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The Engagement between Knowledge Transfer and Requirements Engineering

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Developing requirements in the early phase of product development is a process that poses considerable challenges. The most significant challenge is how to effectively transfer knowledge-related requirements. This paper highlights the challenges related to knowledge transfer practices, while developing requirements through a review of literature and an analysis of high-tech company interviews. The most significant challenges and their effects on practices are also discussed. We found that the roots of any difficulty in requirements transfer were embedded in the failure to transfer knowledge-related requirements and facilitate communication between stakeholders. This difficulty affects stakeholders' common understanding. Therefore, interpretations of the requirements vary and do not match the stakeholders' intentions. Lastly, the final requirements and specifications sent are unclear and ambiguous so the requirements need to be changed and modified.

Keywords: knowledge, knowledge transfer, requirements engineering, challenges

Introduction

The indicator of the success of a product is a product design that can truly meet the target set. To achieve that, we need to be able to find and specify the product requirements correctly and clearly base them on the customers', users', or other stakeholders' expectations. These processes are called requirement engineering and involve the front-end activities and main stage for developing any new product (Hall, Beecham, & Rainer, 2002; Nu-seibeh & Easterbrook, 2000). The quality of execution of the front-end activities and the creation of well-defined product requirements play a critical role in a product's success (Cooper & Kleinschmidt, 1991). Well-defined product

requirements lead to clear understanding of the development work, including development time and cost, technical expertise required, market potential, etc., and help to avoid development slowdowns, unexpected project costs, and the creation of unsuccessful new products (Zirger & Maidique, 1990).

Requirements engineering involves communication among various groups of people relevant to the products, so the actual needs can be specified correctly. Requirements are considered an output of the early stage of product development and, at the same time, the input of the developmental stage for the actual production of the product. In the requirements process, many problems and challenges arise since the stakeholders have different points of views, leading to controversy. Therefore, stakeholders and developers must work collaboratively to effectively exchange potential information and knowledge for the requirement process. However, the knowledge transfer is never simple because certain needs, information, or knowledge are difficult to specify objectively. Knowledge-related requirements encompass tacit knowledge, which is highly personal and difficult to communicate to others, and explicit knowledge, which is formal and systematic and easy to communicate and share. Furthermore, the requirements themselves are not directly tangible and knowledge about them is mostly tacit. Therefore, transferring requirements to others is very challenging. Naturally, if the company fails to specify the needs or requirements correctly as proposed by all relevant groups, the new product launched tends to fail. Many previous studies show that products launched fail in the market because of an incomplete requirement process and a lack of effective requirement engineering management, rather than due to technical factors (Alves, Pereira, Valença, Pimentel, & Andrade, 2007). To sum up, when communication or knowledge transfer is not effective, all relevant information and knowledge of the product requirements are sent to the receiver incompletely. Therefore, transferring information, knowledge, intelligibility, and any view regarding products between the stakeholders and developers is crucial.

Currently, although many studies have been conducted on requirements engineering, few have specifically explored the issue of knowledge transfer in the requirements engineering process in the context of collaborative product development. Therefore, this research is an effort to bridge this gap by studying transferring knowledge, especially tacit knowledge-related requirements transfer, to understand the challenges that influence the knowledge-related requirements in the requirement engineering process.

The problems, obstacles, and potential issues found from this research are presented so that the transfer of requirements knowledge can be improved and requirement development can be furthered effectively with the lowest rate of production errors to help avoid costly and ill-informed project

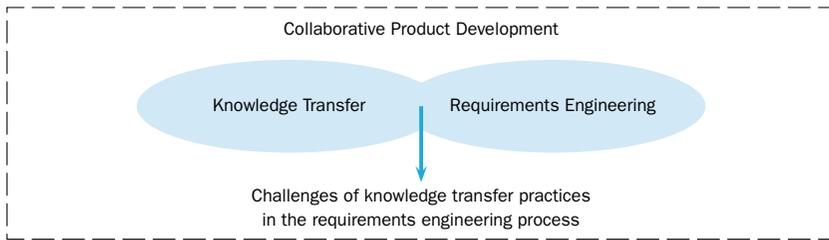


Figure 1 Theoretical Framework

decisions. To achieve the objectives of this study, the following research questions must be answered:

RQ1 What is the initial list of challenges in knowledge transfer and requirements engineering engagement?

