Instructional Design –

The systematic design and development of opportunities to learn: Motivation Design
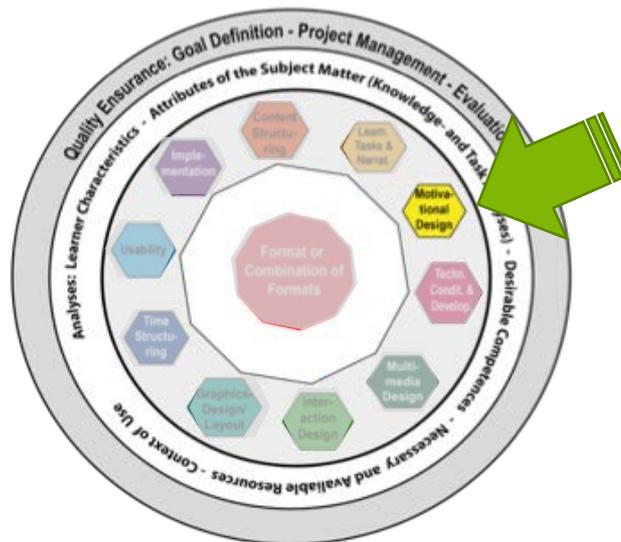
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[1]

DO ID Model: Motivation Design

[2]

Motivation Design

- **ARCS-Model** consists of a series of recommendations for each of the 4 points: Different possibilities to realize
  - How to get the **a**ttention of the learners (and hold them over the time of the course)
  - How to convince the learners hat subject matter is **r**elevant for them
  - How to convince the learners that they could be **c**onfident to understand all the content and to successfully solve the assigned tasks
  - How to give the learners a feeling of **s**atisfaction during and at the end of the course

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Motivation Design

ARCS-Model (J. Keller)
- **A**ttention
- **R**elevance
- **C**onfidence
- **S**atisfaction

Addition:
- Volition (Keller & Deimann, 2012)
  - How to regulate the multiplicity of actual motives

- Measures of *Motivational Design* must be integrated into the design of a course, not just "sprinkeled" at the end over the content.

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Motivation Design

ARCS-Model Sub-categories (A, R)

ATTENTION
A1: Perceptual Arousal
A2: Inquiry Arousal
A3: Variability

RELEVANCE
R1: Familiarity
R2: Goal Orientation
R3: Motive Matching

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Motivation Design

ARCS-Model Sub-categories C, S

CONFIDENCE
C1: Learning Requirements
C2: Success Opportunities
C3: Personal Control

SATISFACTION
S1: Natural Consequences
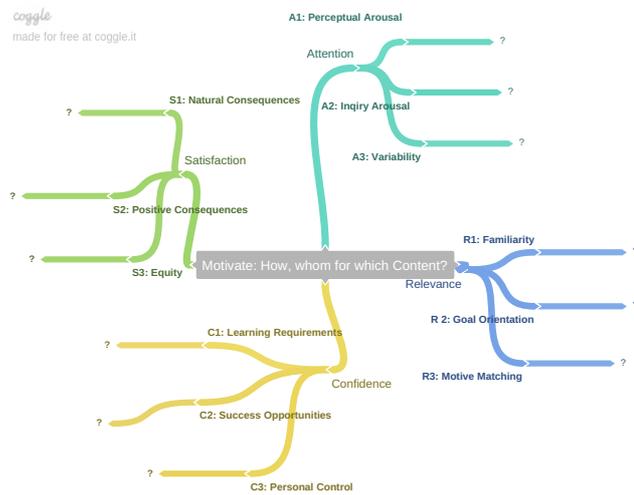S2: Positive Consequences
S3: Equity

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Motivation Design: Assignment

- Please, select and/or find realistic possibilities for all Categories and Sub-Categories to motivate **your learners** for the **subject matter you want to convey**!

- Try to find or select for each sub-category (A-R-C-S) one or more possibilities, which fit on **your learne**rs and **your subject matter**.

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Thank you for your attention.

Questions or comments now or later @

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Now: Hands on

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Appendix: Ways to motivate learners

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To motivate learners John Keller differentiates between four primary categories: **A**ttention, **R**elevance, **C**onfidence, and **S**atisfaction (ARCS).

Attention

The first step of every learning motivation consists of gaining and holding the attention and interest of the learner. Curiosity, sensation seeking, and similar factors play an important role in this area.

Relevance

Once the curiosity has been piqued and the learner's attention directed at the learning material, the learner asks himself about the relevance, the significance of the content or situation for him personally. A distinction is drawn between goal and the process relevance. Learning material can be seen as being useful for reaching a specific goal, passing an exam at a later point in time, obtaining future skills which build off the current material, the future application of the knowledge or skills to reach a specific goal are typical of relevance based on specific goals.

