DESIGNING A 'STRATEGIC PARTNER' SCHOOL

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ABSTRACT

It is the fourth time that we create a new management school. Every time it was different and every time we have learned a lot from the process of curriculum design in harmony with the voice of the times. In this paper we outline the process of curriculum design through our latest experience in creating the Strategic Partner School in Hungary. Although there are important characteristics of the Middle-East European market for post-experiential business education taken into consideration, the meta-level of the process, i.e. how to identify the relevant characteristics, can be applicable well beyond the area in which this study originated. Naturally, our way is not the only right way of curriculum design but our aim with this study is to stimulate thinking and discussion rather than selling a recipe.

Keywords: management education, curriculum design, strategic partner, post-experiential education

1. INTRODUCTION

In this paper we are outlining a process for designing postgraduate curriculum for business. Our departure point is the dissatisfaction with the common practice of curriculum design for postgraduates who are interested in achieving knowledge increase in the field of study where they obtained their original degree and they are aspiring to acquire knowledge above and beyond what they learned in their previous studies. So we are aiming at designing a refresher course in the sense of updating the existing knowledge with new achievements in the field thus becoming up-to-date in the knowledge domain. Unfortunately we observed, together with a number of academics in the business area, that the postgraduate courses in Middle-East Europe (MEE), particularly those labeled 'refresher', are often not more than the abbreviated versions of the undergraduate courses - the available time of studies is shorter thus the delivered teaching material is smaller and it typically does not go substantially beyond the undergraduate curriculum. Even in the best cases the only difference is that the teaching is somewhat more focused on business examples as the students are expected to have some business practitioner experience. We have developed an approach which aims at designing a curriculum for business practitioners who are willing to go back to the school in order to increase their knowledge and at the same time making it sure that the developed program has a unique selling point. We introduce our novel conception of curriculum development for such educational program through our example of developing the 'Strategic Partner' post-experiential and post-MBA school in Hungary - it was through the development of this school that we discovered that it entails a research process. Our argument is organized around five cornerstone concepts:

- The process is *quasi-algorithmic*, meaning that is sort of algorithmic but not exactly
- The steps are quasi-heuristic, meaning that they are sort of heuristic but not exactly
- The conception of education is *quasi-incremental*, meaning that is sort of incremental but not exactly
- The vision of the 'big picture' of the curriculum is *quasi-abductive*, meaning that is sort of abductive but not exactly
- The abductive 'big picture' is *quasi-validated* by the conditions of a particular recipient; meaning that it is sort of validated but not exactly.

In the next section we describe how we use the above concepts in terms of 'working definitions' – similar to the previous points these will not exactly be definitions but almost. This introduction of the basic concepts we want to operate with is followed by the main argument of the paper describing the process of curriculum design.

2. THE CORNERSTONE CONCEPTS

In this section we introduce a couple of concepts which are essential for understanding the curriculum development for a business school in MEE as we describe it here. As indicated in the previous list, we use somewhat altered, usually softened, versions of the concepts – therefore we introduce our working definitions the use of which is limited to this paper. It would perhaps be more accurate to say that these concepts are depicted then described as we are not providing proper definitions but rather somewhat metaphoric explanations which will have somewhat fuzzy boundaries but their meaning will be sufficiently clear to enable the mental operations we are engaging with in the subsequent section.

The problem we are engaging with we describe using a metaphor. The cuckoo is a strange bird not making its own nest but rather placing its eggs in other birds' nests. So we start from a couple of people (the cuckoos) who are developing a new curriculum (egg) and then trying the find a recipient (nest) to run the school to success (get the baby-cuckoos out of the eggs, nurture them to get strong and fly). Why we are using this metaphor? Because we cannot describe the problem precisely. We do not understand it clearly. (Cf Simon, 1973) We can only say about it, at the moment, that we do not know how to get the cuckoo's egg into a nurturing nest.

