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Abstract

This paper critically analyses the main challenges related to teaching and learning in emerging business disciplines. It focuses on the field of Business Intelligence (BI), as a prime example of dynamic, industry-driven discipline where the content as well as methods and frameworks for professional practice are still emerging and co-evolving with teaching practices. However, the work presented goes beyond BI and is equally relevant for any other emerging teaching and professional field of Business Information Systems (BIS). The paper argues that order to address the identified challenges, we need to move away from the traditional transmission model of teaching and adopt a new educational model based on the concept of synergetic learning communities designed to cross university industry / boundaries. To support the argument, the paper uses a case study of an active world-wide, synergetic BI learning community called Teradata University Network (TUN). Most importantly, the paper offers a reflective analysis of the changing role of university teacher that could be directly attributed to the new educational model. The reported findings are the result of an ongoing participatory action research project in this area.

Keywords: Business Intelligence, Educational models, Learning Communities

Introduction

Businesses today operate in a very dynamic environment that is often described by various trends such as globalisation, mergers and acquisitions, outsourcing, intra- and inter-organisational integration. To gain or maintain their competitive edge, more than ever before, organisations need to rely on high-quality, timely information to support decision making processes at all organizational levels. Factors such as, an ever increasing number of very diverse internal and external data sources, the sheer volume of data generated and used in everyday business, complexity of business processes as well as various compliance, privacy and other data-related issues, have made cross-organisational data integration and analysis much more complex than ever before. These challenges have, in turn, created a renewed interest in the field of Business Intelligence (BI), including new tools and applications as well as new frameworks and methodologies for professional practice. According to Gartner, BI has been recognized as one of the top business priorities world-wide these days (Gartner, 2004). Yet, according to another, equally influential industry study "the biggest barrier to BI deployment is a lack of user skills and knowledge of best practices" (Beal, 2005, pg. 2).

One could argue that BI has been around for many years because people have always dealt with data and information in order to make decisions, with or without any computer support. However, only in very recent times, due to the above mentioned business trends, the nature of information and decision making have become so complex and dynamic, creating the pressing need for brand new frameworks and methods ("know-how") in this field. Furthermore, organizations are starting to recognize that a sustainable competitive advantage could be gained through better use of organization's existing information sources (Gartner, 2004).

While in the past, the term BI was used to describe a very broad range of applications, the latest thinking in this field emphasises computer support combined with *human* intelligence, in the context of business decision making. In a nutshell, BI applications are used to provide *integrated* sources of *enterprise-wide*, high-quality data (typically stored in data warehouse/data marts) combined with tools for very sophisticated data analysis. The main objective is to support complex decision making by end-users who have the required domain knowledge to interpret the outcomes of data analysis. While the initial emphasis was on strategic decisions, in recent times, the emerging trend of *operational BI* is starting to promote decision making at all organizational levels enabled by better integration of BI with operational business processes.

Compared to the long-established business disciplines such as for example, accounting and finance, the renewed field of BI opens brand new challenges for university teaching and learning, for all stakeholders involved. There is a world-wide shortage of professionals in this field and this trend is likely to continue in the future (Gartner, 2004). Thus, industry urgently requires graduates that are capable not only to use the existing frameworks and methods, but also to further advance current organizational BI practices. In other words, to keep up with dynamic changes in this discipline, organizations need BI professionals who are reflective practitioners capable to use the accumulated experience to continue to develop new strategies and methods, long after they leave universities.

Growing business demands in this field have increased a demand for BI-related courses. To meet this demand and especially to attract returning postgraduate students, universities are interested to offer innovative, highly relevant courses (subjects). Most importantly, these courses need to be thought by university teachers (i.e. lectures, professors) with up-to-date knowledge and professional experience, who are also capable to engage in continuous design and improvement of the most effective teaching practices. These practices need to co-evolve with professional practices.

