Transfer of learning

Transfer of learning (def)the influence of having previously practiced a skill on the learning of a new skillamount of transfer depends on:-similarity of the invariant features of the skills

-similarity of cognitive features transfer well

i. e. the amount of transfer (between skills) depends on the similarities between the skills ONTRANSFER OF LEARNING SPECIFICALLY FOR YOUFOR ONLY$13. 90/PAGEOrder Now3 types of transfer(1) positive transfer

(2) negative transfer

(a)Retroactive interference

(b) proactive interference

(3) Zero transferPositive transfera known skill (skill A) enhances our ability to perform a novice skill (skill B)

-a previous experience facilitates the performance of a skill in a new context or the learning of a new skill.

ex/ hand eye coordination between hitting sportsNegative transfer: occurs when previous experience hinders or interferes with performance of a skill in a new context or the learning of a new skill

-skill A hinders skill B

2 types

(1) Retroactive interference

(2) Proactive interferenceRetroactive interferencestep (1)a known skill (skill A) interferes with the learning of skill B

Step (2) you learn skill B which then has a negative transfer on skill A

ex/ baseball swing has interferes with learning of golf swing. Golf swing is learned but has a negative transfer on baseball swing= retroactiveproactive interferencesomething you learn before is interfering/hindering you as you

start to learn skill BZero transfersome skills have no positive or negative transfer. the difference in environment(skill) do not permit transfer

ex/ playing the piano and learning to play baseballTransfer Appropriate Processing-Cognitive problem solving

-more sport oriented

-problem solving in a pressure situation--> must practice

*simular to encoding specificity principle: just more related to problem solveing

: the similarity between the learning or performance cognitive processes required by the two performance situations

ex/ 2 min drill : given a situation under pressure and must practice so you can make decision under stressEncoding Specificity PrincipleThe context and cues used when a bit of information becomes encoded, if they are available upon retrieval it will help with the recall of that memory trace

-the more the test contexts resembles the practice context, the better the retention performance will be.

-i. e. practice the way you plan to perform--> will lead to better recall/retrieval of skill or knowledge

-how you want to be tested is how you should practiceBilateral transfer(is always positive transfer)

-the ability to learn a particular skill more easily with one limb after the skill has been learned with an opposite limb

-this is a cognitive transfer

(limb selection is parameter) (GMP has invariant features)contextual Interferencethe interference that results from practicing several tasks together in an intermixed practice schedule

-causes deeper cognition

-which results in better overall learning

*from william battig

*verbal learning--> back and forth processing

*context free learning--> more cognitively challanging

*thus greater learning will occurWilliam BattigDiscover/ presented contextual interference

-more difficult learning--> or context free learning will lead to worse acquisition of a skill

-but will result in a greater retention/transfer

-making practice/learning more complicated will lead to better resultsRandom Practicecreates a more challenging learning environment when compared to block practice

-thus motor skills can be acquired at a faster rate

-random practice challenges the learner more cognitively--> lead to better learning during a retention & transfer testpractice group types(1) Random: BRGGBRGRGBGBRGRRB

(2) Serial: series systematic presentation of variables

-GRBGRBGRBGRBGRBGRB

-fallows both theories had a random and blocked nature

(3) moderate: between middle of blocked & random- random little blocks

-RRRRGGGGBBBBRRRRGGGGRRRRBBBB

(4) Blocked: big blocks

-GGGG... BBBB... RRRR...

-note: blocked trials have more retroactive interference

(5) transition: transition from block to random practiceTheories behind

contextual interference(1) Lee and Magill: Action Plan Reconstruction

(2) Shea and Morgan: Elaboration/Distinction TheoryAction Plan ReconstructionPresented by Lee and Magill

their explanation for contextual interference

they believed that motor acquisition is not based on short term memory

-learning is acquired through the resolving of the same problem

(a) by switching between each trial (random practice) the player will continuously have to resolve the problem(that was previously learned)

-the resolving the problem over and over provides a more cognitive in depth learning

**better for many variable practice like flash cardsElaboration/Distinction TheoryShea and Morgan's explanation for contextual interference

(a) all random events (from a random practice of a motor acquisition) enter short term memory ath the same time

-thus you perform INTERTRIAL processing:

* compairing all the reandom events(at one time)

*you elaborate on each different practice

* become better able to compare and form a more distince view or learning of the different skills or practice settings

-(more cognitive thought process)

_better able to distinct understanding between the trials

**better between smaller variable groups: elaborating between fiewer choices

ex/elaborating between 3 different types of pitches

-random fast balls, curves and sliders.

-all three enter short term memory and as they present themsleves without

preemtive warning you start to elaborate between the pitches and distinction are madecontextual interference (def)the memory and performance disruption (I. e. interference) that results from performing multiple skills or variations of a skill within the context of practiceVariability of practice

Hypothesis-grew out of schmits schema theory

(1) More variable practice will help facilitate Recall Schema enhancementt over constant practice

-thus facilitating the learning and refinement of a skill

-better able to set the parameters needed to perform the skill

--> variable practise will enhance your Recall SchemaVariability of practicePractice with many different parameter settings enhances recall schema thus facilitating parameter choices

*from schmits schema theory

variability of practice

-helps develop better parameter to outcome relationship

*more variable practice enhances recall schemaResearch on variable vs. constantex/ basket ball shoots

Constant group: will shoot from the same spot

(a) subgroups: each sub group shoots the same shot, but the groups all have different shots to make

Variable group: will shoot all the shots presented

ex/ 8ft, 15ft, 30 ft, all around the key

-the variable of practice causes the player to constantly change the parameters for their GMP thus developing a better recall shcema and recognition schemaDynamical systems terminology of variablility of practiceExplore the perceptual workspace

-experiencing more variable environmental context will allow you to self-organize and find " the bottom" of the attractor well (most steady state)

-through practice become better at self-organizing your self into best steady statePart Whole Practice issuesthe question at hand:

is it better to learn a skill in parts and put them together or is it best to practice as a whole or a combination of bothTask complexitythe number of component parts of the skill and the processing demands to put it together

-the number of components that are stung together

-many processing demands are needed to string them together

ex/a dance or gymnastics routine: many components or moves strung togetherTask organizationhow interrelated the component parts are

*one part cannot function without the whole

i. e. one portion of the skill is dependent on another and they must be performed in sequence

Ex/track example given in class: the approach to the takeoff

hop step and jump. You cannot separate them and just practice the hopPart practice is recommendedwhen a skill is low in organization and high in complexity

ex/ gymnastic routineWhole practice is recommendedwhen a skill is low in complexity and high in organization

ex/ hop, step and jump or a golf swing(to some extent)Types of part practice(1) Fractionization

(2) SegmentationFractionizationseparate limb practice then put them together (asymmetric coordination of structures)

ex/ learning the play the guitar

-practice placing the frets with one hand

-then practice strumming with the other

-put them together= musicSegmentationSeparating the skill into parts then stringing the parts together (typical dance technique)

-learn each move then string them together

-helps with procedulizationSimplificationreduce the difficulty of the task and progressively get more difficult (eg hitting off a tee, soft toss, live pitching)

closed motor skill---> more open motor skills

-this is not " part" practice

*just manipulating the difficulty level

-whole practice