

1: Instructional Design Models - www.enganchecubano.com

Instructional Systems Design involves a systematic process for the assessment and development of training solutions, designed specifically for the purpose of formal training delivery. There are two widely recognized instructional design models in use today by both educational institutions and corporate training functions.

The concept of lean comes from the early s MIT study of U. Jones, and Daniel Roos. Lean production a term coined by MIT research team member John Krafcik describes an efficient approach that combines the best of both craft production and mass production. Lean production employs teams of multiskilled workers at all levels of the organization and uses highly flexible, increasingly automated tools to produce volumes of varied products. Lean production requires teamwork, structured yet flexible processes, communications, and continuous improvement. The application of lean to the world of ISD can create a set of common, effective, and efficient processes. Furthermore, the overall PACT Process approach to ISD borrows concepts, precepts, tools, and techniques from the worlds of product management, financial management, and the quality and human performance technology movements. The processes use a highly structured, multiteam approach, and standard tools and templates. Using PACT, suppliers and customers focus from the start on appropriate performance and content. The pact between the ISD suppliers and ISD customers is embodied in a detailed Project Planâ€”the agreementâ€”that the training suppliers create with their customers and stakeholders. The PACT approach includes the following five key processes: Project Planning and Management This figure shows the relationship among the processes. For example, Curriculum Architecture Design is the macrolevel process. Rummler Geary created this cover, back in , not liking the one I had originally intended, that was in his review copy. If you are a leader of, or a serious participant in, the design and implementation of a large-scale corporate curriculum, then this book is for you. Readers looking for more information can proceed to subsequent sections, where each process is treated in much more detail. In the book, I explain how the features embodied in the PACT acronym can provide tremendous benefits for the organization. Click on the graphic to link to more info. The focus is on improving training and development processes and products in business and industry. This book provides a model and methodology to help a training function link its long-term outputs to the business needs of the organization. The PACTProcesses help introduce the voice of the customer into any training organization whose mission is to improve performance. The best way to use the book is as a guide in doing projects. Professor of Psychology, Western Michigan University lean-ISD takes all of the theory, books, courses and psuedo job-aids that are currently on the market about Instructional Systems Design and blows them out of the water. Here is a book that actually includes all of the information that fell through the cracks of other ISD training materials and shows you the way to actually get from one step to another. Guy adds all of the caveats and tips he has learned in over twenty years of ISD practice and sprinkles them as job aids and stories throughout the book. However, the most critical part of the book for me was that Guy included the project and people management elements of ISD in the book. Too often ISD models and materials forget that we are working with real people in getting the work done. This book helps explain and illustrate best practices in ensuring success in ISD projects. The book is designed so that I was quickly able to access the information I needed to provide my clients practical, timely and quality approaches to tackling their business issues. I highly recommend this book as a guide for business professionals challenged by either training and development, learning, knowledge management, or human competence development projects.

2: Lean Applied to ISD – Instructional Systems Design | EPPIC - Pursuing Performance

Instructional System Design (ISD) is often referred to as ADDIE, which is the acronym for the five phases of ISD: Analysis Design Development Implementation Evaluation. ISD or ADDIE may be defined as the systematic and iterative method for creating learning experience that develop and enhance skills.