RQ2 What is the importance and engagement of these challenges in high-tech company practices?

This paper is organized as follows. Section 2 presents an overview of the theory and previous studies in requirements engineering and knowledge transfer; this section ends with the theoretical synthesis. A research process is described in Section 3. The results are discussed in Section 4 and a summary of this research is concluded in Section 5.

Theoretical Foundations

This research bases its theoretical foundation on requirements engineering and knowledge transfer (Figure 1). Selected theories are applied to the extent required to identify the potential challenges that affect the transfer of knowledge requirements, especially tacit knowledge requirements transfer.

Requirements Engineering

Requirements Engineering Process

Requirements engineering is a core process of product development concerned with understanding stakeholder needs, identifying what the company intends to build, and ensuring product development builds a product that satisfies those needs at a minimum cost and rate of time (Kauppinen, Vartianen, Kontio, Kujala, & Sulonen, 2004; Asghar & Umar, 2010). Many stakeholders are involved in the requirements engineering process, including users, engineers, and developers. They participate in requirements and cooperate with each other. Requirements engineering is divided into development and management.

Requirements development deals with discovering, analyzing, and documenting requirements (i.e., Leffingwell & Widrig, 2000; Pfleeger, 1997;

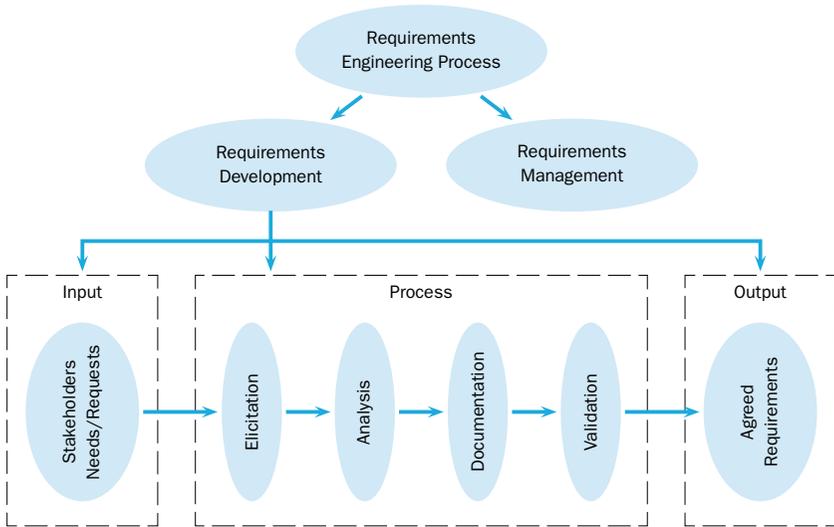


Figure 2 Requirements Engineering Process

Sommerville, 2004; Sommerville & Sawyer, 1997; Wiegers, 2003). The purpose of the output of requirements development is the product requirements documents. Requirements development can be further divided into elicitation, analysis, documentation, and validation processes. These processes are interwoven and there is a great deal of iteration and feedback from one process to another.

- *Elicitation*. The process of discovering and identifying requirements by communicating with stakeholders who will be affected by the system and who have a direct or indirect influence on the requirements (Sommerville & Sawyer, 1997). Many techniques are used: questionnaire surveys, workshops, scenario-based techniques, interviews, etc.
- *Analysis*. The process of analyzing the initial set of requirements and negotiating among different stakeholders to decide which requirements to accept since conflicts, overlaps, omissions, and inconsistencies which have to be resolved, will inevitably arise.
- *Documentation*. The development of a document that clearly and precisely records each requirement to enable communication.
- *Validation*. The final process of requirements development checks that the requirements accurately represent the needs of the system, which are consistency, completeness, and correct information (Pfleeger, 1997; Sommerville & Sawyer, 1997).

Managing requirements is a parallel process to other requirements engi-

neering processes (Sommerville & Sawyer, 1997; Kotonya & Sommerville, 1998). Even when requirements are specified, they are likely to be changed at least once during development and can be changed immediately after development. Therefore, requirements must be managed throughout the product development process. Managing requirements then helps to ensure that iterative and unanticipated changes are maintained throughout the development process.

