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Understanding by Design (UbD) "Curriculum Innovation and Instructional Development"

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Understanding by Design (UbD) is an instructional planning framework that requires planning using backward design. The principle of this approach is to design the course backwards, from the desired goals (standards) with the use of content and evidence of learning and crafting events in the course by engaging pupil intellectually. It addresses two sins of traditional planning, coverage focused and activity focused planning. It also prevents misalignment of long term and short goals. The UbD approach facilitates students meaningful learning by offering three stages of backward design process: identify desired goals, determining acceptable evidences and planning teaching strategies. I decided to adopt the UbD approach as part of the school improvement process, but soon figured out that they needed support in conceptual understanding and skills prior to using UbD framework efficiently. To address the need I designed a Continuing Professional Development (CPD), that is included in this report. I believe that the UbD has changed the lives of the teachers for better, personally and professionally. It fundamentally makes school more meaningful and relevant for learners, and this is at the heart of school improvement. Understanding by Design (UbD) is an instructional planning framework that requires planning by backward design. The principle of this approach is to design the course backwards, from the desired goals (standards) with the use of content and evidence of learning and crafting events in the course by engaging pupil intellectually. It addresses two sins of traditional planning, coverage focused and activity focused planning. It also prevents misalignment of long term and short goals. The UbD approach facilitates students meaningful learning by offering three stages of backward

design process: identify desired goals, determining acceptable evidences and planning teaching strategies. I decided to adopt the UbD approach as part of the school improvement process, but soon figured out that they needed support in conceptual understanding and skills prior to using UbD framework efficiently. To address the need I designed a Continuing Professional Development (CPD), that is included in this report. I believe that the UbD has changed the lives of the teachers for better, personally and professionally. It fundamentally makes school more meaningful and relevant for learners, and this is at the heart of school improvement.

Keywords: *Curriculum, Instructional Development, UbD, Understanding by Design*

Introduction

Seminar Report

The report intends to provide an overview of the first chapter from the book '*Understanding by Design'*(UbD) expended 2nd edition. The authors G. Wiggins & J. McTighe introduced the UbD framework in 1998 and since then making improvements based of feedbacks from teachers. This framework aimed at helping educators plan and design curriculum by clarifying goals, develop assessment processes by devising tools that measure the level of students' understanding of the content and their performances, and craft effective instructional strategies to keep students engaged.

Backward Design, the first chapter in this book, provides a detailed description of the UbD approach. In this chapter, a reader explores in greater depth the significance and rationale of the key ideas and three-stage design process of the UbD framework. The following chapters, in the book, help educators to uncover the practicality aspect of the design process, with an expanded array of examples, practical strategies and tools. Chapter one presents the outlines of the key elements of the UbD principles and prepares the readers for what is to come throughout the book. Selection of this book has a four-fold reason, the first one is its relevance to our module content, i.e. assessment and learning, also, the first chapter of this book provides an outline of all the points to come in the book for the reader to understand an overall concept of UbD principles. Secondly, being a researcher and a practitioner in education, my experience led me to conclude that the UbD framework has stood the test of time. The UbD framework was conceived in 1998, it still is relevant in the context of developing countries that focus on developing curriculum and building teachers' capacity. Thirdly, its wide spectrum of employability, the principles of UbD can be applied to the district-level curriculum designing process as well as to the planning of individual units of curriculum. And finally, it comprises and takes into account the knowledge

and understanding of all learning theories, taxonomies of learning and integration of the modern trends in education.

As a teachers' trainer, I find it to be an immensely powerful tool in two ways. Firstly, it provided me a framework to design CPDs[1] for teachers, it helped me develop success indicators and evidences to measure their professional growth. Secondly, it quickly helped me identify the gaps in teachers' knowledge and skills.

What UbD framework is? What are the stages and key principles that drive the framework? How 'Backward design' help teachers prepare a rigorous curriculum and how it helps students perform better on their assessments? Let us determine these key concepts of the UbD by reviewing chapter one[2].

