure deep understanding and concept application.
7. Success leads to motivation	Gamification, personal dashboard to visualize progress, and AI that adjusts difficulty to ensure progressive successes.
8. Learners often don’t know how to learn effectively	Cognitive science-based features, integrating principles into continuous recommendations to guide learners.

B12

Discover how B12 can revolutionize your upskilling initiatives! Contact us for a personalized demo and see how applying these principles can elevate skill development, boost engagement, and drive measurable results within your organization.

Schedule a personalized demo

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