Requirements

Requirements are identified during the early stages of product development as specifications of what should be built. Many researchers have provided a definition of requirements. Lawrence (1997) suggests a requirement is 'anything that drives design choices.' *Webster's Ninth New Collegiate Dictionary* (1989) defines a requirement as 'something required; something wanted or needed,' whereas Kotonya and Sommerville (1998) define requirement as 'a statement of a system service or constraint.' They are descriptions of how the system should behave, application domain information, constraints on the system's operation, or specifications of a system property or attribute. Therefore, a requirement is a necessary attribute in a product or system defined before design development. A requirement must be determined and agreed upon by the customers, users, suppliers, and other product stakeholders. Requirements are very important because they are used as an input in the design phase of product development. On the other hand, they provide the basics for all the development work that follows.

Challenges of Requirements Engineering

The most important step in successful product development is creating the requirements expected by the customers and stakeholders in the early phase. However, the process of developing requirements poses considerable challenges. Some of the most significant challenges of requirement development are ambiguity and incompleteness (i.e., Curtis, Krasner, & Iscoe, 1988; Kotonya & Sommerville, 1998; Lubars, Potts, & Richter, 1993; Raatikainen, Mannisto, Tommila, & Valkonen, 2011; Wiegers, 2003; Zaga-jsek, Separovic, & Car, 2007). The requirements can be interpreted alternatively, which makes them incomplete and negatively affects product development afterwards. Ambiguity and incomplete requirements result from poor communication, which can have various causes (Bubenko, 1995; Damian, 2007; McAllister, 2006; Naz & Khokhar, 2009), for example, the lack of a standard knowledge transfer process followed by everyone. In addition, the ability to communicate the needs and interpretation among stakeholders are also important factors affecting the process (Sommerville, 2004). Tacitness can affect stakeholders' understanding and interpretation because it

is difficult to transfer or express to others (Pilat & Kaindl, 2011; Raatikainen et al., 2011). Differences in the stakeholders' knowledge level and skills or a supplier's lack of knowledge about the work process and technology affect the requirements development process, and are very challenging (Kauppinen, 2005). Many researchers found that the main problems in developing requirements are the lack of technical skills, the lack of understanding of the software and the product line being worked, and the lack of a writing requirements skill (i. e., Alves et al., 2007; Kauppinen, 2005; McAllister, 2006).

Time constraints pose another crucial challenge when developing requirements. Normally, in developing a product, the time spent is very constrained (Alves et al., 2007). Everyone has to compete with the time allowed so the product is launched within that time frame. This can lead the developer to make many mistakes. However, developing requirements is complicated work that requires a lot of time to ensure communication with every relevant person.

A limited time frame can lead to many mistakes. For example, some meetings that require experts' participation may not be run as expected because the experts do not have enough time to participate. Assigning a substitute to participate in the meeting can cause problems in understanding the work and eventually affect the entire work process. Communication among stakeholders is important as well. Sometimes, contact through email, telephone, or video conference is not effective. In-depth communication such as face-to-face communication is needed to build personal relationships and trustworthiness among stakeholders, which can ensure the work goes smoothly and effectively. Therefore, numerous researchers agreed the most significant challenge affecting the quality of requirements is how to effectively transfer knowledge-related requirements among stakeholders throughout the development life cycle.

Knowledge Transfer

Knowledge transfer is to pass knowledge from one person to another who needs that knowledge. Szulanski (1996) observed knowledge transfer as a communication model in which the transfer process can be viewed as a *message flow* (process) from a *source* to a *recipient* in a *given context*. In the transfer process, the characteristics of the senders and receivers play an important role. People who have great skills and a willingness to absorb and share knowledge achieve knowledge transfer results. Successful knowledge transfer also depends on the degree of the relationships between the senders and the recipients. The closer the personal relationship, the more efficient the transfer. Additionally, the characteristics of the knowledge and transfer methods are also important (Distanont, Haapasalo, Rassamethes,