ISD Instructional Systems Design model is an organized procedure that includes steps of analyzing, designing, developing, implementing and evaluating instruction to improve the quality and effectiveness of instruction and to enhance learning. What are systems characteristics of ISD? ISD guides the preparation of instruction to accomplish specific goals and objective Interdependence of each step in the process: ISD emphasizes the congruency among the objectives, instruction, and evaluation An closed system: Gustafson explained the models serve a variety of purposes, such as theory-building and testing, description, prediction, and explanation; the ISD models are used for three primary functions in the ID practice: Communication device Planning Guides for management activities Prescriptive algorithms for decision making Andrews and Goodson defined a model as "an abstraction and simplification of a defined referent system or process, presumably having some noticeable fidelity of the referent system or process. The emphasis is on selecting and adapting existing materials and instructional strategies. The Kemp Model Product focus: The goal is production of instructional products. The focus demands extensive analysis of the use environment, the characteristics of the task, and whether or not development should even take place. It is a problem solving approach requiring data collection to determine the precise nature of the problem. Media view, embryonic systems view, narrow systems view, standard systems view and the instructional systems design view. The standard systems view The system includes major processes: The comments on the standard systems view: It indicates the generic procedural framework that includes the steps of analyzing, designing, developing, implementing and evaluating instruction. How should Instructional Systems Design be? Schiffman proposed a systemic view showing ISD to be a synthesis of theory and research related to How humans perceive and give meaning to the stimuli in their environment The nature of information and how it is composed and transmitted The concept of systems and the interrelationships among factors promoting or deterring efficient and effective accomplishment of the desired outcomes The consulting and managerial skills necessary to meld point 1 through 3 into a coherent whole The knowledge base for this systems view of ISD integrates five major categories: Educational theory and research: Designers need to have an understanding of the principles of human physical, emotional, social, and mental growth and development. Without a broad-based foundation in learning theory the practice of ISD becomes narrowly focused on means the steps in the systems model rather than on the rightful end learning The instructional designers have to distinguish different human capabilities. This knowledge enables the designers to utilize the research on the particular conditions under which each type of human capability is more likely to be learned, and to identify objectives of instructional unit that reflect the needs of the system Systems Analysis: Data Collection and Data Analysis: What data needs to be collected? Designers must know the goals, functions, resources, constraints, chain-of-command culture of the organization Data must be gathered on the specific target population to determine their general characteristics, motivation, sophistication as learners, and performance levels. Learning environment must be studied: Determine to what extent the problem can be classified as instructional in nature Identify constraints, resources, and learning characteristics Determine goals and priorities What is the problem? Determine the gap between what it is and what it should be the gap between the capabilities of performers and the desired performance ; prioritize the needs How do we solve it? To identify the causes of the problem and propose instructional or non-instructional solutions depending on the situation Analysis can determine whether there are any gaps between what is and what should be, and to determine the causes of the problem: However, task analysis is essential to identify the content and the process that are required to achieve the desired learning goals. For instructional designers, first we have to determine an instructional need exists, and then to specify what to be learned in order to develop how to learn and how to evaluate the learning. The analysis of the context is much more strongly influenced by systems theory and by sociological theories The attention given

to the analysis of the learner has grown since the learner plays a constructive role according to cognitive theory. How a learning task is analyzed: Five phases of a consultancy Bell and Nadler, Project Management Knirk and Gustafson listed six stages of project management: Planning, organizing, staffing, budgeting, controlling and communicating References: The systematic design of instruction. Harper Collin Gustafson, K. Survey of Instructional Development Models. US Department of Education. The instructional design process. Design effective instruction, New York: Five views of the field. Past, present and future Second ed.

3: Instructional System Design (ISD): Using the ADDIE Model | Semuanya Ajib

Instructional Systems, College of Education, Penn State University Instructional design is the systematic approach to the Analysis, Design, Development, Implementation, and Evaluation of learning materials and activities.

ISD or ADDIE may be defined as the systematic and iterative method for creating learning experience that develop and enhance skills and knowledge. Department of Defense, ; Department of the Army, ISD can be thought of as a roadmap that helps to ensure the learners and their organization achieve their learning and performance goals through formal, nonformal, and informal environments. These approaches have some common elements: Competency Based Job Related: The training focuses on the job by having the learners achieve the criteria or standards necessary for proper task performance. Lessons are logically and sequentially integrated. A tracking system is established that allows changes and updates to the learning materials to be performed efficiently. Evaluation and corrective action allows continuous improvement and maintenance of training material that reflects current status and conditions. While ISD can handle a variety of performance and learning needs, some problems might require a different approach. Other models that may fit the problem better can be found at Design Methodologies: Design - Define the learning objectives " what the learners need to do to learn the new performance activities , and what will motivate them to learn and perform. This becomes your blueprint. Development - Elaborate and build the products called for in the blueprint the finished product is often called courseware or learning activities. Implementation - Deliver or conduct the training. Evaluation - Determine if the performers and learning process achieved the desired results. Formative evaluations are performed throughout the first four phases and a summative evaluation is performed at the end of the process. On the other hand, Instructional Design ID models normally only focus on the design and somewhat on the analysis parts, thus they are able to address a particular need in a learning process. Simply stated, it provides a means for sound decision making in order to determine the who, what, when, where, why, and how of a learning program. The concept of a system approach is based on obtaining an overall view of the learning process. It is characterized by an orderly process for gathering and analyzing collective and individual performance requirements, and the ability to respond to identified learning and training needs. The application of a systems approach insures that learning programs and the required support materials are continually developed in an effective and efficient manner to match the variety of needs in a rapidly changing environment. ISD is not that difficult or complicated. The ISD model was designed to solve human performance problems related to learning or training U. Department of Defense, The figure shown below is a flowchart of the ISD model. It was first created by Florida State University in conjunction with the Department of Defense, but can now be found in almost any type of organization Watson, In addition, it has evolved over the years to keep up with new technologies and ideas. While it does a good job of showing the phases and steps, it does not really show the dynamics of the ISD process. In addition, it only shows a selected number of steps under each phase that may or may not be needed for a particular learning process and omits steps that may be needed for other learning processes. A better diagram is achieved using the following model: The model also highlights the importance of evaluation and feedback throughout the entire life-cycle and shows the importance of gathering and distributing information between the five phases. Note the use of two evaluations in the model " the inner circle is for formative evaluations, while the outer one is for summative evaluations. The five phases are ongoing activities that continue throughout the life-cycle of a learning process. After building the learning process, the other phases do not end once the learning process Implementation has began, but are continually repeated to improve the learning process and meet new challenges as they are encountered. But, designers must step back to see where they are going, otherwise the tool will become a process model that controls them, instead of them controlling the tool.

