Evolving as a Digital Scholar

Published by Leuven University Press

Evolving as a Digital Scholar: Teaching and Researching in a Digital World.

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The Future Digital Scholar

Wim Van Petegem

In this chapter we focus on

- The future, and how a digital scholar can prepare for it.
- Agility as a specific characteristic of an ever-evolving digital scholar.
- Action research as an activity for a digital scholar to evolve in the right direction.
- Trend watching in order for a digital scholar to somehow be able to predict what comes next.
- Leadership taken by digital scholars as change agents.

Keywords: Agile methods; action research; trend watching; leadership; change management

8.1 Introduction

“Prediction is very difficult, especially if it is about the future.” With this quotation Nils Bohr, Nobel laureate in Physics (1922), wanted to say that it is maybe easy to find a model explaining a certain phenomenon based on evidence or data available at that moment, but that it is quite another matter to identify those characteristics or features of the model which will be similar or valid in the future as well. So far in this book we have focused on a framework reflecting our stance on how a digital scholar should or could behave and evolve in the current digital world. This is based on our own personal experiences, what we know from our own research, and what we learnt through many training opportunities we have given in the past about this topic. In that respect we didn’t take a purely scientific viewpoint on digital scholarship, but followed a more pragmatic approach, though still keeping the academic context in mind. When we now want to expand our view and look into the future, we are on slippery ice. We can imagine a couple of things that might affect our lives as digital scholars in the coming years, just looking at evolutions in the digital world with regard to technology, to pedagogy, to academic leadership, etc. No one however could foresee the impact on our lives, private and professional, of a tiny virus causing the COVID-19 pandemic. Is that important? Yes and no. It is good to have some
certainties in life, as they give some predictability to what comes next. On the other hand, we should learn to cope with the ever faster changing world around us.

In this chapter we want to equip the reader with some guidelines on how to deal as a digital scholar with the future and the changes that are sure to come our way. We present them in the form of recommendations and use active verbs to express our belief that we all should actively take our future in our hands. Critically consider these and use them to your advantage. We hope they help you better understand how to move around in the Digital Scholar framework, to take your position and further evolve as a Digital Scholar, now and in the future.

8.2 Be agile

8.2.1 Agile methods

Agile methods are best known from the world of software engineering or software project development, where they have taken over from the traditional waterfall and later spiral models. In the waterfall model a huge software project is broken down into a linear sequence of smaller phases, each one corresponding to a set of ordered specific tasks and depending on the deliverables of the previous phase. An improved way of developing huge software projects was called the spiral model, originally described by Boehm, B. (1988). The process is now described as cyclic, in which each cycle is a sequence of steps (like in the waterfall model), but cycles are expanding, from smaller to larger steps, covering more and more elements of the project and coping with more and more risks associated with the project (including costs). More recently agile methods have been introduced. The principles of agile methods are popularised in an Agile manifesto, published in 2001. The advantage of agile methods is clearly that they permit one to respond to rapid changes in the context or feedback from end users or customers, without spending too many resources on tight plans. ‘Just enough’ planning and delivering smaller, but more frequent, intermittent results allow us to assemble quick feedback and integrate that into future plans at a minimum cost. And above all, agile methods are about people: human interaction, collaboration with customers and team mates prevail above procedures, processes and super-detailed documentation.
8.2.2 Agile methods for a digital scholar: Focusing on instructional design

In instructional design we could detect a similar tendency, from more rigid and linear ways of thinking to more agile approaches. Without going into too much detail, we will present basically two models at both ends of the spectrum.

The most linear model commonly used in course or curriculum development is called the ADDIE model. This model was created in 1975 by the Centre for Educational Technology at Florida State University for the U.S. Army. It describes the different steps of instructional design as a cyclic sequence of an Analysis, Design, Development, Implementation and Evaluation phase.

![ADDIE model](image)

Figure 8.1 The ADDIE model for instructional design.

In the analysis phase, you pre-plan and think about the goals, the audience, the learning objectives, the context, the constraints, etc. Next, you design the course on paper, i.e., you write a sort of storyboard for the course (naming the learning units, identifying contents, writing the instructions, etc.). In the development phase, you really build, produce and/or assemble learning materials. And, then, you begin teaching the course, in interaction with your students. At the end, you look back and reflect on the outcomes, from the viewpoint both of the students and your own learning experience.

