Overview of Instructional Design Model: Issues and Challenges

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Abstract:
Instruction design (ID) is perhaps the most critical component of material development of today’s focus in education industry, since the effectiveness of learning is controlled primarily by the nature of instruction. How instruction is delivered to the audience is the key factor that decides the success or failure of the content designed by the course designer. In today’s scenario lot of well-known ID model are available, in this paper we review the important aspects of ID models and the current issues and challenges that are faced while implementing it in the real world situation by the instructional designers while preparing the course materials for learning.

Introduction:
ID models describe a systematic process, typically delineated by phases. They provide a structure to use when designing instructional products and experiences to meet learners’ instruction. ID models provide a series of steps to help us communicate with clients to determine project goals, learner outcomes, timelines, and budget. This is a systematic process with roots in behaviourist theory. This is a valuable process particularly useful for teaching concepts, procedures, and basic skills. On the other hand, there are also learning goals that involve critical thinking, problem solving, and lifelong learning skills (Dunlap & Grabinger, 2003). There are also benefits of employing new media in learning and teaching and embedding the use of Information Technology into the curriculum. These methods of learning are being harnessed to improve access, enhance the quality of learning, increase effectiveness of teaching and hopefully provide cost efficiency (Kyriaki Anagnostopoulou, 2006). The term instruction, in this paper, refers to the content that is delivered to a learner. The process of delivery is important in instruction design, since that is what encompasses much of the pedagogical issues. As practitioners we need to be aware that online learning experiences can be designed in a number of ways, some of which provide learners with richer online learning experiences than others; but the ultimate intention here is how well the content is received and delivered to the respective audience using the best suited ID models.

Overview of Common Weakness in Material design:
Teachers prepare the learning environment for learning to take place at a lecture/ seminar room early to make sure that presentation equipment’s are in order, seating capacity and the lighting is perfect for the class to conduct etc. Inglis et al (1999) identify three zones of expertise: information technology, instructional design and subject knowledge. It is unlikely that one individual will be proficient in all three areas. So we might need a team of expertise people to form a group for the sole purpose of designing learning material to be accessed online by traditional students. Let us take for example to deliver the content using a textbook approach. As a teacher, you'll need to make many decisions, and one of those is how you want to use the textbook. As good as they may appear on the surface, textbooks do have some limitations (Excerpted from The Complete Idiot's Guide to Success as a Teacher © 2005 by Anthony D. Fredericks).

<table>
<thead>
<tr>
<th>Weakness</th>
<th>Student Difficulty</th>
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<td>The textbook is designed as a sole source of information.</td>
<td>Students only see one perspective on a concept or issue.</td>
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<td>Textbook is old or outdated.</td>
<td>Information shared with students is not current or relevant.</td>
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<td>Textbook questions tend to be low level or fact-based.</td>
<td>Students assume that learning is simply a collection of facts and figures.</td>
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<td>Textbook doesn't take students' background knowledge into account.</td>
<td>Teacher does not tailor lessons to the specific attributes and interests of students.</td>
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<td>Reading level of the textbook is too difficult.</td>
<td>Students cannot read or understand important concepts.</td>
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<tr>
<td>The textbook has all the answer to all the questions.</td>
<td>Students tend to see learning as an accumulation of correct answers.</td>
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[Source: http://www.teachervision.fen.com/curriculum-planning/new-teacher/48347.html#ixzz1x54P2bb5]

Some of the key weakness in material design which Learning technologists [Learning technologists are a new breed of professionals who have emerged to address the pertinent issue of effective curriculum design in regards to the application of emerging technologies. Their role encompasses a variety of activities often relating to the
creation of pedagogically sound contexts in which learning can take place. Author: Oliver M. Source: Innovations in Education & Teaching International, Volume 39, Number 4, 1 November 2002 , pp. 245-252(8)] aim to address in a systematic manner. These include:

- No clear idea in selecting the correct media for using the existing resources that may lead to duplication of resources.
- Teaching Learning outcomes are not always aligned to appropriate teaching strategies; Teaching styles and strategies are not always well matched to students' learning Styles and also teaching strategies may not reflect tutors intentions, beliefs or perceptions of pedagogy and good practice what he intend to deliver.
- Instructional materials developed, which is used currently are of ad hoc process with no systematic approach. Due to many ID Models in the market it is becoming difficult to say which model will fit in material design, that lead to inconsistency as well lack in quality.
- Good Teachers doesn’t mean they are subject matter experts and they have the expertise in all domains. It is not fair to assume that academic staff can do the job of an instructional designer as well as author, edit and design learning materials.

