

Agile learning Designs for an Agile world - Using Agile values and principles to handle complex learning topics

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Abstract

Agile methods and Agile working are the actual hype in business. The vast majority of companies and other organizations understand, that Agile competencies are a relevant success factor for future success. But how can Agile be educated? How do Agile learning designs look like? Since learning always should simulate the future wanted to be achieved by the education, it is essential to design new learning environments using Agile values, principles and methods. This is often a breach to established standards but Agile can't be learned in formal trainings. The future of Agile learning is based on self-responsible learners, interacting in self-organized teams, using modern tools to define their own content and method set to achieve individual learning goals, which may change in the course of a program, due to new insights and a changing context. Three examples show, how Agile learning can be designed in the context of an MBA Study "Honorable Leadership", Executive Education (executives as beginners in Agile) and scaling Agile in an Agile Transformation within companies. In all three examples the key elements are: self-responsible definition of an individual learning plan, forming peer learning groups, using modern tools for content delivery and communication and continuous reflection and re-adjustment of the process. To coordinate the individual learning tasks and progresses tools from Scrum and Kanban (Board, Timeboxing etc.) are used. This gives a good chance to let participants experience Agile to a highest possible degree and use the learning process itself to gain Agile experience. Experience shows that learning is faster and more sustainable when done this way. Participants speak of high motivation and easier transfer of newly acquired knowledge and experience into day to day operations. In summary this means the benefits of working Agile can not only be seen in software development or other typical fields for Agile but also in learning and education.

Key Words: Agility, Learning Design, Executive Education

1. Introduction

1.1 Why businesses need to become more Agile

Discussion about the most relevant aspects of business strategies naturally are a matter of diverse views and conflicts of interests. Looking on the actual discussion there are a few topics where the vast majority of experts and executives agree on. When executives are asked where they see the biggest challenges for the next years, digitalization and becoming more Agile dominate the answers ^[1]. What does it mean to be more Agile and which effects have Agile methods and Agile organization on education, personal development organization and individual learning processes?

To answer these questions, we first may have to define what Agile means. The dictionary gives two definitions for Agile:

- a. able to move quickly and easily.

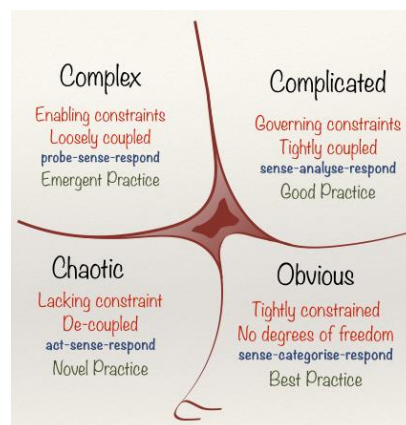
- b. relating to or denoting a method of project management, used especially for software development, that is characterized by the division of tasks into short phases of work and frequent reassessment and adaptation of plans.

Whereas the first definition describes an ability and is used as an adjective, the second one is the one relevant for organizations. Even so many Agile methods have been developed before, the publication of the so-called Agile Manifesto in 2010 ^[2] is often seen as the key catalyst for the Agile movement. Since then the number of publications grew exponentially, Agile may be seen as a hype but those who already experienced the outcome of Agile working know, there is a significant change going on. Not only software development is affected but nearly all industries and organizations try to achieve dramatic productivity increases, rarely seen before. To do so it is essential to understand that Agile is a framework including methods, but also needs a governance structure for the organization and an Agile mindset.

For the further discussion we want to define Agile as a way to organize work with a focus on value-creating output for the customer created by cross-functional (to minimize dependencies) teams who take a full end-to-end responsibility. Work is broken down in small tasks which can be time-boxed (all tasks are realized in the same short period) and this iterations allow to experiment, analyse and learn quickly. This often in close cooperation with the customer.

