5.4. Role of the Different Learning Techniques at STUK

Regional Workshop on the Management of Training Systems for Nuclear and Radiation Safety

8/11/2023 Manila, Philippines

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Use of Various Training Methods in STUK

- STUK utilizes various training methods when developing its regulatory capacity

- The selection and planning of the methods used is part of training design.
  - When deciding on the methods, various factors are considered:
    - **Training objectives** – What do we try to achieve?
    - **Nature of the topic area** – What are we talking about?
    - **Targeted audience** – Who are they?
    - **Prerequisite level of skill, knowledge, experience** etc. – Simple or complex?
    - **Extent of desired 'change'** – How to influence?
    - **Timeframe of the training / training program** - How long? When?
    - **Need for multiple stimulus / blended learning** – Mix it up?
    - **Efficiency vs 'deliberate maturation'** – Shold we 'hold our horses'?
    - '**Big picture** of the organization'
    - '**Big picture** of the training program'

- Use of various methods within one topic area

- 'Right tool for right task'

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Different Objectives, Learning Styles and Methods...

Visual learners (V)

have a strong preference for seeing information, and like to write things down.

Auditory learners (A)

learn better when the information is heard. They may enjoy learning language with lots of listening material or they may need to talk to someone to help them remember things.
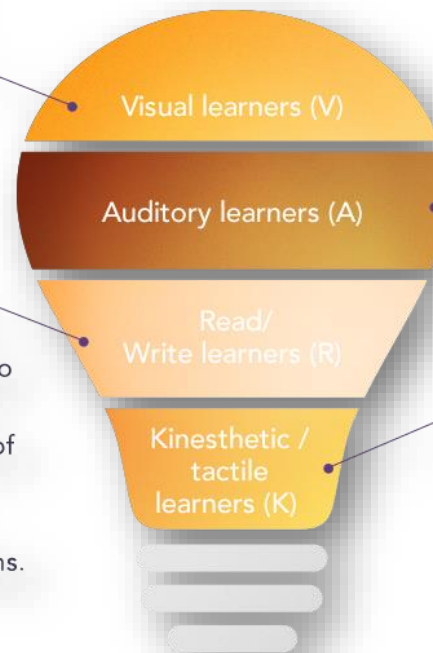
Read/ Write learners (R)

learn better when information displayed as words. Being able to write well and read widely are attributes sought by employers of graduates. They may prefer text-based input and output – reading and writing in all its forms.

Kinesthetic / tactile learners (K)

are 'hands on' learners and they like to be involved with the physical environment around them. These learners need motion to learn and enjoy moving and activities that allow them to touch and manipulate things.
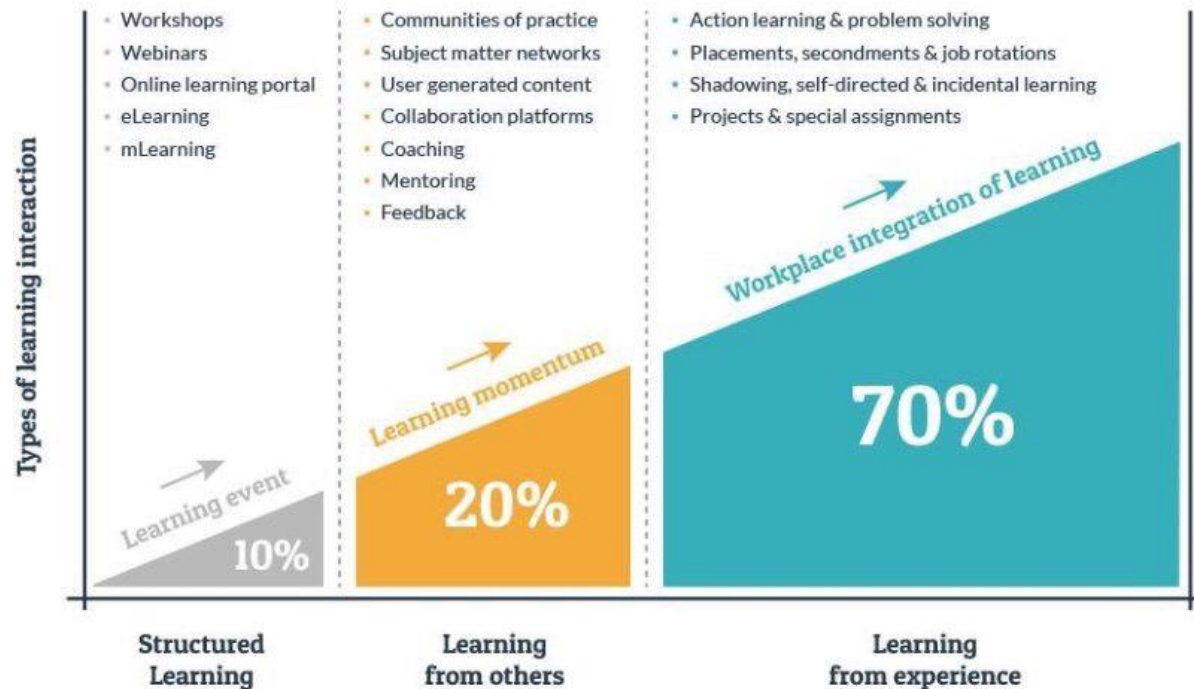
Visual learners (V)

