

ASIE Model: An Innovative Instructional Design Model for Teachers in Enhancing and Sustaining the Quality of the 21st Century Learning

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ABSTRACT

An effective and systematic design of instruction will determine the quality of learning and teaching practices. Hence, instructional design models are required, to move from just adopting a standard approach to developing models that have an impact on learners' profiles, creating a much better learning experience, skills, and knowledge both in the classroom and online. The 21st Century Learning Framework requires learners to develop their thinking skills, communication skills, collaborating skills and enhancing their creativity, (4Cs) towards establishing "globally competitive learners." An Integral ASIE Instructional Design Model is an innovative 21st Century teachers' designing tool that provides a solution to the above challenges. The Model assist teachers in *Planning, Utilizing and Sharing* (PLUS) instructions with others across nations. It promotes the Professional Learning Community practices where educationist, stakeholders, parents, and corporates work collaboratively ensuring its quality and sustainability in addressing the future employability issues of the learners. Results from 5 Likert Scales Questionnaires given to teachers in workshops and pilot project conducted, shows positive views on the model.

Keywords: Instructional design model, 21st- century learning skills, ASIE ID Model, Higher Order Thinking Skills, Professional Learning Community.

1. INTRODUCTION

An effective and systematic design of instruction will determine the quality of learning and teaching practices. It is the "heart" of the teaching profession and the "initial step" of teaching procedures before entering the classroom since the instruction planned derived from a given syllabus, fulfilled the intended learning outcomes of a nation's education policy. Hence, Oblinger & Oblinger [2] suggested that instructional design (ID) models are required, to move from just adopting a standard approach to developing models that have an impact on learners' profiles, creating a much better learning experience, skills, and knowledge both in the classroom and online. Partnership for 21st Century Skills [13] formulated the 21st Century Learning Framework (Figure 1) which requires learners to develop their thinking skills, communication skills, collaborating skills and enhancing their creativity, (4Cs) towards establishing "globally competitive learners." An Integral ASIE Instructional Design Model developed by Ismail and Balakrishnan, [8], is an innovative 21st Century teachers' designing tool that provides a

solution to the above challenges. This "learner-centered approach" interactive online ID model in designing instruction, engage learners exploring and unleashing their potentials in generating and creating ideas through Higher Order Thinking Skills (HOTS) activities.

2. PROBLEM STATEMENTS

The challenges and complexity of today's learning environment faced by teachers besides their heavy workload, time constraints and other issues existed have a great impact on the teachers' instructional planning. Thus the Integral ASIE Instructional Design Model (Figure 2, Table 1) developed may provide solution to the current issues.

3. RESEARCH QUESTIONS

The following research questions may trigger teachers to think the best possible planning strategies to fulfill the 21st Century learning framework through the application of ASIE ID Model.

- Does the model able to assist teachers design their instructions?
- Does the model relevant to the 21st-century learning & teaching strategies.
- Does the model provide improvement of knowledge & skills among teachers in instructional planning?
- Does the model foster "learner-centered" practices towards teachers' instructional planning.

4. THE OBJECTIVE OF THE STUDY

The main objective of this study is to look at teachers' views on the effectiveness of the newly developed ASIE ID Model in term of the four items based upon the above research questions, namely its practicality in instructional planning, relevance towards the 21st century learning environment, improving knowledge & skills among teachers and fostering "learner-centered" practices towards teachers' instructional planning.

5. RESEARCH METHODOLOGY

The theoretical and operational aspects of ASIE Model are given to the 120 samples of teachers participating in the project. The hands-on online session is conducted followed by a two-month application of ASIE Model in their instructional planning. The 5 Likert Scale Questionnaires is given to the respondent in getting their views on ASIE Model through the descriptive statistical analysis.

Theoretical Framework

The Integral ASIE Instructional Design Model has fundamentally encompassed the philosophical attributes of metaphysics, epistemology, axiology, ethics and logic. These philosophical underpinnings strengthen the need for professional education player primarily classroom teachers to execute this model in their daily teaching and learning endeavors. Theoretically, by looking at various perspectives, ASIE Model belongs to the paradigms of behaviorism, cognitivism, constructivism by Jonassen [4], and connectivism by Siemens [5]. New technology forces the 21st-century learners to process and apply information which leads to the emergence of connectivism. According to Siemens [5], connectivism was driven by the understanding that decisions were based on rapidly altering foundations. Andrews, & Goodson, [3], Seel, [12] and Gustafson, Branch [7], agreed that some of the conventional models are initially designed for Instructional System Development. Nevertheless, ASIE Model is a classroom-based ID Models which follows the principles of instructional design.