4: Clark Training & Consulting - Instructional Systems Design Certification

The Instructional System Design Model (ISD) uses the five phases of ADDIE (Analysis, Design, Develop, Implement, and Evaluate) to create both informal and formal learning processes.

APS uses an instructional system design ISD approach to design and develop effective training programs for our clients. The five-phase instructional systems design or systematic approach to training provides a method for analyzing, designing, developing, implementing, and evaluating cost-effective, results-oriented training programs. It ensures that a step-by-step approach is followed. Analysis - Analysis provides a method of responding to changes in human resource requirements, solving job performance problems, and learning from operations experience. Analysis begins with the conduct of a training needs assessment. The training needs assessment is necessary to make sure performance concerns can be resolved through training. If the facts confirm a valid training need, job analysis uses existing job data and input from employees to identify and rate job tasks. Tasks rated difficult and important are selected for training. Their exact methods of correct performance and underlying skill and knowledge are determined through task analysis. Completing this process reveals reliable information on safe work practices. The knowledge and skills identified provide a task-specific content reference for both new and existing programs. In addition to training needs assessment and task analysis, an audience analysis can be conducted, if necessary, to determine the characteristics of the intended learner audience. Reading grade level and years of related job experience are two of the types of factors that may be considered in an audience analysis. A gap analysis that details the current level of knowledge required to perform a job and the level of knowledge needed to perform a new or radically changed job may also be conducted. Design - Design uses the task performance information collected during analysis to specify, in measurable terms, the training that employees need to perform a job. Job performance measures used for post training employee evaluation are prepared for each task. Defining how individual tasks are performed focuses training development efforts and supports training and qualification. Through the process of curriculum design, learning objectives are developed for knowledge requirements and grouped into courses. These courses are then organized into a curriculum. Instructional materials and appropriate media and methods are selected based on the characteristics of the job and the learner audience. The number of instructors classroom and on-the-job needed is identified and training facilities and presentation resources are determined. Methods for evaluating employees and the requirements for keeping records are decided upon. Develop - Development organizes the instructional materials needed for employees to achieve the learning objectives. Emphasis is on maximizing the use of existing materials and resources. Existing, suitable training materials and lesson plans are selected and new ones produced as required in the appropriate media. Resulting training materials are reviewed for readability and technical accuracy, tried out with a group of employees, and revised as necessary. Performance-based training materials are the products of this phase. Implement - Implementation is the process of putting training programs into action. Instructors are selected and trained, and the availability of employees, facilities, and resources is confirmed. Training is delivered as planned, and the performance of both learners and instructors is evaluated. These evaluations serve two purposes. First, they verify that employees have achieved the design learning objectives. Second, instructor performance problems can be identified and solved. Key training records are maintained to support management information needs and to document the performance both of employees and instructors. Monitoring employee job performance, equipment and procedure changes, and production experience helps maintain and improve the training program. Evaluation is a dynamic process of assessing performance, identifying concerns, and initiating corrective actions. The feedback it yields enables training management to respond to unforeseen problems or changing conditions. Completing evaluation steps produces the performance data and feedback vital to any training system. We tailor our services and approach to fit each situation, with the goal of creating a program that adds value to your organization. For more information, email us at info@aps-online.com. Copyright, Applied Performance Strategies, Inc. Downloading, republication, retransmission or reproduction of licensed material on this site is expressly prohibited.