Therefore, to teach future reflective practitioners, BI teachers need to be the reflective practitioners themselves, constantly learning, evaluating and improving their practices through an ongoing action research process. While this statement applies to any teaching experience, dynamic nature of BI discipline makes this ongoing process of design and improvement more challenging than in more established disciplines, due to the very short action learning cycles.

Also to ensure that the evolving teaching practices are effective, in terms of the intended learning objectives, they need to be evaluated in different educational settings with different groups of students. While this is easier to achieve in an established teaching discipline, in more dynamic discipline such as BI, this is practically impossible for a single teacher to do on their own. Consequently, knowledge sharing among BI teachers and cross-university communities of teaching practitioners become very important. These communities also need to involve industry partners, but in a fundamentally different way from the existing commercial alliances and industry/academic boards. This paper argues that teaching and learning in BI and other emerging disciplines, require a very different educational model, based on a new type of synergetic learning partnership between university and industry sectors.

The main objective of this paper is to further investigate the needs for, and the outcomes of, synergetic learning communities, from the university teaching and learning perspective. This paper identifies and critically analyses the main challenges of teaching in BI discipline and use them to describe the main limitations of the transmission model of teaching. It then proposes a new model of learning communities based on synergy and multi-channel collaboration between university and

industry. The approach is illustrated by a case study of an active, synergetic BI learning community called Teradata University Network (TUN). Most importantly, the paper offers a reflective analysis of the changing role of university teacher that could be directly attributed to this educational model. The findings are based on the author's ongoing action research project and active involvement in TUN learning community.

Teaching in the BI Discipline

Teaching in any discipline involves numerous challenges. In addition to common ones, such as setting up learning objectives, selection of teaching and learning resources, design of learning activities and evaluation of students' learning experience, each discipline also has domain-specific challenges. The main objective of this section is to analyse the main challenges of teaching in the BI discipline, in order to motivate and justify the need for a new educational model. Even though they are discipline-specific, the same challenges equally apply to other evolving disciplines that also share the same characteristics such as fast-changing industry context, a very short half-life of content, shortage of the appropriate teaching and learning resources and methods. Examples include courses (subjects) such as business process management, business strategy, business innovation and change management.

While teaching and learning challenges in any discipline could be analysed from many different perspectives, this section adopts the curriculum design perspective to identify and analyse the main elements of BI curriculum. They can be described as follows:

- **Teaching perspective**

BI-related courses are typically thought from two different perspectives: business or IT. This paper focuses on BI teaching in business schools. Currently, this appears to be a more challenging perspective, because traditionally, BI has been considered to be an IT discipline. Consequently, BI-related courses were offered exclusively by IT schools and approached from the application development rather than business perspective. However, current industry developments confirm that the business perspective of BI is as important, if not more important than the IT side. Consequently, there is a world-wide shortage of BI professionals capable to bridge the existing gap between business and IT world (Gartner, 2004).While technical solutions and IT-related "know-how" have been around for more than a decade, business-related frameworks, methods and strategies (such as for example data quality methodology, BI technology governance, BI-related ethics) are still evolving. This, in turn means that in the case of business-oriented BI courses, teaching practices also need to co-evolve with these professional practices.

- **Student population**

While one could argue that, these days, any university course involves an increasingly diverse student population, this is especially the case with high-demand business courses such as BI and, in particular, those at the postgraduate level. For example, in addition to their cultural diversity, students come from very diverse educational and professional backgrounds (e.g. general business, IT- related, IS-related) as well as with a wide range of learning skills formed during their previous educational experiences.

Furthermore, their interests and educational needs also vary. While some students are interested to become BI professionals in the future, a growing number of students are already working in this field. Then, the existing BI professionals also come from a wide-range of BI-related functions: business analysts, data modelers, knowledge and information managers, BI managers, data quality assurance managers etc.