1.2 The Cynefin Framework

To understand the relevance of Agile for modern business a bit better let us take a look at some of the key aspects. The purpose of working Agile is to handle complex topics in a proper manner. Until today most organizations are well doing in handling simple and complicated topics like basic services or building machines and plants. The value stream is broken down in roles and processes and the organization mostly reflects exactly this structure by defining departments etc. according to a production process. If complex topics shall be handled, this does not work anymore and even the use of project management methods has its limits. A look at the so called Cynefin Framework ^[3] gives first hints, why this is the case. For simple and complex topics, the standard way to work is to sense the relevant factors, decide and plan and afterwards execute the plan. In most cases best or good practices can be used as an orientation. In complex contexts the best way to work is probe (experiment), analyse the effects and respond to this learning. New ways of work and new knowledge are created.



Picture 1: Cynefin Framework according to Dave Snowden. Source: https://en.wikipedia.org/wiki/Cynefin_framework

If you try to organize work in the traditional (simple or complicated context) manner, it will fail to show the expected outcome. Customer expectations may change over the process, external conditions as well or a completely new way to do business arises. This was obvious in the IT, internet and telecommunications business where new products and platforms already replaced whole industries or threaten to do so in the near future.

Just by looking at the standard way to work in complex environments it becomes obvious, the organization of work has to be done in a different way. This is what Agile methods try to do. The key changes are already mentioned in the Agile Manifesto and can be summarized as follows:

- the basic organization is a cross-functional (minimizing interdependencies) and self-organized team taking an end-to-end responsibility for the value creating process.
- The customer benefit is the main driver for work and integrating the customer into the process is key
- Work is made transparent and broken down into small tasks delivering working (and therefore testable) output. Output is created in short-term iterations (sprints) to keep adaptability high.
- Regular reviews and retrospectives allow quick response to changes on customer or market side and are the base for continuous learning and improvement.

1.3. Consequences of Agile working methods for Learning

The last point “continuous learning and improvement” is what we want to focus on in the following discussion. In a complex, i.e. unforeseeable, fast moving and highly interactive context learning is a key factor for success. In a complex world the relevance of basic knowledge and experience decreases dramatically whereas the creation and sharing of new knowledge and experience is of higher importance. Agile working itself is a permanent source for creating new knowledge and methods and can be seen as a continuous learning journey.

Teams and individuals permanently develop new competencies and share these with others in direct interactions. The Agile community developed several new formats for this kind of sharing, starting with working out loud, fuck-up nights, townhall meeting, etc.^[4]. Other new formats focus on structured approaches to create sustainability in newly developed knowledge. Overall the teams took over the responsibility for individual and peer learning and the relevance of the Personal Development (PD) departments decreased in this organizations dramatically. This is mainly a result from a far to slow innovation rate and a lack of customer (i.e. learner) focus. In the small field of PD the recent change represents what Agile is doing on the large scale in similar speed and consequence.

So said this does not mean, there is no need for classical education and Personal Development measures. Keeping in mind, the Agile approach itself and its consequence for learning is relevant for complex contexts, there still remain many fields of education and learning which are related to simple or complicated topics. Here it has to be checked, if newly developed approaches can be used meaningfully or whether traditional ways to organize learning are still favourable.

The Japanese concept of Shu Ha Ri ^[5] may help to understand the situation better. On the Shu level a beginner follows the instructions of his master. On the Ha level he uses the input from

other masters too, tries new ways and learns by changing things. On the Ri level the learner creates new ways by himself, based on the already existing experience. He became a master himself. When organizing learning concepts in a company, university or any other organizations, the three levels can be used to differentiate the needs to learn and suitable learning designs. If for example an apprentice shall learn to use a machine, this is beginner level and formal, instruction-based training can be the best way to educate him. Bachelor studies at university will also have more formal learning parts too. When knowledge and experience are more relevant, social learning designs (learning based on interaction), experiment-based learning and technological sophisticated tools like AR/VR-based training, internet systems etc. become more relevant. Agile learning will be more relevant for the Ri level, where new knowledge is developed.

Though most organizations will develop bi-modal learning designs, where classical and Agile ways to organize learning are used. Classical learning designs and Agile approaches will be used simultaneously. The challenge is to develop the organizations capabilities to design learning more Agile and handle a much bigger “toolbox” for self-responsible learning in peer groups and other learning designs.^[6]

2. Design of smart Learning systems

The key to successful learning is the design of learning formats, allowing the learner to get the proper mix of input, experimentation and interaction with others. For those who want to develop themselves to Agile working context this means, the initial learning to achieve Agile competencies as well as the later process of continuous learning should be designed as close as possible to the way Agile work is organized, i.e. simulate the Agile working in the education. A formal training or seminar of five days to get instructions on Agile methods etc. does not make any sense. Learning Agile means acting Agile.

