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Self-directed Learning in Adaptive Training Systems: A Proposition for Shared Control

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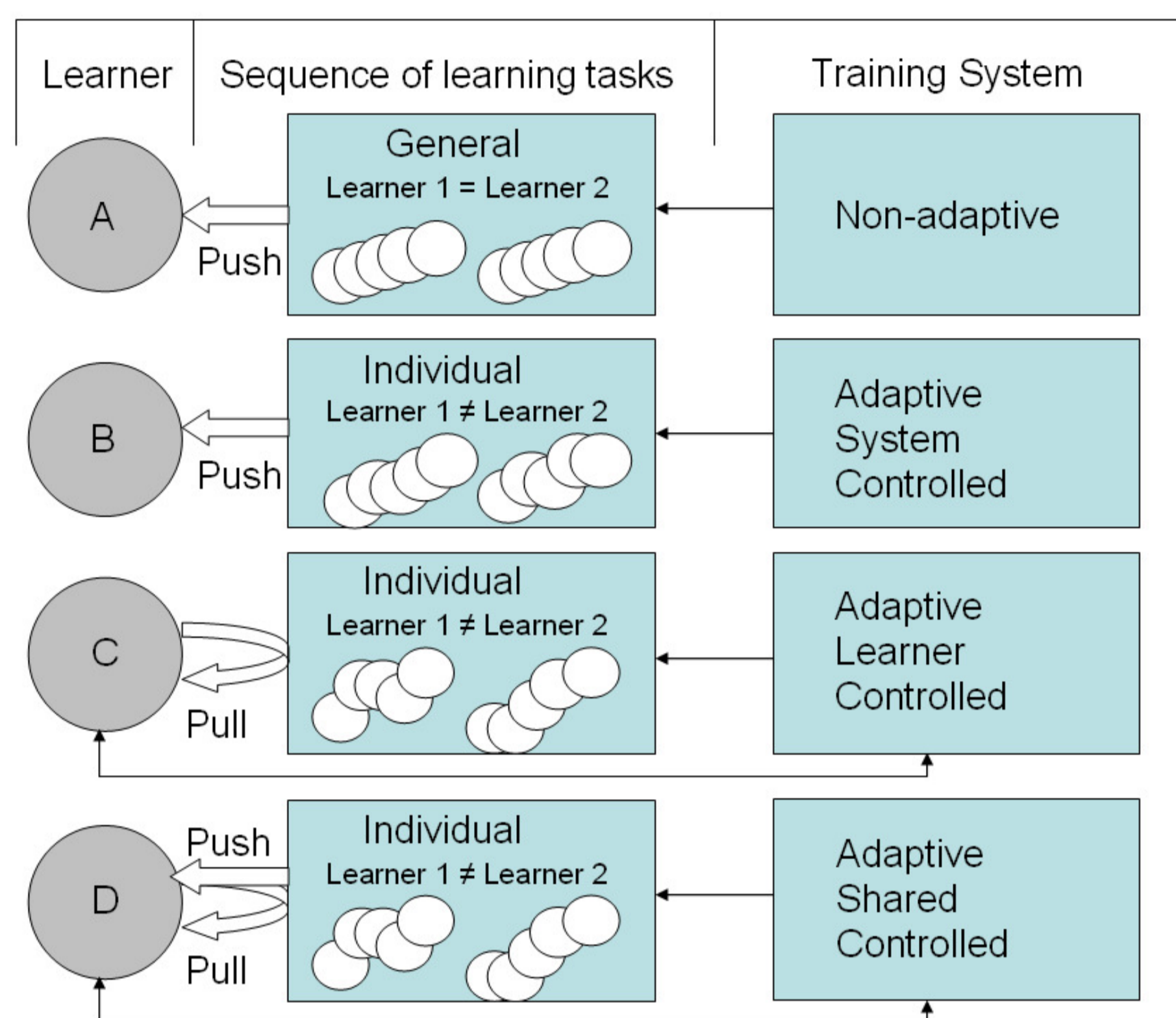