In terms of their learning skills, it is very important to recognize and acknowledge their very diverse approaches to learning and very different prior expectations as to what a university teaching and learning process entitles. For example, while going through their undergraduate degrees, majority (if not all) students experienced the traditional *transmission* model of teaching

where the main emphasis was on delivery of content, often in large lectures and learning was perceived as a "passive experience in which one absorbs knowledge or copies facts into their memory" (Dillenbourg et. al, 1996). Unfortunately, it is very well known fact that this educational model, still practiced today, does not enable students to discover and address some of the problems with their own approaches to, and epistemological beliefs about learning, especially in relation to development of their critical thinking, problem solving and reflective skills (Biggs, 1999).

Therefore, after experiencing the transmission model in their undergraduate studies, students come to a postgraduate BI-course with a preconceived idea that teaching is (still) about delivery of content and learning is about "regurgitating" this content back to the teacher in the exams and assignments often designed to test factual rather than applied and/or experiential knowledge and creativity.

In essence, on the basis of the increasing cultural / educational / professional / learning diversity in our classes, it is only possible to conclude that there are no "typical" BI students. Consequently, more than in any other discipline, a successful learning experience in BI relies on teacher's ability to recognise different aspects of student diversity and then use the most appropriate methods to guide students towards the intended learning objectives. This is a very challenging problem for BI, having in mind that the best teaching practices and methods are still emerging.

- **Content**

The ongoing industry-based developments in this area mean that traditional, print-based learning and teaching resources, such as textbooks become quickly obsolete, in spite of the faster production processes at the publisher side. As in any other popular area of business, the market appears to be saturated by the books, articles and case studies written by, and for, industry professionals rather than students. More often than not, these resources don't even come from reputable sources and don't cover the required concepts in enough depth to be directly used for teaching, especially at the postgraduate level. As BI standards are still evolving, different sources often use very different terms to describe the same concepts and offer their own definitions and terminology. To add to the problem, professional articles are often written in a form of various experience reports, promoting a particular view and/or product and making unsubstantiated claims. When combined, articles are likely to offer conflicting views on a particular topic or issue. While this is an excellent teaching opportunity to explore different perspectives, it is equally important to adopt a critical, non-bias point of view.

Ideally, to be used for teaching purposes the industry-relevant case studies should be written in collaboration with experienced educators or by educators doing applied research in different organisations. They are available, but often very expensive. Furthermore, the emerging nature of this discipline also means that research articles, especially the ones that deal with the business aspects of BI from the practitioner's point of view, that would be suitable for teaching purposes, are equally scarce, compared to other more established research disciplines.

- **Tools and applications used to support learning activities**

Although this question applies to any technology-related course, in the case of BI, this is a very complex issue, especially when teaching current/future business professionals rather than BI software developers and other IT professionals. This is because, having access to the most appropriate software tools and applications, is not sufficient. It is even more important to have access to very large sets of *integrated* data to enable students to get a realistic hands-on experience and to truly appreciate the power and complexity of working in a BI environment, especially from the business perspective. Very large data sets are not typically provided by the vendors of BI tools and are not easy to obtain due to various reasons including, for example, issues related to compliance and ethics. While the traditional database management courses also need access to data, the sheer volume of *integrated* data and different types of very sophisticated data analysis students need to perform in order to have a realistic learning experience are much more complex to create. For example, it is not possible to quickly generate meaningful "dummy" data in order to populate the tables, as in transactional database systems.

- **Teaching/learning methods**

Compared to all other aspects of BI teaching, design of the effective and relevant teaching and learning activities for a particular class is the most challenging but, also the most creative part of teaching experience.

