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MODEL OF INSTRUCTIONAL DESIGN BASED ON CONSTRUCTIVISM AND COMMUNICATION THEORY

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ABSTRACT

Instructional Design is the complementary element of the contemporary education standards. Through the well-designed instruction; there can be effective, mastery learning of the students that the students are the main-concern of the teaching-learning process. Designing instruction is the important step to make students understand, learn more about creating knowledge into practice version by experience reality itself. Instructional design is systematically designed that also affect individual human development. Instructional design conducts to the system approach. What it means that there are input, process, output and feedback in order to apply students' needs, resources as input, application of learning-teaching activities as process, results of learning as output, complementation of weaknesses in learning as feedback.

Instructional Design is about designing interactions based on the content, materials of the course in order to catch, support the expectations, needs of students. Therefore; there can be alternative models about the instruction that can be implemented according to level, understanding, needs of the students. According to theoretical foundations about instruction and learning theories, we are moving to the constructivist perspective on the understanding of the students and their learning in their own way. Constructivism and communication theory became the important cores of the instruction in today education and teaching-learning environment. All these mean that learning process based on constructivism requires to think both content and context efficiency for creating meaningful, experiential learning in teaching-learning process within the instruction and its principles.

Communication Theory, Constructivism, System Theory, Systemic Approach and İşman Model give light or base to construct the Model of Instructional Design based on Constructivism and Communication Theory. The

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model became the harmonic integration of thoughts that includes these components as Instructional Goals, Instructional Analysis, Entry Behaviors / Learners, Performance Objectives, Delivery System based Communication Process, Summative Evaluation, Results/SWOT Analysis. The designed model is important and can become an alternative to the instructional design models as including the base of communication, importance of learner, revision of the weaknesses on the model in itself.

A- IMPORTANCE OF INSTRUCTIONAL DESIGN AND MODELS IN EDUCATION

Instruction is the set of events that enhances learning of individuals. Instruction is the part, element of education that should be changed according to needs, expectations of students through the effect of globalization, technology and competitive environment. As Gagne, Briggs, Wager (1992) indicate that instruction is human undertaking whose purpose is to help students learn. Therefore; instructional design is based on aiding the learning of individual. Instructional design creates long-range effect to students but it can be applied immediately.

In addition to this; instructional design is systematically designed that also affect individual human development. Instructional design conducts to the system approach. What it means that there are input, process, output and feedback in order to apply students' needs, resources as input, application of learning-teaching activities as process, results of learning as output, complementation of weaknesses in learning as feedback. Also designed instruction must be based on knowledge of how human beings learn.

From the systematic and systemic side of the instructional design; there should be events that facilitate productive teaching and essential learning of students according to needs, expectations of them. In order to understand the importance of instructional design, there should be known the history of instructional design. After the World War II, the effect of technology, globalization and competition; everything change and these domains affect all fields, especially the design, structure of education. Instructional design is the part of the education that helps the long-range effect, complementation of problems, and weaknesses in learning-teaching process. Reiser (2001) points out that systematic instructional design procedures have been developed by system approach, instructional system design, instructional development, instructional design. The effect and application of instructional design reflect the changes according to long-term history. In 1950's; instructional design is

about training device like film, etc. Then, it changed as the sense of real experience. After 1960's; instructional design converted to visual communication and media research. Then, there was conflict between behavioral psychologists in order to define instructional design. Saettler (1960) categorized the instructional design into six parts as programmed instruction, individualized instruction, teaching machines, behavioral objectives, computer-assisted programs, and system approach. The history leads us to think expectations, needs of students in order to design qualified instruction (Wager, 1995).

Instructional Design is about designing interactions based on the content, materials of the course in order to catch, support the expectations, needs of students. Liu, Gibby, Quiros, Demps (2002) indicate that designing of instruction and consciousness of instructional design should be based on high technology, competitive changes, especially consumer oriented markets that needs, expectation of students get importance.