Auditory learners (A)

Read/ Write learners (R)

Kinesthetic / tactile learners (K)

https://www.eduhk.hk/cle/en/asllc/independent_learning/learning_styles

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All of STUK's Personnel Are Adults...

- Adults aim for **self-direction** with learning

- Adults have an **extensive empricial background**; An adult uses his/her experiences as resources and attaches new learning content to the previous experiances and structures

- **Requires** a strong **need/purpose** for one's learning

- **Motivation** for learning is extremely important for adults

- Adults are often **problem-oriented** approach to learning

- All adults are **not the same** e.g. self-directive;
    - Context and individual factors are emphasized with adult learners

- **'Cognitive restructuring and unlearning'** are in important role with adults.

- **Individual needs** for learning methods & means of learning and related stimulation

(e.g. Knowles, 1985)

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Learning in a Specialist Organization

- Expertise and broad number of competencies

- Specialization

- Role based & 'local' needs

- Shared practices & individual solutions

- Operational changes as a challenge

- Nature of the expert's work – heterogeneous tasks

- *Learning with the biggest impact takes place close to everyday tasks and activities.*

Types of learning interaction

- Workshops
- Webinars
- Online learning portal
- eLearning
- mLearning

- Communities of practice
- Subject matter networks
- User generated content
- Collaboration platforms
- Coaching
- Mentoring
- Feedback

- Action learning & problem solving
- Placements, secondments & job rotations
- Shadowing, self-directed & incidental learning
- Projects & special assignments

Learning event **10%**

Learning momentum **20%**

Workplace integration of learning **70%**

Structured Learning

Learning from others

Learning from experience

https://pkms.co.uk/2017/06/use-702010-principle-training/

Classroom Training

- Formal training – historically 'the method' for all development
  - Often considered as 'the only form of development'
    - 'Development blindness'

- Classroom training
  - In-house
  - External training events
  - Shared training events in collaboration with other organizations

- *Different methods of classroom training* (even within one training)
  - Activation
  - Participants' experience emphasized
  - Requirements for trainers

- 'Hybrid training methods' have almost displaced the 'traditional lecturing'
  - Combining eLearning, facilitated workshops, eLectures with lectures

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On-the-Job Training

- By far the most significant method in STUK
  - Bundle of 'sub-methods' and variations
  - Utilized from qualification to training of senior experts

- E.g. Participation, Double staffing, Shadowing, Job profile design, Extension of job profile, Task forces, Project work, Inspector exchange, Internal 'summer jobs', Development roles…

- Personal development plans are developed for everyone
  - The plans include objectives for the on-the-job training activities