	Insurance Final Attainment Level	Training Efficiency	Developing SDL	Progress Monitoring
A	++	--	--	?
B	++	++	--	++
C	--	?	?	?
D	++	++	++	++
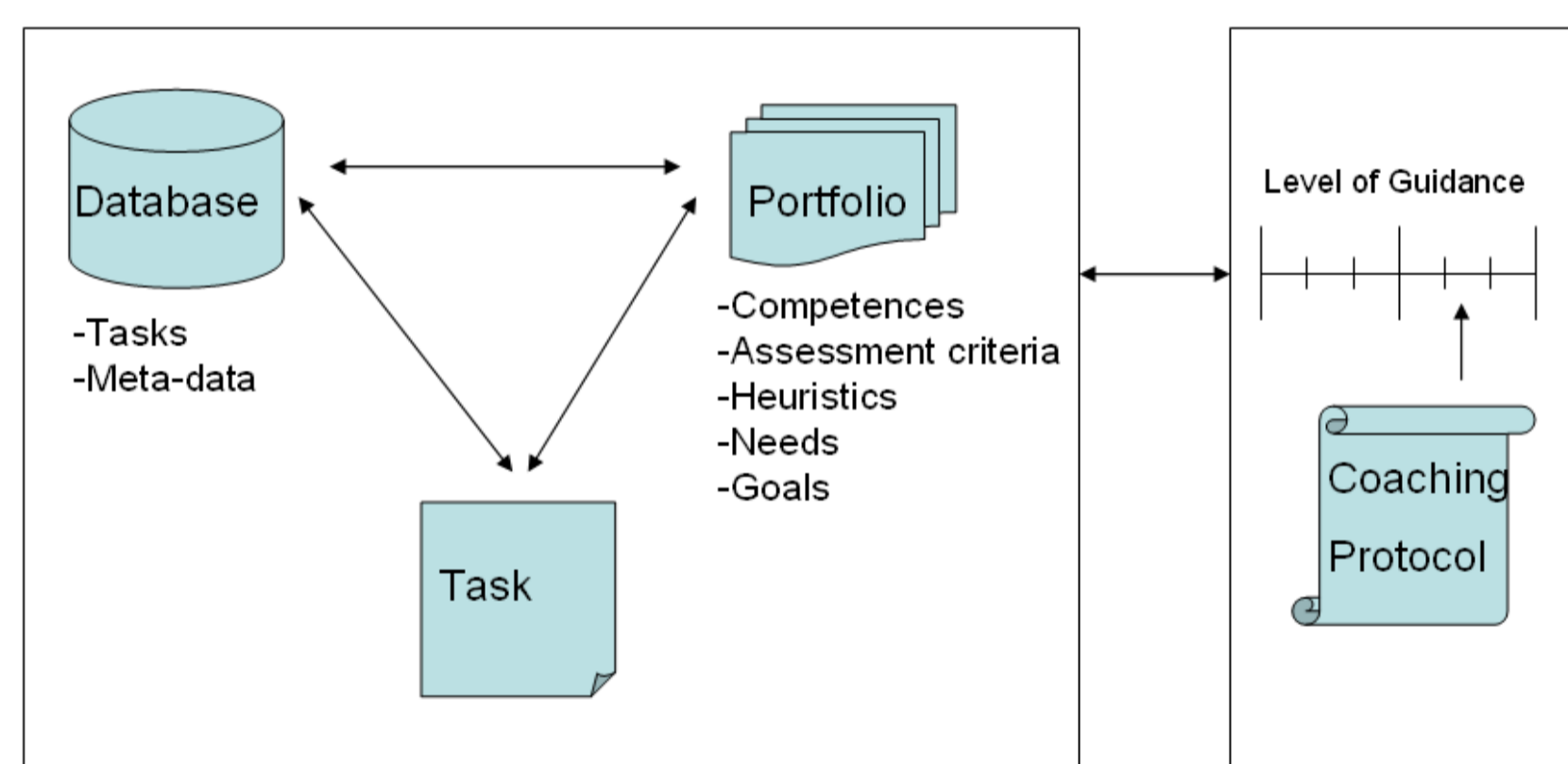
Aim