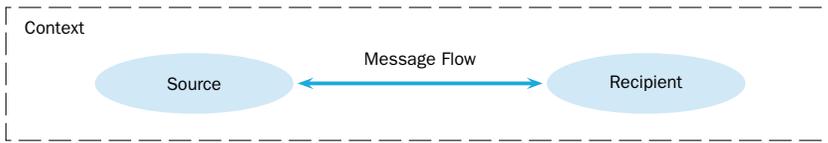


Figure 3 The Transfer Process (adapted from Szulanski, 1996)

& Lin, 2012). Each method of knowledge transfer is suitable for each specific situation depending on the type of knowledge to be transferred and the transfer method (Distanont et al., 2012). Some transfer methods are suitable for some types of knowledge but not for others. Therefore, classifying the knowledge to be transferred is useful and many researchers have classified the types of transferred knowledge. For example, Polanyi (1962) and Nonaka (1994) distinguished knowledge as tacit and explicit, whereas some researchers categorize knowledge as declarative (know-that, know-why, or know-when) and procedural (know-how) (Cohen, 1991; Huber, 1991; Kogut & Zander, 1992). According to the nature of knowledge transfer discussed above, the basic elements of a transfer should be *the source, the message, the recipient, and the context*.

Knowledge Transfer in the Requirements Engineering Process

The aim of the requirements engineering effort is to understand the characteristics of the software or system to be developed, and the desired results of the requirements engineering effort are documented requirements or specifications (Kotonya & Sommerville, 1998; Macaulay, 1996; Pfleeger, 1997; Sommerville & Sawyer, 1997; Zave & Jackson, 1997). In this process, the important problem is transferring requirements knowledge among stakeholders (Coughlan & Macredie, 2002; Gacitua et al., 2009; Raatikainen et al., 2011). The entire requirements engineering process is related to transferring knowledge, but the failure of requirements development is specifically caused by the transfer of knowledge-related requirements during this process. In the context of requirements engineering, knowledge transfer involves transferring needs, understanding, insight, information, and knowledge between stakeholders and developers to develop requirements. Close interaction and collaboration between stakeholders and developers are very important during requirement development since they have to exchange views and ideas or share information and knowledge necessary to effectively accomplish the requirement engineering work. During the requirements engineering process, knowledge related to the requirements has to be elicited and captured by using appropriate methods and during requirements development, tacit knowledge-related requirements are

created or captured. The knowledge gained through this activity needs to be transferred to others to create a requirement or specification in the end. One of many problems is that it can be difficult to transfer knowledge that is not explicit between stakeholders and developers. People may know how to do something but are unable to articulate how they do it. Furthermore, the requirements themselves are not directly tangible and knowledge about them is mostly tacit. Therefore, transferring knowledge to others is very challenging. Poor knowledge transfer during the requirements engineering process results in severe problems in later stages of product development.

Challenges of Knowledge Transfer

Although companies recognize the advantage offered by effectively transferring knowledge within and across organizations, many challenges affect successful knowledge transfer. The amount of research in the past confirms the importance of the nature and characteristics of knowledge; they can truly affect the process. In particular, tacit knowledge is very difficult to transfer (Albino, Garavelli, & Schiuma, 1999; Argote & Ingram, 2000; Gupta & Govindarajan, 2000; Nonaka & Takeuchi, 1995; Szulanski, 2003; Zander & Kogut, 1995). The degree to which knowledge is tacit influences knowledge transfer results through its impact on knowledge ambiguity (Simonin, 1999). Some researchers claim that to be able to transfer tacit knowledge, we need to adjust tacit knowledge to be explicit knowledge first. Therefore, many researchers have tried to implement an information technology (IT) method for adapting tacit knowledge to explicit knowledge before the transfer. However, some researchers have stated that we cannot make tacit knowledge explicit as expected and complete. Therefore, the attempt to adapt the type of knowledge mentioned is not appropriate, because certain parts of the knowledge will be lost. A possible effective way to transfer tacit knowledge is through personal communication. Tacit knowledge, as we can see, is an individual's knowledge and skill that require direct communication for the transfer. Knowledge may also be transferred by observing an expert so that we can understand that person's tacit knowledge from his or her on-job activities. Furthermore, the knowledge type is also needed to find the appropriate transfer channel.