Key factors while designing a new course / programme or preparing to adopt a standardized curriculum, you will need to be clear in defining what you expect from your audience to learn by the end of your course. By this way it helps the learners as well designer a new ways of presenting course materials that serve the learning outcomes you have chosen.

**Types of instructional design models: which one is for you?**

“Instructional Models are guidelines or sets of strategies on which the approaches to teaching by instructors are based. Effective instructional models are based on learning theories. Learning Theories describe the ways that theorists believe people learn new ideas and concepts. Often, they explain the relationship between information we already know and the new information we are trying to learn.” (Learning technology Service, NC State University, May 2006). There are almost as many instructional design models as there are practitioners of instructional design.

Gustafson's taxonomy is based on a set of assumptions that each creator of an instructional design model has made about the conditions under which the development and delivery of instruction will take place. The taxonomy assists in the classification of instructional design models as primarily focusing on developing instruction for: (a) a classroom, (b) a product (c) a system. (Gustafson et al, 1997)

**Classroom:**

Instructional design models designed for use in a classroom setting are intended to be used as general road maps to provide guidance to teachers. Models that are classified under this category accept that a teacher’s primary role is to teach, and that students require some form of instruction. These models are readily available for use by teachers and do not require input from developers. A model which is representative of this category is the one developed by Heinich, Molenda, Russell & Smaldino (Heinich et al, 2002) as shown in the sequence:

**Analyse Learner-> State Objectives->Select Methods Media & Materials-> Utilise Media & Materials-> Require Learner Participation-> Evaluate & Revise**

**Product:**

The models that fall under this category assume that a unique product is needed, one that cannot be derived by selecting and modifying/enhancing an existing one. The end product must be usable by many instructional providers and therefore the emphasis is on piloting and revision. Typical of this orientation is the model developed by Bergman and Moore (1990 cited in Gustafson et al, 1997). It was developed for the sole purpose of producing interactive video and multimedia materials. This model highlights the importance of authoring when producing "high-tech" products by including it as one of its six steps as shown below.

**Analyse->Design->Develop->Produce->Author->Validate**

**System:**

Models in this category are designed for use in the development of an entire curriculum or course. This in turn assumes substantial resources are made available and the involvement of a highly trained, multi-disciplinary team. The team will typically consist of a subject expert, a graphic designer, a developer and an instructional designer who co-ordinates the team. The materials developed are not necessarily designed from scratch, although original production is often recommended. Emphasis is placed on the primary analysis of the environment, the learners and tasks, as well as on piloting and revision. The end product is disseminated to a large audience with little or no involvement from the development team.

DSchneider believes that the term instructional design model is overloaded with various meanings. He suggests that we can find at least six kinds (at least for now):

1. **Models that describe a pedagogic strategy in detail**
   Examples: Nine events of instruction (behaviorist/cognitivist), inquiry-based learning (constructivist) (won’t be discussed in this paper)

2. **Models that relate to the quality of a design**
Example: Merrill's First principles of instruction

3. **Models that provide a method to create a design**
   Example: Instructional systems design models like ADDIE

4. **Complementary models that will enhance a design**
   Example: FEASP (Fear, Envy, Anger, Sympathy, Pleasure), Self-regulated strategy development model (strategy development), POME (Prepare, Organize, Monitor, Evaluate), Felder design model (learning styles)

5. **Change management related models**
   that specifically address the issue of introducing new pedagogics and associated instructional design models
   Example: activity theory-based expanded learning

6. **Models that describe the functions of a learning environment**
   Example: The Sandberg learning environment functions

Out of the six different kinds of models, we will only summarize three of it: (Sandberg’s/Merrills/ADDIE)

**Functions of a learning environment: Sandberg’s definition** (adapted by DSchneider)

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Teacher component: Its role is to provide something between loose guidance and direct instruction. It can be a human agent (present or distant), an intelligent agent, instructions like some text books provide, etc. This component provides information from the syllabus to the task level.

