# Learning CSCW through Fairytales: a Practical Model

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**Abstract.** This paper focuses on the claim that the development and persistence of learning and working groups, which are key to managing knowledge and experience-based content, both at an organisational and individual level, can be promoted via the relatedness inherent within fairy tales.

In the first section of this paper, a brief overview of the current research situation is provided (2). In section 3, a collaborative storytelling model is developed, explaining that learning and working in line with Knowledge Cooperation requires social exchange and collaboration (3.1), that (digital) storytelling is an appropriate method for promoting social interaction by bringing people and their (tacit) experiences together (3.2) and finally, that fairytales can do much more in terms of *holding* learners in a community together (3.3). In section 4, a concrete project idea is presented based on the theoretical considerations outlined in chapter 3, before the most significant results are finally summarised (4).

**Keywords:** Learning and Working Communities, Knowledge Management, Knowledge Cooperation, Storytelling, Tacit Knowledge, Fairytales, Relatedness, Transfer, Metaphor

## **1** Introduction: starting with a story of experience

When people learn, they learn within and through the experiences that they assemble daily. An infinite treasure trove of knowledge can arise from sharing these experiences with others. As will be shown below on the basis of an anecdote from the educational domain, the path to this treasure trove of knowledge can lead through fairytales, because they bring and keep learners and their experiences together within a community. This core message can also be transferred to a work setting.

How do you explain to 17-year old vocational school students that human development is not just influenced by the social environment but also by one's own will and self-determination? And ideally in such a way that they understand it, remember it after a week and have fun with it?

Following several less successful attempts at helping students understand the difference between exogenous and autogenic factors, the teacher then started the next lesson by entering the classroom, darkening the room and playing a DVD. It was not long before there was a reaction: 'Hey Harry Potter... Cool!!!' The brief was clear: find all the possible examples of factors influencing the lives of the characters and organise them according to social and self-determined factors. It was hardly surprising that the students appreciated their teacher giving them a bit of variety but the results of the research were certainly surprising too. The students spent double the time originally planned compiling the relevant factors. Everyone had something to contribute; something which he or she felt should not be omitted under any circumstances. Discussion naturally turned to the Sorting Hat – the hat which allocates the apprentice sorcerers to the different houses at the school. The teacher's conclusion was clear: a social factor helps determine from the outside the direction taken by the hat wearer. However, half of the class did not agree. The hat would not tell Harry which school house he would be in; instead the hat would adapt to Harry's wishes. And therefore the hat would be autogenic. Even more interesting than these human development factors was the clear motivation of the students and teachers as they exchanged ideas about what they believed. This fact alone makes the lesson one of the best.

Fairytales encourage people to exchange ideas with others – and Harry Potter is a fairytale in a modern form. In this way, fairytales create a sense of community – a community where experiences are shared with others and which give rise to new experiences by revolving around people using images and metaphors. This means that stories and fairytales in particular, given their links to everyone's experiences, are suitable for implementing learning and working in a cooperative and collaborative understanding. This paper explores this hypothesis.

In section 2, we will review the research situation and try to identify what is the predominant established view and what is the key missing aspect in relation to the aforementioned hypothesis. This missing aspect or gap will be addressed in section 3, the main part of this paper, where we present our proposal for filling the gap by means of an innovative Model of Collaborative Storytelling based on a radical constructivist approach to Knowledge Management and on a social theory of learning [20]. The following section 4 will outline why and how we plan to apply our model within the context of our university and finally in section 5 we will conclude with reflections which evaluate our proposal and summarise its main messages.

# 2 State of the Art

The cultivation of knowledge at an individual and organizational level reflects the requirements and demands of modern institutions. Over the last few years, numerous approaches have sought to go beyond a traditional understanding of Knowledge Management. Bettoni [3] introduced the Knowledge Cooperation model, for example. Based on a radical constructivist approach, he assumed learning and working to be social processes within which knowledge is communicated, shared, negotiated and (re)created. Moskaliuk et al. and Ozmen, among others, also follow this approach when they refer to the significance of tacit knowledge for the creation of new

knowledge [8–9]. According to the authors, knowledge gained from experience is dynamic knowledge which can only unfold its potential for (further) development (of both the organization and individual) through (social) exchange. The bottom line in research literature is that stories are suitable for cooperative Knowledge Management because they embody interaction and collaboration. Storytelling is discussed at various points as a means of interactive access to the silent wealth of experience of its owners by serving the two purposes of dissemination of information and conveying meaning at a high level of understanding [9], according to Ozmen. Erlach et al. see the storytelling method as a new method of Knowledge Management that provides access to the experiences of employees, initiates change processes, promotes learning and raises awareness about the internal values of an enterprise [22]. Reissner comes to a similar conclusion when she indicates the potential of stories as an evaluation and reflecting method for learning processes in the workplace [23]. Stories (according to her conclusion) are a powerful tool for making worked-based learning processes and experiences visible and therefore manageable [23].

While there is a broad range of literature already addressing the issue of storytelling in the context of learning and working, few works investigate the issue of fairytales as a special form of story. One exception is Thissen [14]. Using his D.E.S. method, he applies existing stories to (problem-focused) learning in the virtual domain. The basic dramaturgical structure of the story enables the learner to acquire knowledge by exchanging information with others and to transfer this knowledge to a problem and its solution [14]. In this way, Thissen shows how the example of Mother Hulda and her two daughters can be used as a model for hygiene and hygienic behaviour. Through the dramaturgical presentation and the images and analogies of this fairytale, employees learn about what needs to be addressed in hygiene terms [14].

If we summarise the research situation according to the hypothesis that fairytales are particularly suited to creating relatedness through openness, optimism and symbolic power as part of a cooperative Knowledge Management, the following image emerges: learning and working as social processes require a dynamic understanding of Knowledge Management. Learners need opportunities to exchange experiences and build up new knowledge in this way. Stories embody these opportunities thanks to their potential for conveying a sense of common understanding by providing access to the wealth of tacit experiences of the users. What is missing in the current state of research is the contribution of fairytales to learning and working as a means of collaboration and cooperation, a gap which is particularly unfortunate if we consider the relevance of the function fairytales could fulfil.

In this sense, the model presented in this paper fills a relevant research gap because it brings fairytales back into the spotlight as a special form of storytelling and investigates them systematically in their role as means of promoting a collaborative and socialised Knowledge Management [19].

# **3** The Model: Theoretical Considerations

A system-theoretical collaborative storytelling model is developed in this chapter. To this end, the following sections demonstrate that Knowledge Management, understood as a dynamic Knowledge Cooperation, takes place through social interactions (3.1), that stories and their application support this social interaction because they bring learners and their tacit knowledge (3.2) together and that fairytales perform even better, as they hold these learners together in a community.

#### 3.1 Knowledge Management as Interactive Knowledge Cooperation<sup>1</sup>

Communities and networks of all kinds are gaining in significance in modern everyday business, including firms which have a decentralised organization in geographical or thematic terms. Employees at various national and international sites and with different professional backgrounds are bringing their knowledge to the organization in question and enriching it with new experiences each and every day. Given the ever shortening half-life of knowledge, these experiences will gain in significance too. Companies today face the challenge of making learning processes for their employees visible and accessible as well as supporting and promoting these processes to benefit from this dynamic wealth of experience and knowledge.

If we adopt a radical constructivist understanding and assume that reality is only accessible to the individual through his/ her experience of the environment, then reality per se cannot exist for the individual [2]. In other words: whatever is experienced as reality depends on the experiences the individual has acquired in relation to his/ her environment [2]. As such, learning (seen as an ongoing digesting of experiences) primarily becomes a social process [3], [14].

Based on a radical constructivist approach of this nature, Bettoni formulates his Knowledge Cooperation model, extending the traditional understanding of Knowledge Management [3]. When knowledge is constructed within a social process as an on-going and unending exchange of experiences, it is not sufficient to simply gather and manage knowledge. Modern companies instead face the challenge of perceiving the knowledge of their employees as dynamic. By investigating this radical constructivist model of Knowledge Cooperation, communities and networks become a fundamental instrument of Knowledge Management whereby learning and working are seen as social processes within which knowledge and experience are shared with others, re-designed and expanded. Participation and sharing therefore become key criteria for successful Knowledge Cooperation where professional and/or geographical distances are involved.

Web technologies designed to foster participation and creation correspond to this understanding. Learning platforms (such as Moodle, Olat etc.), Web 2.0 and social media tap into the dynamic principle of Knowledge Cooperation and implement this within teams for virtual learning and working: with their assistance, the individual is

<sup>&</sup>lt;sup>1</sup> Early versions of parts of this and of other sections have been used in a short sketch of our approach which was published as a blog post [21].

transformed from a consumer into an active designer [5]. "We are creating a new and profound mechanism of democratic communication," says Lambert about the development of digital media [13]. Tools make it possible to contact others quickly, easily and regardless of the time and place as well as to create a shared understanding through the exchanging of experiences and to acquire new knowledge on this basis. Learning and working as social interaction and collaboration processes are developing to become eLearning and eCollaboration with the aid of web technologies [11]. Nevertheless, tools alone are not sufficient for achieving collaboration and cooperation [3], [11]. As a form of knowledge and experience exchange, the latter are first and foremost social and not technical, meaning that equating team work with web technologies falls short of the mark. The result of this is less surprising: learning and working communities are only as successful as the socially motivated goals and the objects, meanings, motivations, needs and competences accomplished within them [11]. In other words: it is only possible to actively participate in a group by promising yourself positive things; by feeling settled, by being valued and respected, by not needing to be afraid etc. Social skills and a culture of communication, mistakes and criticism are just some examples of the genuine social being of communities.

In summary, it can be established that learning and working take place within and via social exchange – through sharing, devising and gaining (new) experiences together. Web technologies such as blogs, wikis, forums and social platforms support this collaborative learning and working, even beyond geographical and temporal boundaries and thereby meet the needs of modern companies to manage the knowledge and expertise of their employees and handle them in an active and dynamic manner. The application of technology alone is not sufficient to ensure the success of learning and working in communities. The latter are always (also) socially motivated. The question which remains to be answered is therefore which methodological processes (can) correspond to this.

(Digital) storytelling is presented as an appropriate method for socialised learning and working in the next chapter. After all, stories bring people and their (silent) experiences together. They call for the exchanging of experiences and create access to the meaning, providing tacit knowledge which holds together all knowledge like glue [9].

#### 3.2 (Digital) Storytelling as a Method for Promoting Interactive Exchange

The method of (digital) storytelling has been observed and rediscovered for many decades by researchers, practitioners and experts in various fields and from various perspectives [18]. But what are stories? When is it correct to call something a story? And how can this be distinguished from other narrative forms? Aristotle defined a story as a plot with a beginning, middle and end [12]. While many authors still adhere to this interpretation today (albeit sometimes in an adapted form2), it was Boje in particular who proposed a differentiated view of stories in an organizational context [4].

<sup>&</sup>lt;sup>2</sup> See Sharda et al. [12].

According to Boje, everyday stories as are found in every company, institution and inter-human relationship do not (always) follow Aristotle's principle of having a beginning, middle and end [4]. Instead, these stories are often unfinished, undefined, inconclusive, unstructured, unconscious, unorganised or unfamiliar [4]. In his view, traditional narrative access routes are insufficient and cannot do justice to the complex character of stories in organisations and in society. Instead, the concept of the 'improper story' needs to be added [4]. One difficulty which emerges from such a broad interpretation of stories, as presented by Boje, is the fact that everything ultimately becomes a story. There are no clues in the literature as to how to react to this fact. A middle path between the two positions presented here is adopted by Erlach and Thier in their definition of organisational stories either as 'complete stories with a plot, flow and characters or only in fragments [sic, N. B.]' [6].

Despite this wide range of views concerning what constitutes a story, there is consensus in one matter: the telling of stories as an educational or general social principle is not new [5]. Humans have been telling one another stories ever since communication began in order to explain the world, make the incomprehensible comprehensible, bring sense and direction to life and actions, learn from mistakes and pass on knowledge to help shape one's own future [21]. Stories correspond to fundamental requirements – including those of modern man. Stories are therefore gradually finding their way back into a dynamic and digitalised society; a society which requires communication and interaction, like all societies which have gone before<sup>3</sup>. In this sense, it comes as no surprise to hear of a 'narrative turn' [18] or that digital storytelling is not much more than just the packaging of a traditional principle in the robes of new digital technology [13]. Given these circumstances, it is no coincidence that the storytelling principle is featuring ever more frequently in learning and working contexts too<sup>4</sup>. Among others, Standley addresses the potential of bringing the method of digital storytelling to schools and making stories part of everyday learning and teaching [13]. On the other hand, Reissner focuses on the narrative approach in general for learning processes within work settings [23]. She concludes that stories are a powerful tool to evaluate and reflect upon learning processes in the workplace.

The idea of learning and working with stories reflects a cooperative understanding of knowledge [3]: social interaction is always implicit in storytelling [10]. Stories bring people and their individual experiences together. Storytellers as well as listeners participate in stories as individuals with a biography – a biography which manifests itself in terms of experiences without being fully aware of this range of experiences. Erlach et al. likewise started to apply stories to Knowledge Management contexts at the beginning of the new millennium in order to visualise these '*soft' experiences* of employees [22]. Researchers have concluded that the method of storytelling may have different benefits in enterprise settings such as: sharing experiences with colleagues

<sup>&</sup>lt;sup>3</sup> An increased need for such social interaction and communication is suggested by the key phrase of the communication society.

<sup>&</sup>lt;sup>4</sup> Studies document the positive effects of the storytelling method on the learning process in different ways. Yang and Wu state that the use of storytelling in foreign language lessons has a positive impact on academic achievement, critical thinking and learning motivation [17].

or getting familiar with the internal values of the company. But first of all, the use of stories promotes learning as well as change processes on the basis of tacit knowledge [22]. And it is here that the special potential of stories lies – as the literature<sup>5</sup> confirms. Stories enable the communication of what often remains unexploited as tacit knowledge<sup>6</sup>. They make experiences tangible which helps determine human thoughts and actions without having full accessibility as an individual [9]. In this sense, it becomes clear why Ozmen describes tacit knowledge as the glue "that holds all knowledge together and makes sense of it" [9] and that "the greatest benefit of using storytelling in K[nowledge] M[anagement] [N. B.] is seen from its ability to capture tacit knowledge." [9]. Stories bring together the (tacit) experiences of participants, link them together and expand on them to create new knowledge.

Thus, based on these considerations, we are convinced that there is good reason to look at digital storytelling as a suitable method for learning the skills needed in Computer Supported Cooperative Working. The following chapter shows that fairytales can do much more in terms of holding learners together, not just bringing them together. As such, they make a special contribution to developing and shaping communities where learning and working are perceived as social processes within the knowledge exchange.

# 3.3 Fairytales and their Specific Potential in Building Communities via Relatedness

This section investigates the contribution of fairytales to interactive learning and working. It will be demonstrated how fairytales create communities, one of which forms the basis for dynamic and cooperative Knowledge Management.

Fairytales differ from other stories due to their metaphorical expressive powers which promote social exchange. Interdisciplinary research literature is united in the view that the telling of fairytales and stories in general represents a key component of inter-human communications and interaction. Stories bring people together. Stories have long been used to explain the world, to create meaning, understanding and structure, to trade and pass on values and to create the past, present and future [5]. Stories thrive on the fact that standards, relationships, wishes, fears, experiences and expectations are shared through them. In this way, stories create a sense of commonality. Fairytales achieve much more than this too in the sense that they hold people together as well as bringing them together. And this represents their special potential for collaborative learning and working. This potential is described according to the three aspects of **optimism**, **openness** and **symbolic power**.

Unlike other stories, fairytales are stories which always have a positive and optimistic message and ending. No fairytale ends before the King has found his Queen or the hero has successfully completed his task. The happy ending is an integral feature of every fairytale. Thanks to this optimism, fairytales have a motivating effect be-

<sup>&</sup>lt;sup>5</sup> See Moskaliuk; Ozmen among others [8-9].

<sup>&</sup>lt;sup>6</sup> Ozmen describes tacit knowledge as knowledge which may not be codified. Therefore the core element of tacit knowledge is that it is not tangible [9].

cause they signal to learners that everything is possible and that anything can be achieved. The overriding message is the same for all fairytales: you can create what you are dreaming of if you are prepared to fight for it. Fairytales therefore motivate people to take action themselves – without setting the direction.

A second aspect of fairytales is that they have an open message – and this makes them a suitable subject for discussion. It is up to the listener to decide if Cinderella is about envy and jealousy, justice and reward, complicated family relations or the contrast between dreams and reality [21]. In other words: everything is possible in (and with) fairytales. By expecting the listener to disregard the strict boundaries of rationality and feasibility for a time, fairytales open themselves up to interpretation. As a result of this openness, fairytales invite an exchange of individual perceptions and are suitable for the shared learning of new perspectives [21].

After all, fairytales have a strong symbolic power expressed through images and metaphors with which they create a sense of community among readers and storytellers. They build bridges with the biography of the individual via analogies. What happens in fairytales concerns everyone because they address fundamental questions and answers in human life. Since we all know what it is like to lose something valuable due to not paying enough attention, we are touched and moved by the unlucky fairytale characters because everyone suffers misfortune from time to time – and Hans in Luck is no exception. In this way fairytales create an emotional link between the protagonists of the story and the listener. Turning a blind eye would reflect ignorance about one's own living situation. In this way, fairytales create the impossible: they represent an analogy for human actions – and this fact brings and holds people together. Thus fairytales create community – a community of participants which thrives on the experiences, perspectives and knowledge of each individual involved.

It appears that fairytales motivate the listener to share individual experiences with others through their optimism, openness and symbolism– and as such they create (emotional) ties among learners. Fairytales create an environment which is motivating, tolerant, inspiring, open and error and criticism-friendly as well as being appreciative and trusting. Fairytales therefore promote a kind of learning which is understood as a social process of interaction and collaboration.

The following systemic-theoretical model summarizes the thoughts presented in this chapter in graphical form.

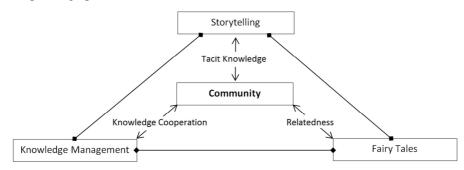


Fig. 1. Model of Collaborative Storytelling.

The model shows that communities form a link between modern companies and their Knowledge Management and the newly identified method of storytelling through dynamic Knowledge Cooperation which is about bringing and holding together employees and their (tacit) knowledge in order to learn and work. And fairytales are a motivating approach to this with their relevance to everyone's life and experience.

## 4 The Model at Work

This section helps the reader to gain an idea of the implementation of the model within the practical setting of a Distance University of Applied Sciences. As part of the Story@eTeam project at FFHS, the model presented in this paper is applied to concrete learning and working settings within the virtual domain.

Starting with the theoretical considerations outlined in section 3, FFHS is launching an online course which conveys the social aspects of successful virtual teamwork. Since working together with others means following a common goal, sharing becomes an essential part of (e)Collaboration. In order to encourage people to share their knowledge, ideas, experiences etc., the implementation of technical tools is not sufficient. In addition to an appreciating environment and a flat hierarchy, virtual teamwork is enabled by other social and more personal criteria like constructive communication, trust, openness and autonomy.

The online course focuses on these human values of a knowledge-friendly and dynamic enterprise culture. With the support of fairytales, the learners experience what it means to share, shape and develop experiences with others as part of a dynamic process of Knowledge Cooperation.

The following activities are included in the course design in order to devise a (social) basis for successful virtual teamwork both online and collaboratively: 1) getting familiar with the virtual course platform; 2) setting up an individual profile; 3) meeting the other participants in a virtual greeting room; 4) receiving an introduction to the course contents and procedures; 5) collaboratively solving different tasks relating to the topics of *communication*, *trust*, *openness* and *autonomy*. This main part of the course is based on the fairytale *The Devil with the Three Golden Hairs* and all its activities are enabled by different eCollaboration tools such as wikis, forums and social media platforms like Twitter etc. 6) finally, the participants finish the course by exchanging and reflecting on their personal learning experience.

The course offers a practical introduction to the social topics of eCollaboration and Knowledge Cooperation by using the method of storytelling – promoting social exchange and interaction with others and their (tacit) experiences, wishes, fears and knowledge. Thus computer-supported collaborative learning (CSCL) becomes a possible approach en route to developing skills in computer-supported collaborative working (CSCW).

# 5 Conclusion

This paper argues that learning and working through social exchange are fundamental to a cooperative Knowledge Management in companies today and that fairytales are particularly suited to the creation and existence of social communities because they bring and hold together individuals and their (tacit) experiences through references, metaphors and analogies. A model has therefore been developed for this purpose which defines and links the aspects of Knowledge Management, storytelling and fairytales with the community as a core element.

When knowledge is seen as the socially constructed sharing of experiences and managing knowledge from this radical constructivist viewpoint is therefore no longer sufficient (any more), Bettoni's Knowledge Cooperation model raises the question of how sharing, constructing and negotiating experiences can be promoted, supported and structured as a social experience [3].

The (digital) storytelling method has proven itself to be a means of tried-andtrusted access here because stories bring people and their (tacit) experiences together as a form of inter-human interaction. Even those experiences which are of limited availability to the learner as a form of tacit knowledge but which are nevertheless involved in the development of knowledge are liberated by stories as a means of social interaction: anyone who participates in stories does so as an individual with his/ her own biography and always with the (necessary) readiness to open up the content of this biography to others.

After all, fairytales have been discussed as a form of story which brings learners together and *keeps* them together by creating emotional ties through **optimism**, **openness** and **metaphors**. In other words: although nobody was actually here in this long-forgotten age at this unknown location, fairytales appeal to everyone because they can be adapted to the life and learning of each individual. In this sense, fairytales create a simple and promising pathway of supporting learning and working as a collaborative and interactive process within a community by motivating participants to share their individual perspectives, experiences, wishes and knowledge. Demonstrating this is the aim of the 2011 FFHS Story@eTeam project.

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