Understanding by Design (UbD) – Backward Design

To understand the concept of UbD curriculum planning framework we need to unpack the two keywords contained in its name: *Understanding and Design*. 'Understanding', the authors states that with the UbD approach teachers *'teach and assess' students for their understanding* and *their ability to transfer*, what they have learned, in their context. *Teaching for understanding* requires teachers to prioritize in all of the content they could teach 'what is worth teaching'? *assessment for understanding* requires teachers to make students show their understanding through transfer of what they have learned. Another one is 'Design', in the context of the UbD, the design process is called backward design. The authors suggest that the planning is best done backwards when we begin with the desired results and then plan assessments and instruction that can help students achieve those desired results.

The UbD approach encourages teachers to think critically and creatively, part of the process also requires them to reflect on their plans. While planning their units, they engage asking themselves these Socratic questions: what is the goal? what content and resources should I be using and what should I be assessing to know how my students are doing against the goal? what should I be doing instructionally that facilitates meaningful learning and transfer? These teachers exactly know where they want to end up. Subsequently, they also 'reflect' on what is working for them

[1] CPD is continuing professional development, the term is used to describe the learning activities professionals engage in to develop and enhance their abilities. It enables learning to become conscious and proactive rather than passive and reactive.
[2]: Understanding by Design 2nd Edition. by Grant Wiggins and Jay Mc Tighe

and what is not working for them, and how can they strategize to make it work next time. These Socratic questions encourage them to find meaning in every activity they do in the classroom.
In this chapter, authors introduce the three stages of Backward Design processes (Figure 1)

1. 'Identify Desired Results' by keeping the long-term goals in view
2. 'Determine Acceptable Evidences' by getting the blend of content and performance right
3. 'Plan learning experiences and instructions' Better engage learners

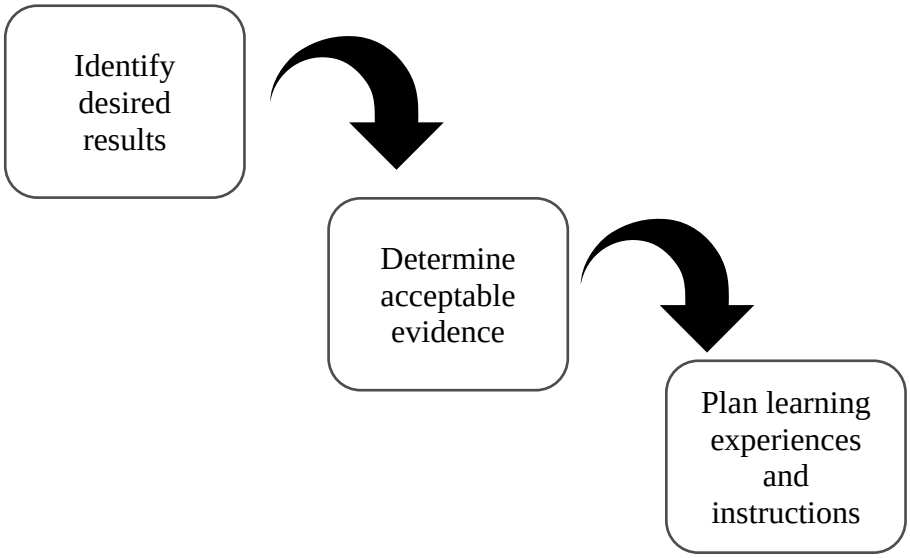

Figure 1: UbD: Stages of Backward Design

This sequence of the UbD design differs from the traditional curriculum planning. The authors point out two sins of traditional planning: activity focused and coverage focused teaching. The first one is 'activity focused', it is planning isolated activities and lessons for students' engagement without any alignment to long term goals. Another on is 'coverage focused', it is covering a large number of content facts marching through textbooks.
UbD is a way of thinking and planning with students' understanding and transfer at the heart of it.

Stage one: Identifying desired results

UbD is known as backward design because the curriculum plan begins with the end in mind for desired outcomes. So instead of a model starting with what teachers teach, it begins with what the students will learn. The essential questions that the teacher takes into account while designing at this stage is:

1. What long-term goals are targeted?
2. What meanings should students make?
3. What essential question should student explore?