Such problems need to be handled as a whole as they cannot be broken down into small-enough components which would be easy to handle. However, sometimes we can identify (at least some) components of the problem even though their boundaries are not sharp, they often overlap and the relationships between them are less then clear. This is called near decomposability (Simon & Iwasaki, 1988; Simon, 2002). We need to introduce the cornerstone concepts to tackle such problem and to have the chance of arriving at a meaningful solution – although such solution is usually not demonstrably correct, let alone the only correct one. Of course, this notion also applies to our work presented here – this is certainly not the only right way of designing a curriculum but we have found it useful and we hope that others may benefit from it as well.

2.1. Quasi-Algorithmic Process

In a complex system there are great many independent agents interacting with each other in great many ways. (Waldrop, 1993) If we were able to isolate these agents, understand each of them on its own and map all their interactions we would have a chance to create processes that can be described by algorithms. However, in complex systems this is impossible. As noted above, however, near-decomposable systems can more or less be taken apart; in such systems it is possible to describe processes in more or less algorithmic ways. We call such processes quasi-algorithmic.

Example: In our curriculum design are able to identify many involved parties – we know who could teach such topics as we are interested in, we know the potential universities (Middle-East Europe) that can receive our course, we know the companies who need a strategic partner and we know quite a lot about who can become our students. However, there may be other agents we do not count with (or may not even know about them) and we are far from being able to describe all the ways the agents interact. Therefore the curriculum design we describe here is quasi-algorithmic.

2.2. Quasi-Heuristic Steps

If we zoom closer into the steps of the quasi-algorithmic process we find a resemblance with the complexity that led us to the quasi-algorithmic process; not unlike in Mandelbrot's (2004) fractals. This means that the steps in themselves are still too complex for complete explanation of what and why we exactly do then and there. When we cannot explain why we do what we do in a particular situation, we often use heuristics. These are 'rules of thumb' for the use of which we do not have proper explanation apart from a vague idea that they often work in similar situations – while we cannot specify what the similar situations are, how often the heuristics works or what kind of solution they lead to. "Heuristic, as an adjective, means «serving to discover»". (Pólya, 1957: 113) Heuristics should be rooted in "experience in solving problems and experience in watching other people solving problems" (ibid: 130) and they lose their appropriateness when inherited without the experience and are applied in mechanistic ways. If

developed and used appropriately, heuristics can be very useful (ibid: 181): "If you take a heuristic conclusion as certain, you may be fooled and disappointed; but if you neglect heuristic conclusions altogether you will make progress at all. The most important signs of progress are heuristic." What we call quasi-heuristic steps here, is more or less heuristic – we can provide some explanation for most of them but such explanation is certainly the only possible one, often not complete and may contain heuristic elements themselves.

Example: Many steps, as it will be shown later, in our search for the nest for our cuckoo-egg are based on heuristics, particularly concerning the judgment how long should we try searching and when to give up.

2.3. Quasi-Incremental Education

Before Kuhn (1996) introduced the paradigms in (scientific) disciplines, the growth of knowledge was regarded to be incremental; i.e. following the pyramid conception of Comte (1868) and Mill (1861). The pyramid conception implies that any new knowledge always builds on previous knowledge, all of which is regarded as valid. Kuhn's paradigmatic approach assumes that apart from building sometimes the growth of knowledge also entails destruction or even leaving the location of building. When applying these approaches to knowledge increase of individuals, the pyramid conception can be called incremental as it builds on the learner's existing knowledge. Radically new knowledge, however, which would contradict everything one knows, could not be acquired as the learner would have nothing to connect it to (Dörfler, 2010). Therefore we argue for quasi-incremental knowledge increase and thus quasi-incremental education, meaning, that the new knowledge builds on the existing knowledge of the learners but it will also contradict and dismiss some of it.