- Considered as the most efficient method for training of 'senior experts'
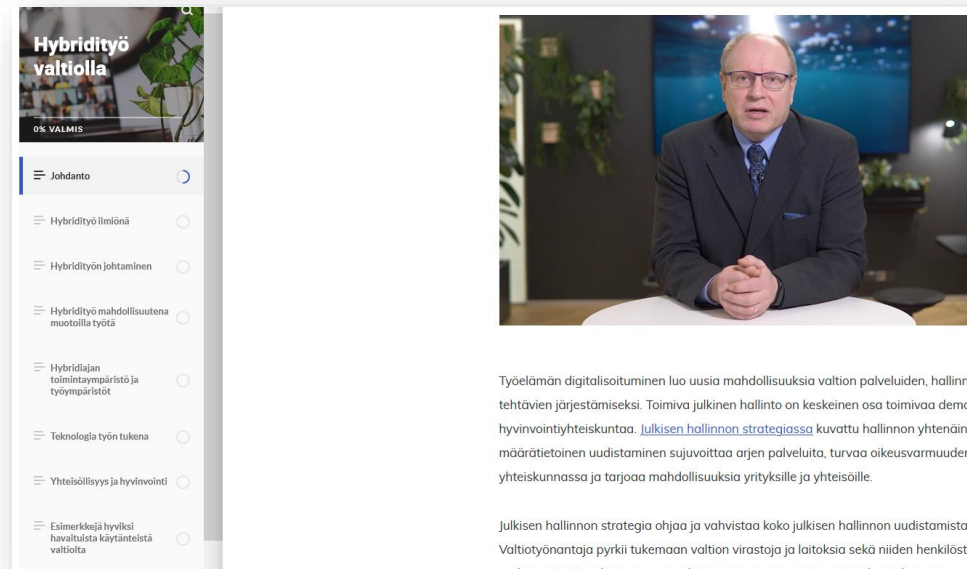 - Often not recognized as part of the training system

Mentoring

- Planned and structured learning process through mentoring

- Mentoring for
  – Management (coaching) and supervisors
  – Specialists (incl. Peer-mentoring)

- Typical drivers: need for
  – 'new/deeper/broader professional competence'
  – 'professional growth'

- Mentoring process
  – Initial evaluation and identification of goals
  – Scheduling and sub-targets
  – Guidance and discussion templates
  – Evaluation of progress, achievements & next steps

- Support training for mentors and mentees

- Duration from 4 to12 months
  – Objectives; targeted change
  – Work balance
  – Organizational/network status

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eLearning

- eLearning provides flexibility in terms of time and location

- eLearning on
  – Shared platforms (e.g. Finnish public sector)
  – STUK specific e-learning tools
  – External training courses

- Implementation of eLearning tools and practices was highlighted during the pandemic

- Gamification

- "Has to be more than just an archieved presentation!"

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Use of Virtual Reality

- Use of virtual, augmented and mixed reality is a growing area of training in Finnish work life.

- The Finnish licensees (e.g. Fortum and TVO) have already adopted the use of VR/AR as part of their training system.

- STUK has taken first steps to establish quality VR-content
  - Piloting projects were promising
    - e.g. pilot project for using VR as a training platform of radiation protection and radiation monitoring
  - Cost-effectiveness as a challenge in STUK

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Workshops and 'Internal seminars'

- Many contemporary learning topics require collective reflection

- Topical events

- Objectives may be defined
  - Accurately
  - Approximately
  depending on the 'bigger picture'.

- Development workshops
- Reflection workshops
- Implementation workshops

- Topical seminars and fairs (internal)
  - Organized primarily to share knowledge and to present the overall picture or general information of the selected topic area.
  - Contemporary topics
  - Designed to spark conversation

Study circles in STUK

- New knowledge is obtained by organizing internal and topical 'study circles'

- Different 'types' of study circles
  - One-time meetings, series of meetings, more continuous groups
  - Nature of the group vary
    - *Specialist driven* study circle (group mentoring)
    - 'Learning collective' with a facilitator
  - Some of the circles are more formal than the others

- Learning targets is defined and suitable e.g. learning material is identified
  - Elements of self-study, self-reflection, group discussion and mentoring are applied

- Some of the study circles result in further studies or broader discussions e.g. in staff meetings or seminars
  - E.g. Internal 'Boeing accident training' was developed on the basis of expert discussions and summaries of a study circle.