4. What knowledge and skills will students acquire?

In this stage a teacher identifies the goals, examine established content standards (national framework) and review expected learning outcomes. Standards are complex and lengthy, it requires a teacher to unpack the standards to determine big ideas[3], cross-skill and cross-curricular links and establishing curricular priorities by choosing content and resources that consolidate the understanding of big ideas. Given the fact that not all content can be covered teachers determine what is worth understanding. Figure 2. depicts establishing curricular priorities in content selection using three nested rings framework.

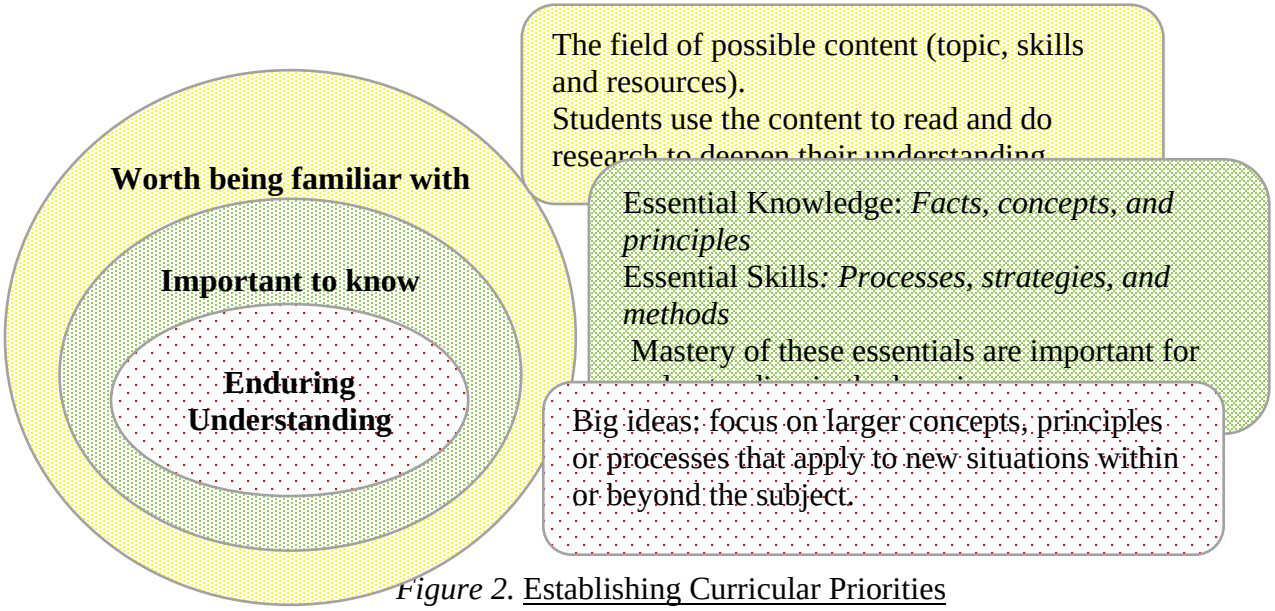

Figure 2. Establishing Curricular Priorities

Stage two: Determining Acceptable Evidence

After identification of the desired goals, the second stage of the design process is to determine what evidence is needed to reveal students understanding and meaningful transfer. The validity of the evidence of learning is determined by its alignment with the desired goals and the expected learning outcomes**.** Guiding questions for stage two are:

1. What performance and products reveal evidence of meaning-making and transfer?
2. What additional evidence will be collected?

Understanding develops with an ongoing inquiring, rethinking and analyzing processes, therefore, it is important to gather evidences from various formal and informal assessment tools. These tools vary in scope, timeframe, setting and structure. Teachers have a range of assessment

[3]Big ideas lead to essential questions to foster inquiry and transfer of learning.

methods to employ to collect evidence over time. The *continuum of assessment* methods includes observations and dialogue, small tests and quizzes, oral questions, open-ended prompts, peer observation, projects, students' self-assessments and performance tasks can be gathered over time.

Stage Three: Planning learning experiences and instructions

During this stage, the teachers create the lessons and activities directly related to the desired results and assessments process determined in the previous two stages. The authors also created an acronym WHERETO to help teachers design effective learning events and experiences. The guiding questions are:

1. What activities, experiences and lessons will lead to the achievement of the desired results?
2. How will the learning plan help students with the acquisition, meaning-making, and transfer?
3. How will the unit be sequenced and differentiated to optimize achievement for all learners?
4. How will progress be monitored?
5. Are the learning events in this stage aligned with stage 1 and stage 2?

