Original scientific paper

Between Cooperation and Conflict in Quality Assurance: Principles of Toyota's Just-In-Time Production for Training Geriatric Staff

Max Liebscht
LISL - Lausitzer Institut für Systemischere Lösungen
Rosenstrasse 1, 02826 Görlitz, Germany
Mail@angewandte-psychologie.com

Martin Weitzmann
LISL - Lausitzer Institut für Systemischere Lösungen
Pablo-Picasso-Strasse 1, 13057 Berlin, Germany
Mail@welearning.eu

Katrin Schubert
Fernuniversität Hagen
Hauptstrasse 163, 02788 Zittau, Germany
Mail@welearning.eu

Summary

Due to rising cost in geriatric care, discussing, defining and updating consistent quality standards is of utmost importance. E-learning in the cloud can provide synergies between all stakeholders in quality assurance so that the transfer of theoretic knowledge into practice will benefit in ways which will sustainably enhance care quality for the elderly. Consistent use of the findings from the stakeholder analysis results in a transfer of technologies and communication architectures from the traditional business sector to the non-profit sector. The discussion will focus on two aspects transferred from Toyota's just-in-time principle: focusing all parties involved by decentralized provision of relevant information and discourse loops between prosumers for virtual assistance.

Key words: e-Learning, e-services, business applications, principle of just-in-time-production, prosumers

Introduction

Knowledge management in learning organisations (Senge, 2004) and stakeholder networks can be substantially modified by information processing systems (Kruse, 2004). This understanding and our background as trainers, systemic organisation developers and future care patients raises the following question: How can we develop a virtually assisted communication design

facilitating the integration of care quality for all parties involved in geriatric care? If geriatrics training and studies can be brought up to date in a consensus between all stakeholders, new standards can be transferred to practical use. To optimize any form of communication it is first necessary to analyse the parties involved. Which interest groups and institutions are involved in geriatric care? Which are the most essential problems for each of these groups? Once these problems are identified, they can be used as links to create optimized communication processes. In the following, nineteen parties are identified which are players in geriatric care and whose least common denominator is the interest in defining what up-to-date quality in geriatric care should, could and must achieve.

Decentralised provision of relevant information as a focus for all parties involved

a.) In theory, people in need of care are the focus of all caring activities, i.e. stakeholders are to concentrate their work on this group of people which is in particular need of protection. Due to their health and legal situation, they are often hardly able to take care of their needs.

b.) Family members, who are often quite unexpectedly faced with care issues, seem to require a large amount of orientation. The largest challenge is to find the information best suitable to the situation and personal needs in the vast amount of data provided. Furthermore it would be interesting for them to know what professional care workers learn during their training in order to assess the know-how to be expected. The transparency of training courses, however, is hardly given.

c.) Care providers usually act within the legal framework provided by political representatives perhaps competent in care issues. Unfortunately, the trend is to transfer business with obvious profit potential to private-sector organisations. Classic non-profit tasks are more and more transferred to profit-oriented service providers although these tasks have been efficiently and sustainably been solved by families and later on by church-run organisations. Losses are borne by the public and profits are privatised. Due to the demographic development the profit expectations involved in geriatric care are now fulfilled often only at the expense of defenceless people. News headlines cannot substitute statistic analyses; they can, however, indicate the temptation (DRK, 2011) managers of care-providing facilities might yield to. One basic temptation could be found in reinvesting earnings to improve balance sheets instead of upgrading quality of the services provided. Even major geriatric care providers are again and again discovered to use earnings for share speculations (Pubantz, 2009) and not to stock up reserves for hard times. Decreasing fees for geriatric institutions are never heard of although well-planned investment strategies and budgeting might enable such a scenario. Charitable organisations tend to benefit from subsidies, the profits earned, however, are rarely transferred back to the public even if this

might be expected from a macro economic perspective. Discussing quality issues more in public may create here a higher degree of sensitivity (EpD, 2010) in decision making and improved social control (Birgelen, 2009) by the general public.

d.) The ways of assuming managerial responsibility suggested above provide the framework for executives in care institutions when they find compromises between so-called practical constraints and ethical requirements in care quality on an every-day basis. It is the issue of labour costs or client-staff ratio which is again and again under discussion in geriatric facilities.

e.) Committed staff in training geriatric homes faces the problem of their career advancement on the one side and is often left alone when implementing professional standards or they are in need of substantiating their approach. Who the professional authority encouraging them?

f.) Unskilled geriatric care assistants are on the lowest level of hierarchy seen from a formal point of view. "Proletarising care services" is on the rise in spite of all reservations. It seems to be inadequate that assistants are not only badly paid but also badly trained. These assistants take care of a major part of the practical work in care facilities, but have nearly no lobby at all except with the people they take care of.