However, Dixon (2002) indicated that knowledge transfer is not a compulsory voluntary action. An efficient transfer, therefore, depends on the willingness of senders and receivers to share. Moreover, the level of knowledge and skills of the sender and the receiver affect the knowledge transfer process. Efficient knowledge transfer necessitates the strong disseminative capacity of knowledge senders. It is the ability of senders to efficiently and effectively codify, articulate, communicate, and teach knowledge to other people (Tang, Mu, & MacLachlan, 2010). When the sender is not skilled

in communicating precisely what he or she wants to transfer, good transfer of knowledge will not happen, or if knowledge senders do not have sufficient ability to transfer needed knowledge to recipients, the knowledge to be transferred might be misunderstood, misinterpreted, and distorted. The efficiency and effectiveness of the knowledge transfer will be significantly reduced as a result, although the sender's capacity is necessary but not sufficient to facilitate full understanding of the knowledge transfer (Tang et al., 2010). The absorptive capacity of the receiver also plays a key role. Absorptive capacity is the ability to recognize and value new external knowledge, the ability to assimilate it, and the ability to commercialize it (Cohen & Levinthal, 1989). If the receivers cannot understand the knowledge transferred due to a lack of sufficient prior related knowledge to assess the value of that knowledge, the transfer fails as well (Argote & Ingram, 2000; Cohen & Levinthal, 1989; Gilbert & Cordey-Hayes, 1996; Hutchins, 1995; Ndlela & Du Toit, 2001). The disseminating and absorptive capacity depends on each person's prior knowledge level. Apart from the potential, knowledge, and skill level of the sender and the receiver, trustworthiness and motivation issues can also affect the success of a knowledge transfer (Dixon, 2002; Szulanski, 2000). If neither trusts each other or lacks motivation, creating an effective transfer is impossible.

In addition to the factors related to senders, receivers, and knowledge, relationships and interactions between the sender and the receiver are also worth considering (Distanont, Haapasalo, Kamolvej, & Meeampol, in press; Sverlinger, 2000; Szulanski, 1996; Zander & Kogut, 1995). The level of relationship between the knowledge sender and the receiver affects the difficulty of transferring the knowledge as well. Many previous works indicate that personal relationships affect the effectiveness and time used in transferring knowledge (i. e., Gupta & Govindarajan, 2000; Hansen, 1999; Kogut & Zander, 2003; Szulanski, 1996). For example, regarding tacit knowledge, direct communication between the sender and the receiver can ensure the transfer is conducted effectively. Therefore, we need to provide face-to-face communication in formal and informal settings because it can help increase personal ties, which can drive the knowledge transfer to be both faster and easier. However, the issue of cultural and language differences must be borne in mind.

Theoretical Synthesis – Challenges for Knowledge Transfer in Requirements Engineering

Based on the literature analysis in Chapter 2.2 about knowledge transfer, there are four basic elements of a transfer: source, recipient, message, and context. To fully understand the process of knowledge transfer in the requirements engineering process, understanding the criteria that affect a

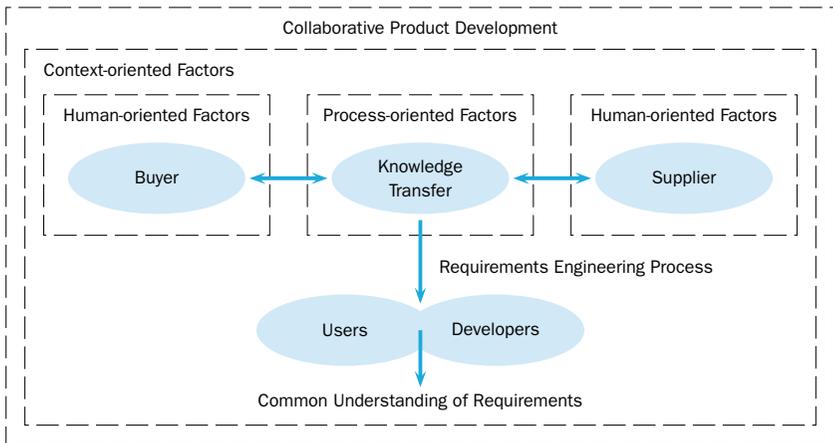


Figure 4 The Classification of Challenges in Transferring Knowledge During the Requirements Engineering Process