While all educational principles of curriculum design are still applicable here, dynamic and emerging nature of this discipline and very diverse student population opens new design challenges. For example, different concepts need to be taught at different levels and from different perspectives using different methods. Most importantly, teachers should be able to observe progress of their students and, if required, change learning activities (but not the objectives), if the current ones are not working. The same teaching resource (e.g. a tool or a case study) could be used in different ways to achieve a completely different set of learning objectives starting from the factual knowledge and awareness of the fundamental concepts, development of the applied knowledge, experiential knowledge, all the way to creativity and innovation in the BI context (as depicted by Figure 1).
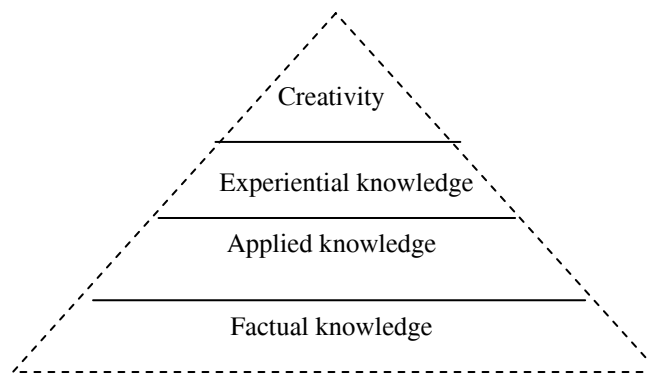

Figure 1: *Different levels of knowledge*

This knowledge framework has been developed and refined by the author, through numerous action-learning cycles in many different courses including BI as well as the other business and IT related courses. The framework has been used to design different types of learning activities to help students to develop different levels of knowledge, as depicted by Figure 1, in both undergraduate and postgraduate courses.

At this point, it is important to reiterate the fact that the traditional transmission model could be best used to help students to develop awareness of fundamental concepts, sometimes referred to as "passive knowledge". Unfortunately, the same educational model is often adopted by various online eLearning (training) packages, turning computers into "content-delivery machines" often reducing "teaching" to sequencing of content modules. Development of applied and experiential knowledge certainty require active participation and reflection in action for more experienced learners and could be achieved only by expert teachers (Schon, 1987).

Ultimately, to become experts, students need to learn how to become reflective practitioners, able to engage in an ongoing action-learning process in their own workplace (Ericsson, et al, 2007). To achieve this level of learning skills in the future, while they are still at the university, they need to be guided through activities designed to scaffold their learning process. The aim is to help them to gradually develop into self-regulating practitioners able to set their own learning objectives based on challenges in their own professional practice and, then continue to learn and improve from the accumulated experience in a very dynamic environment. As Ericsson (2007) pointed out, to become experts, practitioners need to be guided by expert teachers who are also domain experts.

Meeting the Challenges of BI Education – Some Common Approaches

To address the above identified problems universities tend to use different approaches. For example, to ensure that their students have access to the latest tools, universities typically enter into various strategic alliance programs with industry partners, who then provide software applications for a fee. Sometimes they even include access to their online eLearning training tools designed to train students to use a particular software application. Having in mind that the world of IT applications keeps changing at a very rapid pace, acquisition of skills ("how to do something") need to be combined with development of knowledge of the underlying principles and best practices ("what to do in order to address a particular business problem and why") as this is much more sustainable in the long term. Higher level learning skills also include the ability to reflect and learn from the accumulated experience.

All these aspects of student learning are considered to be tacit knowledge and require very experienced teacher. This tacit knowledge cannot be easily acquired though training that focuses on skills and content. A very similar argument was made by (Ericsson et. al, 2007) in their research related to education of experts in any discipline, in particular business.

Furthermore, to ensure that the teaching content is up-to-date, a widespread model is to use industry-practitioners as guest lecturers. This practice is of tremendous value to students as they have an opportunity to learn about their future profession from practicing professionals. However, it is also important to acknowledge that this practice could have some serious drawbacks. For example, a typical educational model used by most, if not all, practitioners is again the transmission model of teaching e.g. giving presentations. While this model has its purpose and place especially among professionals who already have the expertise in the field, this is not the case with all students. There is strong evidence from years of educational research that students need to be engaged in order to learn (Ramsden, 2003). It is very unlikely that the invited industry guest speakers would be able to design the most effective learning activities to achieve the intended learning objectives. As Ericsson et al. (2007) observed, development of expertise requires time but also, teacher's expertise required for development of the most appropriate and effective educational methods.