g.) State-run organisations in health care politics deal with care provision or education in geriatric and care issues, as well as with care quality in geriatric homes and often mediate between the different interests. The quantitative assessment scheme for geriatric homes carried out by the Medical Review Board of the Statutory Health Insurance Funds in Germany introduced in Germany in 2010 (Medizinischer Dienst der Krankenversicherung. Qualitäts-prüfung von Pflegeeinrichtungen, 2011) was widely criticized on the background that homes which were regionally known as practising "dangerous care" were assessed as being "very good" homes after arranged quality checks (BKK Bundesverband GbR, 2011).

h.) A further target group for quality improvement and qualification are university students in nursing studies. This field of studies is mainly offered as an extra qualification and its quality essentially depends on the degree academic approaches taught reflect every-day life in care facilities with its ups and downs.

i.) Which is the particular interest when classifying graduates as a target group? In theory one might expect them to be an especially welcome asset on any ward as it is them who bring the up-to-date knowledge in care and professional standards to the wards. From a social psychological point of view the enthusiasm of long-served staff is quite limited. This is not only due to the fact that potential future managers are first informally tested on their loyalty. New team members rank low in any informal hierarchy. As the relationship aspect in interpersonal communication is more important than the factual aspect, new input of graduates is appreciated as an exception only. If transferring theoretical

knowledge into practical use is not to result in excessive stress for the individual, those ranking lower in status need authorities and an institutional framework during this transient period in order to have their commitment supported.

j.) Conflicting requirements in care institutions are reflected in training organisations like a mirror. Which are the legal and communicative frameworks necessary for education service providers so that they can convince markets with setting a good example in quality standards and well integrated curricular offers and perceive pedagogic and economic aspects as of equal importance?

k.) Which form of help is essential for managers in training organisations when they recognized moderating knowledge management for their staff as part of their leadership function?

l.) Support is also necessary for permanently employed staff if they would like to keep up their input in the courses they teach and to combine their expert authority with course contents which is transparent for all involved, i.e. teachers AS WELL AS trainees.

m.) Freelance teachers who teach psychological, sociological and communication subjects in theory and care practice have normally not a profound knowledge in the field. It is important to note that permanently employed teachers and freelancers see themselves usually as competitors a fact which complicates transparent knowledge management and integration enormously. When asked to share their know-how, they will be afraid of being replaceable.

n.) The most profound problem students in vocational schools face is the fact that they are expected to be fascinated by questions which they have usually not encountered yet in their everyday life. Teachers provide them with answers to decision-making problems they have never dealt with as they have not had hands-on experience in care homes, especially in their first year of training.

o.) Private-company staff in charge of certifying quality standards are usually not sufficiently acquainted with the field they certify in so that they are not able to assess the quality of cooperation between teachers with different employment status, i.e. to what extent the courses are integrated instead of fitting just into different spheres of knowledge. However, more than ninety different certifying products (Medizinauskunft, 2004) are offered in Germany in the geriatric care sector by legally authorized companies. There seems to be an urgent need to have certifying agencies evaluate more competently to what degree the courses offered by training providers in care training are up to date according to latest findings in care sciences. From an official point of view this necessity does not seem to exist as it is unrealistic to update the legally binding curricula involving all the authorities needed to bring such changes under way. Could open access content and web-based discourse systems provide fresh impetus to further quality standards?

p.) University staff doing research in geriatrics and care faces the challenge to leave their ivory tower and to do participating field research. Such type of