5: UK College of Education Department of Curriculum and Instruction | Master of Science

Instructional design (ID), also known as instructional systems design (ISD), is the practice of systematically designing, developing and delivering instructional products and experiences, both digital and physical, in a consistent and reliable fashion towards an efficient, effective, appealing, engaging and inspiring acquisition of knowledge.

Instructional design aims for a learner-centered rather than the traditional teacher-centered approach to instruction, so that effective learning can take place. These phases sometimes overlap and can be interrelated; however, they provide a dynamic, flexible guideline for developing effective and efficient instruction. During this phase, you must define the problem, identify the source of the problem and determine possible solutions. The phase may include specific research techniques such as needs analysis, job analysis and task analysis. The outputs of this phase often include the instructional goals, and a list of tasks to be instructed. These outputs will be the inputs for the Design phase. Design The Design phase involves using the outputs from the Analyze phase to plan a strategy for developing the instruction. During this phase, you must outline how to reach the instructional goals determined during the Analyze phase and expand the instructional foundation. Some of the elements of the Design Phase may include writing a target population description, conducting a learning analysis, writing objectives and test items, selecting a delivery system, and sequencing the instruction. The outputs of the Design phase will be the inputs for the Develop phase. Development The Develop phase builds on both the Analyze and Design phases. The purpose of this phase is to generate the lesson plans and lesson materials. During this phase you will develop the instruction, all media that will be used in the instruction, and any supporting documentation. This may include hardware e. The purpose of this phase is the effective and efficient delivery of instruction. This phase measures the effectiveness and efficiency of the instruction. Evaluation should actually occur throughout the entire instructional design process - within phases, between phases, and after implementation. Evaluation may be Formative or Summative. Formative Evaluation is ongoing during and between phases. The purpose of this type of evaluation is to improve the instruction before the final version is implemented. Summative Evaluation usually occurs after the final version of instruction is implemented. This type of evaluation assesses the overall effectiveness of the instruction.

6: Instructional System Design: The ADDIE Model - A Handbook for Practitioners

A concept that affords us a method to determine the who, what, when, where, why, and how of training. There are various names besides ISD for training systems that offer this systematic method.

Instructional television was not adopted to a greater extent. The effect of CAI was rather small and the use of computer was far from innovative. Online training increased rapidly to the point where entire curriculums were given through web-based training. Simulations are valuable but expensive, with the highest level being used primarily by the military and medical community. The effect from both are too new to be fully measured. Similarly, instructional events should mirror the learning events: To ensure reception of coming instruction, the teacher gives the learners a stimulus. Before the learners can start to process any new information, the instructor must gain the attention of the learners. This might entail using abrupt changes in the instruction. Informing learners of objectives: The teacher tells the learner what they will be able to do because of the instruction. The teacher communicates the desired outcome to the group. Stimulating recall of prior learning: The teacher asks for recall of existing relevant knowledge. The teacher gives emphasis to distinctive features. The teacher helps the students in understanding semantic encoding by providing organization and relevance. The teacher asks the learners to respond, demonstrating learning. The teacher requires more learner performance, and gives feedback, to reinforce learning. Enhancing retention and transfer: The teacher provides varied practice to generalize the capability. The figure below illustrates these five ideas. He emphasized the design principles and procedures that need to take place for effective teaching and learning. His initial ideas, along with the ideas of other early instructional designers were outlined in Psychological Principles in Systematic Development, written by Roberts B. Increasing the effectiveness and efficiency of practice was of particular concern. Learning design might be defined as "the description of the teaching-learning process that takes place in a unit of learning e. This acronym stands for the 5 phases contained in the model Analyze, Design, Develop, Implement, and Evaluate. Over the years, the steps were revised and eventually the model itself became more dynamic and interactive than its original hierarchical rendition, until its most popular version appeared in the mids, as we understand it today. The five phases are listed and explained below: The instructional designer then classifies the information to make the content more applicable and successful. Design â€” The second phase is the Design phase. In this phase, instructional designers begin to create their project. Information gathered from the analysis phase, in conjunction with the theories and models of instructional design, is meant to explain how the learning will be acquired. For example, the design phase begins with writing a learning objective. Tasks are then identified and broken down to be more manageable for the designer. The final step determines the kind of activities required for the audience in order to meet the goals identified in the Analyze phase. Develop â€” The third phase, Development, involves the creation of the activities that will be implemented. It is in this stage that the blueprints of the design phase are assembled. Implement â€” After the content is developed, it is then Implemented. This stage allows the instructional designer to test all materials to determine if they are functional and appropriate for the intended audience. Evaluate â€” The final phase, Evaluate, ensures the materials achieved the desired goals. The evaluation phase consists of two parts: This process incorporates formative assessment , while the summative assessments contain tests or evaluations created for the content being implemented. This final phase is vital for the instructional design team because it provides data used to alter and enhance the design. Connecting all phases of the model are external and reciprocal revision opportunities. As in the internal Evaluation phase, revisions should and can be made throughout the entire process. Proponents suggest that through an iterative process the verification of the design documents saves time and money by catching problems while they are still easy to fix. This approach is not novel to the design of instruction, but appears in many design-related domains including software design, architecture, transportation planning, product development, message design, user experience design, etc. For this reason many traditional methods of instructional design are beginning to be seen as incomplete, naive, and even counter-productive. As this argument goes, at the heart of Instructional Design is the analysis phase. After you thoroughly conduct the analysisâ€”you can then choose a model based