transfer during requirements engineering knowledge is important. In this research, we classified the challenges of knowledge transfer and requirements engineering by using a basic element of the transfer as a criterion. The source and recipient are both people who have a role in sending and receiving knowledge. Therefore, these two elements should be classified in the same category – the human category. The message element is somehow relative to the media and channel of knowledge transfer. It defines how to transfer knowledge from a source to a recipient – the process category. Additionally, the context element is about the environment which has an impact on the transfer – the context category. This element can support the knowledge transfer or create barriers to transfer practices. Therefore, according to these basic elements of a transfer, the classifications of challenges have been grouped into (1) human-oriented factors, (2) process-oriented factors, and (3) context-oriented factors.

The challenges in knowledge transfer and the requirements engineering process are summarized in Table 1. This synthesis highlights the key findings from the literature review and previous studies. The goal of this summary was to list all the challenges in the knowledge transfer and requirements engineering process.

Research Process

The research was conducted as a case study: knowledge transfer in the requirements engineering process was studied in a high technology company. This case company offers complex telecommunication solutions, including hardware, software, and services. Solutions are produced in cooperation

Table 1 Knowledge Transfer and Requirements Engineering Challenges

Knowledge transfer challenges	Requirements engineering challenges
<i>Human-oriented factors</i>	
KT1.1 Disseminative capacity of sender	RE1.1 Skill for defining requests/requirements
KT1.2 Absorptive capacity of recipient	RE1.2 Skill to understand and translate requests/requirements RE1.3 Articulating needs/requirements of potential stakeholders
KT1.3 Relationships between sender and receiver	RE1.4 The individual's relationship
KT1.4 Trust	RE1.5 Trust
KT1.5 Knowledge distance between sender and receiver	RE1.6 Different perspective and knowledge background (users and developers exhibit differences in language, experience, ambition, knowledge and interest)
KT1.6 Communication style	RE1.7 User-developer interpersonal communications
KT1.7 Motivation	RE 1.8 User involvement
<i>Process-oriented factors</i>	
KT2.1 Nature of knowledge to be transferred	RE2.1 Ambiguous requirements
KT2.2 Transfer channel	RE2.2 Inadequate channeling of requirements change information/knowledge
KT2.3 Different language	RE2.3 Communication channels for requirements knowledge to travel between stakeholders and developers RE2.4 Transferring requirements information/knowledge RE2.5 Lack of well-defined or standard process RE2.6 Time constraints RE2.7 Lack of opportunity to seek out relevant knowledge
<i>Context-oriented factors</i>	
KT3.1 Executive support/commitment	RE3.1 Executive support/commitment
KT3.2 Culture distance/diversity	RE3.2 Culture distance/diversity RE3.3 Distance between stakeholders

with partners and subcontractors. The case company has long traditions of continuous collaborative product development and has been developing the requirements engineering process for years. The main data collection method is interviews. Interviewees include nine persons that, at that time, were working in the same large product development project. The interview-

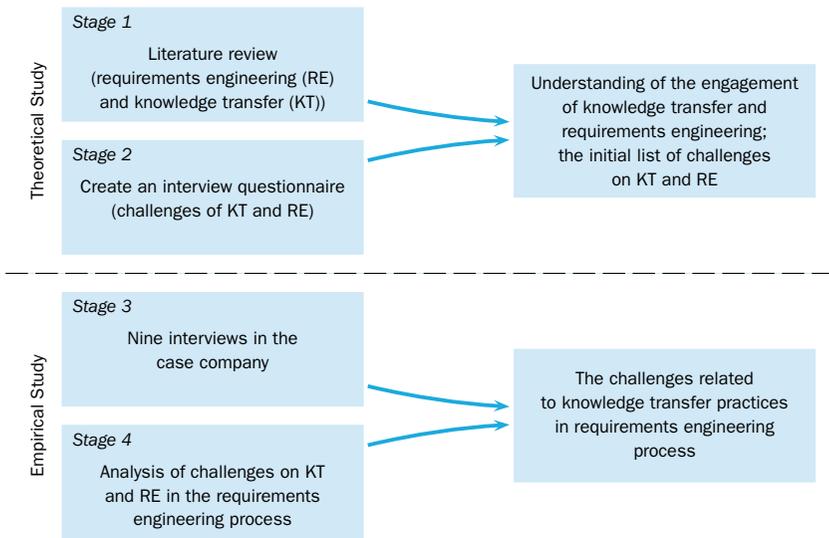


Figure 5 Research Process

wees represent different roles in the project. More detailed research process is presented in Figure 5 and in the following text.

