Instructional Design Project Success: Waterfall or (perhaps and) Agile?

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SDG 4: Ensure inclusive and equitable lifelong learning opportunities for all

Contributing to global challenges-generating knowledge-providing education relevant to the development agendas of all nations

What does this mean for the ODeL sector?

SA=access to higher education a challenge-ODeL can address

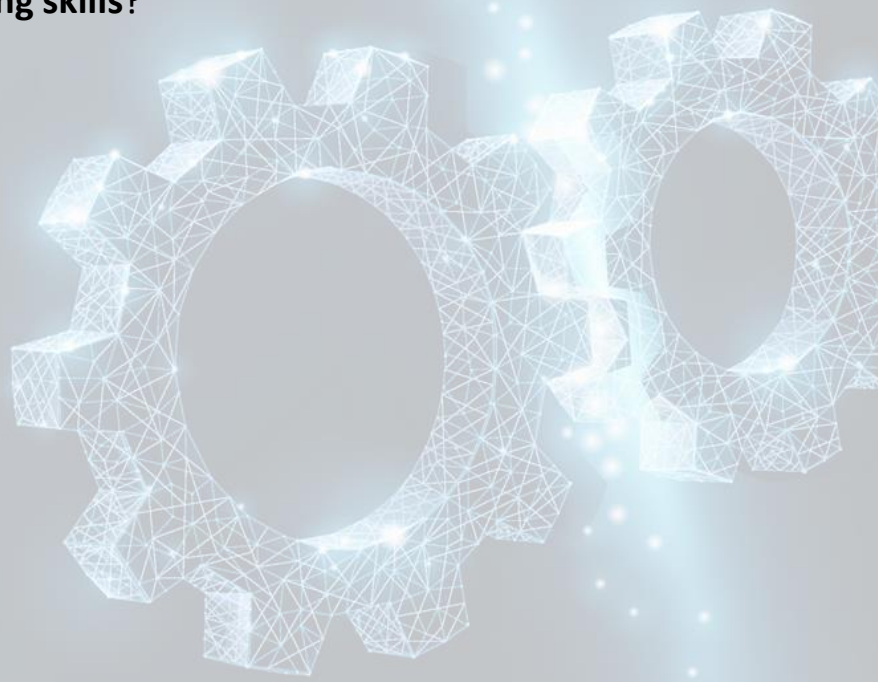
Inclusive, equitable and quality lifelong learning-what processes do we follow to ensure this?

To prepare 21st century students for the **unpredictable** and ever-changing future, the instructional design of higher education programmes must develop their **critical thinking skills amongst others. Students must be more active in their learning; instruction must be designed to connect learning to real life and to be flexible with diverse unique qualities of different students in mind**.

To attain the latter, education programmes must be flexible, and **adapt appropriate pedagogies and modes of delivery**. Projects focused on the instructional design development for specific programmes need to be managed carefully to ensure that all timelines, commitments, and quality standards are met.

The question…

Is the way in which we are developing our programmes, catering for **flexibility** while aiming for the **highest quality standards** that enable students to develop their **critical thinking skills**?



Project Management in ODeL-what do we see?

I saw the shift in developmental practises- gradual change/combination of/to Agile PM & ID Development pedagogies - wanted to investigate WHY this shift happened-what was the benefit, if any? And how it contributed (or hampered?) standards of quality of ID Course design & management.

Agile is the new “it” word-is it really all it is cracked up to be?

It is new, so it should be better/more advanced, right?!

Waterfall or (perhaps and) Agile?