Example: Our course is post-experiential and post-MBA. Those, who obtained a business degree earlier than a year or two ago, certainly could not have learned about the strategic partner conception as a new organizational role. Very few could have met the concept through their work and/or readings and even they could not have developed a fully contextualized view of this role. In our school we will build on the students existing knowledge, however, we also expect them to give up some of their obsolete knowledge – therefore we offer quasi-incremental education.

2.4. Quasi-Abductive Big Picture

The notion of abduction as a form of reasoning was introduced by Charles S. Peirce as an alternative to deduction and induction as both of these are prone to the fallacy known as the 'problem of induction' (e.g. Russell, 1912, 1948; Popper, 1968, 1989). Peirce (1940) suggests that if we observe something we find surprising, we should 'guess' an explanation which, if true, could account for the observed facts or, at least, some of them. So the form of the inference is the following (ibid: 151):

The surprising fact, C, is observed; But if A were true, C would be a matter of course, Hence, there is reason to suspect that A is true.

Of course, there may multiple explanations appropriate for explaining the same set of facts; which one we choose is also part of the abductive reasoning. Usually Occam's razor (see e.g. Russell, 1946) is used, which in this case means that everything else being the same, the simpler explanation is better. Bateson (1980) adds that abductive reasoning also includes, once having found an explanation we are happy with, trying to find additional observations that are consequences of the same explanation. The idea of a quasi-abductive big picture in this paper means a big picture that is arrived at by means of abductive reasoning but also discussed between peers and therefore interpersonally reasoned – so it is more or less abductive but not completely.

Example: As it will be discussed in detail in Section 3, the starting point of the curriculum design is finding interesting components and integrating them into a single whole. This integrative process is tacit (Polanyi, 1966; Polanyi & Prosch, 1977) and as such it provides

an abductive 'big picture'. Then we run a series of workshops and go through various steps through which this 'big picture' is amended and, to some extent, interpersonally reasoned.

2.5. Quasi-Validation

The idea of validity is inheritance from experimental sciences and is concern with the question of where a particular knowledge applies – i.e. what is the domain of validity. It is closely linked with the notion of generalizability, which refer to extending some knowledge beyond the domain in which it has been obtained from. Some of the underlying concepts of validity only apply in a positivistic approach, although some requirements also make sense in the non-positivistic world. One of these is internal consistency which we consider also a necessary condition in our view of quasi-validation. Where the quasi-validation departs from all other approaches of validity is that it is only concerned with one single instance of application at a time and the validation process is evaluation of the quasi-abductive big picture in terms of the conditions of that single instance.

Example: The quasi-abductive big picture in our case is the conception of the Strategic Partner school. Not all organizations need the role of strategic partner and this need is determined by the unique set of circumstances of the organization – these provide the conditions for quasi-validating our new school. The internal consistency is examined and reexamined using a concept mapping technique.

3. MENTAL OPERATIONS

In line with the previously depicted concepts we introduce the quasi-algorithm for developing the curriculum (note: post-experiential business education in Middle-East Europe) in eleven steps. Over the course of talking about our new school and how we developed it we had variants of 5-11 steps in the process, not as we added new steps but certain steps can be handled together or separately. Here we use the version with the largest number of steps as the stages of the process are most readily recognizable in that way – but the process does not depend on the number of steps we use to describe it.

3.1. Look at what the greatest thinkers management are busy with

We currently distinguish four classes of great management thinkers: The *Classics*, such as Bertrand Russell, Umberto Eco and Michael Polanyi, perhaps belong more obviously to the domain of philosophy than to management but for instance Michael Polanyi is the single most quoted author in knowledge management. The *New-Top-Thinkers*, such as Malcolm Gladwell, Nassim Taleb, Roger Martin and Chris Anderson, are newcomers to lists, such as the Top Thinkers 50 (http://www.thinkers50.com/results) and often rejected by reviewers of academic journals. The *Stabile-Top-Thinkers*, such as Henry Mintzberg, Charles Handy, C. K. Prahalad, Gary Hamel and John Kotter, are the often quoted management gurus – the most significant problem here is that they are significantly more quoted than read and more read than understood. It is important to always read the original works of these gurus. Finally the *TED-Stars*, such as Dan Pink and Dan Ariely, seem to have something very important to say but they are not on the gurulists yet.