research needs exchange with staff working in geriatric care so that new approaches create more than a storm in a teacup for care organisations.
q.) Editors and other commercial forms of knowledge providers base their sales strategies on the need for orientation of all the different stakeholders. Charitable organisations and foundations, e.g. the German Board of Geriatric Care approach profit orientation in more relative terms.
r.) The media more often takes up subjects of quality in old age and care for their main target groups due to recent demographic trends.
s.) Last but not least we classify so-called public top performers who are getting used to issues of getting older and being in need of care despite the trend to block these subjects out. Qualified new performers can be found only in their ranks, bringing the suitable maturity for geriatric care – a profession still having a bad public image.
The fragmentations most essentially found in communication could not be dealt here in greater detail. The main problems, however, can be summarized as follows: On the one hand, there is no medium where all the stakeholders can get to the point in discussing quality standards. On the other side, interests and values seem to be highly contradictory for the institutions and stakeholders involved in quality management. Training providers run by private organisations or local authorities see each other often as competitors for recruiting students. The present culture of communication between permanently employed and freelance teachers results in the fact that students feel that the courses on offer to be fragmented and not integrated. All the individual groups listed above have their least common denominator in the fact that they all will find themselves in the middle of fig. 1. Does this fact already show the way to solve the problem? The circle shown in Figure 1 represents a (incomplete) macro-system of all social interest groups involved in the "problem" of care quality with the point of focus right in the centre.
The diversity of target and interest groups involved in an intervention into this social area of conflict reflects the social and political complexity. How can such a complexity be reduced without being trivialised? The first aspect of our approach to this question is to establish a common focus of communication between the different interest groups. The second aspect can be derived from Toyota's just-in-time principle introduced in the 1950s. If care institutions orient themselves more towards market-oriented rational criteria than to charitable views, it only seems to be consistent to make the best of it and to learn from efficient or sustainable organisational principles of businesses.
The just-in-time principle aims at meeting the demand exactly when needed in the quality and quantity required at the point needed. The Japanese production and logistics strategy is to consider the entire order process in a holistic way. With knowledge products mainly based on information, this process has been dramatically simplified thanks to the Internet synchronising the individual

functions within the value chain up to the finished product. Materials flows found in the traditional publishing industry no longer play an essential role. The dominating role of traditional elite universities which have achieved their success in a grown infrastructure with the help of business partners can be set off by “universities in the cloud” which provide excellent expert knowledge and didactics despite their physical location far away from urban centres. The missing link has just been the consistent transfer of JIT’s success (together with successful principles developed on this bases such as module-specific feedback loops in KANBAN) to a web-based software architecture synchronising experts defining demand and experts developing products and manufacturing them. As a consequence quality assurance should be handed over to a moderated discourse between former producers and consumers, as these parties can find maximum agreement for their requirements. The coordination between contents authors and licensees will be moderated by editors, who are also in charge of maintaining the communication design. The main focus is put on scientific state of the art, usability and efficient didactics.

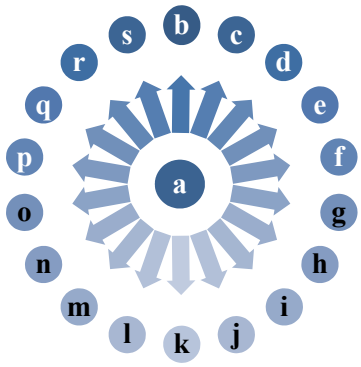

Fig. 1: System (Schmidt, 2005) of social groups involved in defining quality standards

When qualifying care staff analogies to JIT principles can be found: all stakeholders focus their commitment on care quality which is in news headlines again and again as quality is demanded by the public. When bringing theory and practise of qualifying executives and professionals together, the point in question is to bring apparent opponents, i.e. manufacturers and consumers, together and integrate all stakeholders as prosumers (cf. Toffler). Prosumers act together in defining their current requirements as exactly as possible and in co-producing the final product. Cultivating the dialogues between suppliers and manufacturers and subsequently producers and consumers will make warehousing costs redundant and avoid on-spec production. Nowadays it is essential to avoid storing knowledge which is no longer up to date in its

expertise and does not meet the requirements of practical decision making. The product in focus is up-to-date knowledge prepared with logically consistent didactics inviting the user to participate in learning and teaching. The discourse system we are developing is virtually assisted and can be used beyond Saxony to transform the stakeholders mentioned above into prosumers. More details of the project and its architecture are available in Liebscht, Weitzmann & Schubert, 2011.

Modes to virtually assist discoursivity

Buber's dialogue ethics, synergetics as well as Toffler's concept of prosumers in discourse inspired the orientation towards calibrated feedback loops.