There has been ample criticism of this model, mainly for its simplicity and its rigidity. Variations have been proposed, with smaller feedback loops or shortcuts in the cycle. Alternatively, totally different approaches have been introduced like, e.g., the 4C-ID model by van Merriënboer et al. (2002)
at the end of the 1990s. Four C (4C) stands for four components, and ID for instructional design. The basic claim is that four interrelated components are essential and need to be designed properly in blueprints for complex learning: (a) learning tasks, (b) supportive information, (c) just-in-time (JIT) information, and (d) part-task practice. It is valuable to take note of such models, but it is beyond the scope of this book to go into much more detail here.

Clearly, ADDIE and even 4C-ID have been developed long before agile and other iterative processes have been introduced. Due to the successful implementation of these agile methods in other disciplines (e.g., software engineering), similar attempts have been made in instructional design thinking as well. One such model, proposed by Allen Interactions Inc., is called SAM (Successive Approximation Model). It consists of three main phases: preparation, iterative design, and iterative development. First, in the preparation phase all the information and background knowledge relevant to the project is gathered, with all stakeholders involved and with a focus on alignment between learning needs and learning solution. This process is done quickly and called “savvy start”. Second, in the iterative design phase, all design, prototyping and review rotates iteratively in small steps. Prototyping is a vital part in the design phase. A prototype or mock-up makes conceptual ideas more visible for the team members, instead of describing and listing all the design specifications on paper. Finally, in the iterative development phase, the project team members rotate through development, implementation and evaluation. Design proof, the product of the first cycle, is made at the beginning of the development phase. After presenting and testing the design proof, an alpha version is released, and then it evolves to a beta version before finally rolling out the gold version. Not too many authors have already described their experiences with this model of instructional design. Though, for sure, it has potential, and it comes closer to contemporary ways of development and collaborative teamwork. With proven success in the world of software development, it fits very well into the digital world that scholars as teachers can benefit from.

And what about scholars as agile researchers? In a career column in Nature, Pirro (2019) describes how agile methods can be applied in a PhD research project. The protocol involves the following steps: splitting the work (in smaller layers of activities, each with tangible results), sprint planning (with supervisor and any other stakeholder), sprint execution (i.e., working on a specific task for a limited amount of time), weekly scrum (short meeting with the supervisor), sprint review, retrospective and planning (to discuss results, expectations and changes), and go back to the first step. The
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approach has been tested in the case of running a set of experiments, but also in writing a manuscript or building a simulation code. Among the benefits are faster knowledge development, fewer misunderstandings about research expectations, increased output and improved motivation and morale. Needless to emphasise that such an agile research mindset goes very well together with twenty-first century skills and digital competencies. In case you want to probe further, you can find more inspiration in Kucirkova and Quinlan’s (2017) work.

One particular example of agility in research concerns citizen science. It is a way in which citizens participate in scientific research projects by observing, gathering or processing data themselves, depending on their personal interest, time and technological resources. The digital scholar involved in such research projects needs to be able to use the proper digital technologies, and above all needs to have an agile mindset to interact with the citizens. Indeed, it is first of all important to select a technology that fits the research objectives, is user-friendly and is affordable for a large share of the envisaged population so that the participants can easily report their findings with the (academic) researcher. It is equally important, however, for a digital scholar to interact sincerely with the ‘assistant’ researchers: listening to their concerns and expectations, helping them with the tools, replying to their questions, finetuning or adjusting the research methods according to their needs and capabilities, stimulating quality and rigour in the process, persuading them to persevere when it becomes challenging, communicating about the results, involving them in future actions, etc. A genuine interest in how members of the community can contribute to real scientific experiments, each one according to their own ability, is a conditio sine qua non for a successful citizen science project. It must be clear that in this case an agile digital scholar is not just a teacher, even not merely a researcher, but someone who is also heavily competent for outreach activities, science communication and community service, the third pillar of academic life.