Learning...	classical	Agile
Reference	Best practice (simple, complicated context)	Emerging practice (complex context)
Goal	Knowledge transfer	Knowledge and experience creation
Supporter	Teacher / trainer	Facilitator / Servant Leader
Content	Curriculum, books, Articles,...	„Blue Water“ approach (analyse and reflect available information, find new knowledge and define methods/tools)
Impact check	Tests and certification	Use of gained experience in operational context (outcome orientation)

Table 1: Comparison of major factors influencing classical and agile learning design

2.1 Adapting Agile values and principles to learning

The first step to Agile learning designs may be to “translate” the Agile mindset into the world of learning and education. The following table takes the Agile values and principles and uses them to define an Agile learning mindset.

Agile Values	Agile Learning Values
Individuals and Interactions Over Processes and Tools	Individual learning needs and interactions over Processes and Tools
Working Software Over Comprehensive Documentation	Working offers (related to learning needs) over certificates and test results
Customer Collaboration Over Contract Negotiation	Supporting individual learning processes over defined methods and models
Responding to Change Over Following a Plan	Responding to Change Over Following a curriculum and operational structure
Agile Principles	Agile Learning Principles
Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.	Our highest priority is to satisfy the learner by delivering individually useful offers at the right time and in the right way
Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.	Welcome changing requirements, even late in a development program. Agile learning processes harness change for the learners progress.
Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.	Learning is a continuous process, reflected and improved in short cycles.
Business people and developers must work together daily throughout the project.	Learning is strengthened in diverse learning groups interacting on a daily (or other short iterations) base.
Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.	Organise learning teams around motivated learners. Learners get a suitable framework but learn self-responsible.
The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.	The most efficient and effective method of conveying information to and within a development team is face-to-face conversation. (as in original)
Working software is the primary measure of progress.	Learning outcome visible in the operational context is the primary measure of progress.
Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.	Agile learning promotes continuous personal and professional development. All stakeholders in this process should be able to maintain a constant pace.
Continuous attention to technical excellence and good design enhances Agility.	Continuous attention to technical excellence and good learning design enhances learning Agility.
Simplicity--the art of maximizing the amount of work not done--is essential.	Simplicity – the art of focussing on the impactfull and skipping what is not necessary – is essential.
The best architectures, requirements, and designs emerge from self-organizing teams.	The best content decisions, design of formats and learning conduct come from self-organizing learning teams.
At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.	At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly. (as in original)

Table 2: Agile values and principles transferred into the context of learning

To summarize the change resulting from Agile the acronym Agile itself can be used:

- A** Agile learning is an infinite process on the way to individual mastery.
- G** Gained experience in the learners working context defines the learning goals and process.
- I** Iterations (sprints) of individual learning tasks, reviews and re-adjustments characterize the learning process.
- L** Learning is a cooperative, social process in which peer groups support each other
- E** End-to-end responsibility for learning is with the learner himself

In the next step the design of any learning approach tries to follow the values and use the given principles. In some cases this is easy but sometimes, e.g. in formal education at universities this needs some compromise, due the students pre-education and maturity level. Self-responsible definition of an individual curriculum and peer group interaction may have to be developed first, before they can be used in a professional manner. How this may look like is described in chapter 3.

2.2. Changing roles in Agile learning

It should be mentioned, that implementation of Agile learning into an existing organization may also be a challenge for teachers, trainers etc. They may be used to formal education, i.e. being the expert telling others what they should know. This still is needed in basic education but the approach in Agile formats is the opposite. Here a professor or trainer acts like a gardener, creating an environment to grow for each individual learner. The role is more a serving role, ensuring the learner and his peer group gain the most out of their self-structured and self-responsible process. This topic would be worth a more detailed discussion but can not be continued in this paper.

3. Agile learning formats – Three examples

Defining values and principles for Agile learning is a good start into an Agile education but the real challenges are the design and operations of the learning experiences themselves. Above we already mentioned one of the many conflicts of interests (self-responsibility vs. maturity level) which are part of Agile learning designs. The following three examples show, how Agile learning may look like in real terms.