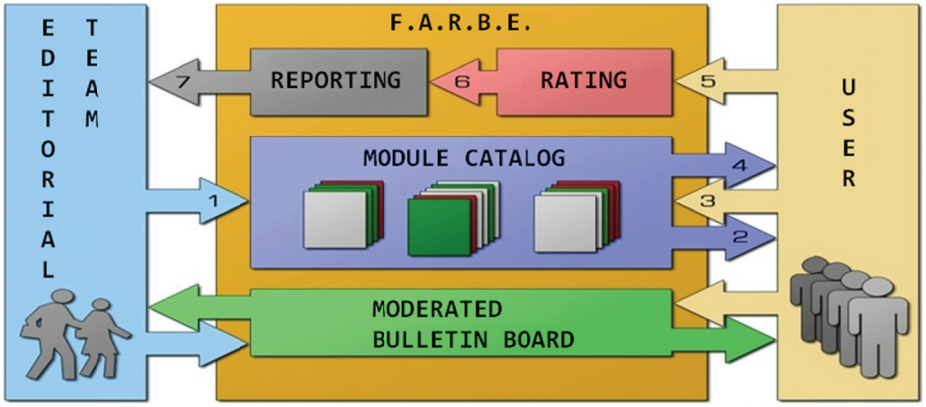

Fig. 2: Process chain for a geriatric knowledge source

Process phase 1: A team of experts in geriatrics creates an initial version of learning modules according to the didactic F.A.R.B.E principle (Liebscht, Schubert, Weitzmann, 2011) together with graphic designers, programmers, photographers and video producers. This initial version is commented on module by module by experts. In contrast to knowledge sources such as Wikipedia, the learning content is consistently organised in a) typical decision-making situations in geriatric jobs, b) embedded into model social contexts using role plays and c) on a firm scientific basis. The decision-making situations are prototypes and can be varied according to practical contexts. Experts, wishing to sharpen their profile in their field and in didactics, can use the prototypical modules to create their own content, have it evaluated and optimized thanks to the feedback loop.

User feedback is the cornerstone of quality enhancement and keeping topics up to date. At the beginning of each training session, a clearly structured entry mask has to be filled in. To keep on evaluating the system it is essential to learn

the target group of the user keying in the feedback. To give an example: What is the his/her practical experience when rating practical relevance? When interpreting the qualitative assessment data, the editorial staff can take into consideration whether a care manager, a family member with someone in need of care, a care assistant or a freelance teacher evaluated the quality of content and didactics of a module. If a user works on the modules from the same computer, user identification can be stored and the input mask skipped.

Process Phase 2: Users having registered use the modules and fill in the test. Modules can be selected at random, in chronological order or according to their level of difficulty. A further option is to deal with the modules according to the German-wide curricula for geriatrics care (Kuratorium Deutsche Altershilfe, 2002). Technical terms can be found through a search function. Modules the user has not dealt with to his/her satisfaction can be repeated. In this sense, the system can be used according to the flashcard principle. This is a systematic principle based on progress, optimizing learning in each successive learning session: all modules where the incorrect test answers were given have to be repeated until all test answers are correct.

Process phase 3: The modules can be used as an interactive textbook, as a reference or a model for role plays. In figure 2 processes indicate the use as a test forum. Learning by heart without understanding the context is not given as a large number of questions are randomly generated and always embedded into job-related contexts.

Process phase 4: The test scores of the modules (sorted into correct and incorrect answers) enable younger users in particular to realistically assess their current level of geriatric competence in good time and in relation to practical relevance. The answers given show the users in need to pass an examination for a geriatric qualification what he/she needs to learn in order to pass the test.

Process phase 5: The five components of a module to be dealt with online correspond to one screen mask each. To proceed to the next component, the user needs a mouse click. This click will be used to evaluate the module component on a four-item rating scale, with one corresponding to “very good”, 2 for “good”, 3 for “unsatisfactory” and 4 for “fail”. See the following five rating questions as an example:

F: To what extent is the situational context for the question concisely described?

A: To what extent do the possible answers reflect decision options in practice?

R: To what extent can you comprehend the views and conflicts of the people described?

B: To what extent do the examples of job-related topics correspond to the question?

E: to what extent do the substantiations for correct and incorrect answers the state of the art in geriatric care?

Process phase 6: The quantitative rating given in an input mask can be complemented by written statements. Such qualitative comments substantiating the quantitative rating score double when interpreting the rating.
Process phase 7: The reporting system described provides clues for the author, editing staff und users to see which modules are in need of optimisation. The urgency of updating a module is shown on a scale working like a thermometer. The qualitative comments given by prosumers indicate the details to be optimised. Working like an online exchange, the weekly price for the modules is linked to the quality rating given by previous users. Authors with a reputation for being committed to optimize their modules will gain from their expertise and didactic input by increased demand for their modules and higher prices. Training organisations which buy licences for module sets early on can be sure to have made a safe investment as the modules are continuously optimized and updated independent of the price they have paid once for the modules. This system fosters and promotes high-quality didactics, which is rare to find as a high amount of input is required.

Conclusion

When transferring the basic principles of Toyota's just-in-time production to distribute and update knowledge relevant to geriatric practice, discussing quality standards and quality assurance go hand in hand. Each interest group may save their face and no stakeholder participating in the discourse needs to be afraid of providing advantages to competitors. Everybody involved can learn from each other and together update quality standards in geriatric care thanks to the online communication design introduced in this paper. The system contributes to better combine economic and psychological rational criteria for quality development. As this communication design sustainably assists discoursivity, significant improvement in geriatric care is to be expected thanks to care staff being well informed. The pilot project aims at transferring the principles applied to other fields such as educating educators and precise definition of requirements for junior management, among others. Combining nearly all corporate functions of the process chain will be transferred to the field of knowledge reproduction in the publishing sector due to advanced technology in the near future. Further modes of the discourse systems and technological challenges are described in a book accompanying the project. A beta version with a sample of 100 modules is expected in March 2012.