Examples: We have started with Prahalad's Social Responsibility, Gladwell's Outliers, Pink's Motivation 3.0, etc. starting from the top of the Top Thinkers 50 and TED and continued iteratively coming back and re-searching.

3.2. Find out whether the new conceptions you like are already offered in the red ocean (mainstream business schools in your market) – if yes, throw away that conception and find new ones

For instance you may find that there is already a course offered on Outliers by the Extraordinary Ltd Educational Consortium or a 3-day online training on the social responsibility of managers delivered by the YourChildrensWorld.org Internet Company (made up names). It does not matter whether the quality of these courses is great or poor – and it matters even less whether you could do it better or not. If you

are aiming for a unique program, you need to bring something that cannot be found on the market yet. There is also a quitting point here (like the conditions for avoiding endless cycles in algorithms): the intellectual honesty dictates that you should quit if you cannot find a sensible set of non-offered conceptions as it becomes impossible to start a school the next academic year.

Examples: We continued down the list until we arrived at #16 Howard Gardner, #31 David Ulrich, #32 Roger Martin, #35 Chris Anderson and #40 Nassim Taleb.

3.3. Describe the new knowledge items with key concepts (around 60 of them), decide about a taxonomy and draw up the concept map of it

The first important thing here is to distinguish between the *key concepts* and the *keywords*. The key concepts are content items around which you organize your curriculum (or any content for that matter) while the keywords are terms that are used for searching. The key concepts can, and in the case of such original curriculum should, be new concepts that no one knows – you want students to come to your school to learn them.

However, nobody will find you using such terms as, as it was said, nobody knows these – you certainly want to find established terms for keywords which people actually use when searching. Once you have your key concepts, organize them into a taxonomy. Naturally, there no one single right way of choosing and/or creating the key concepts, so there cannot be a single right taxonomy for these. But the taxonomy should make sense – therefore it is very helpful if you can draw a concept map of them and the picture should be beautiful.

Example: A subset of our key concepts for the Strategic Partner course is: strategic partner, narrative intelligence, abductive thinking, social media, black swan.

3.4. Sign up appropriate teachers

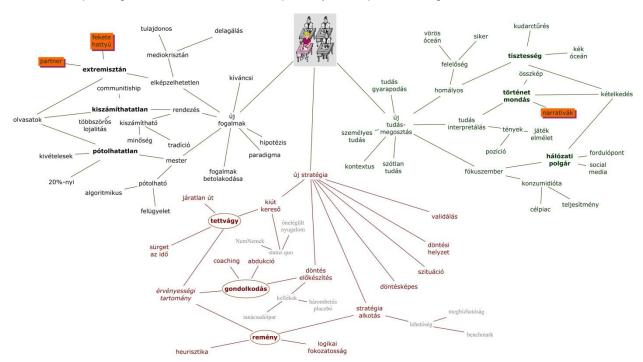
Most of us cannot afford to run our schools with the gurus whose conceptions we adopted; therefore you need to find people who are able to teach the classes. The most important thing about the candidate-teachers is that they are already aware of several of the key concepts from the concept map. It would be good if some of them are stars (of your market) but pay attention not to hire celebrities. We distinguish between stars and celebrities in the way that stars have done something significant and are well-known for their achievements while celebrities are picked up by the media which made them well-known without any particular merits. While the knowledge of your candidate teachers will rarely coincide fully with your key concepts there also must not be huge discrepancy. The choice of teachers will alter your map of key concepts. As in the previous step, you have an exit condition based on intellectual honesty – i.e. if you do not find appropriate teachers for a few months, you need to quit.

Example: With reference to the subset of key concepts from the previous step, we have found teachers who are able to deliver the following: master strategist, storytelling, abductive management, net citizen, strategic thinking

3.5. Design a system of key concepts for your course based on the knowledge of your teachers – for distinction we call this the curriculum map

The previous concept map in step 3.3 was designed around the knowledge items you have found as not yet marketed. However, the choice of teachers will alter your map of key concepts. This time it is also not sufficient if the key concepts describe the knowledge items (even if these are the knowledge items based on your teachers' knowledge) – this time you work focusing on a deliverable course content taking the structure of the course into account. In the case of a 1-year program, with 5 classes in both semesters, 4 sessions for each class and 2 key concepts for each session, you have $10 \times 4 \times 2$ key concepts. This will certainly be different from your previous concept map and particularly it may have a different structure – and this structure is more rigid as the flexibility is greatly reduced by the formalized class 'sizes'. However, the difference between the two concept maps cannot be huge as then you will fail to even

remotely delivery what you originally intended. As a rule of thumb the difference between the two concept maps should not be more than 20%.



Example: Figure 1 below shows our map of key concepts in its original form.

FIGURE 1: THE INITIAL MAP OF KEY CONCEPTS FOR THE STRATEGIC PARTNER SCHOOL

3.6. Check the internal consistency of the curriculum map from step #3.5

The curriculum map is not simply a list of key concepts; there are also multiple complex interrelations between these key concepts. Some key concepts will pre-suppose others (i.e. there must be an order of delivery). Sometimes you will find two key concepts apparently contradicting each other and you will need to introduce new key concepts (this will mean replacing or modifying existing ones as it is important to keep the right number of concepts to maintain the structure) in order to resolve the contradiction. The curriculum map will also need to form a single whole – both parts of this notion are essential it must be a whole with no holes (knowledge gaps) in it and it must be a single one.

Everyone uses tools they are most familiar with but we recommend the Doctus knowledge-based expert system shell. Doctus uses 'if... then' rules for knowledge representation and this type of knowledge base is particularly appropriate for handling such consistency checks. As there are many reasons for which the curriculum map should be altered again, this step is in itself highly iterative. However, one must not proceed without arriving at a fully consistent curriculum which forms a whole entity.

Example: For instance the abductive management pre-supposes some topics of knowledge philosophy; strategic business thinking and storytelling can be thought in both orders (i.e. any of the two can come first) but they will be delivered differently in the two cases, and so forth.

3.7. Find a nest for your cuckoo-egg; i.e. find a recipient for your school

When starting the search for the recipient, it must be re-iterated that our experience is in Middle-East Europe (MEE) business education and it may make sense to do it differently in a market with different characteristics. After a lengthy process of thinking and discussion we argue that in MEE the recipient

should be a university. There is no really right solution as a university is a bit too much but a non-university is certainly not enough. The heuristic that prevailed is that the students are not really coming to obtain a diploma but at the end it will be a good thing if they get one – and they will also be happy about it. It is also important that the potential audience is only looking for this kind of courses in universities. For a course in carpentry or an interpersonal communications training the choice would be entirely different.

We considered a fair number of heuristics here and your market and your experience being different you may come up with somewhat different heuristics. But we believe that at least some of these would be useful for many. For instance it cannot be an unstable university (e.g. many new ones in MEE) as they are busy with their internal struggles. It also must be a university that can imagine getting serious income from students not only government financing or (EU) gran applications. You will want a strong university-identity and established university culture. What is the most important here is that you consciously think about the heuristics that limit your search space and explicitly formulate them.

Example: Although there appear to be many candidate-recipients in Hungary, we quickly reduced these to only five. We managed to settle with the University of West Hungary and we stopped searching. It could have been possible find a few more candidates through identifying additional personal contacts that could get us at the table with few more candidates but the number could not be significantly larger.