In aviation, Air-Traffic Control professionals must be able to adapt to continuing changes in technologies. Professionals in such an environment must learn how to act upon the changes and they must learn how to maintain expertise to meet the skills required in the changed situation. As a consequence they should be able to indentify and study learning materials that fit their learning needs and meet their set learning goals. Learners are called self-directed learners when they can formulate own learning needs, set own learning goals, and can identify human and material resources for an optimal learning process. These skills can be defined as self-directed learning (SDL) skills and training of these skills is desired. We focus on SDL skills learners need to develop and we plead for a shared controlled adaptive training system which can support the development of these skills.

Four Configurations

Pro's and cons of different training system configurations. Comparison of four training system configurations shows advantages for a shared controlled configuration on four crucial aspects in trainings for cognitive complex and technology advanced domains: Insurance final attainment level, training efficiency, developing SDL, and progress monitoring.

Design of the Training System

Guidelines for the design of a shared controlled training system: include learning tasks, a development portfolio, heuristics for the selection of future learning tasks, and a coaching protocol.

Measurement of SRL skills: Eye-Tracking Study
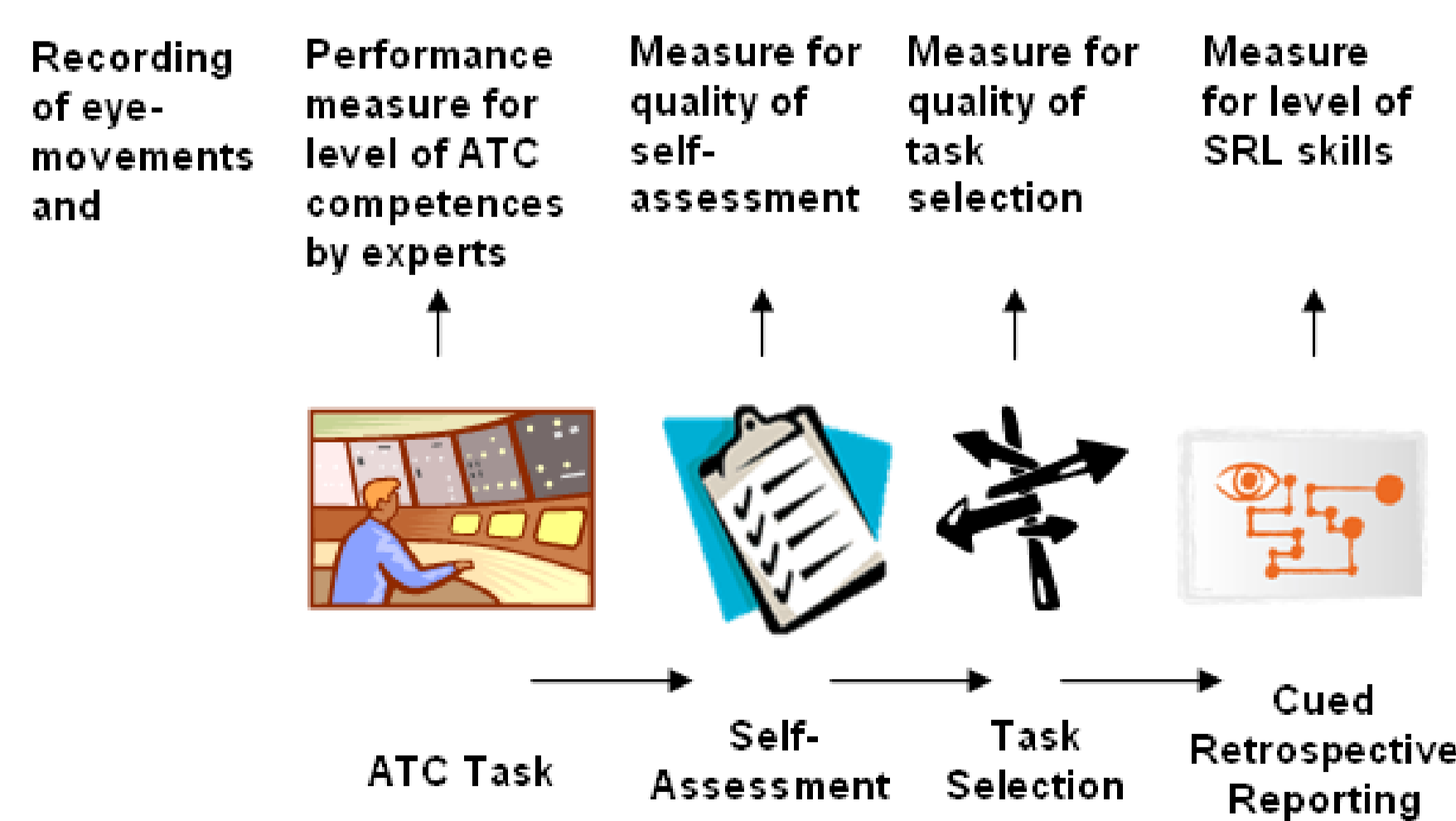
During training and during accomplishing learning tasks, learners should be able to self-regulate their own learning which makes them conscious of how well they carried out tasks as basis for a realistic self-assessment and task selection (i.e. SDL).

In this study, self-regulation is measured by use of cued retrospective reporting; Cued retrospective reporting is a verbal reporting procedure in which participants verbalize their thought processes during task performance after completing the task, based on a cue of their performance. The cue used here consisted of the videos with the recordings of participants' own eye movements superimposed onto the video of the task.

The participants' use of self-regulation skills, their quality of self assessment and their quality of task selection is investigated.

Partners: