

HOW CAN STORYTELLING HELP IN TRANSFERRING KNOWLEDGE

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Abstract: A comeback to the oldest knowledge sharing method – storytelling is prominent in foreign commercial companies who realised that an organisation's common official languages (manuals, plans, reports etc.) are unable to share the most important forms of knowledge that are essential for competitiveness of companies in the knowledge economy. The paper focuses on the use of storytelling as a means of transferring different types of knowledge in the educational process. Education has been focused too much on the results of ICT implementation, while the efficiency of such methods is disputable due to knowledge sharing, as there is a major difference between information exchange and knowledge sharing. An experiment was carried out in which two groups, test and control, were taught using a story and a traditional lecture. The same area of competitive intelligence was presented both using a PowerPoint presentation and classical storytelling. Much attention was paid to the creation of the story in order to ensure that all knowledge is transferred which we presented in PowerPoint and also that the story is attractive for students who should be able to discover "hidden" knowledge in the story. We have performed three phases of testing – a pre-test, to find out the level of knowledge in the CI area before the lecture; a test carried out immediately after the lecture (PowerPoint or storytelling), and a post-test three weeks after the lecture in order to test not only the effectiveness of immediate knowledge transfer, but also their retention. The paper brings the results showing the higher effectiveness of storytelling compared to conventional teaching. This is apparent especially in the case of sharing know-how and know-who. The findings are presented in more detail in visualisations of the paper.

Keywords: Storytelling, Education, Knowledge Management, Knowledge Transfer

JEL Classification: M12, M14, I20

1. INTRODUCTION

In most companies, traditional presentations prevail nowadays, focused on quantities of data and statistical visualisations. The effectiveness of these tools is questioned and in the age of technology, growing customer demands, globalisation and cultural diversity, we are forced to use a more comprehensive and effective tool for knowledge transfer. Many have realised that knowledge cannot be completely abstracted to categorical and analytical forms. Modern organisations look for tools to synthesise rather than analyse (Sole - Wilson, 2002). Stories can work as these tools. Although brain scan research has shown that if one tells a story of and someone else listens actively, their brains are actually starting to synchronise with one another (Stephens - Silbert - Hasson, 2010). Psychologists also provide evidence that the use of storytelling (ST) is better at keeping the meaning/purpose in mind than raw data and therefore they recommend this tool as a prevention of information overload (Heeg, 2011). People are not motivated to action by "dumb data" in PowerPoint slides or images full of charts. We know that statistics are modifiable and are often misleading. Our attitudes, concerns, hopes and values are strongly influenced by stories. When we read some dry facts and arguments, we read them on the lookout - ready to "fight", we are critical and sceptical. But when we dive into a story, we dismiss our intellectual guards and let ourselves be drawn inside by emotions and become more defenceless (Gottschall, 2012).

2. STORYTELLING IN ORGANISATIONS

Knowledge Management focused on knowledge sharing has already been made familiar with the power of storytelling (ST). Many managers have found that the

organisation's common official languages (manuals, plans, reports, rules, etc.) are not able to make the invisible visible (Sbarcea - Ward - Bohn, 2001). Researchers have identified a number of examples of use of a story as a management tool, for example, to solve problems (McLellan, 2006), investigate actions, clarify meaning, develop new products, but also for entertainment (Prusak, 2001a). They use it to communicate with a large number of recipients (Prusak, 2001b), for non-formal education, socialising new members, consolidating relationships (Sole - Wilson, 2002), maintaining an organisation's history (Snowden, 2005), and for other purposes.

In general we can state that communication through ST is quick, natural, clear, credible, compelling, contextual, intuitive and, especially, activating (Groh, 2001). Although companies shift their focus to knowledge, yet it is its actual application to the company's benefit which is important, and, therefore, ST is referred to as a suitable tool to support sharing norms and values, create an atmosphere of trust and commitment, and be able to share some types of tacit knowledge as well (Sole - Wilson, 2002).

2.1 Problems of Storytelling

Many companies do not realise the true value of a story and consider it a difficult, additional (unnecessary) phase between data analysis and data presentation (Heeg, 2011). It can be viewed as a problem that they are construed from a perspective of one person (where their relevance to others can be questionable), and especially if they are not told in person, but recorded in some way (Sole - Wilson, 2002), (Wijetunge, 2012). Psychologists compare ST to the story of the Trojan horse, as people usually take a story because they perceive a good story as a gift. However, in

fact it is a system of delivering the narrator's agenda, i.e. the story is a trick used to smuggle a message into a suspicious human mind. Therefore, one should realise, especially in the business sector that a story is a tool which can both help and hurt, just like natural elements. A ST master may want us to get drunk with emotions, to let our scepticism go and "make ourselves home" in his or her agenda (Gottschall, 2012).

3. USING STORYTELLING IN SCHOOLS

In the educational context it must be pointed out that a story has got more depth than an example. A story tells about some events, someone particular and something which happened to that person. Stories awaken our minds, our emotions, and lead to the formation of mental images (Green - Brock, 2000). A story provides a framework and context for individuals to easily understand others by giving them the key to his or her own extensive list of adventures and experiences. This makes the listener able to connect and anchor in a meaningful the events of the story set in the narrator's context through personal experience, into the knowledge system. It has been evidenced that knowledge anchored in our minds in such a way penetrates deeper and is more meaningful than it would be achieved through traditional methods of education – through knowledge generalisation. The narrator and the listener are placed on a common cognitive and emotional level that allows the listener to simultaneously link to the narrator and his or her structure of personal knowledge and capture and understand the narrator's perception of the content (Abrahamson, 1998). The actual value of ST from the cognitive perspective is that there is a mutual creation involving interaction and understanding between the narrator and the listener.

In education, stories serve multiple functions such as knowledge sharing, encouraging curiosity in students (McDonald, 2009), enliven students' interest in learning, raise important issues for discussion (Shank, 2006), support flow of lecture, make learning content memorable, stimulate the process of creating meaning, overcome resistance or fear and establish the relationship between the teacher and the student and among students (Green, 2004), stimulate imagination, develop the skills necessary for making decisions (Baldwin - Dudding, 2007), create lessons to be learned (Hamilton - Weiss, 2007), in the information age, they act as a humanising element (Baldwin - Dudding, 2007). ST is used in education to convey different types of knowledge, from history, science, arts, mathematics, economics, management and so on, encourages students to think about things, and creates enthusiasm in them.

4. STORYTELLING RESEARCH IN TERMS OF TRANSFERRING DIFFERENT TYPES OF KNOWLEDGE

We decided to carry out an experiment as part of our quantitative research into ST as a tool used in education. Based on several studies conducted, we wanted to test and present to students some results to show a significant difference between students who taught using the classical PowerPoint method, and students who received the same content presented in the form of ST.

Due to the relatively limited options, we created a selection consisting of two groups with randomly assigned members (alphabetically) of our undergraduate students in the second year. The number of participating students was 30 (15 + 15). In both groups the conditions for achieving objective results were met such as the same school, the same teacher, subject, and time range. The presentations were given on the same day, we started with the test group, followed by the control group.

4.1 Preparation

In the beginning, we chose the Competitive Intelligence (CI) as the topic to be tested, for which we reworked (shortened) a commonly used PowerPoint presentation to include the basic areas containing the necessary know-what, know-why, know-how and know-who types of knowledge. The lecture in both forms was planned to take a maximum of 20 minutes in both groups.

Then we proceeded to create a story that would contain all the knowledge contained in the PowerPoint presentation. Since we were interested in relevant test results, we had to create a story following the recommended composition. Thus, the story included a brief introduction, an outline of the story, development of the story and, especially, the consequences and an implied lesson to be learned. Content-wise, the story consisted of a report, a conflict (we face the problem that we have to deal with) and characters (a hero, an enemy, two rivalling parties) (Fog-Budtz-Yakaboylu, 2005). We prepared and fine-tuned the story for about 3 days.

4.2 Findings

The students wrote all three sets of tests (pre-test, test and post-test) anonymously, and we also evaluated the tests without knowing whether it was the pre-test, the test, or the post-test, or whether it was the test group or the control group. The test included six questions, two concerning know-what and know-why, one concerning know-how and one concerning know-who) and a student could achieve a maximum of 2 points for each question (12 points for the whole test).

4.2.1 PRE-TEST

The pre-test was carried out immediately before the lecture. The results of the **pre-test** demonstrated a low initial level of knowledge in both groups (as they averaged 3 % points of the maximum scores), with no statistically significant differences in the achievements of both groups of students. We were satisfied with the results, since they have demonstrated an appropriate selection in the field of testing, i.e. an area which the students had no or minimum previous knowledge before the lecture.

4.2.2 TEST

The results of the **test** which followed immediately after the presentations were as follows:

- students of the test group (storytelling), averaged 8.2 points of 12, which represents approximately 68.3 % of the knowledge captured, while
- the students of the control group (PowerPoint) averaged 5.5 p of 12, which represents 46 % of the knowledge captured.

Table 1 Statistical calculations for the test and control groups

	tested	control
Median	8.2/12	5.46/12
Mode	9.7	5
Maximum	11.5	9
Minimum	6	3
Variance	5.5	6

We were surprised that as early as in the testing phase there were considerable differences in the results achieved by the test group and the control group in favour of the test group. The variance in students' scores was between 50 % and 96 % in the test group and between 25 % and 75 % in the control group, which means that no student from the test group achieved less than 50 %.

We had expected a fairly high level of points achieved in **know-how** type of knowledge, where students had to describe a process - a solution. Based on the answers supplied by the control group students it was possible to track that the steps to be taken were not thought out well, but merely reflects some proposals as seen on the screen since they used a much more specialised language than the words in the story told to the test group, however, the sequence of steps proposed did not make sense. It was clear that this concerned just the short-term visual memory, and so we were curious what level they would achieve in the second test three weeks later. We had similar assumptions concerning the **know-who** type of question, where the students were given clear instructions in the story who to talk to in the company in various situations and why.

4.2.3 POST-TEST

The **post-test** followed three weeks after the presentations, and students had not been informed about repeating the tests in advance, so they had no reason to prepare for it.

While the knowledge gap between the test group and the control group in the first test was between 68 % (8.2 points of 12) and 46 % (5.5 points of 12, i.e. 2.7 points), it was even greater in the tests taken three weeks later, as the difference in memory was between 65 % (7.8 points of 12) and 28 % (3.36 points of 12), i.e. 4.4 points, which represents a knowledge gap between these groups of almost 37 %. The **test** group worsened its performance on average (calculated to the total of 12 points) by 0.4 points three weeks later, i.e. the level of knowledge decreased from 68 % to 65 %, while the **control** group performed worse by 2.14 points, i.e., the level of knowledge dropped from 46 % to 28 %.

Table 2 Knowledge gap (test and control group) and knowledge loss (test phase and post-test phase)

(Calculated for the whole test, maximum of 12 points)	Test Group (Storytelling)	Control Group (PowerPoint)	Knowledge gap Test vs. Control Group
success rate/ test phase	68 % (8.2 p/12 p)	46 % (5.5 p/12 p)	22 % (2.7 p)
success rate/ post-test phase	65 % (7.8 p/12 p)	28 % (3.36 p/12 p)	37 % (4.4 p)
Knowledge loss test vs. post-test phase	3 % (0.4 p)	18 % (2.14 p)	

Table 3 Test phase results

TEST PHASE	test/storytelling	control/PowerPoint
what	1.56	1.2
why	1.23	0.87
how	1.1	0.53
who	1.53	0.87

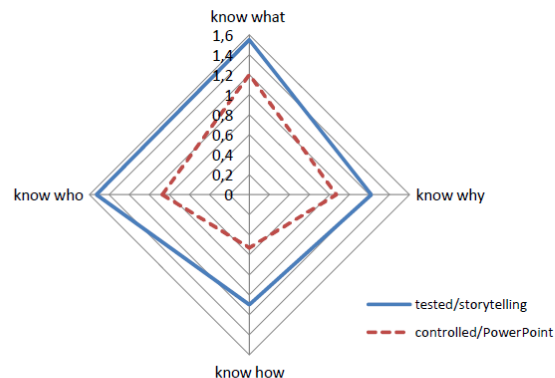
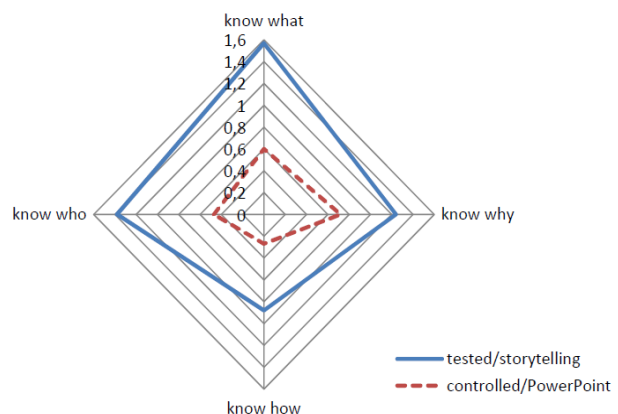

Figure 1 The level of knowledge in test phase

Table 4 Post-test phase results

POST-TEST PHASE	test/storytelling	control/PowerPoint
what	1.55	0.6
why	1.23	0.72
how	0.88	0.27
who	1.38	0.47


Figure 2 The level of knowledge in post-test phase

The level of the **know-how** type of knowledge decreased in the case of the **control group** from 0.53 points (27%) to 0.27 points (14%), while in the test group the decrease was from 1.1 points (55 %) to 0.88 points (43 %). We were pleasantly surprised at how well the students remembered the procedure after some time, and we have been convinced that students educated in such manner (without further learning - studying for a test) are better prepared "for life".

Even more apparent were the differences in the **know-who** type of knowledge, where the level of knowledge decreased considerably in the control group from 0.87 points (43 %) to 0.47 points (23.5 %), while the drop was only from 1.53 points (76 %) to 1.38 points (70%) in case of the test group. We observed that even three weeks later the students knew without learning, who to contact when necessary in a business company, and we were very satisfied about the results of the test group.

We realised that it would be interesting to evaluate the overall results of each student in a test for which both

groups would prepare using the same learning materials, as well as to see the test results of students several months after the test in order to find out long-term life the knowledge acquired. Therefore, we are determined to continue this experiment.

5. CONCLUSION

The experiment confirmed our assumptions about the power of ST. Perhaps we had expected even better results of the test group, but in the end we realised that the absolute level cannot be assessed, as it is related to the qualities of the students themselves and the quality of our story. The most important for us are the differences obtained in assessing the level of knowledge in different types of knowledge. According to our expectations, the levels of the more difficult and practically more usable types of knowledge such as know-how, know-who and know-why

were significantly higher even three weeks later. The students in this group were mostly positive about the story and after seeing the comparison of their average results and those of the control group they understood what we discuss only theoretically in lectures about the complexity and depth of knowledge transfer using ST. We believe that if some of the students tested once get to work in managerial positions, they will recollect the power of the story which will help them to implement ST in common business practice in Slovakia.

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