3.8. Embed your key concepts into your own context, write a book about it, and present it to the wide audience

As most steps outlined here, this one serves multiple purposes. First of all, as you are working on the book (which is also the process of embedding the key concepts into your context), you will once again rework the curriculum map. It is particularly useful to involve the teachers you have signed up in their respective parts by organizing a workshop. In an interaction of minds the key concepts will be further clarified and sometimes shifted or, rarely in this stage, changed. It is also great to see how everything is coming together – this will re-energize you and your collaborators as well. Through the workshops you also achieve that your teachers acquire awareness of the full context and therefore the teaching in your school will not be fragmented but form a single whole. Such book is not a manual, it is not a reader and it is not a textbook. It is also not a monograph as you are targeting curious potential students and their bosses not your fellow academics. The book may be written by a team of (a few) authors but it has to be an authored book, not an edited one. It has to be readable by your target audience and what is does is to frame the emergent discipline taught in your school, so you have to pay attention to the order and consistency of key concepts. Once the book is written, you need a fancy large-scale book launching party. This party is very important in itself as this is the first time that you, your teachers and the recipient publicly commit to each other and to the new school.

Example: We have organized a series of workshops with the signed up teachers in which we discussed the quasi-abductive big picture; and this provided the interpersonally reasoned part of it (cf Section 2.4). We organized the book launch event as a mini conference with contributions from the involved teachers and created the largest media-exposure we could.

3.9. Spread the word: explain your new school-concept wherever you can

The book launching event is part of the spreading the word. The news about the school need to be spread and announcing your event e.g. on the internet and in radio is already part of it, and after the event you should give interviews. There are two distinct types of interviews: On radio you need to speak fast and repeat your message many times – thus in the radio you speak about the new profession you are introducing. In newspaper interviews you can elaborate the idea further as the reader can also spend more time on it, unlike the radio listener. Therefore in newspaper interviews you talk about the book.

The choice of media is also very important – if you only use leaflets and newspaper advertising you will fail. What you need today is blogging, YouTube, Facebook, LinkedIn and so forth. This is not only important as these channels are more likely to reach your target audience but you also demonstrate your awareness of 'our times' – you want to sell the latest knowledge, you cannot sell it using obsolete

communication. For instance, viral videos today are a must: no longer than 1 minute videos in which your teachers introduce themselves and commit to the idea of your school. Of course, tomorrow this may be something different.

Another important way/channel of spreading the word is getting into organizations that are likely sources of your students – but you will not talk to your potential students but to their bosses. Delivering workshops to these organizations is also testing the viability of your curriculum – and your curriculum map will change for one last time before starting the school.

Example: We gave several interviews on radio and in newspapers, set up a website, blogged and tweeted about it, posted on Facebook and LinkedIn and created groups, made our viral videos available on YouTube and linked to the school website, prepared presentations on SlideShare, etc. We also have an agent organizing workshops for organizations.

3.10. Recruit students

First you need to identify what kind of students you want so that it is easy to manage the expectations. As you are starting from the conceptions of gurus, you are in many ways different from the 'usual' schools. Most business schools promise instant knowledge, i.e. knowledge that they can use tomorrow in their workplace. You do not want your students to have such expectations. The conceptions of the gurus help developing a better understanding of the big picture of business in general and of the emergent discipline you are introducing in particular. This does not mean that you do not want students who do have real problems in their organizations and they obviously want to solve them. So you are not offering a philosophy course the outcome of which is simply a better understanding of the world. But you need students with the right haste/patience ratio: their primary focus should be the better understanding of their business and of their role in the strategic thinking process; but they need to be professionals facing real business problems keen to find their way out of the woods. And possibly there will be a few things they will be able to do more or less immediately, although this is likely to be due to a newly developed insight than to a new tool they learned about.