Instructional design is process, discipline, science, and reality (Berger, Kam, 1996). It helps to make learning of individual easy, fast and productive and requires teaching process as adaptable, accountable, and beneficial to the development of individuals. Instructional design should be in both systematic, systemic process. I can be changed according to developments, changeable needs, and expectations of students. Within the instructional system; there should be known needs, goals, objectives, planned sequences of instruction, performance objectives, characteristics of learner with considering internal and external contexts, conditions, assessment, delivery system of instruction and evaluation. In designing instruction, the essence of instructional design, delivery of instruction has the important role to make system efficient. There should be well-understood instruction in order to create long-term effect for the qualified education standards based on student-centered learning-teaching process. Instructional design is important because of enhancing learning of individual and helping to get beneficial results in terms of learning-teaching process. When the students actively, meaningfully learn the instruction, instructional design can reflect the productive results for the development of qualified education that instructional design is core essence of education and has importance for developments of each society members.

Instructional design model requires understanding what model is. Model is an explanation of how phenomena occur and how data or events are related. Modeling activities are integrated into a learning cycle paradigm. In addition to this, Reeves (1995) reflects that model can be defined as a kind of metaphors

that shows us to see different or unexpected condition in order to solve problem in instruction. It provides us to visualize and understand units of instruction in manageable way for catching qualified coordination. Model can be categorized as system environment, structural model and process. Banathy (1987) states that model is experiences of realities, mental image by merging rationality, system inquiry, system methodology, philosophy in integrated and dynamic way to coordinate occurred problems in contemporary standards.

Richey (1995) requires a hybrid instructional model combining context importance and systemic side of system in order to reflect the importance of constructivism in designing instructional design model based on current trends. According to Gustafson (1996), it's necessary to define the term of instructional design and related terminology in order to discuss instructional design models. It's required what is learned, how it's learned, tryout-revision, assessing whether learners do learn are the step-by-step components of the instructional design. In instructional design models; it's important to understand planning and management of process, communicating with clients, subject matter and aiding decisions, structure of content, learning activities (Trowbridge, Bybee, 1990). From the new trends and issues in education, because of developments on technology the alternative models have been offered and constructivism shows its importance in designing instruction. Therefore; it's time to rethink on instructional design and related models for constructing update-productive design in order to make individuals learn more in meaningful, experiential way with combining content and context factors together.

B- THEORETICAL FOUNDATIONS ABOUT INSTRUCTIONAL DESIGN AND MODELS

According to history of instructional design; there are changes in the components of instructional design that are affected from globalization, competition and technology. The main, important component of instructional design is the learning theories that are theoretical foundations of instructional design. The changes of the learning theories require reconstructing, rethinking on the instructional design and alternatives models are designed day by day towards hybrid, adaptable consciousness (Nowlan, 2000).

Mergel (1998) emphasizes the changes of instructional design from changes of learning theories. Mergel (1998) contributes that there should be the combination of all learning theories in order to complement the weaknesses

sides of them between each other's and these information carry us to examine hybrid essence of models.

In addition to this; there is a recognizable shift to the constructivist approach in education and also design in instruction to make centered all facilities, alternatives, theory and practice for the development, learning of individuals through the real sense of experience.

In order to come up with constructivist approach and its effectiveness in instructional design, the alternate learning theories also should be known. Behaviorism is based on observable changes in behavior. It requires stimulus-response interactions that connect learning to the behaviors of students. According to behaviorism, instructional design considers the behaviors, stimulus-response interactions of students without considering what is happening in their minds and essence of experience. On the other hand, cognitive approach is based on thought process behind behavior. Students can actively solve issues in their mind that instructional design requires concentrate on mind of students from cognitivists' perspectives. In the constructivism, there is learning through the experience of students with matching multiple realities with real life situations. Each of the learning theories has some strong and weak sides that there should be complementation of weak sides through supporting the strong sides to the instruction. But through the development of technology, competition and globalization, constructivism requires learning by doing based on the needs, expectations of students and get importance on the learning-teaching process and designing instruction. According to reflection of constructivism in instructional design; the main consideration become based on needs of students, experience of real world, constructing own learning. Therefore; constructivism and hybrid models have impact on the contemporary design of instruction (Moallem, 2001).