on your findings. That is the area where most people get snaggedâ€”they simply do not do a thorough-enough analysis. Dick and Carey Systems Approach Model Dick and Carey made a significant contribution to the instructional design field by championing a systems view of instruction, in contrast to defining instruction as the sum of isolated parts. The model addresses instruction as an entire system, focusing on the interrelationship between context, content, learning and instruction.

Identify Instructional Goal s: A goal statement describes a skill, knowledge or attitude SKA that a learner will be expected to acquire

Conduct Instructional Analysis: Identify what a learner must recall and identify what learner must be able to do to perform particular task

Analyze Learners and Contexts: Identify general characteristics of the target audience, including prior skills, prior experience, and basic demographics; identify characteristics directly related to the skill to be taught; and perform analysis of the performance and learning settings.

Objectives consists of a description of the behavior, the condition and criteria. Designers try to identify areas of the instructional materials that need improvement. To identify poor test items and to identify poor instruction

Design and Conduct Summative Evaluation With this model, components are executed iteratively and in parallel, rather than linearly.

Gabriel Ofiesh, a founding father of the Military Model mentioned above. In , Peter and Mary Esseff created an eLearning course to enable participants to take the GL course online under the direction of Dr. The components of the Guaranteed Learning Model are the following:

- Design a task analysis
- Develop criterion tests and performance measures
- Develop interactive instructional materials
- Validate the interactive instructional materials
- Create simulations or performance activities
- Case Studies, Role Plays, and Demonstrations

Other[edit] Other useful instructional design models include: Learning theories also play an important role in the design of instructional materials. Theories such as behaviorism , constructivism , social learning and cognitivism help shape and define the outcome of instructional materials.

Motivational design[edit] Motivation is defined as an internal drive that activates behavior and gives it direction. The term motivation theory is concerned with the process that describe why and how human behavior is activated and directed.

Motivation concepts[edit] **Intrinsic and Extrinsic Motivation**

Intrinsic: When intrinsically motivated a person is moved to act for the fun or challenge entailed rather than because of external rewards. If we are intrinsically motivated, we would not be worried about external rewards such as praise. Writing short stories because you enjoy writing them, reading a book because you are curious about the topic, and playing chess because you enjoy effortful thinking

Extrinsic: People who are extrinsically motivated may not enjoy certain activities. They may only wish to engage in certain activities because they wish to receive some external reward. John Keller [66] has devoted his career to researching and understanding motivation in instructional systems. These decades of work constitute a major contribution to the instructional design field. First, by applying motivation theories systematically to design theory. Attention, Relevance, Confidence, and Satisfaction. The first 2 of 4 key components for motivating learners, attention, and relevance can be considered the backbone of the ARCS theory, the latter components relying upon the former. This component is split into three categories: Within each of these categories, John Keller has provided further sub-divisions of types of stimuli to grab attention. Grabbing attention is the most important part of the model because it initiates the motivation for the learners. Once learners are interested in a topic, they are willing to invest their time, pay attention, and find out more.

Relevance[edit] Relevance, according to Keller, must be established by using language and examples that the learners are familiar with. The three major strategies Keller presents are goal-oriented, motive matching, and familiarity. Like the Attention category, Keller divided the three major strategies into subcategories, which provide examples of how to make a lesson plan relevant to the learner. Learners will throw concepts to the wayside if their attention cannot be grabbed and sustained and if relevance is not conveyed.

Confidence[edit] The confidence aspect of the ARCS model focuses on establishing positive expectations for achieving success among learners. The confidence level of learners is often correlated with motivation and the amount of effort put forth in reaching a performance objective. This can be achieved in the form of a syllabus and grading policy, rubrics, or a time estimate to complete tasks. Additionally, confidence is built when positive reinforcement for personal achievements is given through timely, relevant feedback.