What & How & Who

Two Instructional Design projects created at an ODeL department:

- Used Waterfall Method (1)
- Used Agile Method (2) (Work in Progress)

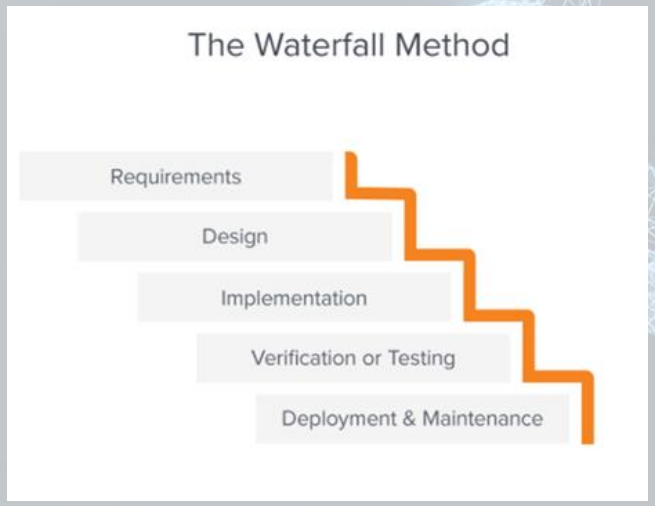
Instructional Design Approach
Project Management Approach

The voice of:

Project Manager
Instructional Designers
Graphic Designer
Subject Matter Expert (SME)
Students
Facilitators

WATERFALL

Emphasizes a linear progression from beginning to end of a project. It is front-loaded to rely on careful planning, detailed documentation, and consecutive execution.



AGILE

- An iterative approach to both development and project management that hinges on constant planning, learning, development, teamwork, evolutionary improvement, and early delivery. Its ultimate goal is to inspire a flexible response to change. AGILE gives us the opportunity to use **collaboration, feedback and iterations** to **streamlin**e the eLearning design and development process.

- **Adaptive**ness and **responsive**ness to change.

- According to Gottfredson, AGILE instructional design is geared toward meeting the needs of today's organizations to be "agile" and adaptive.

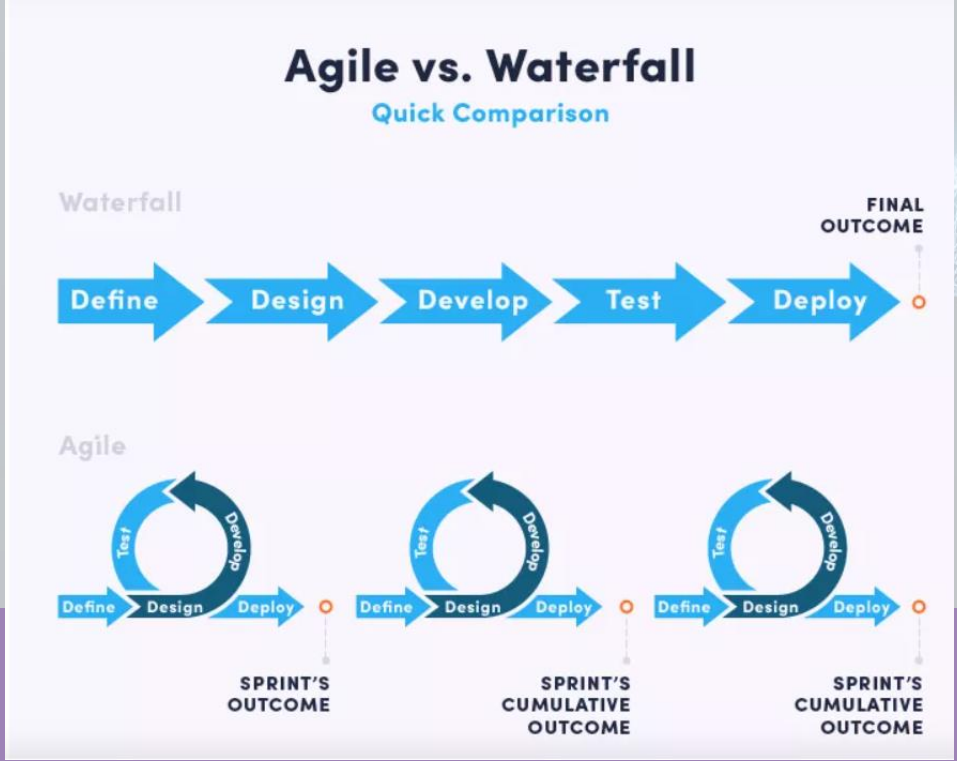
AGILE vs WATERFALL

AGILE

- Individuals and interactions
- Working software
- Customer collaboration
- Responding to change