References

Birgelen, Dominik. Volkssolidarität Fonds insolvent. 2009. http://www.senioren-blogger.de/recht-verbraucher/volkssolidaritaet-fonds-insolvent.html (19.07.2011)
BKK Bundesverband GbR. Qualität der Pflegeeinrichtung. 2011. http://www.bkk-pflegefinder.de/details/index.php?uid=511420146_02791_ams_s (15.07.2011)
Bosch, Bernhard. Handbuch Projektmanagement für ESF-Projektträger. Stuttgart: Deutscher Paritätischer Wohlfahrtsverband, Landesverband Baden-Württemberg e.V., 2007.

Buber, Martin. Das dialogische Prinzip: Ich und Du. Zwiesprache. Die Frage an den Einzelnen. Elemente des Zwischenmenschlichen. Zur Geschichte des dialogischen Prinzips. Gütersloh: Gütersloher Verlagshaus, 2001.

Deutsches Rotes Kreuz. 23. April 2011 - Neue Wege vier Jahre nach Skandal. 2011. http://drk.ac/aktuelles/newsdetails/archiv/2011/april/23/meldung/60-23-april-2011-neue-wege-vier-jahre-nach-skandal.html (18.07.2011)

Evangelischer Pressedienst. Ex-Diakoniechef hat weitere Spendengelder unterschlagen. 2010. http://www.diakonie-oldenburger-land.de/index.asp?ID=17697 (18.07.2011)

Haken, Hermann; Schiepek, Günter. Synergetik in der Psychologie. Selbstorganisation verstehen und gestalten. Göttingen: Hogrefe. 2010.

Kruse, Peter. Next Practice. Erfolgsreiches Management von Instabilität. Veränderung durch Vernetzung. Offenbach: GABAL, 2004.

Kuratorium Deutsche Altershilfe. Bundeseinheitliche Altenpflegeausbildung. Materialien für die Umsetzung der Stundentafel. 2002. http://www.kda.de/files/curriculum/curric-kda.pdf (19.07.2011)

Liebscht, Max; Schubert, Katrin; Weitzmann, Martin. The F.A.R.B.E. eLearning system. 2011. http://www.pixel-online.net/edu_future/common/download/Paper_pdf/ENT23-Liebscht.pdf (14. 07.2011)

Liebscht, Max; Weitzmann, Martin; Schubert, Katrin. Gemeinschaftsprodukt Pflegequalität - Das Kompetenz-Training-Pflege als Modellprojekt zur integrierten Kompetenzentwicklung von Fach- und Führungskräften am Beispiel Altenpflege. 2011. www.systemagazin.de (in prep.)

Medizinauskunft. Gütesiegel in der Pflege: Keine Garantie. 2004. http://www.medizinauskunft.de/artikel/special/19_08_pruefsiegel.php (18.07.2011)

Medizinischer Dienst der Krankenversicherung. Qualitätsprüfung von Pflegeeinrichtungen. 2011. http://www.mdk.de/1328.htm (15.07.2011)

Pubantz, Frank. Der VS-Skandal. 1386 Anleger geprellt. // *Der Priegnitzer. (*Ausgabe 1.9.2009), http://www.prignitzer.de/nachrichten/lokales/guestrow/artikeldetails/article//vs-skandal-1386-anleger-geprellt.html (18.07.2011)

Senge, Peter M.; Kleiner, Art; Roberts, Charlotte. Das Fieldbook zur 'Fünften Disziplin'. Stuttgart: Klett-Cotta, 2004.

Schmidt, Gunther. Systemische und hypnotherapeutische Konzepte für Organisationsberatung, Coaching & Persönlichkeitsentwicklung. (8 MP3-CDs) Müllheim- Baden: Auditorium-Netzwerk, 2005.

Toffler, Alvin. Die dritte Welle. Zukunftschance. Perspektiven für die Gesellschaft des 21. Jahrhunderts. München: Goldmann, 1988.

WIdO (Hrsg.); Gerste/Schwinger/Rehbein. Qualitätssiegel und Zertifikate für Pflegeeinrichtungen - Ein Marktüberblick, Bonn WIdO-Materialien Bd. 51, 2004.