8.3 Watch the trends

Sometimes we hear people complain that whenever they have learnt about a new skill or a new tool, it is outdated before they can ever start using it. What is, then, the added value of putting effort into learning new things all the time? Or, more constructively, how can you know what will be important in the future so you can better select what to focus on or prepare for? There is no definite answer to these questions, but it certainly helps to famil-
iarise yourself with trend reports made by others. Indeed, it is not necessary, if not impossible, to do your own foresight research and explore possible or probable futures yourself. Other parties are better placed, better equipped and better financed to set up these studies in a scientifically correct way. We present here a few of these trend reports and trend-watching instruments as an example for the future digital scholar to find his or her way in the multitude of information and documentation openly and publicly available or not. Plenty of other documentation has been published on trends in teaching and learning in higher education. It is beyond the scope of this book to go into much more detail. The selection below is therefore to be seen purely as an illustration that could be inspirational for future digital scholars, if only because it is based on a (semi-)scientific basis and published by a trustful organisation. We invite the reader to become acquainted with these resources but always handle them with the necessary academic critical attitude.

### 8.3.1 Gartner hype cycle

The Gartner hype cycle is a branded graphical presentation developed and used by the American research, advisory and information technology firm, Gartner, to represent the maturity and adoption of technologies and applications, and how they are potentially relevant for exploiting new opportunities.

The hype cycle can be divided into five key phases of a technology’s life cycle:

- **Innovation Trigger**: A potential technology breakthrough, public demonstration, product launch or other event kicks things off. Often no usable products exist yet and broad-scale or long-term viability is still unproven.

- **Peak of Inflated Expectations**: Early publicity produces a number of success stories, and a wave of ‘buzz’ is built up – often accompanied by scores of failures. Some institutions take action; many do not.

- **Trough of Disillusionment**: Interest wanes as experiments and implementations fail to deliver. Missed expectations (e.g., problems with performance, slower-than-expected adoption) lead to disillusionment. Providers can survive only when they improve their products to the satisfaction of early adopters.

- **Slope of Enlightenment**: Some early adopters overcome the initial hurdles, begin to experience benefits and recommit efforts to move forward. Institutions draw on the experience of the early adopters. Their understanding grows about where and how the innovation can
be used to good effect and, just as importantly, where it brings little or no value.

✓ **Plateau of Productivity**: Mainstream adoption starts to take off. The technology’s broad applicability and relevance are clearly paying off.

![The general Gartner Hype Cycle for the adoption of technology](image-url)

*Figure 8.2 The general Gartner Hype Cycle for the adoption of technology (“Gartner Hype Cycle”, by Jeremy Kemp, licensed under the Creative Commons Attribution-Share Alike 3.0 Unported).*

Although there are numerous criticisms of the hype cycle (e.g., not scientific in nature, not a ‘cycle’, no precise definitions for emotions like disillusion and enlightenment, etc.), it is nevertheless worthwhile keeping the ‘cycle’ in mind when one gets excited about a hyped new technology or tool. Especially if you soon discover it is not the ultimate solution to all problems and needs to persevere in order for one finally to understand its real potential… this is not abnormal, and you are not alone!

Each year Gartner publishes a hype cycle for emerging (digital) technologies. They plot each technology on the curve where it is supposed to be in the hype cycle. Other organisations or institutions use the same curve for technologies specifically related to education. It would be interesting to compare historical plots and to check whether these (learning) technologies really have lived up to their original promise and have achieved a ‘plateau’ of maturity in their usage in higher education institutes.
8.3.2 EDUCAUSE Horizon Report
A well-known report on trends in teaching and learning, especially focusing on (the use of) learning technologies, is the annual Horizon Report, originally published since 2002 by the now defunct New Media Consortium, but currently by EDUCAUSE. This report profiles key trends and emerging technologies and practices shaping the future of teaching and learning and envisages a number of scenarios and implications for that future. While in the past the report was oriented towards 'time-to-adoption' (i.e., technological trends, and later also barriers and enablers, in the next coming two, four and six years), the current report begins now with a scan of the actual situation and offers more evidence and data to build upon four scenarios for the future of teaching and learning. They include an optimistic “growth” scenario and a realistic “constraint” scenario, a pessimistic “collapse” scenario and an imaginative “transformation” scenario. In order to collect ‘signals’ and ‘impacts’ for trends, the foresight methodology of the IFTF (Institute for the Future) is used, i.e., the STEEP framework: Social, Technological, Economic, Educational, and Political trends are identified. These larger trends are then used by a panel of experts from across the higher education landscape, who proceeded their work through a modified Delphi method. They were tasked with responding to and discussing a series of open-ended prompts, as well as participating in subsequent rounds of consensus voting, all based on their own expertise and knowledge. This methodology ensures that the panel’s future forecasts are sufficiently grounded in ‘real’ data and trends and are not merely science fiction. Nevertheless, it would be interesting to look back in history and compare the predictions of previous years with what actually occurred. Since the publishers have changed the methodology for the 2020 edition of the report as described above, this might be a bit tedious at this point, but wait a few years…