Confidence

An expectation of success is the third condition needed to motivate a learner. While a challenge is often desired, the risk of failure should stay within a certain boundary. Keller and Suzuki differentiate primarily between three dimensions of success confidence: perceived competency, perceived control and expectation of success. Perceived competency is the condition, which influences motivation during the course of the knowledge or ability acquisition, rather than when applying already acquired knowledge. In the first case, the freedom to make mistakes without having to fear sanctions plays an important role; in the second case a certain amount of risk or challenge, can be necessary to achieve a high performance. The perceived control has an influence as the belief that the individual's own effort determines the results of the actions, increases the performance confidence, whereas the feeling of helplessness or external attribution has the opposite effect. Therefore, instructional strategies, which strengthen the perceived control, are well suited to increase the performance confidence and thus encourage persistence.

Satisfaction

Learners can quickly become demotivated when the results of their efforts do not match their expectations. There are three factors, which influence the learners' satisfaction with the learning and action results: affirmation and feedback, intrinsic rewards, and reflective evaluation and assessment.

Affirmation and reinforcement in the sense of instrumental conditioning can be an important factor in maintaining learning motivation. It is then important to use appropriate reinforcement plans. Feedback, on the other hand, ensures that efforts are effective or informs when corrections are required. *Extrinsic rewards* can be counter-productive and reduce motivation, for example when a learner was originally intrinsically motivated and the reward distracts the attention of the learner away from the learning task. A third factor that can influence the satisfaction of the learner is the reflective (cognitive) evaluation or assessment, whereby the equity plays a large part.

Application of the ARCS-Model

The ARCS model distinguishes, within its four categories, several possibilities for motivation, each of which contains a series of concrete recommendations.

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Appendix: Ways to motivate learners

Attention

A.1 Perceptual Arousal: Gain and maintain the attention of learners by using new, surprising, contradictory or uncertain events.

Implementation options

Animation, inverse representation, flash, sounds and speech draw attention to themselves;

The use of unusual or contradictory expressions or representations can help direct the attention to the learning content, However using the correct "dosage" is especially important here as too much can have the opposite effect;

Effects, which are suited to directing attention, can, when used inappropriately, reduce the concentration of the learner. Examples are words that flash unnecessarily or long animation sequences, which cannot be shortened.

A.2 Inquiry Arousal: Information-seeking behavior is to be stimulated by the learner being confronted with questions or problems to be solved, or being asked to formulate questions or problems himself.

Implementation options

The interest of the learners can be stimulated through "Question-Answer-Feedback" sequences which require the learner to think for themselves

Allow students to design the tasks themselves

The learner should be given the opportunity to design problems and to solve them. The program can then check the correctness or show the results of the student's actions. For example a computing program can allow students to input their own problems and their solution, then the computing program can check the answers and provide feedback. In a simulation program students can set up specific parameters, predict the results and then watch what actually happens.

-Allow students to discover and explore.

Problem-solving situations should be presented in an exploratory context so that the corresponding knowledge can be discovered successively.

A.3 Variability: The variation of the instructional elements is one of the most important measures for the maintenance of the student's interest.

Implementation options

Short Instructional Units: Instructional units should be as short as possible and easily readable.

Alternating between presentations and interactive sequences: Mere screen pages and those requiring interactions should alternate with each other instead of a series of screen pages, followed by a task sequence.

Variations of the screen format: In general, a consistent screen format should be used, but sometimes deviations from this standard are recommended, however they should always serve a specific purpose.

Functional media mix: Audiovisual recordings should be economical and have a didactic function, e.g. no long-winded video sequences, which primarily show a moderator or speaker.

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Appendix: Ways to motivate learners

Relevance

R. 1 Familiarity: A sense of familiarity can be achieved through the use of a sensible linguistic style, as well as illustrative terms and examples, which reference the experiences or values of the learners.

Implementation options

Personalized language and graphics: Using personal pronouns and the name of the respective learner is recommended. It can also be very useful to transfer information via a person or cartoon figure instead of an impersonal explanatory text.

Illustrations for exemplification: illustrations and animation should be used to represent abstract or unfamiliar terms in a familiar context(Analogies, metaphors).

Familiar examples and situations: When selecting examples the experience range of the learners should be taken into account.

R. 2 Goal Orientation: Each teaching program should include statements or examples of the objectives and usefulness of the instruction; Objectives for (high) achievement should be offered or alternately the learner is given the chance to set the objectives himself.

Implementation options

Importance or benefit: The teaching objectives should be clearly stated in each case with reference to the importance or the usefulness of the corresponding teaching content.

Implicit delivery of goals: In order to strengthen the relationship to the learning objectives, suitable games or simulations can be used

Possibility of selecting learning goals: In order to meet the different learning objectives of different learners, the learner should be able to choose from a number of different learning goals and learning outcomes. For example, selecting between: "Know the basics of the cost calculation in Company X" or "Use the system of the cost calculation in company X correctly in daily office processes."