Monitor component: Ensures that something is learned. A role taken by either the human teacher, the learner (self-control) or by some program.

Fellow learner’s component: Improves the learning process (some research tries to implement artificial ones).

Learning material, often Courseware: Contains what has to be learned in a very broad sense (knowing what, knowing how). It can be computational in various ways (exploratory hypertext, lesson and task oriented hypertext, simulation software, task solving environments, etc.).

External information sources: All kinds of information which is not directly stored in the learning material (e.g. additional material, handbooks, manuals, etc.).

Tools: Everything which may help the learning process other then the learning material (e.g. calculators, communication software, etc.)
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School [a category we added]: Something that provides a curriculum and does student administration.

Key focus is how the learners got the concepts of learning outcome through the delivery of the learning materials

[Source: http://edutechwiki.unige.ch/en/Learning_environment]

Quality of a design: David Merrill's First principles of instruction

The debate is open, several grids exist we have taken Merrill’s model for 5 Star Instructional Design’s. Not applicable to transmissive (“spray-and-pray”) / or exploratory designs (“sink-or swim”).

1. Does the courseware relate to real world problems?
2. Does the courseware activate prior knowledge or experience?
3. Does the courseware demonstrate what is to be learned?
4. Can learners practice and apply acquired knowledge or skill?
5. Are learners encouraged to integrate (transfer) the new knowledge or skill into their everyday life?

[Source: http://id2.usu.edu/Papers/5FirstPrinciples.PDF]

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Many current instructional models suggest that the most effective learning environments are those that are problem-based and involve the student in four distinct phases of learning. Much instructional practice concentrates primarily on phase 2 and ignores the other phases in this cycle of learning principles.
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Method to create a design: ADDIE
The ADDIE model is a generic and simplified instructional systems design (ISD) model. ADDIE is short for Analyze, Design, Develop, Implement, and Evaluate. These five stages of the ADDIE model encompass the entire training development process; from the time someone first asks, "What do people need to learn?" all the way to the point where someone actually measures, "Did people learn what they needed?" As practiced today by instructional designers in higher education, the ADDIE model is used as an easy to remember heuristic that is an iterative not linear process. Ideally each phase of the process is informed by rapid prototyping where feedback from students, instructors, and other targeted users informs the next stage.

**Analyze** the performance environment in order to understand it and then describe the goals needed in order to correct any performance deficiencies (identify training requirements).

**Design** a process to achieve your goals, that is — correct the performance deficiencies.

**Develop** your initial discoveries and process into a product that will assist the learners into becoming performers (in training, this product is often called courseware).

**Implement** by delivering the courseware to the learners.

**Evaluate** the performers, courseware, and audit-trail throughout the four phases and in the working environment to ensure it is achieving the desired results.

**Instructional Design models what do they have in common**
When designing instruction generally we need to look out certain norms; first of all find a need and try to fill it. If the learning goals/ objectives are well defined at the earlier stage then course of instruction will be delivered accordingly. When you look into the common aspect of instructional design models is the notion of a 'classroom' setting. However, with the adoption of virtual learning environments the concept of 'anytime, anyplace, anywhere learning' and a re-visioning of the classroom are needed. It is no longer necessary for the 'classroom' to be defined as being a specific geographical location accessible between prescribed hours on prescribed days; it should be seen as being a setting, physical or virtual, which facilitates the bringing together of people with common interests and objectives. This re-visioning will assist in the conscious move away from developing teacher-centred instruction to developing instruction and contexts that facilitate student-centred, guided learning (Gustafson et al, 1997). Lecturers' roles become those of facilitators supporting the learning. They no longer have to be the fount of all knowledge and are able to share the learning experience.