Satisfaction[edit] Finally, learners must obtain some type of satisfaction or reward from a learning experience. This satisfaction can be from a sense of achievement, praise from a higher-up, or

mere entertainment. Feedback and reinforcement are important elements and when learners appreciate the results, they will be motivated to learn. Satisfaction is based upon motivation, which can be intrinsic or extrinsic. To keep learners satisfied, instruction should be designed to allow them to use their newly learned skills as soon as possible in as authentic a setting as possible. This process has 4 phases Analysis, Design, Development, and Evaluation with 10 steps within the phases:

7: UK College of Education Department of Curriculum and Instruction | Instructional Systems Design

Instructional Systems Design (ISD) is a type of formal approach to training where the goals of the training are carefully determined often from various types of assessments of the learners, goals are established to address the results of the assessments, various methods of training and learned are developed and designed to achieve those goals.

Subsequent practitioners revised the steps, and eventually the model became more dynamic and interactive than the original hierarchical version. By the mids, the version familiar today appeared. Questions the analysis phase addresses include: Who are the learners and what are their characteristics? What is the desired new behavior? What types of learning constraints exist? What are the delivery options? What are the pedagogical considerations? What adult learning theory considerations apply? What is the timeline for project completion? The process of asking these questions is often part of a needs analysis. The design phase should be systematic and specific. Systematic means a logical, orderly method that identifies, develops, and evaluates a set of planned strategies for attaining project goals. Specific means the team must execute each element of the instructional design plan with attention to detail. Development phase[edit] In the development phase, instructional designers and developers create and assemble content assets described in the design phase. If e-learning is involved, programmers develop or integrate technologies. Testers debug materials and procedures. The team reviews and revises the project according to feedback. Implementation phase[edit] The implementation phase develops procedures for training facilitators and learners. Training facilitators cover the course curriculum, learning outcomes, method of delivery, and testing procedures. Preparation for learners includes training them on new tools software or hardware and student registration. Implementation includes evaluation of the design. Evaluation phase[edit] The evaluation phase consists of two aspects: Formative evaluation is present in each stage of the ADDIE process, while summative evaluation is conducted on finished instructional programs or products. The P phase is the planning phase, which develops project goals, project objectives, budget, and schedules. The M phase is the maintenance phase, which implements life cycle maintenance with continuous improvement methods. The Maintenance of the Learning Community Network is a modern educational process that supports the continuous educational development of its members with social media and web tools.

8: Formal Training Processes -- Instructional Systems Design (ISD) and ADDIE

Instructional Systems Design (ISD) Designing and rolling out a successful training program involves a variety of people co-ordinating their efforts to achieve the desired outcome. Clients and end users of the program may be interviewed to determine the real training requirements.

Conceivably, there are as many approaches to the process as there are practitioners of it. The basic model is simple to understand and easy to use in almost any training environment. Essentially, it is a series of steps leading to the production of a successful training program. The ISD steps for building a course are analogous to steps for building a home. Building a quality home requires a systematic process so the home meets standards personal, structural, and community standards among them. It could be disastrous if one left out a critical step, such as drawing up the blueprints. The same ideas apply to developing quality training. Most ISD approaches contain five major phases see Figure 1. The first four phases analysis, design, development and implementation are generally sequential; the outputs of one phase are the inputs to the next. The fifth phase, evaluation, involves feedback that applies throughout the model. This lesson looks at these phases and describes their purpose, relationships, and results Figure 1. This phase determines training needs and expresses them as information useful for training development. The ISD model requires that training fulfill specific needs. This is done through the generation and evaluation of such analysis elements as needs assessment, job analysis, and target audience analysis. Needs assessment A needs assessment is conducted when a job performance problem has been identified. Needs assessment involves a systematic identification of solutions to performance problems. The assessment determines the root cause of the problem, then proposes a solution. The problem may be due to inadequate training, poor job documentation, poor equipment, lack of motivation, or other organizational issues. Conducting training without repairing faulty equipment, for example, will not solve the problem; it will only exhaust resources. Needs assessment determines whether training, alone, will solve the problem. Job analysis Job analysis is a systematic method of listing all the tasks necessary to competently do a specific job. These tasks represent the foundation on which we construct performance-based training objectives, course content, and evaluation instruments. Simply put, the job analysis provides a detailed "picture" of the job to be trained. The job analysis can also provide information about entry-level skills and possible prerequisites for training. Target audience analysis A target audience analysis identifies characteristics that affect trainee learning. This information helps designers customize training for the intended audience. The analysis phase also identifies training requirements and training outcomes. Training requirements are the knowledge and skills that must be taught during training. Training outcomes are the tasks that trainees must demonstrate to ensure competent performance back on the job. Its purpose is to transform relevant content into concise, behavioral objectives, creating the instructional "blueprint" that will direct the development of all training materials, tests, and methods. Training requirements and outcomes identified during analysis are written as goals and objectives. Then other design elements are addressed, such as instructional strategies, media selection, types of training materials, evaluation methods, and the design document. Goal statements A goal statement is a broad general description of the learning outcome. It describes what the trainee will be able to do at the end of the training. Goal statements are written for the entire course, as well as for each lesson within it. Instructional objectives An instructional objective specifies a measurable level of a behavior for a trainee after training, including the conditions and standards for the performance. Objectives are used to ensure achievement of the larger goal. Viewed as a unit, lesson objectives are the detailed steps leading to attainment of the lesson goal. Usually, several instructional objectives are written for each lesson goal. Instructional strategies Since objectives form the framework for the training structure, the sequence of objectives is a very important part of lesson design. Objectives may be arranged in the order that tasks will be performed on the job, by their ease of performance, by order of the complexity of the task, or according to other appropriate strategies. Evaluation methods Decisions on how trainees will be evaluated or tested are made in the design phase. Evaluation options include knowledge tests and performance tests. If a trainee learns by practicing a skill during training, the trainee must perform it when evaluated. He or