In all three examples the key elements are: self-responsible definition of an individual learning plan, forming peer learning groups, using modern tools for content delivery and communication and continuous reflection and re-adjustment of the process. To coordinate the individual learning tasks and progresses tools from Scrum and Kanban (Board, Timeboxing etc.) are used.

3.1. Students– Agile MBA education at Hamburg School of Business Administration

For many years MBA studies have been seen as the most sophisticated way to qualify managers for a role as executive. Discussions initiated by critics like Mintzberg ^[7] and practical shortcomings as described by Wujec ^[8] already initiated change.

At Hamburg School of Business Administration (HSBA) several improvements to the classical MBA design have been done. The lack of ethical aspects in modern leadership for example has been addressed in an MBA called “Honorable Leadership”, using the experience of the Hamburg Honorable Merchant tradition ^[9].

Agile education has been introduced as follows. Since MBA students shall be prepared for a leadership role, i.e. for a role mainly handling complex topics, the standard Case Studies (which use working logics for a complicated context) have been dismissed as too mechanistic. The leadership course instead is organized completely Agile. There is no curriculum, no Powerpoint slides or any other formal education element. The course is started with a statement saying: The most relevant competence of any leader is critical thinking! What you will learn here is critical thinking.

This said, the group is asked a question: Can we learn about great leadership from the most successful company in human history? This already is a trap-question, because it asks for best (simple) or good (complicated) practice. Due to their former education and experience the students will answer yes and asked to identify the respective company in different groups. Most groups come up with different ideas and realize within the first 15 minutes of their course, that critical thinking is not as easy as most believe. Answers normally relate to existing companies (history?) and there was no prior definition of success. So it is no surprise, that the V.O.C. as most successful (in terms of market capitalization) company in history can't be identified.

Finally (we are still in minute 20 of a several months course!) the base is laid for a more diverse, broader discussion and the insight, that using the diversity of the group (several nationalities, industry backgrounds etc.) may be a success factor. Furthermore, the question sharpens the view on the context and the relevance of change for any company's success. Whereas monopolies and slavery have been key success factors for companies in the early 17th and 18th century, today a company is wise to integrate the *UN 17 sustainability goals* or the *Human Rights Charta* into their definition of success. Context changes over time and the technological drivers of the change are only one part of the underlying social changes. Understanding this, students are able to further drive their learning self-organized in small peer groups.

Seeing the whole picture gives students a far better foundation to define a modern and context-related leadership model themselves. By applying the resulting model to their own company, the students can create a useful outcome and mostly try to apply modern tools like Business Model Canvas etc. without being asked to.

Looking on the recent experience it became clear that MBA students bring sufficient experience and maturity to work 98% of the time on their own planning and find proper answers to any question. Knowledge is provided by the internet and modern tools allow experimentation to find new approaches for modern leadership. Motivation to work on the

topic of leadership and transfer to the own context is significantly higher than in comparable studies using more traditional curriculum-based approaches.

What we deliver is the critical mind needed to see the whole picture and the value of diversity to find the best solution in a cooperative approach.

3.2. Executive and Managers – Introducing executives to Agility by using sports

When looking back on the last years of discussion about Agile, the most critical education topic was the preparation of organizations or more often just small parts of an organization to use Agile in a proper manner. When looking on the Agile mindset and the changes they cause, it becomes obvious that Agile is not a methodological matter. The organizational design is affected and even the top management has to learn and understand what Agile means for them and their role.

Experience shows, that many executives where educated formally and have a mechanistic view on the way companies should be organized. They are beginners in Agile! Key point here is, they mostly define Agile as given in the first definition (see introduction) and do not understand what Agile working is and how the effects on their role look like. After many years of hard work and career success they lack the insight of being a total beginner in a completely new approach.

To get access to this group the design of an introduction into Agile may look like the following. We invite for a two-day workshop (time restricted target group), to meet at one of the Olympic training centres. These centres have been introduced to give athletes ideal conditions to prepare for the next Olympics. Top managers mostly see competitive sports very positive due to the many similarities to business. Additional it is appealing to directly interact with top athletes and national trainers in the workshop.