Tennyson (1995) also reflects the changes in instructional design from the effect of learning theories and requires four alternative models of instruction. But with the effect of Wilson, Teslow, Jouchoux (1995) studies about constructivism in instructional design let us to understand the change of environment, expectations of students, essence of learning by doing in order to construct meaningful learning standards. The day is the constructivism and meaningful learning and hybrid models that can be through own experiences of realities for long-term effect for contemporary education standards. Therefore; after all examination of theoretical foundations of learning theories, it can be indicated that working with constructivism and hybrid models which means facilitating for students' expectations and experiences in instruction by

merging communication theory that is essential process to design for effective new instructional design model.

C- IMPORTANCE OF CONSTRUCTIVISM AND COMMUNICATION THEORY IN INSTRUCTIONAL DESIGN

As Savery, Duffy (1994) state that constructivism is a philosophical view on how we come up to understand or know. Constructivism requires learning of individuals through the experiences of real world. Constructivism is an alternative for problem-based learning in order to reflect new framework for designing instructional model. Cobb (1996) indicates, constructivism handles that understanding is in our interactions with environment in learning process. Within the learning environment, cognitive conflict or puzzlement is the stimulus for learning and determines the organization and nature of what is learned. In the constructivism, knowledge evolves through social negotiation and through the evaluation of the viability of understanding. Savery, Duffy (1994) reflect the effect of constructivism to the instructional principles; it is obvious that there is anchoring all learning activities to a larger task or problem, supporting learning in developing own perspective, designing an authentic task, designing learning environment, giving learner ownership of process used to develop solution, creating critical learners' thinking, encouraging testing ideas, providing opportunity for and supporting reflection on both content learned and learning process. All these mean that learning process based on constructivism requires to think both content and context efficiency for creating meaningful, experiential learning in teaching-learning process within the instruction and its principles.

Wilson, Lowry (2000) state that constructivism is a view of learning theory that let students learn by fitting new information together with what they already know. And they attribute that people learn best when they actively construct their own understanding. This information belong us to think and recognize that individuals can learn more and reflect long-term effect in order to create meaningful learning and understanding through the experience of realities. Therefore; qualified learning and designed instruction can be concentrated on constructivism framework and communication theory in order to create efficient learning-teaching process and productivity.

With the development of globalization, technology and competitive environment; constructivism and communication theory gained popularity in instructional design and creating a model. Dick (1992) reflects that principles of instructional design have been changed and technology helps the

development of constructivism role in instruction. In addition to this; Merrill (1992) points out that in solving, it's necessary to be collaboration that education and instruction should require. Constructivism is an alternative view of learning that requires collaboration; importance of delivery system in instruction in order to make individuals' actively learned and constructed meaningful understanding within the instruction.

Communication theory requires the importance of communication process in order to let students well understand in a meaningful way. Romiszowski (1998) defines that communication can be successful if the message can be reached to the communicator in a right way and condition. Communication processes with its content and context interrelations provide delivery system of instruction in a two-way continuous interactivity. Because of being interactive and continuous; Slater (1993) refers that learner can face with theory and practice together and convert learning process into meaningful and productive understanding. Communication process and theory require understanding need, expectation of students and making them active participants within the instruction that nowadays instruction should be learner centered.

Constructivism and Communication Theory are important for today's instructional activities and productive learning. It's important to apply new model based on systemic, communication and constructivist view in order to make model adaptable for catching more implications of theory and practice in order to come up with qualified standards in education as a whole picture.