It is maybe worthwhile to delve a little bit deeper into the Delphi method, especially when applied in a digital age. The Delphi method was originally invented by the RAND Corporation in the 1950s. It was a structured communication and collaboration mechanism to gain consensus, synthesise opinion and process feedback from experts. Needless to say, in those times this research process was constructed within the limited possibilities of the available technology. With the advent of digital tools, the previous limitations for participation, time for response and processing, and geographical location no longer restricted the application of a Delphi method in scientific research. Moreover, in today’s digital age, researchers have access to technological tools for conducting Delphi studies that extend beyond these limitations, thus providing both opportunity and challenge to con-
duct global studies, automate elements of the research process, and handle greater amounts of data in shorter time frames. Indeed, using online communication, collaboration and survey tools helps the Delphi researcher to prepare the study, design surveys, communicate with participants, analyse data (both qualitative and quantitative), protect against researcher bias and manage other mistakes. More practical considerations can be read in the Handbook of Research on Innovative Techniques, Trends, and Analysis for Optimized Research Methods | IGI Global (igi-global.com), chapter 9: Delphi Method in a Digital Age: Practical Considerations for Online Delphi Studies, by Christine A. Haynes and Kaye Shelton (pages 132-151).

8.3.3 Innovating Pedagogy
A similar report, but starting from a totally different perspective, i.e., from a pedagogical point of view rather than the technology, is the annual Innovating Pedagogy report published by the Open University’s Institute of Educational Technology (UK), in collaboration with the National Institute for Digital Learning at Dublin City University (Ireland). By ‘innovative pedagogies’ the authors mean novel or changing theories and practices of teaching, learning and assessment for the modern, technology-enabled world. The process followed by the researchers has involved sharing ideas, discussing innovations, reading research papers, reports and blogs, and commenting on each other’s draft contributions. They worked together to compile their report by long-listing new educational concepts, terms, theories and practices, then reducing these to ten top ones that have the potential to provoke major shifts in educational practice. And, lastly, the authors drew on published and unpublished writings to compile ten sketches of new (innovative) pedagogies that either already influence educational practice or might transform education in the future. An interesting remark made by the authors concerns the diversity of the readership across the world. It forces them to examine carefully assumptions made about how innovations that originate in one place may be perceived elsewhere. This approach creates added value to the report, not always true for other similar trend reports.

8.4 Engage in action research
As a future digital scholar, it is recommended that you research your own practices, in collaboration with others, and do that in a systematic and formal way. This could be done through ‘action research’, i.e., taking the action, researching the action and learning from the process. Therefore, an appar-
The characteristic of action research is that you do it for yourself, i.e., to improve your own personal behaviour as a digital scholar. Several authors have described how to implement action research as a project by teachers for teachers in a classroom, working together with students and colleagues. We rely on their practical advice, and try here, where possible, to generalise their ideas to all activities of a digital scholar.

Action research can be approached as a real research project. The basic process consists of the following steps:

- **Planning stage:**
  - Identify and limit the topic; this could be based on your own interest or something that you like to examine in depth, something that you like to improve or correct, something with a sufficiently narrow focus and feasible to do within boundary constraints of time, skills, budget, etc.
  - Gather information, by e.g., talking to colleagues, skimming manuals, checking websites, bringing up ideas, etc.
  - Review the related literature (books, journals, websites etc.) in depth, to make an informed and scientifically sound decision on the further steps to take, and (later) to connect existing theory with the actual practice.
  - Develop a research plan, from stating the research question (best is to state only one in order to keep focus), formulating the hypotheses, identifying possible variables, choosing the proper methodology, to selecting and/or developing the research instruments, while taking into account the issue of research ethics.

- **Acting stage:**
  - Implement the plan and collect the data, through observation, query, survey or study, using appropriate digital tools whenever possible and appropriate.
  - Analyse the data, both quantitative and qualitative (in action research mostly both types of data are necessary), with proper statistical methods and triangulation processes.

- **Developing stage:**
  - Develop an action plan, based on your findings, with short-term and modest objectives, in order to take small steps in improving your current practice.