Having in mind a very diverse student population (ranging from novices to very experienced industry practitioners) and different ways student learn, the transmission model simply does not work. Teaching in emerging areas require development of new learning resources, but most importantly new teaching and learning strategies and best practices that are not readily and widely available. Furthermore, in order to ensure that best practices are educationally sound and effective they need to be evaluated in different settings and with different groups of students. However, this is a very demanding task for one person to achieve, due to very dynamic nature of this discipline. Therefore, more than in any other disciplines teachers need to share their experience in order to re-evaluate and co-create new practices. While the field of higher education, has seen many examples of shared knowledge repositories, related research form the knowledge management (KM) field confirms that static repositories of captured explicit "knowledge" quickly become obsolete and turn into "information junkyard" (Malhotra, 2004). KM-related research also confirms that best practices are developed and shared through active engagement in professional communities of practice. (Davenport and Prusak, 1998).

This paper goes even one step further and argues that teaching in BI and other emergent disciplines require implementation of learning communities. As (Shapiro and Levine, 1999) pointed out "…educational reforms are usually additive rather than transformational, having little impact on core values, structures and practices. Some learning communities –though by no means most – seam to be reaching beyond this historical pattern of educational tinkering" (ch.2, pg. 23). Although this concept is often associated with online communities of students and e-learning this paper adopts a much broader view to involve all stakeholders in students' learning process: students, teachers and industry partners as well as wider community. As with any other community, there must be a value-added for all members, otherwise it is unrealistic to expect that they will contribute. This could be only achieved through possible alignment of their individual

goals and synergetic effect of their actions. The following section describes a case study of a real-life example a synergetic BI learning community and explores its underlying educational model.

An Example of Synergetic BI Learning Communities

This section describes a real-life example of a synergetic BI learning community in action called Teradata University Network (TUN). Currently, TUN serves more than 1.000 academic members from over 600 universities in more than 300 countries (TUN, 2006). TUN provides a *free* learning portal, developed by the leading BI practitioner and educator, Professor Hugh Watson from the University of Georgia. This portal provides industry and other learning and teaching resources with the main objective to support the world-wide community of academic users "to teach, learn about, and connect with others in the fields of data warehousing, DSS/BI and database". (TUN, 2006).

The activities of this virtual community (including maintenance of the TUN web site) are sponsored by the Tearadata Company and various resources are provided by a number of leading BI companies, even direct competitors. On the industry side, this community includes vendors and developers of various BI applications, their customers (e.g. organisations currently using their solutions) as well as various industry analysts and thought leaders. In terms of their contribution, industry members provide up-to-date case studies describing their BI-related applications, problems and solutions. They also provide tools and applications to be used in the classroom. Some vendors even give access to on-line training tools to students, free of charge for educational purposes.

From the university side, this community includes university teachers who are currently teaching BI/DW/DB-related courses and even doing applied research (e.g. case studies) with some of the partner organisations. The academic version of the TUN enables teachers to access and select different resources including assignments and other assessment items while students get to see a subset of these resources. Most importantly, teachers can use TUN to share their best practices with other community members and thus, learn from and learn with other community members. Compared to other static repositories of educational resources, this knowledge sharing aspect is crucial for further advancement of best practices in this field. Some university members are also engaged in resource development and also provide access to large real-life datasets that combined with various tools could be used to create realistic learning experience. Most importantly, compared to other industry-sponsored portals, in the case of TUN, leading academics, rather than solution vendors are primarily responsible for the evolution of this community.

Based on the above description of the main stakeholders and their activities, it is possible to observe that TUN is, indeed, an example of a synergetic learning community because there is value-added for all members involved. Teradata and other industry partners are increasing brand awareness and thought leadership, students acquire leading edge skills, employers receive better graduates and professors are more effective (TUN, 2006). The following section explores the teacher's perspective in order to illustrate how synergetic learning communities are gradually reshaping and redefining their role.