D-MODEL OF INSTRUCTIONAL DESIGN BASED ON CONSTRUCTIVISM AND COMMUNICATION THEORY WITH ITS THEORETICAL BASES

Communication Theory, Constructivism, System Theory, Systemic Approach and İřman Model give light or base to construct the Model of Instructional Design based on Constructivism and Communication Theory. The essence and relations of each component in constructing Model of Instructional Design based on Constructivism and Communication Theory are explained in below:

1. Communication Theory: As Romiszowski (1998) states that communication should be two-way interactive process which starts with sender, transmission, receiver and conclude with feedback to make process interactive. The essence of communication process is to make other participants know what you really want to say. Therefore; delivery

system is important to let others understand what you say, think and want as purpose. Romiszowski (1998) reflects that communication is very important as base in designing the Model of Instructional Design based on Constructivism and Communication Theory. In learning and instruction; communication process reflects psychological and engineering model as well. Communication process includes engineering model that start with information source, message, transmitter, signal, received signal, message and conclude with destination orderly. Through this process, noise sources also can be seen in signal stage. Psychological model refers reaction and interactions with including feedback to the process. Within the instructional process, communication is important to make qualified instruction in delivery system. In the Model of Instructional Design based on Constructivism and Communication Theory, communication theory is important base that embrace all delivery system in order to deliver instruction, make learning process continuous and complement weaknesses of learning through doing formative evaluation in that process.

2.System Theory: System Theory concentrates on system approach. System approach includes input, process, output and feedback. This requires step-by-step process. Within the instructional design, Banathy (1987) handles the system inquiry and design inquiry. System theory is also the guide; base of Model of Instructional Design based on Constructivism and Communication Theory that embraces general theories of system, methodology and philosophy. As a learning theory and principles, Model of Instructional Design based on Constructivism and Communication Theory includes constructivism in order to design rationale, experience, and contextual space from the point of design inquiry new model for the instructional design system views. The system will be learning-experience level in order to combine theory and practice together.

3.Systemic Approach: Banathy (1987) indicates that system should be open, flexible and adaptable for the changes besides being the step-by-step process. Model of Instructional Design based on Constructivism and Communication Theory also reflects the adaptable, flexible manner with adding the SWOT (strength, weak, opportunity, and threats) for the conclusion of the model. It will be changeable, adaptable besides systematic process.

4.İşman Model (2003): Model is based on system approach which embrace input, process, output and feedback. In input stage; there are needs, content analysis orderly. In the process stage; there is pre-test, complementing of weaknesses, and application of instruction. In output stage, there is testing and evaluation, repairing of weaknesses. In feedback stage, there is a turn to related step and final stage is conducted to learning that includes mastery learning. İşman Model is based on system approach that give a light to understand system approach and experience of learning as base of new model.

5.Constructivism: Constructivism is the learning theory and philosophy that require experience of students to construct learning. According to constructivism, students should construct their own meaning beside strong side of other side of learning theories. Model of Instructional Design based on Constructivism and Communication Theory also requires the learning-experience level of students to let them construct their meanings through continuous delivery system understanding based on communication interactive process.

E-STAGES OF MODEL OF INSTRUCTIONAL DESIGN BASED ON CONSTRUCTIVISM AND COMMUNICATION THEORY

Stage 1: Instructional Goals

According to needs, expectations of students; expected need and current resources analysis, environmental effects that can be expenditures, motivation, etc., teacher performance on subject matter, learning context as providing theory and application to the students, the goals should be defined. It's important to check again whatever sub-components are effective or not. Therefore; before starting the efficient goal setting, there should not pass to the second stage. Designers should spend much time in defining goals that are the important process to make us come to the concrete conclusion.

Stage 2: Instructional Analysis

The second stage should handle the learning task analysis and preparation of schedule for students in order to inform them about what they will learn. Through the examination of required skills for the level of students and informing students what they are going to learn. There should be focus and interrelations between goals and required skills in order to pass next step which is entry behavior, learner.