R. 3 Motive Matching: In general, teaching strategies should be used that fit the respective motivation profiles of the learner.

Implementation options

Differentiated difficulty levels: The learner should be offered different learning goals with regard to competency levels in order to increase performance motivation.

Point-or evaluation system: In order to take account of the learners progress an assessment system should be introduced, which is used for the feedback regarding the learner's performance

Optional competitions: So that less competitive learners do not feel discouraged all competitions should be offered on an optional basis.

Cooperative opportunities: The option of working cooperatively with one or two other learners in the program should be explicitly offered.

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Appendix: Ways to motivate learners

Confidence

C. 1 Learning Requirements: The learner should be aware of the performance requirements and assessment criteria.
Implementation options
Goals and course structure: The learning objectives, which can be achieved with the help of the respective teaching program, as well as an overview of the structure of the teaching material should be clearly presented.
Evaluation criteria and Feedback: In each case evaluation criteria should be explained and exercises with feedback should always be offered
Learning pre-requisites: Abilities, skills, attitudes, and prior knowledge necessary or useful for mastering learning tasks should be mentioned in advance.
Testing conditions: Learners should be informed in advance of how many tasks to expect on the test and whether there is a time restriction.
C.2 Success Opportunities: Within a teaching program, different levels of difficulty should be offered that allow the learner to set individual levels of achievement and personal performance standards. Opportunities to perform successfully should be offered.
Implementation options
From easy to difficult: While introducing new learning materials the learning program should be arranged according to the principle "from simple to complex" and should always, or at the least very often, be followed by reaffirming feedback.
Appropriate difficulty level: In order to avoid boring or overwhelming the learner it is recommended to adjust the difficulty level to the skills, abilities and prior knowledge of the learner.
Variety of starting points: As far as useful, different possibilities for entry into the teaching program and different learning paths through the program should be offered according to the results of a pre-test.
Randomization: After the introductory phase, in which the compilation of the exercise should follow determined rules, exercises should be arranged randomly in order to increase the challenging character of the tasks by maintain a certain degree of indeterminateness.
Variable difficulty levels: The level of difficulty should take into account complexity of the task, time constraints, and other variables.
C.3 Personal Control: Feedback should be given, emphasizing the ability and effort of the learner as the cause of success.
Implementation options
Termination control: Every learner should be able to interrupt the current chapter or even the learning program at any time. Likewise going back to an earlier chapter should always be possible.
Pacing control: In general learners should be able to control the pace of their own learning. Switching and advancing between screens should not happen automatically, but rather when the learner pushes the appropriate key.
Fast Access: It should be possible to skip introductory presentations and explanations as to operating the program in order to get directly to the selection menu for the learning content.
Unrestricted access to individual chapters of learning content: he learner should be able to decide for himself, which part of the learning material he will work on at any moment.
Promote favorable attributions: Particularly in the case of feedback, attention should be payed that favorable internal attributions (talent, effort) are credited with success and that failures are attributed to external or internal variables.

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Appendix: Ways to motivate learners

Satisfaction

S.1 Natural consequences: The learner should be given the opportunity to use her newly acquired knowledge or skills in real or simulated environments.
Implementation options
Exercises to apply the learned material: Exercises should be offered that enable learners to apply the previously acquired knowledge and skills.
Transfer to subsequent tasks: Tutorial learning programs should be structured in such a way that each sections builds on the learning from the previous section.
Application simulations: At the end of a learning program or learning unit, a learning game or a simulation should be offered, which requires an application of what was previously learned.

S. 2 Positive Consequences: In principle, feedback and affirmation should be given, which are appropriate to maintain the desired behavior.
Implementation options
Appropriate reinforcement plans: In a tutorial, positive, motivating feedback, or other rewards should be given after each correct answer, in case of application-oriented exercises only after a content-related series of answers.
Meaningful Feedback: In order not to endanger the motivating effect of positive feedback, exaggerated praise should be avoided with relatively simple tasks.
Reward for correct answers: After correct answers learners should be extrinsically rewarded, while after incorrect answers rewards should be avoided as a consequence. This last point is not trivial. There is a large number of learning programs where the graphic, which indicates incorrect answers is at least as interesting as the visual following correct answers.
Balanced rewards: Care should be taken that the reward following a correct answer is not more interesting than the instruction itself.
Choice of reward form: If possible, different types of rewards should be offered and chosen by learner in advance in order to avoid unintended effects of external control.
S.3 Equity: Assessment criteria and the consequences the learner's performance must always be coherent.
Implementation options
Coherence between goals and content: The content and structure of each lesson, and the entire program, should be consistent with the stated objectives and the overview.
Coherence of tests and exercises: Exercises and tests need to be consistent with one another and the learning goals

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