6. PRINCIPLES OF INSTRUCTIONAL DESIGN MODEL

Research attests that instructional design is the youngest discipline in the behavioral sciences. However, its impact on learning activities of the military, business organizations, and other non-governmental organizations has been very remarkable. Nevertheless, the impact of Instructional design models in the classrooms of our educational environment has not been notable as expected.

Instructional Design is a system of procedures for developing educational and training programs in a consistent and reliable fashion. According to Gustafson & Branch [7] and Seel [12], it is a complex process that is creative, active and iterative. The dynamics learning process involved multi-sensory, collaborative, and kinesthetic learning experience integrated into the learning activities. The improvement of dynamics teaching and learning process needs teachers understand deeply the areas of instructional design as part of their instructional planning. However, ID model needs to move from adopting a standard approach to developing models that could be customized to the 21st century needs of each learner and thereby creating a much better learning experience both in the classroom and online. Hence, Oblinger, Oblinger [2] suggested that traditional ID models will have to be re-modelled and re-designed to deliver instructions to learners in the information age today. Especially during the times when instructional approaches are becoming more learner-centered than process centered.

The 21st Century Learning

A drastic technological development leads to the global transformation process resulting changes in socio-politico-economic structures, government policies, as well as the restructuring of educational policies and practices. Technologies influenced in every aspect of human lives. Although automation progressively replacing human forces, human brains are still much needed in creating innovative ideas towards new direction and invention. Thus, student needs education which enables them not only to gain knowledge but skills that are required at the workplace.

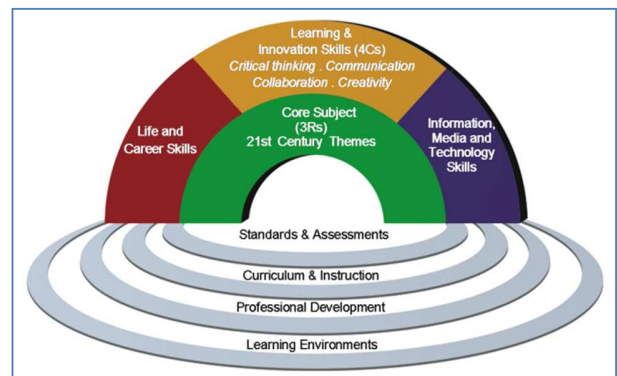


Figure 1
The Framework for 21st Century Learning
Image adapted from <http://www.p21.org/>

The demands of human creativity and innovative ideas challenge the current education strategies and practices. P21's Framework for 21st Century Learning (Figure 1) was developed to address the issues and find solutions to the challenges. (<http://www.p21.org/our-work/p21-framework>). The 21st Century framework proposed four areas of required skills for learners namely learning and innovation skills, life and career skills and information, media and technology skills. Those skills are integrated into the proposed core subjects supported by 21st Century themes in strategizing their instruction effectively to accomplish learners' outcomes, unleash their potentials, generates their critical and creative minds establishing "globally competitive learners". Mishra, & Koehler [14] argued that teachers too need to be skillful in integrating technological, pedagogical and content knowledge (TPACK).

An Integral ASIE Instructional Design Model

ASIE Model is an acronym for Analyze, Strategize, Implement and Evaluate (Figure 2, Table 1). It is an integral instructional design model consisting four components developed as alternative solution to the challenges mentioned for schools and institutions of higher learning in the 21st-century learning environment.

According to Ismail, Balakrishnan, Wahid [10][11], ASIE Model has a planning mechanism known as Multiple Integration Worksheet (MIW). Unlike the rest of the models, these unique features guide teachers in the process of formulating & integrating the instructional items. The sequencing of the components is in the form of a cycle known as "Reflection Cycle". Teachers need to reflect between and within components to identify learners' needs in relation to the aspects and items in the components before doing their instructional planning.

The instructional planning begins by identifying the instructional profile which refer to several customize items such as subject, theme, learning area, learning outcome and other related items. Learners' profiles such as multiple intelligences, learning styles, learners' psychometric tests score, learners' prior knowledge and skills or other relevant items are also analyzed and identified for the purpose of an appropriate selection of instructional media.

Teachers may include, exclude or create new items accordingly since the system allows customization.