Instructional design models and instructional design methods can be very complex. However, there are some common questions an educator or a course designer should ask as stated:

1. What do the learners have to learn? This does not just include definition of the subject matter but also the learning type (in particular the learning level) and a sort of description of what the learner should be able to do with his new knowledge.

2. Who are the learners? This includes assessment of their entry skills and maybe learning styles.

3. What is the setting? How many learners? How much resource can you spend? Who is teaching? Is the design "industrial" (i.e. a canned product) or can it be dynamically changed?

4. Given these constraints, what are the appropriate strategies and instructional design models? Do we need a formal instructional design method?

5. How should we evaluate the learning? Are their institutional rules?

Brent Wilson (1997) asks: “Is 'content' defined as "What is," "What is presented to the student," or what is expected to be learned?”. Most likely, we have to answer at least all these three questions. Once we answered these questions, we have to figure out how to design teaching and learning activities.

**General issues to be considered while selecting an Instructional Design Model**
First thing to be considered is what learning theory do you suggest to use or support? Are you a behaviorist, a cognitivist, or a constructivist?

What is purpose and how to you intend to use the model?

Are we looking to change behaviors or build on an established knowledge base?

What is the size of your learning unit?

Under what context we plan to use it; so we know whether it is for training purposes or will it be academically based or any specific project based training? What is the approach going to be used for presenting the knowledge; since it can be of many different approaches like procedural or declarative approach?

One model will not satisfy all the requirements for any given situation while developing a course material for any training. A number of theorists have discussed the ways in which constructivist values influence instructional design
and have proposed several principles of the ‘constructivist instructional design model’.

In the traditional approach, the instructional designer analyses the conditions - such as the content, the learner, and the instructional setting - which bear on the instructional system, in preparation for the specification of intended learning outcomes. In the constructivist approach, the instructional content cannot be pre-specified. Constructivist designers avoid the breaking down of context into component parts as traditional instructional designers do, but are in favour of environments in which knowledge, skills, and complexity exist naturally. Since objects and events have no absolute meaning, the design task is one of providing a rich context within which meaning can be negotiated, and ways of understanding can emerge (Hannafin et al., 1997). Therefore, designers develop procedures for situations in which the instructional context plays a dominant part, and the instructional goals evolve as learning progresses (Tam, 2000). Thus, constructivists do not adopt learning and performance objectives that are internal to the content domain. Instead, they “search for authentic tasks and let the specific objectives emerge and be realised as they are appropriate to the individual learner in solving the real-world task” (Bednar et al., 1992, p. 25). The goal, for instance, is not to teach a particular version of history, but to teach someone how to think like a historian.

Constructivist designers assume that every learner has a unique perspective, so the concept of the global ‘average’ learner is rejected (Bednar et al., 1992). Empowering students to make choices about how and what they will learn results to a shift from having all learners learning the same things to allowing different learners learn different things. In the opposite case, without a level of persistence and mindfulness in the cognitive process, any benefits of the process become questionable (Greening, 1998). Constructivists are also interested in the learner’s prior knowledge in terms of cognitive processes and self-reflective skills (Vrasidas, 2000). Both students’ prior ‘correct’ concepts and ‘errors’ or ‘unanticipated’ responses - often labelled as ‘misconceptions’ or ‘misunderstandings’ - are important.

Since learning occurs as an act of cognitive restructuring, students metacognitive capabilities are augmented (Greening, 1998). Correspondingly, designers are interested in the learners’ skills of reflexivity and not on remembering (Bednar et al., 1992). According to constructivism, the centre of instruction is the learner. Constructivists recommend that designers provide problems which may be solved in different ways and leave students struggle with problems of their own choice (von Glasersfeld, 1993). Such problems are regarded by learners as obstacles in their progress towards a goal. Perkins (1991a) points to the need for discovery learning through two approaches of constructing knowledge: ‘Without the Information Given’ (WIG) and ‘Beyond the Information Given’ (BIG).

According to Cey (2001), authentic learning occurs when instruction is designed to facilitate, simulate and recreate real-life complexities and occurrences. The complexity of authentic contexts must be maintained; any simplification of the knowledge base, which is the way traditional instruction deals with ill-structured knowledge, facilitates memorization but denies the development of associations between concepts and reflective metacognitive processes (Greening, 1998). Squires (1999) refers to “cognitive authenticity” through the articulation of ideas, experimentation and engagement in complex environments as well as ‘contextual authenticity’ through the relation of tasks to the real world.