For us the setting is some kind of “Trojan Horse” allowing to introduce some Agile principles like eye level, cross-functional work, outcome orientation and strong cooperation. The managers live at the centre which means only training clothes to wear, informal communication, living in simple two-bed rooms etc.

Within the workshop short sport activities and Agile activities alternate and step by step the principles of Agile working and the consequences for organizational design (main topic for the participants) become obvious. The ground is prepared for more detailed workshops within the company and other activities needed to get a real Agile top management. Motivation to drive Agility in the own context becomes very high.

Most relevant for the success is avoid the company and even related contexts. Using the hotel where quarterly strategic workshops are held for example will not change the view and mindset the way we see it at the Olympic training centre. Here Agility can be experienced in a positive, motivating and eye-opening design.

3.3 Organizational learning – An Agile transformation program

Starting Agile in a few teams or Agile garages, hubs etc. may be an easy task, compared to the next step. Scaling Agile working into a whole company, especially if the final goal is a bi-modular organization is a highly complex and time-consuming process. The decision to go this way automatically will include a significant learning part. Those having no experience with Agile have to be introduced and the organization has to change at several points to allow Agile teams to be successful. We have to keep in mind, Agile is always having end-to-end responsibility for a value-creating outcome. The whole value creating chain has to be Agile to realize the value of Agile working.

As already mentioned before any education should use the principles (see table 2) of the new situation which is pursued by the change process. Any Agile transformation therefore should be designed to be Agile itself. For any Agile transformation we recommend to use all values and principles of Agile working in the design and conduct an Agile transformation process.

Key element for the learning process is experimentation and improvement in short iterations to gain experience as fast as possible. For that we designed a learning program in which a whole organization can develop Agile competencies in short iterations and mostly (some basic training is needed) self-organized and self-responsible. To fit into the operational context most companies decide to give the program a formal structure and define a set of workshops. This may look like given in the following table.

	Module					
WS1	Rules & Roles	Agile Basics	Requirement Engineering	Project start	PA	SP
WS2	Review	Design Thinking	Organizational Design	PA	PA	SP
WS3	Review	Leadership 1	Agile KPI's	PA	PA	SP
WS4	Review	Scaling Agile	Leadership 2	PA	PA	SP
WS5	Review	Agile Transform.	Facilitation	PA	PA	Retrospective

Table 3: Example for a mixed formal/Agile transformation program. Formal parts result from the need to basic inputs and operational organization. Content and projects are conducted fully Agile. PA: Project, SP: Sprint Planning

The program of five Workshops (WS) of three days each. The modules define a frame in which self-organized learning groups interact. The modules contain:

- 2 modules on the program organization (first and last)
- 10 modules for formal input
- 10 Module for Agile projects (key element!)
- 4 modules Review
- 4 modules Sprint Planning

The project work is mandatory but participants choose projects supporting the Agile transformation, Reviews and Sprint Planning are used the same way they occur in Scrum or other Agile methods. The whole program is timeboxed, tasks are defined and the actual situation in the transformation (which will never be as planned) is reintegrated in the planning.

Each participant defines an individual learning plan, including topics to learn (about agile and change) plus a catalogue of personal strengths. From the learning needs and the existing competencies (strengths) a group map of existing and needed competencies is drawn. Afterwards learning groups form in which learning and teaching/support are combined. The mindset behind this is: We learn with and from each other.

The whole program in real life is not a program anymore, since approximately 90% of the invested time and effort comes from self-responsible and self-organized learning teams, supporting the transformation in their company by their project work and supporting others to learn about Agile.

4. Summary and conclusion

Agile working allows organizations to add better ways to organize work in complex environments to their existing learning portfolio. Since new knowledge and experience is created within Agile teams, learning plays a key role for success in this area. Learning for complexity will use the logic *Probe – Sense – Respond* and Agile mindset as given in the Agile learning manifesto (see table 2).

Since learning always should simulate the future wanted to be achieved by the learning it is essential to design new learning environments using Agile values, principles and methods. This is often a breach to established standards but Agile can't be learned in formal trainings but will be essential for all learning institutions.

The future of Agile learning is based on self-responsible learners, interacting in self-organized teams, using modern tools to define their own content and method set to achieve individual learning goals, which may change in the course of a program, due to new insights and a changing context.

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