WATERFALL

- Processes and tools
- Comprehensive documentation
- Contract negotiation
- Following a plan



Traditional project management

- Define target
- 'Take aim'
- Launch
- Hope (the target doesn't move)

Hybrid

Agile project management

- Vision
- Start in broad direction
- Learn/adapt to conditions
- Home in on target incrementally

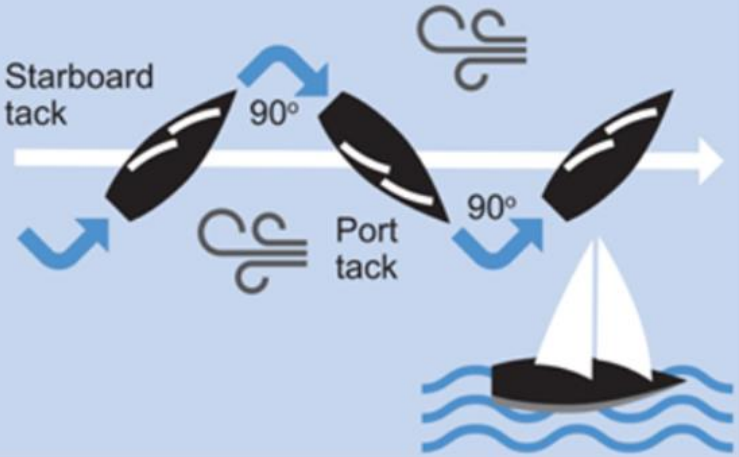


Diagram Source: Directing Agile Change

Project developed using Waterfall: ACT

Project developed using Agile: Patient Blood Management (PBM)

How the Waterfall project was developed:

STEP 1-5
FINAL OUTCOME
Stakeholders: Client; ID; PM; GD

- Extensive meetings & documentation
- ALL deliverables had to be clarified at the start (MAP)

Pro's & Cons of Waterfall: our experience

- ✓ Clear plan & pathway-expectations clearly stated at the beginning
- ✓ Able to plan timelines & dedicated finish date
- ✓ Measure progress according to clearly defined milestones
- ✓ Developers who join the project in progress easily got up to speed because everything they need to know was in the requirements document
- ✓ Customers weren't always adding new requirements to the project, delaying production

X Extensive documentation often halted by number of stakeholders needed to approve

X Disruptions/change requests difficult to implement (time & stakeholder constraint)

X Feedback only at end. Ripple-effect of change implementations

X Work under immense pressure: SME's; PM; GD; ID (depends on scope)

X Extensive maintenance all at once-communicated at the end

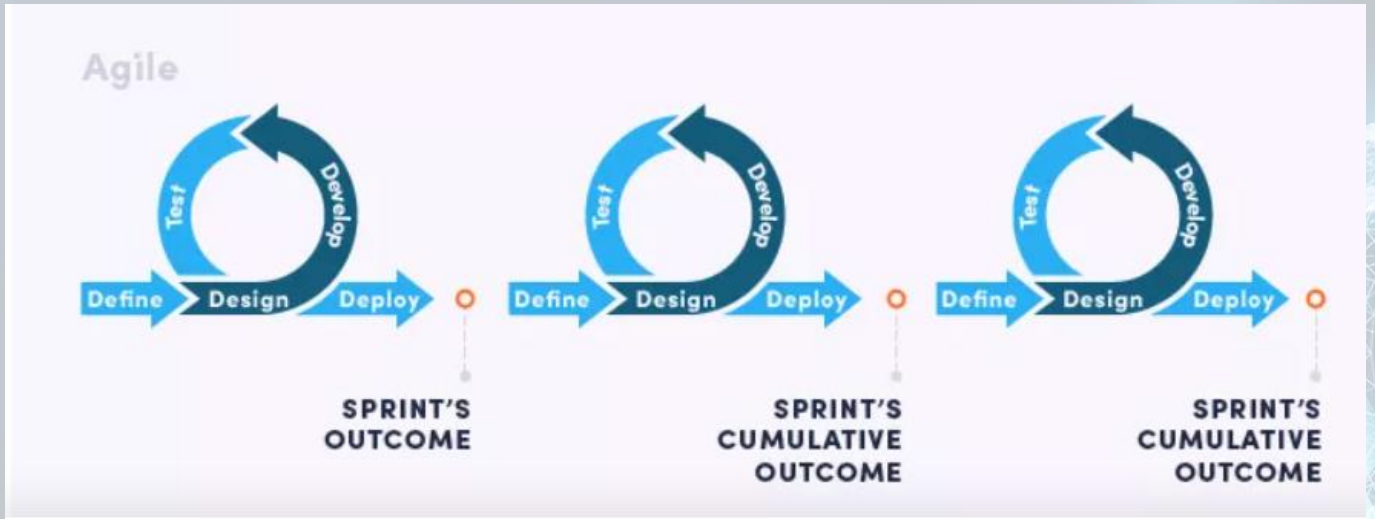
X Clients are not involved in the design and implementation stages-only in planning