Thus, constructive instructional designers must situate cognition in real-world contexts. Situated cognition suggests that knowledge and the conditions of its use are inextricably linked (Brown et al., 1989). Learning occurs most effectively in context, which becomes an important part of the knowledge base (Jonassen, 1991). The context facilitates the application and transfer of knowledge in both heavily ill-structured domains, such as medicine, history, literacy interpretation, and well-structured domains at advanced levels of study, such as mathematics (Spiro et al., 1991a). A related approach to situated cognition is anchored instruction, which emphasizes skills and knowledge in holistic and realistic contexts (Cognition and Technology Group at Vanderbilt, 1991a).

Different ways of presentation and different strategy can be used to present to the learners. A rich learning environment encourages multiple learning styles and multiple representations of knowledge from different conceptual and case perspectives (Kafai & Resnik, 1996). Our intention may vary in delivering the concept and we may use different approach via a wide range of learning contexts to aim transfer of the knowledge in a broader range of domains. On the contrary, when the learning of a concept occurs as separate topics, the learning remains inert and superficial, bringing about boredom, negative effects on motivation, and incapability of transfer to meaningful real-world situations.

Collaborative learning does not just entail sharing a workload or coming to a consensus, but allows learners to develop, compare, and understand multiple perspectives on an issue. The goal is the rigorous process of developing and evaluating the arguments (Bednar et al., 1992). Learners should be able to explain and justify their thinking and “openly negotiate their interpretations of and solutions to instructional tasks” (Cobb, 1994, p. 1051), leading towards the establishment of consensual meanings. The learning environment should make it possible for students to build their theories and articulate these theories to one another. By continually negotiating the meaning of observations, data, hypotheses, and so forth, the learners construct systems that
realize that some learning problems require highly
approach to learning is most appropriate. It is necessary to
surrounding the learning situation to help us decide which
constructivist values. We must allow circumstances
approach but we must modify it to accommodate
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give ourselves some focus in our approach to instructional
where and how do we knit everything together to at least
Technology Group at Vanderbilt, 1991a).

Behaviorism, cognitivism and constructivism - what works
where and how do we knit everything together to at least
give ourselves some focus in our approach to instructional
design? First of all we do not need to abandon the systems
approach but we must modify it to accommodate
constructivist values. We must allow circumstances
realize that some learning problems require highly
prescriptive solutions, whereas others are more suited to
learner control of the environment. (Schwier, 1995)

*Weakness in ADDIE Model / David Merrill's First
principles of instruction / Sandberg's: Functions of a
learning environment*

While the *ADDIE Model* was predominantly used in the
development of multimedia content for learning for many
years, the model has some significant weaknesses. It tends
to be inefficient because it is not iterative. Also, the linear
approach tends to work well for static content but may be
restrictive when dealing with user generated content or
learning outcomes that do not have a predetermined end
state. Perhaps the biggest weakness of the model is that it
assumes that you can know all of the requirements before
you develop the content. From practical experience we
realize that the design process (developing and
experimenting with the content) actually shapes the final
design. While ADDIE strives to identify adequate on-the-
job performance so that the learners can adequately learn to
perform a certain job or task (Branson, Rayner, Cox,
Furman, Hannum, 1975), it was never meant to determine if
training is the correct answer to a problem. The following is
a list of specific weaknesses to the ADDIE model from
Allen Interactions.

*Seven Common Weaknesses of the ADDIE Process*
[From Rapid Interactive Design for E-Learning Certificate
Program © 2007 Allen Interactions]

1.) Typical processes require unrealistically comprehensive
up-front analysis; most teams respond by doing very little at
all and fail to access critical elements

2.) Ignores some political realities. Opportunities are misses,
vital resources aren't made available, support is lacking, and
targets shift.

3.) Storyboards are ineffective tools for creating,
communicating and evaluating design alternatives. Poor
designs aren't recognized as such until too late.