Stage 1

The first stage involved an extensive literature review to understand the engagement between knowledge transfer and requirements engineering and explore the challenges of knowledge transfer and requirements engineering.

Stage 2

The second stage involved creating the interview questionnaire based on the literature review. The interview questionnaire consist of three parts. The first part is rating the initial list of challenges. In this phase, the informants rate each challenge in the Likert scale from 1 to 5 to express a) the criticality of the challenges and b) the current performance of handling these challenges (i. e. how well the challenge is tackled currently). The second part is designed to highlight the challenges affecting the process of transferring requirements to the supplier in practice. The particular viewpoints are requirements engineering and knowledge transfer. The final part is designed to discuss other challenges in practices, which are not included in the initial list.

Stage 3

This phase involved the interviews at a case company, which is a high-tech company in Finland. In-depth interviews were conducted with nine represen-

tatives. The interviewees were selected carefully on the basis of their professional background and expertise. Four of the interviewees were project managers, three interviewees were specialists, and two interviewees were technical managers. Their experience and current interests ensured high motivation among the participants and up-to-date knowledge with respect to the topics discussed. The total work experience of those interviewed was typically between 10 and 20 years. The aim of the interviews was to identify the challenges of knowledge transfer and requirements engineering in practice. The interview consists of three parts: 1) to ask the participants to give a rating to the listed challenges, 2) to ask participants to explain how the challenges manifest in practice and their importance, and 3) to ask about any potential additional challenges that arise in practice.

Stage 4

The final stage involved analyzing the interview's results. The collected data from part 1 of the interview questions was analyzed via the gap analysis method. The NVivo program was used to analyze the data collected from part 2 and part 3 of the interview questions. Gap analysis (Franklin, 2006) is a tool that helps compare the gap between two things (Franklin, 2006); for example, actual performance with potential performance. In this research, gap analysis was conducted to measure the gap between the actual criticality and performance of challenges (the value of criticality minus the value of performance). NVivo is a qualitative data analysis computer software package, which helps with classifying, sorting and arranging data. In this research, this analysis method was useful to extract meaning and insight based on the data collected from the interviews.

Analysis of the Challenges Affecting Knowledge Transfer Practices

This section presents the challenges affecting knowledge transfer practices as found by the empirical study.

The Importance of Challenges

Based on the gap analysis, the challenges affecting knowledge transfer practices were identified (Figure 6). They were classified into four groups, ordered from the largest gap between the value of criticality and performance to the smallest gap. The first two groups of challenges are significant challenges. They are located in the most important area above the keep band. This area represents the challenges that are critical, but whose performance is poor in practice. The third group consists of the challenges lying within the band that reflect criticality commensurate with their performance. The fourth group are the challenges located below the keep band, a placement that indicates high performances deemed noncritical.