X Deadline creep—when one phase in the process is delayed, all the other phases are delayed

X Implementation of student & facilitator feedback-timelines & development ripple-effect (immediate)

X Final product takes longer to deliver

How the Agile project was developed (Work in progress)



- Not based on milestones, but hours+feature selection+ prioritization+meeting client's requirements
- **Sprints or iterations**. At the beginning of each iteration or Sprint, our development team decides what can be accomplished within this time frame and what sets of features will be delivered. At the end of each Sprint, the product is placed in a production environment so the client can take a look and provide their feedback (Rise/Blackboard)
- Client; ID; PM; GD

Our aim with AGILE is the following-we can relate to eLearning industry:

- **Focuses on learners and their interactivity with the eLearning course**
  Rather than focusing on the process of learning itself, the eLearning authoring tools (Rise/Articulate/Blackboard functionalities) that will be used, and the eLearning design approach, the AGILE instructional design focuses on learners and how they will be interacting with the eLearning course, itself. During each meeting, the needs of the learner and how they will engage and participate in the eLearning course are seriously taken into consideration. This allows our Instructional Designers to design eLearning experiences that are more engaging and immersive, as they are able to concentrate on how the learner is expected to perceive every eLearning activity, piece of eLearning content and design element, in general. This guarantees that every eLearning experience will be learner-centered and will meet the specific needs of the audience.
- **Produces higher quality eLearning deliverables more rapidly**
  The eLearning project, as a whole, is divided into smaller chunks that must be completed before moving onto the next chunk or module. As a result, it is easier to identify and remedy all the issues that might have been overlooked, if the entire eLearning course had been developed at once. For example, a graphic that may be out of place or text that may be too lengthy might have not been corrected if you were looking at the project as a whole, as these are perceived as minor details that can very easily be overlooked. However, since our entire team of eLearning professionals (ID's; GD) are there to analyze every individual section of the eLearning course, these problems and other eLearning mistakes can be modified and corrected early on. This leads to eLearning deliverables of higher quality that are designed at a more rapid pace, which benefits not only the eLearning professionals and the client, but also the target audience.

- **Reduces the need for extensive "last-moment" revisions**
  AGILE instructional design is carried out in stages. Every member of our team- under the lead of the ID- regularly evaluates and tests each section of the eLearning course, having the opportunity to make changes, throughout the eLearning development process. This, in turn, leads to a variety of benefits. For example, instead of having to delay launching the eLearning course due to unexpected revisions, you can roll it out right on schedule and start building your learner enrollment numbers and profits. It also gives you the power to avoid making repeated mistakes. Instead of including the same flawed graphic in every module of your eLearning course, for instance, you can iron out the issue during the first section and save yourself the time and expense of having to fix it in every eLearning course unit.
- **Allows for greater collaboration**
  An important aspect of AGILE design in eLearning is collaboration. Members from every cross-section (ID; AV; GD; Client) are involved, from the stakeholders to the actual learners. All of them share opinions and offer feedback, which can offer our eLearning professionals the chance to benefit from the insight and expertise of other members of the group. All parties are encouraged to voice their concerns, highlight any issues they might discover and offer advice that will make the finished eLearning course a more memorable and engaging eLearning experience for the target audience.