Use of Movies & Videos

- Movie nights @ STUK
  - Movies to spark conversation
  - E.g. Safety Culture Objectives

- Movie and reflective discussions
  - Different ways of implementation
    - Mo-Di
    - Tr-Mo-Di
    - Mo-Di-Mo-Di-Mo-Di

- Scenario and STUK

- 'Movies and pizza/popcorn'

- Use of movies and video content in class room training

Reflection and Group Reflection

- Reflection methods are used as part of other training methods

- Every now and then reflection and group reflection elements are included in 'the normal events of daily operation'
  - E.g. qualitative discussion and evaluation of a meeting; facilitated group reflection on an real world event (or an accident)
  - Source of self-awareness

- STUK's safety culture program emphasizes group reflections of organizational aspects and their safety impacts

- Real life cases and comparisons are used to spark the reflection process

'Storytelling'

- e.g. Senior staff members share their experiences and/or views as they reflect their career in the industry. E.g.
  - Career path and history
  - Tasks with the most significance for their professional growth
  - 'Personal story'

- e.g. Staff member shares his/her experiences gainded while working on some specific period/project/task/secondment through stories/examples etc.
  - Key events (level of detail varies)
  - Lessons learned
  - Self-reflection

- Still a relatively new method in STUK

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National Training Courses

- Finland has a history of conducting national Safety culture courses
- e.g. The national *course* on safety of nuclear power plants and radioactive waste management
  - Organized in co-operation by the main Finnish nuclear energy organizations
  - The first annual course commenced in 2003; each 6-week course commence in autumn
  - So far, over 1200 (junior) experts have participated
    - Participants from all nuclear organizations
  - High-level experts as lecturers
  - Important for networking among nuclear professionals

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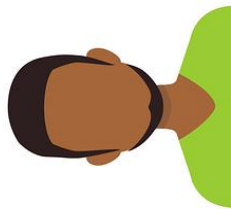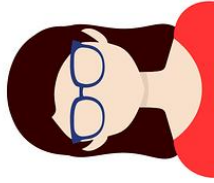
International Training Courses and Networks

- STUK participates international training courses on a regular basis

- The international training courses are often linked with the specialized technical training or leadership training

- Participation in the international community of Nuclear and Radiation safety is an important aspect of STUK's capacity building.

- STUK's international expert services
  - Lessons learned
  - Opportunities for personal development

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Training Courses of Other Industries

- STUK aim to benefit from suitable training events of other industries on various topic areas for
  - 'Bechmarking of ideas'
  - Practical knowledge
  - Reference information
  - 'Out of the box thinking'
  - Reflection
  - Discussion and reflection with 'the outsiders'

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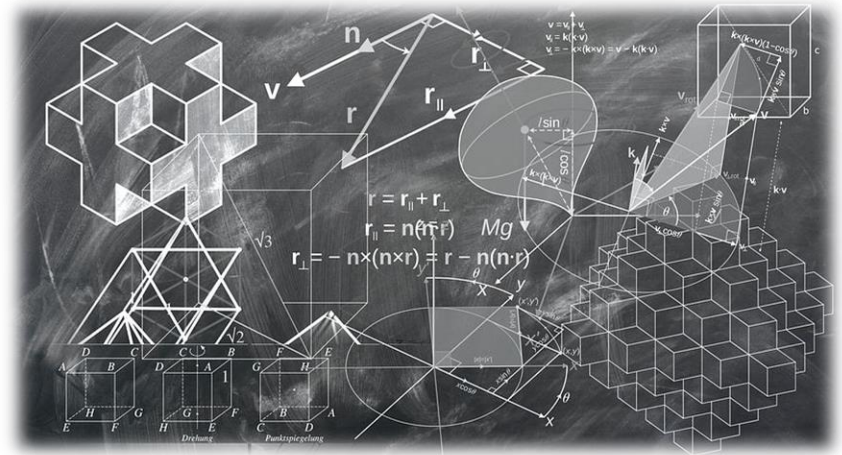
Summary

- Methodology shall support the overall goals of the training
  - Testing of methods

- Quality of the actions is highlighted.

- Different types of learners
  - Need for multiple forms of stimulation – even within one event/activity

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Questions?

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Thank you!

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