- **Reflecting stage:**
  - Share and communicate the results, with your peers at your own institution, but also with the broader community, e.g., through
presenting at a local or global conference, writing a scientific paper in a peer reviewed journal, etc.

- Reflect on the research process and try to adapt wherever needed for a next cycle.

In most cases, these steps are taken in a cyclic and iterative manner. Some of the steps may be skipped or rearranged, if appropriate.

Such action research can be used effectively to bridge the gap between theory and practice, and to expand the knowledge base on digital scholarship. In that way, all your academic (and professional) skills as a teacher and researcher will be tapped in and will help to conduct the action research in a correct way, from the ideation up to the reflection phase. Needless to say, digital tools can and will help you to conduct the action research at all stages, and by now you should be able to know how to use them to your own benefit.

8.5 Lead the change

The Technology Acceptance Model (TAM), as described by Davis, F.D. (1989), claims that “perceived ease of use (PEOU)” (the degree to which a person believes that using a particular technology would be free from effort) and “perceived usefulness (PU)” (the degree to which a person believes that using a particular system would enhance his or her job performance) are the two fundamental determinants of user acceptance of new technology.

The author further states that when users find a technology ‘easy to use’, then they perceive it also as a ‘useful’ one, or: PEOU influences PU. TAM offers the causal relationships of these two fundamental constructs (PEOU and PU) with three other constructs, “attitude toward usage (ATT)”, “behavioural intention to use (BI)” and “actual usage (AU)”. ATT is defined as an
individual's positive or negative feeling about using a certain technology. According to TAM, both PEOU and PU influence ATT, i.e., if users find a technology useful and easy to use then they develop a positive attitude towards this technology. BI is defined as the degree to which a person plans to perform or not perform some specified future behaviour. TAM claims that, if users find a specific technology a useful one (PU), then they develop a positive intention of using it. Similarly, users’ positive attitude to a specific technology (ATT) leads them developing an intention to use this technology. So, both PU and ATT directly influence BI. TAM further suggests that users’ behavioural intention (BI) shapes their actual use of the technology (AU). If users have the intention to use a specific technology, then they will use it.

The basic version of this technology acceptance model, as described above, has been frequently used in many situations, also in the academic world (e.g., to model take up of learning technologies in education). Nevertheless, it has been widely criticised for several reasons. Newer versions (refined, adopted or expanded) have been developed better to define the terminology and to include more factors, like e.g., the Unified Theory of Acceptance and Use of Technology (Venkatesh et al. (2003)). It is beyond the scope of this book to go into detail here. We just want to emphasise that it is possible to describe the process steps taken by a digital scholar from seeing some potential in a certain new digital technology up to actually using this technology in your scholarly work. We need a change in mindset, in attitude to technology and in behaviour of using it (or not).

Not all digital scholars look at change in the same way. The process of adoption over time of a new technology (or innovation in general) is typically illustrated by the technology adoption lifecycle, represented as a classical normal distribution or “bell curve”. The model indicates that the first group of people to use a new technology is called “innovators”, followed by “early adopters”. Next come the early majority and late majority, and the last group eventually to adopt a technology are called “laggards” or “phobics”. 
Innovators – These are risk-oriented, leading-edge minded individuals who are extremely interested in technological developments. Innovators are a fractional segment of the overall population.

Early Adopters – A larger but still relatively small demographic, these individuals are generally risk-oriented and highly adaptable to new technology. Early adopters follow the innovators in embracing new products; they tend to be younger and more technology savvy.

Early Majority – Much larger and more careful than the previous two groups, the early majority are open to new ideas but generally wait to see how they are received before adopting them.

Late Majority – Slightly conservative and risk-averse, the late majority is a large group of potential users who need to be convinced before jumping into something new.

Laggards – Extremely frugal, conservative and often technology-averse, laggards are a small population of usually older and technology averse individuals who avoid risks and want to embrace new ideas only when they are forced to.

The most difficult step is making the transition between early adopters and the majority, indicated by ‘the chasm’ in the picture. It is the moment when the hype turns into more moderate and mainstream considerations when adopting a certain technology (cf. the Gartner hype cycle), or the moment where enough momentum has been built in order for a technology to become a standard.