she should not be evaluated with multiple-choice questions or by describing the skill in writing. Types of training materials Training materials include such items as texts, student guides, workbooks, instructor guides, job and training aids, visual aids, and case studies. While these items are produced in the development phase, they are identified in the design phase. Media selection Taking target audience characteristics, number of trainees, and environmental requirements into account, decisions are made about how to deliver the training to meet instructional objectives. Media selection requires a close look at the strengths and weaknesses of each medium based on the type of student, what he or she needs to learn, and how to teach it. Growth in electronic technology has substantially increased the media options for delivery of training. Choices may change from goal to goal and lesson to lesson to get the best training results from the available media. Many electronic media now provide delivery of training or partial training without trainees ever entering a traditional classroom--we call this distance learning. Design Document The outcome of the design phase is an instructional "blueprint," a design document, that guides development, delivery, and evaluation of the training. Often a design document details design decisions that guide the training development team in production of course materials. In addition, the design document serves as a managerial review instrument in the approval process required at this stage of training development. This is where the real work of course development is done. Using the objectives, instructional approach, and media selections from the design phase, development produces course materials for the trainer, course materials for the trainee, and evaluation instruments. Course materials for the trainer Lesson plans are the major element constructed during this phase. They function as a written "advance organizer" for the delivery of lessons by the instructor. Course materials include anything the instructor will need to present the lesson, including workbooks, handouts, visual aids, demonstration props, media equipment, and administrative materials. Course materials for the trainee Course materials for the trainee are materials that support and supplement lessons. These may include handouts that provide a summary of the presentation, replace or facilitate note taking, and provide references or job assistance back in the workplace. Often trainees are evaluated with cognitive or performance-based tests. Written tests may include multiple-choice questions, and performance checklists may be used to record behavioral skills. The evaluation approach, form, and content identified in the design phase are produced in the development phase. The development phase produces a standardized, documented approach to training delivery. This outcome assures that a trained, qualified instructor can deliver this training confident that training goals and objectives will be met. Logistical arrangements, such as scheduling a training place, preparing an agenda, setting up the training environment, and even practicing the presentation ensure delivery of a training session that captures trainee interest. Logistical arrangements Logistical arrangements are addressed in the implementation phase. These are time-sensitive planning and coordinating details such as scheduling training facilities, arranging for the set-up and use of equipment, accommodating guest speakers, etc. Another step is generating the training schedule. This schedule ensures that the trainer and trainees are informed of all events programmed to occur during training. A good training environment is critical to good learning outcomes. Arranged well in advance, the training environment should fully support delivery of training. In a classroom or other on-site setting, comfortable yet functional furniture, work areas, equipment, safety plans, and training materials should be ready to meet the learning needs of each trainee, including those with special needs. When using a distance-learning medium, distant-site facilitators should prepare training environments at their sites. Training room heating and cooling, lighting, and trainee accesses to rest rooms, food facilities, smoking areas, telephones, and parking are additional considerations that require preplanning. Most administrative tasks should be completed well in advance of training: Another aspect of preparing the training environment is arranging for facilitation of a social climate conducive to group formation and peer interaction. Placement of furniture, rules of conduct, and "ice breaker" activities are useful for creating a desirable social climate. Delivery of training Delivery of the training is next in the implementation phase. The trainer must employ adult learning principles throughout the presentation. Using effective verbal and nonverbal techniques, the trainer must engage the trainees and demonstrate the appropriate skills necessary to achieve instructional objectives. The desired outcome of implementation is a roster of educated, skilled trainees. Decisions about revisions for future course iterations can be made after evaluating the strengths and weaknesses in a completed