Changing the Traditional Roles

This section provides author's reflective analysis of the changing role of a university teacher in a synergetic learning community such as TUN. Even though the reported changes were identified in the BI context, they are by no means domain specific.

Thus, based on the lessons learnt during ongoing action research in this area, it is possible to observe that the synergetic industry/university learning communities, as described in this paper, are gradually re-shaping the traditional role of university teacher, offering new opportunities for reflective practice, research and development as well as new forms of collaborations. This is a

brief summary of the changed and new roles teachers need to assume in order to contribute to ongoing, organic co-evolution of synergetic learning communities:

- **Teacher as a reflective practitioner**

In more traditional disciplines, where content remains relatively stable over time, over many decades of professional practice, teachers have gradually developed best practices how to teach certain concepts in the best possible way. However, this is certainly not yet the case with BI and the other evolving disciplines. This is why it is so important for BI teachers to engage as reflective practitioners so they could continue to improve and redesign their practices though the process of reflection-in-action (Schon, 1983). Even more, BI teachers are required to educate future reflective practitioners and this could be best done by leading by example. While the concept of reflective practice tends to be associated more with other applied disciplines (e.g. medicine, nursing or even design disciplines such as architecture) this paper argue that the same approach need to be taken by the emerging business disciplines.

- **Teacher as a creative designer**

Design of the creative learning and teaching activities requires a solid understanding of educational theories and methods related to student learning, curriculum design and evaluation methods (see for example (Ramsden, 2003).) While the traditional transmission model also required mastery of educational theories, at least those related to student approaches to learning, in the case of the industry/university learning community, this requirement becomes even more important for the overall success of students' learning experience. This includes different approaches to identifying and dealing with student diversity, especially those related to student's learning skills and epistemological beliefs about learning.

- **Teacher as a community leader**

In his paper on teacher's professional development, Kugel, (1993) identifies five stages (ages) of teacher's (professor's) development and discusses the challenges and needs of each phase. This paper argues that synergetic learning communities introduce one more stage and that is, the community leader, responsible for maintaining and growing collaboration and communication channels between industry and university partners as well as co-evolution of their practices. This in turn, has some important consequences for teacher's professional development courses.

Typically, these courses tend to focus on the earlier stages of teacher's development. However, they should be extended to include skills such as leadership, innovation, change management, motivation, networking that should be developed through action-learning, workplace-related projects, rather than taught in the traditional way. The same argument was made in the context of the above described example of TUN community, where leading academics are primary responsible for community evolution (TUN, 2006). This is not surprising, having in mind that academics, rather than industry partners are primarily responsible for design of student learning experiences (while students are responsible for their own learning).

- **Teacher as a practicing professional**

Even though the content, tools and applications are provided by industry providers, it is still important for teachers to select relevant, up-do-date resources (e.g. case studies) and include them into learning activities in the most effective way. Even more important is teacher's ability to analyse and evaluate the reported industry's practical experience in the context of relevant theoretical frameworks. This is only possible, if teacher has the required domain knowledge at the much higher level than what is required by the transmission educational model.

At the same time, synergetic learning communities could provide more opportunities for applied collaborative research with industry to help teachers to stay up-to-date with current developments and the results obtained in these projects could be then made available to other community members. This is already the case with TUN communities where an increasing number of case

studies are direct result of university/industry collaboration. However, this mode of collaboration could be extended even further to facilitate, for example, industry-wide participatory action research projects.

- **Teacher as "knowledge management" agent**

Innovative and educationally sound teaching and learning practices in BI and other emerging disciplines can only evolve over time through collaboration and knowledge sharing across university boundaries. For example, in the case of the above described TUN community, academics are encouraged to share their teaching practices (e.g. assignments, questions/answers, case studies etc.). However, this is only one aspect of knowledge sharing activities. We are yet to explore the full potential of collective wisdom in action. Further opportunities for collaborative research could include creation and sharing of learning designs suitable for different types of learning outcomes, different types of learners as well as collaborative design of evaluation methods. For example, the same case study could be used in different learning designs to achieve very different set of learning objectives.