4.) Detailed processes become so set that creativity becomes
a nuisance.

5.) No accommodation for dealing with faults or good ideas
throughout the process.

6.) Learning programs are designed to meet criteria that are
measured (schedule, cost, throughput) and fail to focus on
identifying behavioral changes.

7.) Posttests provide little useful information to assist in
improving instruction

*David Merrill's First principles of instruction*

First Principles of Instruction suggest that building the
content and strategy of an instructional product around real
world problems or tasks increases the effectiveness,
efficiency and engagement of the learning experience. The
issue of transferring theory into teaching practice is often
discussed in the field of education, (De Corte, 2000;
Defazio, 2006; Randi & Corno, 2007). For example, a
recent study found that most courses in higher education,
even those that are award-winning, do not effectively use
First Principles of Instruction in their teaching strategy
(Cropper et al., 2009). Without using sound theory in the
educational practice, instruction can potentially fall short of
its power to increase student learning. Research has shown
that the use of First Principles of Instruction in education
improves student learning and satisfaction (Frick et al.,
2007; Merrill, 2006; Thomson, 2002). However, although
several articles describe First Principles of Instruction
(Merrill, 2002, 2006), including methods for implementing
and evaluating these principles (Merrill, 2009), *experience
has shown it can be difficult to apply this theory into
educational practice.*

Merrill utilizes the premise that there are fundamental
principles for instructional design. He then formulates two
hypotheses. [Merrill, M. David "First Principles of
Instruction" Presented at AECT Denver October 28, 2000]

1. Learning from a given instructional program will be
facilitated in direct proportion to the implementation of first
principles.

2. Learning from a given instructional program will be
facilitated in direct proportion to the degree that first
principles are explicitly implemented rather than
haphazardly implemented.

Some of the disadvantages found from the research are
highlighted below: Abstract taken from MediaWiki, (Mar,

- The demonstration applied to individual learning tasks is
not effective unless the information and portrayals involved
are consistent with the type of task being taught.
A number of diverse schemes for identifying types of learning tasks have been planned. Teaching and applying these 4 interrelated principles in the instruction are a difficult and lengthy process.

**Sandberg’s: Functions of a learning environment**

The essential features of learning and instruction can be described in just a few words (Thomas Duffy, 2001). Learning is making sense of the world. Instruction is aiding to learn. To design a learning environment you must know the learner’s goals and the resources that are available. Then you can create learning activities.’

In accordance with the greater emphasis on learner control, learner-initiated learning processes and interactivity we see the emergence of open learning environments. An open learning environment allows the learner to learn what he or she wants when he or she wants it in the manner of his or her choice [Van den Brande, L. (1993) and Tergan, S., Hron, A., & Mandl, H. (1992)]. Technological support is indispensable to sustain such an environment because it has the potential to offer different didactic approaches and different kinds of learning material, in support of different learning goals.

Barnard, Y.F. & Sandberg, J.A.C. (1994). Distinguish six entities with which the learner interacts, that characterize an open learning environment: tutor, monitor, fellow learner, learning material, information sources and tools. A truly open environment consists of all these entities. More restricted environments may be characterized by fewer entities. For example, an information technology based course needs software, hardware and systems for the participants to use hands on to learning during the training were as business management subject taught in a university environment just need the teacher with power point slides to explain to the subject matter. So the learning environment cannot be the same for one instruction design to another; and it also depends on the teacher and the learner. The entities proposed by Barnard and Sandberg refer to functions supporting learning. They may be realized in many different ways. For example the tutor function may be realized by a human tutor or by a computer tutor, information sources may be found in books and other documentation or in information databases. The realization of each function can depend heavily on technology but this is not necessarily required. Entities can take the role of agents (especially the tutor, monitor and fellow-learner entities) and as such can be described in terms of the layers proposed by self.