As a digital scholar, you can position yourself on the curve, based on the way you feel about adopting new technologies in your scholarly work. We
leave it up to the reader to make that exercise by themselves. Your position might also depend on the technology itself: for some products produced by your preferred manufacturer you might feel tempted to be on the left side of the curve, while for products from competitors or less hyped in the media you need a bit more encouragement to try them out.

One particular interpretation of the technology adoption life cycle is seeing it as a model to grow, moving from right to left over the bell curve. With increasing digital competences, a scholar once afraid of new technologies can become a more and more digital scholar and eventually belong to the bigger majority or, why not, to the early adopter or even innovator category. Fortunately, you don’t have to make the moves all by yourself. You can rely on the help of change agents. Change agents in this context are people who are advocating the growth and adoption of an innovation. In the higher education world, they are those who are doing new things in their scholarly work in the institution and trying to spread those ideas outwards. In a way this is just what scholars should do: investigating new things and diffusing their findings in an influential manner among people. It helps that the change agents are digital scholars themselves: they can translate in a culturally sensitive way the message of innovation such that it gets the best chance of being favourably received by as many as possible other still doubting colleagues. As a digital scholar you probably have the proper competences to succeed in this challenge. There is maybe one attribute that deserves special attention here, and this is ‘power’, not in the sense of hierarchical or managerial control, but rather the possession of knowledge and the ability to pass that on and exert enough influence to make changes for the better (i.e., innovate). That transforms future digital scholars into leaders of change. They will be able to read the signs of the times, to keep their institutions agile to respond to new trends, and to initiate changes whenever needed.

In order to help future digital scholars in taking up this role as a leader, we present here a useful framework called FIRRST by Cavanagh et al. (2018), which is an acronym describing the following set of principles to make strategic decisions:

- **Follow the Energy:** identify pockets of opportunity where critical mass is forming, capitalise on those “rising tides” of institutional energy, and direct them to organisational goals.
- **Invent the Future:** recognise potential opportunities, have the courage and fortitude to envisage a future that does not yet exist, inspire others to see this vision and keep the organisation moving towards that vision even amid inevitable setbacks.
✓ **Research and Make a Decision:** involve pilots or even formal research studies (e.g., action research), gather as much data as possible (and needed), and don’t be afraid of making a decision even with insufficient data.

✓ **Recognise Resource Limitations:** allocate the available resources in the chosen direction, mobilise partners or extra resources, and don’t forget to include the creative potential and passion of all involved as a valuable resource.

✓ **Solve the Big Problems:** embed the innovation into the broader institutional challenges and strategic goals.

✓ **Take Action:** recognise a window of opportunity, eliminate risks to a sufficient extent and accept others, choose the proper time to decide and act!

This FIRRST framework can serve as a practical heuristic for future digital scholars making decisions for themselves and leading the change in their institutions.

### 8.6 In sum: Go DIGITAL

With the above recommendations in mind, all that remains for a future digital scholar is to take the final step, and really go digital. In order to help, and to stimulate any scholar to engage in the digital world or, even better, to shape this digital world, we give some extra advice in the form of a few active verbs:

✓ **Dare!** Don’t wait, don’t hesitate, take your chance, don’t have cold feet, jump or dive into the deep, take the risk, be adventurous, go for it!

✓ **Ignite!** Start right away, enlighten your environment, inspire your peers, encourage colleagues, instigate new ideas, light the fire!

✓ **Grow!** Broaden your scope, rise to the top, push the limits, expand across borders, mature and become wiser, increase your impact!

✓ **Interact!** Don’t hide, network with partners, build a community, participate and communicate, connect with like-minded people, cherish relationships!

✓ **Try!** Experiment and explore new things, practise, give it a chance, don’t give up, back off to blow up better, don’t reinvent the wheel!

✓ **Appeal!** Fascinate, attract, charm, please, invite, engage, be stunning, show your best (digital) side!
✓ **Learn!** Treasure your successes, turn mistakes into learning opportunities, stand on the shoulders of giants, integrate new knowledge, be wise, keep smiling!

This list does not pretend to be complete, and for sure you can find other and more active verbs to be a scholar teaching and researching in the digital world of today and tomorrow. “The best way to predict the future is to create it!” That statement was true when Abraham Lincoln, 16th President of the United States, first said it, and even more true today, when the world is a whole lot less predictable than it used to be. With our Digital Scholar framework as basis and with the above recommendations to evolve we hope to have given some pointers on how to do that as a digital scholar in the future. Safe journey!

**References**