- **Teacher as a change agent**

One could argue that any teaching innovation requires the adopting teacher to become, to some extent, a change agent. In the case of the synergetic learning communities, the scope of the required change could be potentially larger as it extends well beyond boundaries of one's classroom or individual courses. Most importantly, to adopt the above described changes, one should re-evaluate their own assumption about teaching and learning process, roles and responsibilities of different stakeholders in this process, and most importantly, their own role and values. This includes motivation to participate in a world-wide community, willingness to share ideas and ongoing focus on, and commitment to student learning. Only in this way it is possible to assume the leadership role in this education community and take responsibility for its future evolution.

Value Creation through Synergy

This paper argues that synergetic learning communities, as described here, are making teacher's role even more powerful and important for the overall outcome of student's learning experience. This goes against the popular claim, made by many developers and adopters of on-line and flexible learning tools that technology will gradually replace the teacher or turn their role into a "guide-on-the-side". This claim remains valid, if one is to adopt the transmission model of teaching where the main emphasis is on delivery of content. However, one could argue that, if teacher's primary role is, indeed, to repackage and deliver content, then they should be replaced by technology.

However, this is certainly not the case with synergetic learning communities as described here. This model enables teachers to focus on the most creative aspects of teaching and learning process. They include design of learning objectives as well as design of innovative, domain-specific teaching and learning activities to help their students to achieve these objectives. Obviously, this is the skill set and knowledge that industry partners cannot easily provide themselves as they don't normally have the expertise required for curriculum design and in particular, design of the effective learning strategies. Another very important aspect of student learning process is related to evaluation of different learning methods and strategies by using formal, rigorous methods. Again, this is something that industry partners are not very likely to provide, simply because their training courses typically focus on acquisition of very specific product-related skills rather than higher-level learning skills and knowledge as well as research-based evaluation of their own strategies.

On the other hand, industry partners contribute by providing content, tools and applications but also a wealth of practical knowledge and experience. All these aspects of industry's contribution are not readily available in the university environments.

Students also have an important role to play. They contribute by providing an ongoing feedback that is then used to refine learning activities and, in this way, also contribute to development of best practices.

Thus, all community members have important roles to play making sure their contributions are aligned with the overall goals of educating competent professionals. Truly synergetic relationships enable each member to provide skills and expertise that complement those of other members.

Finally, learning communities provide opportunities for creative collective wisdom, to be created and shared across university boundaries as well as across university-industry boundaries. As teachers and industry partners continue to combine their creative ideas, new opportunities will continue to emerge, further changing and reshaping the role of university teachers in many different ways, yet to be seen and explored.

Conclusions

The main objective of this paper was to identify and critically analyse challenges related to teaching and learning in emerging disciplines, and in particular in the emerging field of business intelligence. The paper argues that in order to address these challenges, we need to move away from the traditional transmission model of teaching and adopt a new educational model based on the concept of synergetic learning communities that cross university industry / boundaries and open new channels for teaching and research collaboration. To support this argument, the paper uses a case study of an existing, world-wide synergetic BI learning community called Teradata University Network (TUN). Based on the results of an ongoing action research project in this area, this paper offers a reflective analysis of the changing role of university teacher where the identified changes can be directly attributed to the new educational model.

Finally, it is important to point out that even though this paper focuses on challenges of teaching in BI, synergetic learning communities open many new opportunities for collaborative research in different areas: knowledge management, educational technologies and eLearning as well as research-led teaching, virtual communities and creativity. Future possibilities could also include collaborative learning activities among students from different universities enabling students to experience first- hand all benefits of learning in multi-cultural, global environments, just like in their future workplace. In the case of TUN community, some of these opportunities have been identified related to research within TUN as well as research on TUN learning community. As the membership grows and nature and types of contributions keep evolving, new opportunities will also emerge in the future through collective wisdom of TUN members.

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