training program. Finally, evaluation ensures that training improves performance back on the job. The ISD process includes two types of evaluation: Formative evaluation Formative evaluation monitors the training as it proceeds through the ISD process. Monitoring involves periodically reviewing the analysis and design documents to confirm that objectives are being developed and delivered as originally intended. Summative evaluation Summative evaluation is the process of reviewing a course or training after it is taught. The feedback loop Dynamic feedback loops are very important parts of the ISD evaluation process. If the training under development does not satisfactorily proceed through a particular ISD phase, checking it against specifications from an earlier phase may identify the problem. If a problem is identified, the training product must be corrected in the deficiency phase. Back in the analysis phase, the training package must be corrected and re-developed from that point forward. Training developed with the ISD model depends upon systematic movement through all five phases at least once or more than once, if revision is necessary. The evaluation phase tells us if training was successful, how successful it was, and where to correct the problems. Evaluation is the ISD phase that ties all other phases together through feedback. The outcome of one phase become input for the next. Feedback ensures that the transition of training through the phases stays on course.

9: Instructional Systems Design (ISD) - Training Industry

The design phase is the planning stage of ISD. Its purpose is to transform relevant content into concise, behavioral objectives, creating the instructional "blueprint" that will direct the development of all training materials, tests, and methods.

ISD Models The process of designing and developing training can be viewed as a system, enabling us to identify different functions in that process and how they interact with each other. While design and development are separable activities, the overall process that includes both activities has been variously named. Andrews and Goodson reviewed over 60 such models. Many large organizations, including the U. To date, no other approach has been shown to be more effective than ISD. In the analysis phase, we analyze the performance requirements of the job or task and the needs and characteristics of the learners. We specify the performance gap difference between actual performance and mastery performance , so that all necessary but no excess content can be selected. In addition, we identify solutions other than training, such as job aids, performance support systems, personnel selection, and motivational strategies. During the design phase, we break down tasks into skill and knowledge components, identifying all necessary learning components to ensure complete instruction; and, to ensure lean instruction, we exclude extraneous components. We develop specific instructional objectives and test items to measure learner achievement of the objectives. Instructional strategies are designed and media choices are made for each objective, according to research-based principles, such as the events of instruction and conditions of learning discussed in *The Conditions of Learning: Training Applications* Harcourt Brace, In the development phase, we develop materials to match the specifications derived during the design phase. Depending upon the media and delivery systems selected, we produce courseware for live classroom training and for computer-based and Web-based instruction. We strongly believe in the power of formative evaluation, in which we pilot test draft instructional materials with representative members of the learner population. Formative evaluation yields data to inform revision decisions, to improve the instruction. Summative evaluation assesses the overall value of the training or compares new training with alternatives. The ISD process is iterative, rather than linear. All activities are goal-driven, and all phases of the process feed information to the other phases. Most organizations that use ISD have their own models, but generally they follow this same generic pattern. The Benefits of ISD The systems approach to training and the associated ISD models grew out of a need to increase drastically the effectiveness and efficiency of instruction. The critical need to train large numbers of people quickly during World War II led to research and development efforts that gradually came together as ISD. Many other ISD models have been constructed to satisfy specific organizational requirements. Early applications of ISD brought about measurable and often dramatic increases in the effectiveness and efficiency of training efforts. These and other early successes led to wide acceptance of ISD. Training developed according to ISD principles is generally recognized to be job relevant, effective, and time efficient. However, ISD may not be appropriate to all training development efforts. Because the initial costs of an ISD project are relatively high, ISD is most practical and cost effective when the following conditions obtain: Large numbers of learners must be trained. A long lifetime is expected for the program. Standard training requirements must be maintained. High mastery levels are required because of criticality, such as safety or high cost of errors. Training is valued in the organizational culture.

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