There are basically three ways to recruit such students: The best is if their boss sends them as the right person to acquire this new knowledge. A somewhat less good version is if they tell their bosses that they would like to attend your school and they convince their bosses that it is the right school and they are the right persons to attend. And finally, the worst version is if they are sent by the career office of their organizations according to some checklists. You might get a few students from the first two groups from the internet and other channels you are advertising yourself but most will doubtless come on the basis of personal contacts, i.e. your former MBA students, their colleagues, bosses of your former students and so forth. However, in these cases your media presence is important as that is where the potential students will check you out and take their final decisions.

Example: The vast majority of our students applying to the Strategic Partner school are colleagues of our former students from various previous schools and some are also former students themselves (occasionally obtaining their third diploma in our schools). Our company workshops are just about to start and we hope that they will yield additional students.

This is the step at which we finish our quasi-algorithmic description of the process, they outlined steps feature a number of quasi-heuristic branching points and cycles, we introduced the quasi-abductive 'big picture' of the school and now we are just about to start the quasi-validation in the particular organizations. There is one more step remaining which we have not included here as it will only start in Fall when the school starts – you need to nurture the baby-cuckoo.

4. DISCUSSION

Having gone through the process of curriculum design in detail, the question perhaps naturally arises: whose job it is to design a curriculum (a school)? The simple answer is that there is no such profession. This answer is so obviously unsatisfactory – the curriculum has to be designed. As Bateson (1980) put it:

"Break the patterns that connect the elements of learning and you can be sure that you will destroy all quality."

Then, perhaps, we should ask the question differently: Who can master curriculum design? This is a question that we can give a satisfactory answer to, based on this paper: the person who has transdisciplinary knowledge. It is important that we clarify what trans-disciplinary knowledge means by delineating it from related concepts, such as interdisciplinary and multidisciplinary. Interdisciplinary means that it is in-between disciplines, i.e. it is in a hole and does not belong to any discipline. This is not very helpful, no substantial knowledge can reside in such places – the holes are not very large. What often is inter-disciplinary is research problems – but these are actually the opposite of knowledge, these are knowledge gaps and the task of the research is to create the new knowledge. The multidisciplinary is even less likely since Leonardo died – he was the last polymath. Disciplines are too large for more than one of them to fit into a single mind. Trans-disciplinary knowledge is based on knowledge of a single discipline to which the person was able to add particular bits from other discipline – these bits can range from facts and tools to large-scale conceptions or beliefs.

The trans-disciplinary curriculum designer primarily needs deep knowledge of the discipline of cybernetics in the sense of Ludwig von Bertalanffy (1969, 1981) and Gregory Bateson (1972, 1980). S(H)e needs to be able to see the whole, the elements and the patterns that form the elements into a single whole. By making sense of the whole this person is able to change some elements of the system and by modifying the patterns to construct a new whole from it which may be more or less similar to the earlier version of the whole but it will again make perfect sense. It is indispensible that the curriculum designer also has superficial but wide knowledge of the constructivist learning in the sense of Ulric Neisser (1963, 1967) Jean Piaget (1959, 1972) and Lev Vygotsky (Vygotsky, 1978; Liu & Matthews, 2005). Finally you want a curriculum designer who has deep knowledge of facts about the state-of-the-art conceptions of the management gurus, such as what can be found on Top Thinkers 50. The attribute 'deep' in this reference to facts means that the curriculum designer is able to make sense of the gurus' conceptions and pull them together forming a whole.

The final characteristic you require from your curriculum designer is intellectual honesty. Intellectual honesty is not apparent in the precise description of the quasi-algorithmic process but in giving account of the quasi-heuristics of quitting – i.e. articulating the conditions in which one is willing to give it up.

5. REFERENCES

Bateson, Gregory, Steps to an Ecology of Mind, University of Chicago Press, Chicago, IL, 1972/2000.