In the second component of the model, the integration of instructional media as proposed by Anderson & Glenn [6] and Ismail [9], in the planning are identified, features of the 21st century learning skills are analyzed, various instructional tools such as techniques, methods, approaches & activities featured by Newby et al.[15] are selected, appropriate thinking tools especially dealing with the principle of higher order thinking skills (HOTS) and aspect of moral values are identified. This leads to the formation of instructional questions. They are essential questions for the topic which formed instructional strategies in MIW.

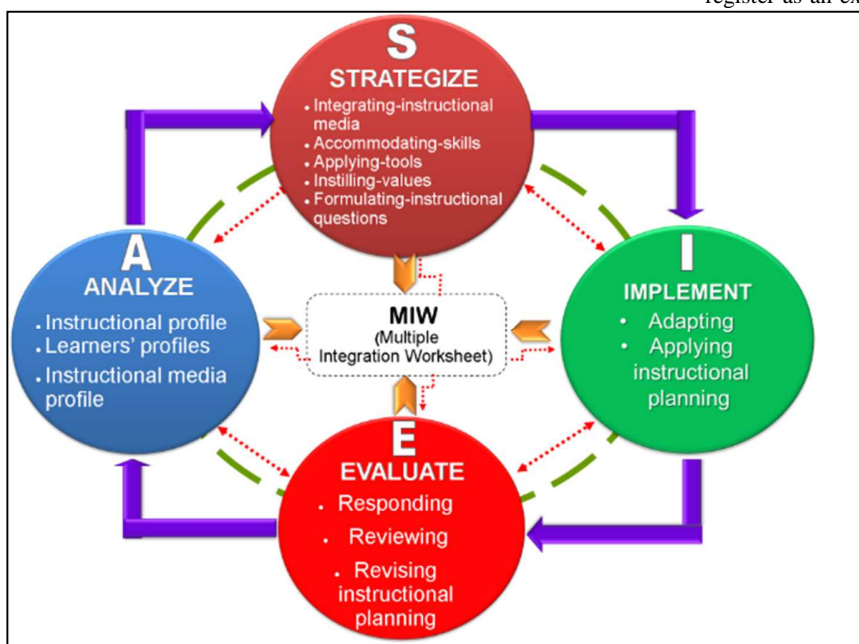


Figure 2
The Integral ASIE Instructional Design Model

The third component of the model is the implementation stage. At this stage teachers may use MIW as an overall planning (macro level) or create/develop several lesson plans (micro level) for classroom practices. Improvising may take place to ensure its appropriateness and effectiveness on the learners in the learning & teaching environment.

The final component is the evaluation stage whereby responses from feedback are gathered to revised and evaluate the instructional planning strategies in the respective component and aspect of the model. It is a reflection process for future instructional redesigning opportunities. However, evaluation is not only taking place at the end of the planning but at every component of the model as indicated in dotted lines where ever applicable.

Professional Learning Community

ASIE model provides an optional for teachers to create a Professional Learning Community (PLC), part of the Community of Inquiry (CoI) theory founded by Jennifer [1]. PLC serves teachers to work collaboratively with their colleagues in giving guidance and suggestion to improve the standards of their teaching practices through a lesson study on the teachers' planning. Hence, MIW may use as a lesson study in the events of discussion. Subsequently, PLC created in the model goes beyond the existing practices where it features allow not only educationist to be a member of the community but invites professionals in various fields and categories to share and contribute ideas in improving the educational practices particularly on the current and future employability issues that affect the learners. They may register as an expert group or as a speaker that enables them to interact with the members of the PLC virtually using email, video chat, and other facilities in the forum chamber provided openly or by virtual appointment.

7. RESULT AND DISCUSSION

The indication of the effectiveness is represented by the percentage of respondents' frequencies marked in each item. 120 participants responded to this questionnaire. Table 3 shows the respondents' views on the research conducted. The results of the analysis are in the form of frequencies and percentages of total respondents towards all the five items listed.

By looking at Table 3, the scores clearly show that all items are above 50% on the strongly agree column (Practicality – 65%, Relevance - 75%, Improvement of knowledge & skills – 73.33%, Fostering “learner-centered” approach – 72.50%). On

this premise, this study indicates that ASIE Model is much needed by teachers for designing their lesson effectively.

Impact of ASIE Model

The development of the Integral ASIE Model gives an impact on the instructional planning. It is an integral model because the entire items of the components integrate into MIW to form a complete intended teaching and learning profiles at macro and micro levels. Every component of the model is interactive providing simple planning steps to ensure instructors achieve the complete and effective design of instruction for their learners.