Pro's & Cons of Agile: our experience

- ✓ Empower those involved; build accountability; encourage diversity of ideas; allowing the early release of benefits; and promotion of continuous improvement
- ✓ Helps build client and user engagement because changes are incremental and evolutionary rather than revolutionary
- ✓ Allows decision 'gremlins' to be tested and rejected early: the tight feedback loops provide benefits in agile that are not as evident in waterfall.

X SME's keep wanting to add-no deadline=lack of direction

X Poor resource planning-no clear plan

X Because Agile is based on the idea that teams won't know what their end result (or even a few cycles of delivery down the line) will look like from day one, it's challenging to predict efforts like cost, time and resources required at the beginning of a project (and this challenge becomes more pronounced as projects get bigger and more complex).

X Limited documentation (proof, reference, guidelines)- documentation happens throughout a project, and often "just in time" for building the output, not at the beginning. As a result, it becomes less detailed and often falls to the back burner.

X Fragmented output- Incremental delivery may help bring products to market faster, but it's also a big disadvantage of Agile methodology. That's because when teams work on each component in different cycles, the complete output often becomes very fragmented rather than one cohesive unit.

X No finite end-The fact that Agile requires minimal planning at the beginning makes it easy to get sidetracked delivering new, unexpected functionality. Additionally, it means that projects have no finite end, as there is never a clear vision of what the "final product" looks like.

X Difficult measurement-Since Agile delivers in increments, tracking progress requires you to look across cycles. And the "see-as-you-go" nature means you can't set many KPIs at the start of the project. That long game makes measuring progress difficult.

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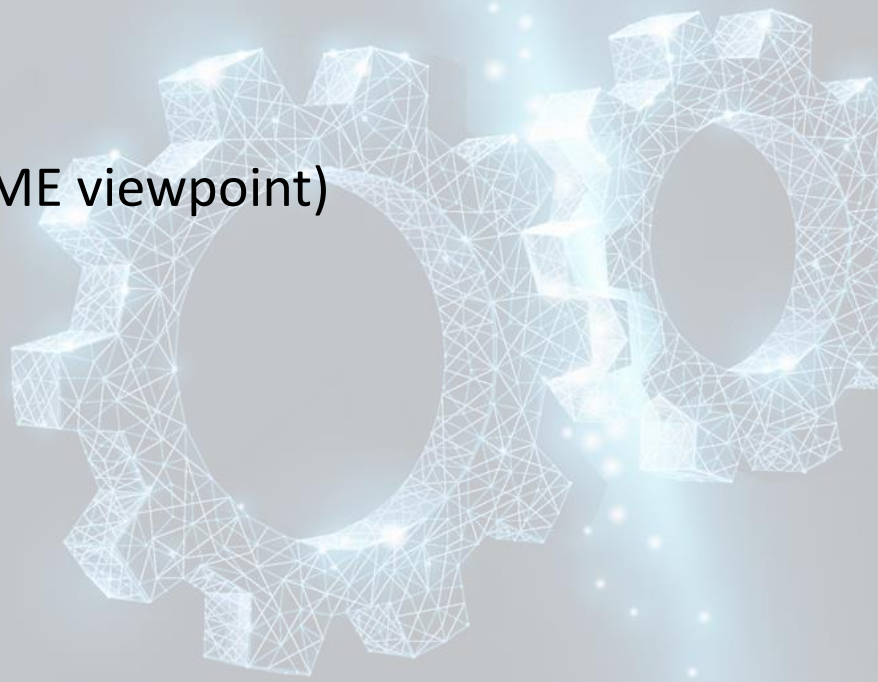
Why did we change from Waterfall to agile?