Stage 3: Entry Behaviors / Learners

After the interrelations of goals and required skills; there should be examination of who are learners, what are their capabilities and characteristics, what they learned before to gain the required skills which goals and instructional analysis offer. Entry behavior is the third stage. Because goals firstly should be defined based on alternative resources and task should be prepared in order to know what we're going to do. This system is designed to make students to construct their realities. Therefore; learners' previously learned capabilities and their traits, abilities have important to come up with accountable, efficient results in learning.

Stage 4: Performance Objectives

After knowing the target group who are learner and their entry skills, there should be decision which objectives can be stated in order to add more meaningful learning to the learning journey of students. Objectives, of course will be derived from goals, analysis of instruction and learner examination to make more specific understanding, application and assessing.

Stage 5: Delivery System based Communication Process

The most important phase/stage of the model is delivery system. It's real that meaningful understanding can be occurred how much successfully message is delivered to the communication participants. Therefore; teacher and students are the main communicators within instruction that communication should be flexible, adaptable and efficient in order to create successful teaching-learning process. Within the communication process; sender should be open minded, have willing, subject matter in order to express groups of ideas as a teacher. In order to apply constructivism in instruction, he/she transmits messages through the instructional strategy and related productive media. Both sender and receiver should have consciousness that cultural, technical, physical noises can disrupt the delivery system. The characteristics and effect of environment as psychology should be known for receiver. Teacher should do formative evaluation when message response comes back to him/her. Formative evaluation will require seeing weaknesses of learning and making communication process continuous until meaningful learning occurs.

Stage 6: Summative Evaluation

If the communication process as delivery system successfully apply within the instruction through letting them to learn, construct meaning; there should be summative evaluation in order to indicate the success of students. Through the two-way communication and constructivism; students should reach theory and practice should reflect success in summative evaluation.

Stage 7: Results/SWOT Analysis

From the result of summative evaluation, the system or model should be re-examined based on SWOT analysis. SWOT analysis will require the strength, weak sides of the system besides reflecting opportunities to apply this model and threats to apply model as self-criticism for further successful application of Model of Instructional Design Based on Constructivism and Communication Theory.

F-IMPORTANCE OF MODEL OF INSTRUCTIONAL DESIGN BASED ON CONSTRUCTIVISM AND COMMUNICATION THEORY

This model was designed with the complementation of constructivist view, communication theory, systemic, system approaches and reflections of İşman Model. The design model contains the creation of learning authenticity, meaningful understanding, long-term effect and self-criticism in order to provide qualified instruction for aiding individual learning and developments.

Communication Theory requires success of understanding and delivery system between communicators that is the essence of instruction. System approach requires being step-by-step and systematic in order to apply phases in instruction. Systemic approach also requires being open, flexible and dynamic as a system. İşman Model requires to understand system approach with the importance of instructional technology and provides guide for the teachers as different alternative design models.

Model of Instructional Design based on Constructivism and Communication Theory is the alternative design which is designed for subject-matter experts in order to create qualified teaching-learning process to catch the popularity and effectiveness of constructivism, communication theory, systemic, system approach with their important sides and contributions to the new instructional design.

G- CONCLUSION

As a conclusion, Model of Instructional Design based on Constructivism and Communication Theory contributes to create meaningful learning and understanding for qualified instructional design in contemporary educational world. With the development of high technology, globalization, competition; alternative new models about instructional design arise to be guide for qualified learning and teaching process in a productive way.

Model of Instructional Design based on Constructivism and Communication Theory is the combination of system theory, communication theory, systemic, system theory, constructivism and reflections of İşman Model

in order to be a alternative guide to the instructional design and productive teaching-learning process. Model of Instructional Design based on Constructivism and Communication Theory aims to include continuous communication process as delivery system in order to make learning meaningful and full of theory and practice through the experience real world and requires SWOT analysis (strength, weak, opportunity, threats) for doing self-criticism of instruction which are the strong side of the Instructional Design based on Constructivism and Communication Theory Model for complementing the other alternative models as new guide.

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