In order to address and cover the guiding questions, the authors created an acronym WHERETO[4] to guide design effective learning events and experiences, that focused on students' deepened understanding and transfer of learning.

Figure 3 Acronym to design process in developing instructions

Though the UbD framework is sequenced in three stages but the authors advocate that it is non-linear design that unfolds unpredictably as teachers go along.

The reviews included in the book reveal that the educators using UbD find the process very exciting and that makes them feel more confident, the best part of the process is that students are equally involved in UbD, they seem to have the sense of purpose in what they are doing in class.

[4] WHERETO: '**W'** Where is the unit going? What is expected? Where students are coming from, with prior knowledge and interest? **'H'** Hook the students and hold their interests. '**E'** equip students to help them experience the key ideas and explore the issues. **'R'** rethink and revise their understanding of the work. **'E'** exhibit and evaluate **'T'** tailored to students needs and interests and styles **'O'** organize for maximum engagement and effectiveness.

And the teachers feel in control, they know what their students know and what they don't know and what the teachers need to do.

Discussion

In the mid of the year 2014, when I was working on my master's dissertation and simultaneously was involved in a curriculum development project at the same university, I had been researching an instruction planning framework to implement for both the projects, specifically the one which allows me being an educator to see 'meaning in planning'. UbD was then I came familiar with. The explicit nature of the backward design process struck me and inspired me to learn the process and implement that in my curriculum development project. Since then I have been using the UbD model of instructional planning with a lot of modifications (to my previous versions) and variations.

There are several reasons educators rely on the UbD model for an effective instructional design.

1. Purposeful planning: The concept of designing a curriculum with a significant focus on promoting students' understanding and transfer of learning is professionally authenticating. It is a continual improvement approach. Educators need to focus on the question: What do students need from my class to be successful at the next level in their lives? (Jacobs, 2004); the UbD approach makes teachers think, rethink and revise the plan that ensures students success at the next level in their lives.

2. Assessments: When guided by the desired results and aligned with the instructions, the assessments play a major role in setting a culture of competence, growth mindset. The data accumulated can immediately to use in various meaningful ways. It helps teachers to track their students' individual progress in all subject areas. They know their students better, their strengths and their areas for improvement, they also know what to do to address the issues faced by them individually or collectively. It also helps students in meta-cognition, they start taking responsibility for their learning by self-directing the process. I have witnessed the miracles of data analysis and the use of meaningful data in students' academic progress as well as in their life-skills and behaviour. The data is also important developing Continuing Professional development of teachers and tracking their performances as well. Of course, it requires to have a system in place to use that data intelligently and help teachers become competent in their area of expertise.

3. Curriculum Development: Tyler (2013) elucidates, "A standard-based curriculum includes not only goals, objectives and standards but everything that is done to enable attainment of those outcomes." In the UbD approach, teachers make decisions about the content to be taught based on how worthy the understanding of certain concepts and skills is. But, I wonder, what the chances of success are for the students in school where

the teachers consider textbooks as the only curriculum that they have to cover until the end of the year, they keep covering chapter after chapter without knowing why they are teaching, and what meaning does that have for students to learn. Mooney & Mausbach (2008) argue that adopting textbooks in that manner causes two major problems: "First, it allows the publisher to dictate curriculum, and second, it perpetuates the notion that the texts are the curriculum instead of a resource."

4. Alignment: The importance of alignment cannot be understated. Alignment is an essential element that ensures meaningful learning is taking place. It refers to the degree of correspondence among the desired results, assessments, and instruction, Anderson and Krathwohl (2001) explicate alignment as, "Typically, the degree of alignment is determined by comparing objectives with assessments, objectives with instructions, and instructions with assessments. From the perspective of teachers' development, such alignment requires teachers to communicate with each other about their units that they plan to teach around the same time to seek if they have any relevance to the lesson or connection that can consolidate the concepts and skills that they may be planning to teach through Grade level parallel integration[5]. Curriculum mapping helps educators to cohere the curriculum vertically[6] and horizontally[7]. The alignment of learning goals with the effective assessment processes and the pedagogies create a rigorous curriculum that enriches students' learning and improves their performances, it also provides teachers with an opportunity to be constantly improving and build their competence.