- Constantly looking for improved ways of working-keeping the student needs at the center, always

What we learnt

Inclusive, equitable and quality lifelong learning, through our development approach



Agile (PBM)

?Develop critical thinking skills (from SME viewpoint)
?Active in learning
?Learning & real life connected
?Flexible

Waterfall (ACT)

Followed a map
?Develop critical thinking skills
?Active in learning
?Learning & real life connected
?Flexible

Agile misconceptions

1. **Agile is a silver bullet, the answer to all your woes**

Agile cannot solve the impossible, however it can reduce wasted time: it focuses on the right things and if it's going to fail it will fail fast. It shortens the lines of communication and encourages collaboration.

2. **Agile is 'quick and dirty'**

In the early days of agile solutions were short-term. The agile approach now encompasses 'rapid' with 'control and quality', demanding a high-level of professionalism. It may however deliver sooner by focusing on important things, ensuring delivery of the right solution at the right time.

3. Agile is only for small simple projects

Complex projects need "corporate strength" agile

4. Agile means you don't need documentation

The agile manifesto states working solutions over comprehensive documentation, however it does NOT mean 'no documentation'. The primary value of documentation is to support the solution.

Agile teams bring together a breadth of roles, which means collaboration and conversation replaces much of the up-front documentation/ paperwork required by traditional silo'ed teams.

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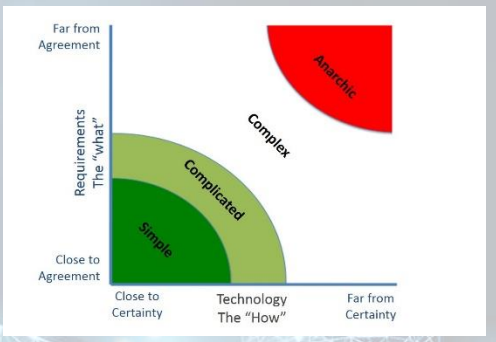
5. Agile is always the answer

It's about choosing the right approach for each project.

Choose where you fit on the spectrum between traditional and agile



6. Agile means you can change anything and everything

Agile is all about change but it's about change within reason.

Foundations are agreed and baselined from the start, defining the breadth (priorities) and scope which are protected and managed by more formal change management controls, though flexibility may be required.

Evolutionary development fills in the depth, which is where informal change can happen through conversation or when something becomes redundant.

7. You don't need project managers in agile

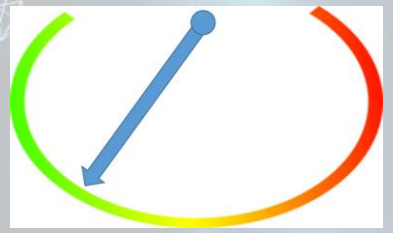
Many agile approaches don't do projects, eg. Scrum which has no defined beginning, middle and end. Most corporate organisations deliver projects which need managing in order to succeed. These need project managers who adopt a facilitative management style, rather than command and control.

8. Either you're agile or you're not

Agile is part of a spectrum - all projects can use some agile practices. *"You can use all of AgilePM some of the time. You can use some of AgilePM all of the time."*

9. Governance is 'anti-agile'

Agile does not negate the need for good governance. Governance is supportive rather than policing. You will however need to accept what is non-negotiable. Agile has been effectively used to deliver in regulated organisations where strong governance is non-negotiable. Such as:



- Pharmaceutical
- Financial
- Military
- Manufacturing

Businesses need to be agile to survive and thrive – agile is for everyone, it just needs to be applied with a big dash of common sense.

(APM, 2017)

Can we combine the two?

Findings suggest that while there is merit in adapting to a revised process, proven success stories of a **traditional approach should not be discounted**, rather, **they should strengthen each other**.

There are however ways to mitigate disadvantages of a revised project methodology while still focusing on quality delivery:

- Delivering value through a quality end product rather than simply delivering a working product
- Managing a clear process for delivering that product, not an uncertain route determined along the way

What do we keep (old-waterfall)	What do we change/keep (new-Agile)
Commitment to timelines	Empowerment
Documentation as project guideline	Collaboration

Think about

Is the way in which we/you are developing our programmes, catering for flexibility while aiming for the highest quality standards that enable students to develop their critical thinking skills?

Let us evaluate what we do to ensure it meets the every-changing needs of students-that is our ultimate goal: to ensure top-quality learning

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Thank you!