**Future challenges for Instructional Design Models:**

A change in pedagogical focus has occurred parallel to the technological development. While Behaviourists’ learning theories were predominant during the early to mid-20th century, there has gradually been a shift toward cognitivistic and constructivistic learning theories during the later half of the 20th century (see, e.g., Schunk, 2003). Constructivistic approaches and associated pedagogical methods, such as problem-based learning and case-based learning, are becoming increasingly popular among teachers and pedagogues in all parts of society. The correspondence between behaviouristic learning theories and the learning technology used in computer-based training and other similar approaches is quite good, while the pedagogical shifts during the later half of the 20th century have contributed to the creation of a gap between the pedagogical requirements and expectations and the supporting technology. Current approaches to instructional design are only moderately successful in taking advantage of the new online medium due, in part, to historically linear implementation procedures. Instructional design models do not often appear to take a multidisciplinary approach to design; thereby omitting the most effective and innovative options for successful and creative online education environments. More user-responsive methods are needed to target design for the online environment that promotes effective learning. Add to it World Wide Web, the Internet, with its social media tools and multitudes of information resources, became a very popular tool for online learning and instructional designers recognized the need to integrate e-learning into the creation of learning objects and curriculums (Reiser, R. A., & Dempsey, J. V. 2012). There is a great increase in the number of online courses offered by high educational institutions (Braine, B., 2010). Technology advanced to the point that sophisticated simulations were now readily available to learners thus providing more authentic and real-world learning experiences (Markham, R)

New learning must be introduced in stages: guided learning, experiential learning and action learning (Simons, Van der Linden and Duffy, 2000). Aims of new learning include the acquisition of learning, thinking and regulation skills (Ten Dam, Vernooij and Volman, 2000). This approach makes it possible to work on the development of competencies (Stoof, Martens & Merrieënboer, 2001).

Instruction design does have limits of applicability; it’s not the solution to all the ills and problems of education and training, nor is it the only method for creating education. In particular, instructional design has limited applicability to educational experience in which (a) learning goals cannot be identified (i.e., non-instructional education). In such cases, because there is no “lead time” to the education, and since reflection and planning are central to instructional design, there is limited opportunity to apply many of its principles and procedures. An example of such a situation might be an advanced graduate class or other educational environment in which the learners have exceptional prior knowledge of the content; these students would have well well-developed cognitive strategies and be required to identify the goals of the course.
Till now most of the organization continue to produce “shovelware” (Fraser 1999), by taking information and shoveling it onto the Web in the form of a page-tuner which is “warmed over, insipid, [and] pedagogically pointless (Fraser 1999)” It is certainly not for a lack of available research and industry best practices. Experts have reminded us for decades that information-centric page-turners provide a very low learning and business impact. Some of the more famous quotes regarding poor e-Learning design include the following:

- Information is not Instruction (Merrill 1997)
- Boring instruction is not effective instruction (Allen 2003)
- People learn by doing (Aldrich 2005)

How can we conceptualize models that fit better to the real-world challenges of practitioners, while also stimulating and supporting approaches that seem more valid from a theoretical perspective? In other words, how can we strengthen the links between theory and practice in instructional design models, making them more relevant for the improvement of learning? For that purpose, in the authors’ opinion, more productive instructional design models should:

- Be highly relevant to realistic circumstances.
- Take into account the wider environment of design and development challenges, with more deliberate anticipation on implementation processes in user contexts.
- Be comprehensive, considering a more systemic view on educational improvement.
- Address learning processes and outcomes from multiple perspectives and include a wide range of influential variables.

Historically, instructional design grew out of educational psychology and became integrated with instructional technology (Dick, 1987; Reiser, 2001). Key to this merger between designers and technologists was a broad view of technology that included "soft" or process technologies such as procedures, models, and strategies intended to achieve defined educational outcomes.

In many respects the Instructional Design and Technology (IDT), community stands at a crossroads as we choose to respond to outside influences. Early-generation leaders such as Robert Gagné are gone, although some theorists continue as bridging figures, notably David Merrill and Don Ely. A number of threats to coherence in the field persist, briefly summarized: Loss of control from growth, Encroachment from related fields, Constantly evolving technologies, Setting-specific focus, Expanded performance concerns, Competing paradigms, "Difficult" knowledge base.