5. Professional Development:
   In order to achieve the strongest alignment of objective and effective instructional practices, teachers need to develop an understanding of standards, curriculum development, and crafting assessment methods and processes. The need to practice "Taxonomy Framework for assessments and instruction planning" (see Appendix ?), learning theories, technological integration.
   Using UbD model and incorporating Nancy Mooney and Ann Mausbach (2008) guide[8]I have developed a **'Capacity Building Plan'** that ensures developing professional learning communities that develop curriculum and plan aligned assessments and learning

[5]: it allows teachers to have information about other subjects taught at their grade-level and allow them to make minor adjustments in their schemes to teach similar concepts concurrently.

[6] Vertical alignment: implies learning progression, continuity, logical sequence and purposeful structure.it ensures what each student learns in one lesson prepares them for the next lesson.

[7] Horizontal alignment: horizontal alignment prevents curriculum inconsistency and disparity in the same grade of different sections

events. This is a two-year plan (see Table 1) of implementation and a year for monitoring and evaluation of the effectiveness of the process and the product.

Table 1: Capacity Building: Planning and Development

Steps	Curriculum Goals	Instructional Goals	Time Frame	End Product
Step 1: Establish the Foundation	Review the National Curriculum Framework Identify the implication of verbs in Curriculum Documents Understand the difference between the Curriculum framework's components	Identify and begin understanding Bloom's Taxonomy in learning objectives Identify effective activities for each level of Bloom's Taxonomy Identify resources for differentiated instructions.	3 Months	Familiarization of the curriculum framework document. Able to write objectives using Bloom's Taxonomy
Step 2: Curriculum Mapping	Develop scope and sequence and curriculum map Vertical (see appendix 2) and horizontal Alignment	Division of work (Standards/ Big Ideas) in 3 Trimesters Grade level Alignment for Parallel Integration Allocation of Curriculum Standards and Objectives into Bloom's Taxonomy framework	6 Months	Scheming Curriculum map (Vertical and grade-level alignment) Blooms Taxonomy Framework
Step 3: Assessments	Develop benchmark assessments around learning objectives in the curriculum Curriculum Camp Assessment Data analysis methods	Learn how to write constructed-response and performance event questions Develop Rubrics Assessment Data analysis management system	3 Months	Benchmark Assessment Rubrics for assessments and assignments

[8] From the book "Align the design", chapter "Developing curriculum leadership and design"

Step 4: Writing a Curriculum Guide	Prepare a document		3 Months	A structured document guide with aligned standards, and assessments
Step 5: Resource Review & Unit Plan	Review relevant texts books with the team Develop Unit Plans	Develop a textbook review form Identify the best instructional practices. (PBL/ Differentiated Instruction/ Blended Learning)	1 Week (Resource Review) 2 Months (Unit Plan)	Select resources for curriculum Instructional policy for curriculum Unit Plans for 1st Trimester
Step 6: Implementation	Principals/Curriculum Leaders monitor implementation through curriculum maps	Mentors professional support Peer Observation (pre-post-observation) Data Analysis	3 Months	Increased student achievement
Step 7: Evaluation	Major changes to the curriculum document		1 year	Aligned Standards with Assessments Improved instructional practices based on standards Comparative analysis of assessment data

Conclusion

The ultimate goal of the UbD approach is to make students perform on their own, help them gain proactive control of the situation and encourage them to make decisions effectively drawing from their repertoire.

The Ubd is a rich and effective planning framework for national curriculum or achievement outcomes but it is also a complicated framework that requires prior knowledge and skills to carry out the process, it is hard to do well. They need to start small by choosing fewer units in the beginning and the ones that can be a quick win. Teachers also need to work in groups or teams to keep sharing their plans, keep them revising based on data analysis and the feedback
The alignment of learning goals with the effective assessment processes and the pedagogies create a rigorous curriculum that enriches students' learning and improves their performances, it also provides teachers with an opportunity to be constantly improving and build their competence.

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