Bateson, Gregory, Mind and Nature: A Necessary Unity, Bantam Books, New York, NY, 1980.

von Bertalanffy, Ludwig, <u>General System Theory: Foundations, Development, Applications</u> (14th paperback edition), George Braziller, New York, NY, 1969/2003.

von Bertalanffy, Ludwig, A Systems View of Man, Westview Press, Boulder, CO, 1981.

Comte, Auguste, <u>The Positive Philosophy</u>, Batoche Books, Kitchener, 1868/2000.

Dörfler, Viktor, "Learning Capability: The Effect of Existing Knowledge on Learning", <u>Knowledge Management Research & Practice</u>, Volume 8, Number 4, Pages 369-379, 2010.

Kuhn, Thomas Samuel, <u>The Structure of Scientific Revolutions</u> (3rd edition), The University of Chicago Press, Chicago, IL, 1996.

Liu, Charlotte Hua & Matthews, Robert, "Vygotsky's Philosophy: Constructivism and its Criticisms Examined", *International Education Journal*, Volume 6, Number 3, Pages 386-399, 2005.

Mandelbrot, Benoit B., <u>Fractals and Chaos: the Mandelbrot Set and Beyond</u>, Springer Verlag, New York, NY, 2004.

Mill, John Stuart (1861) Utilitarianism, Williams, Geraint *Utilitarianism, On Liberty, Considerations on Representative Government, Remarks on Bentham's Philosophy*, Everyman, London, 1-67.

Neisser, Ulric, "The multiplicity of thought", <u>British Journal of Psychology</u>, Volume 54, Number 1, Pages 1-14, 1963.

Neisser, Ulric, Cognitive Psychology, Meredith Publishing, New York, NY, 1967.

Peirce, Charles Sanders, Philosophical Writings of Peirce, Dover Publications, New York, NY, 1940/1955.

Piaget, Jean, <u>The Language and Thought of the Child</u> (3rd edition), Routledge Classics, London, 1959/2002.

Piaget, Jean, <u>Psychology and Epistemology: Towards a Theory of Knowledge</u>, Penguin Books, Harmondsworth, 1972.

Polanyi, Michael, "The Logic of Tacit Inference", *Philosophy*, Volume 41, Number 155, Pages 1-18, 1966.

Polanyi, Michael & Prosch, Harry, <u>Meaning</u> (paperback edition), The University of Chicago Press, Chicago, IL, 1977.

Pólya, George, <u>How to Solve It: A New Aspect of Mathematical Method</u> (2nd edition), Penguin Books, London, 1957/1990.

Popper, Karl Raimund, <u>The Logic of Scientific Discovery</u> (2nd edition), Routledge, London, 1968/2004.

Popper, Karl Raimund, Conjectures and Refutations (5th edition), Routledge, London, 1989.

Russell, Bertrand Arthur, <u>The Problems of Philosophy</u>, Oxford University Press, New York, NY, 1912/1998.

Russell, Bertrand Arthur, <u>History of Western Philosophy</u>, Routledge, London, 1946/2004.

Russell, Bertrand Arthur, <u>Human Knowledge: Its Scope and Limits</u>, Routledge, London, 1948/2003.

Simon, Herbert Alexander, "The structure of ill structured problems", *Artificial Intelligence*, Volume 4, Number 3-4, Pages 181-201, 1973.

Simon, Herbert Alexander, "Near Decomposability and the Speed of Evolution", *Industrial and Corporate Change*, Volume 11, Number 3, Pages 587-599, 2002.

Simon, Herbert Alexander & Iwasaki, Yumi, "Causal Ordering, Comparative Statics, and Near Decomposability", *Journal of Econometrics*, Volume 39, Number 1-2, Pages 149-173, 1988.

Vygotsky, Lev Semenovich, <u>Mind in Society: The Development of Higher Psychological Processes</u> (paperback edition), Harvard University Press, Cambridge, MA, 1978.

Waldrop, M. Mitchell, <u>Complexity: The emerging science at the edge of order and chaos</u>, Simon & Schuster, New York, NY, 1993.