Key facts which as instructional design in future we need to look in will be gaming and virtual worlds: Computer games have been big business for more than twenty years, and a growing body of literature relates to game design and larger issues surrounding "new media theory" (MIT Press, 2004). Some of this work has already been applied to education (e.g., Aldrich, 2004; Gee, 2003), but much more could be done to apply gaming and simulation principles to instructional design.

Tools for e-learning design and development: A number of theories, including those of David Merrill, Jeroen van Merriënboer, Richard Mayer, and John Sweller, approach instruction from an information-processing perspective that considers optimal strategies for managing cognitive load and effectively teaching key content types such as rules, concepts, and procedures. Because these theories are themselves fairly rule-based, they are promising candidates for conversion to automated tools that specialists and non-specialists could use in designing lessons.

Modern Tools for data management and learning support: Internet and computer based learning software is easily available to know the latest happening and get the resources easily available and instruction will be more routinely available to learners, instructors, and managers.

Changing economies: Education tends to be a very labor-intensive, expensive activity, with expert designers and teachers crafting and delivering courses over extended periods of time. Network and presentation technologies have led to renewed emphasis on resource-based learning (Hill & Hannafin, 2001). That is, more attention is given to resource development for e-learning than is true of a typical face-to-face course. Several trends affect the economies in emerging e-learning environments (cf. Wilson, 2002):

Conclusion:
Good quality content is, perhaps, the most pressing problem for the instructional designer: what method to use it for adaptation in the learning environments. There was some agreement that different instructional design can all be useful depending on context, especially the ‘state’ of individual learners and the nature of the subject matter. Ensuring good quality requires attention to a number of different aspects like; visual interface and media have received a fair amount of attention. Instructional design gives you the outlay of how to module the course material to suite the requirements of the learner and also keep in mind the outcome of the course delivered meet the expectation of both the learner and the trainer. While selecting an ID Model first identify the most appropriate approach that will suite the learning environment and don’t be dogmatic about any single theoretical design approach. However, pedagogy and related aspects are confined to academic research programmes, and yet to reach the practical world. In this paper, we have outlined the major aspects of instruction...
design, briefly looking at some of the major issues for each of them and the challenges ahead in ID Model. There was some discussion about whether we needed new learning theories (such as connectivism) to account for social networking and other recent developments in media, but there was some skepticism about whether theories such as connectivism would fit easily with an instructional design approach. The points mentioned here would provide a feel for the kind of issues, and challenges faced in ID.

Results from many research showed that the instructional materials employing ID theories, models and learning theories are more effective in acquiring correct understanding of concepts. These results also showed that the emphasis on the ID theories, models and learning theories in designing instructional materials is important as it gives more meaningful learning to the students. Hence, educators and instructors have to take into consideration ID principles when they are designing material for the purpose of instruction.

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ADDIE+Instructional+Design+Process

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Author’s profile

Naganathan Venkatesh obtained his Degree and a Master degree in Computer Science from University of Madras, India as well he also holds another Masters Degree in Human Resource Management and presently he is pursing PhD in Computer Science & Engineering from University of Madras, India. As Research Scholar, from NITTTR(National Institute of Technical Teachers Training and Research, Ministry of Human Resource Management, Govt. Of India) he has published many international journals to his credit. He is also a charted member of Microsoft and holds Microsoft Certification in MCAD.Net, MCPD.Net, MCSD.Net and MCTS in SQL Server 2005 and BizTalk Server 2006. He is also a ACTA (Advanced Certificate in Training and Assessment) certified Trainer, Assessor and course developer awarded by WDA, Singapore.

He got fifteen years of work experience out of which; 5 years he worked in software industry with different roles played - Business Analyst, Associate Consultant and Program Manager for various clients in US and India whose company status was PCMM Level 5. In training industry he has over 10 years experience; roles played has a corporate trainer, Train the trainer, Chief Manager, Senior lecturer, Assistant Dean, Academic Head. He had delivered and conducted wide range of training in Information Technology, Business Management and Human Resources Management subjects; for various top corporate clients and leading Universities from US, UK and Australia. He had delivered number of technical and marketing seminars in US, India, Singapore, Malaysia and Indonesia for respective employers he worked earlier.

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