Teachers can integrate all the features and requirements of the 21st learning skills confidently as well as guiding them to choose and integrate instructional media appropriately, instilling and sustaining moral values in their instructional planning. It is self-prescriptive to ensure instructors have a deeper understanding towards every component of the model and its role in the current learning and teaching concepts and features. In an online version, the model is convenience in creating lesson plans automatically from MIW as well as time effective since it reduces repetitive

work of the teacher in the instructional planning. In addition, their planning is done professionally based upon instructional design theories and principles.

The creation of PLC has the purpose of encouraging the members to contribute ideas, giving comments and views collaboratively in improving learning and teaching practices and establishing “globally competitive learners” while addressing the awareness towards the kind of educational needs and current and future employability issues. This is an example of CoI where public involvement and commitment to the 21st Century Education further strengthens and improved human capital at the school level.

Table 1
The Structure of the Integral ASIE ID Model

COMPONENT		ASPECT	ITEM	MIW
A	ANALYZE	• Instructional profile	<ul style="list-style-type: none"> ○ subject, theme, learning areas, topic, etc. ○ learning outcomes/ learning objectives etc. 	Multiple Integration Worksheet (MIW) is an overall planning mechanism or framework based upon the four components, used to guide instructors/ teachers in formulating & integrating the best possible practices in the instructional planning strategies to meet the 21 st Century learning needs and requirements for learners.
		• learners’ profiles	<ul style="list-style-type: none"> ○ multiple intelligences, ○ learning styles in relation to their age group/clusters, etc. 	
		• instructional media profile	<ul style="list-style-type: none"> ○ types of media chosen ○ elements ○ compositions 	
S	STRATEGIZE	• integrating - instructional media	○ instructional media chosen for the lesson in relation to the above profiles	
		• accommodating - skills	○ 21 st . Century Learning skills and features	
		• applying - tools	<ul style="list-style-type: none"> ○ applying various thinking tools - Higher Order Thinking Skills (HOTS) ○ instructional tools - technique, methods, activities, etc. 	
		• instilling – values	○ element of moral values & others	
		• formulating	○ instructional questions	
I	IMPLEMENT	• adapting	○ adapting for lesson/course development	
		• applying	○ applying in the learning & teaching process based upon lesson/course plan developed	
E	EVALUATE	• responding	○ responding to the feedback	
		• reviewin	○ reviewing the instructional planning strategies for improvement	
		• revising	○ revising the instructional planning strategies for future redesigning	

8. CONCLUSION

It is our aim to move fast in enhancing the knowledge and skills of the learners needed in the 21st-century education. This mission will be accomplished if our effort in improving the dynamics of the teaching and learning process is successfully performed. Since the 21st-century learning framework is integrated into forming strategies in the ASIE Model, this process will naturally equip students holistically and allow them to succeed in the 21st century with all the opportunities and challenges existed.

Table 2
The Multiple Integration Worksheet

ANALYZE			STRATEGIZE				IMPLEMENT - EVALUATE		
Instructional Profile	Learner/ Profiles	Instructional Media Profile	Integrating	Accommodating	Applying	Instilling	LEARNING & TEACHING ACTIVITIES		
							TEACHERS' FACILITATION	LEARNERS' ENGAGEMENT	IMPACT
Topic:	• Learning Styles :	• Types of media	• Instructional Media:	• 21 st Century Learning Skills	• Thinking Tools	• Values	• Activities based on LOTS:		
Theme:	• Multiple intelligence:	• Elements:		• Thinking skills/other skills:	• Methods/ techniques/ Approaches:		• Activities based on HOTS:		
Learning objectives:		• Compositions:							
Learning outcomes:	• Specific media used/ others:								

Table 3

Descriptive statistical analysis on effectiveness of the integral ASIE ID Model in instructional designing

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total	
	f	%	f	%	f	%	f	%	f	%	N	%
1. Practicality	78	65.00	35	29.17	7	5.83	0	0.00	0	0.00	120	100
2. Relevance to 21st century learning environment	90	75.00	25	20.83	5	4.17	0	0.00	0	0.00	120	100
3. Improvement of knowledge & skills among teachers	88	73.33	22	18.33	10	8.33	0	0.00	0	0.00	120	100
4. Fostering “learner-centered” practices	87	72.50	15	12.50	10	8.33	8	6.67	0	0.00	120	100

The Integral ASIE Model is the solution to the above issues in the field of designing instructions and perhaps answers to the problem statements listed earlier in the paper. Thus, the continuous application of the model in the learning and teaching processes will enhance and sustain the quality of the 21st-century learning.

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