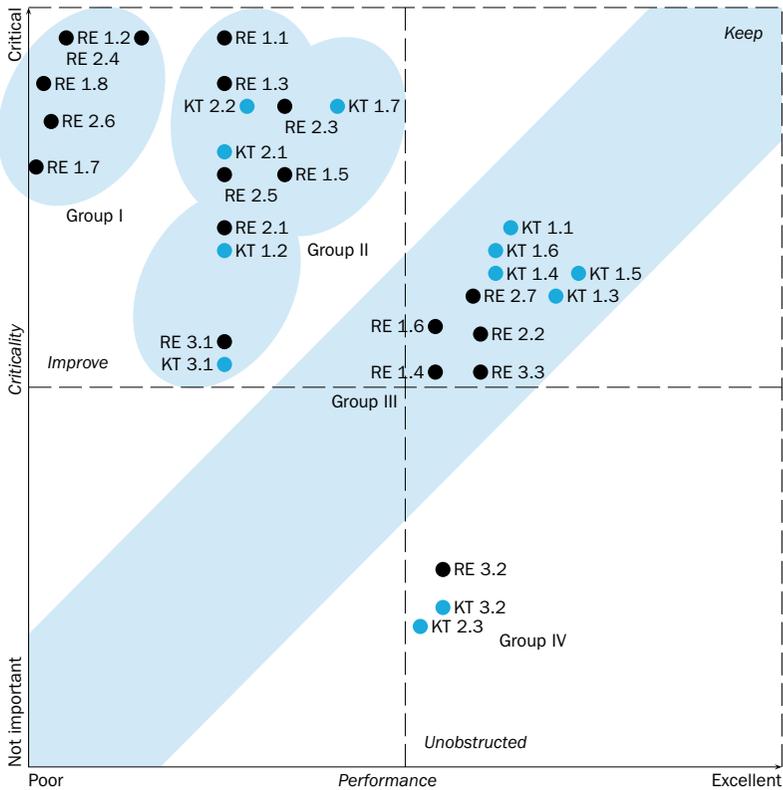


Figure 6 Challenges of Knowledge Transfer and Requirements Engineering

The challenges in groups I and II, which are located in the improvement area, are displayed in Table 2.

According to the analysis, which is based on the NVivo program, the importance of the challenges has been summarized in the following paragraphs. We also highlight additional challenges, i.e., the challenges described by the practitioners, but not mentioned in the initial list of the challenges based on theory.

Challenges in Group I

RE 1.2 Skill in understanding and translating requests/requirements. This skill seems to be not only very important, but also very challenging in the development of requirements. The challenge results from a different level of this skill between stakeholders and the supplier's lack of technical knowledge. Although the development team uses the same language and there is no need to translate anything, problems still exist. Moreover, if requests or requirements need to be translated, the outcome should be checked by

Table 2 Challenges of Requirements Transfer in Practice

Challenges in group I	Challenges in group II
<i>Human-oriented factors</i>	
RE 1.2. Skill in understanding and translating requests/requirements	RE 1.1. Skill in defining requests/requirements
RE 1.7. User-developer interpersonal communications	KT 1.2. Absorptive capacity of recipient
RE 1.8 User involvement	RE 1.3. Articulating needs/requirements of potential stakeholders
	RE 1.5. Trust
	KT 1.7. Motivation
<i>Process-oriented factors</i>	
RE 2.4. Transferring requirements information/knowledge	KT 2.1. Nature of knowledge to be transferred
RE 2.6. Time constraints	RE 2.1. Ambiguous requirements
	KT 2.2. Transfer channel
	RE 2.3. Communication channels for requirements knowledge to travel between stakeholders and developers
	RE 2.5. Lack of well-defined or standard process
<i>Context-oriented factors</i>	
	RE 3.1. Executive support/commitment
	KT 3.1. Executive support/commitment

both companies by a person who understands the translated language and this is very time-consuming.

RE 1.7 User-developer interpersonal communications. Having person-to-person communication is much better than communicating via email or telephone. It helps the individuals to understand each other more easily. However, this type of communication is not easy to facilitate, because there is not enough time for efficient communication between users and developers in addition to budget limitations of face-to-face communication between stakeholders.

RE 1.8 User involvement. It would not be a problem, if at least at the very beginning of requirements development, technical personnel or appropriate people with adequate experience, technical expertise, and language skill on the buyer and supplier sides were available to discuss and lead the requirements work. However, in practice, the supplier does not have enough human resources to solve all of the problems inherent in requirements work.

RE 2.4 Transferring requirements information/knowledge. This seems to be a crucial issue during the requirements development phase and other phases of product development work. There are many causes which gener-

ate difficulty. First, there is no clear guideline for transferring knowledge to the supplier; for example, a guideline on who is responsible for transferring the requirements to the supplier and how much information or knowledge should be transferred to the supplier. Second, the requirements or knowledge cannot be made explicit enough before being transferred. The next issue is that requirements have to be tailored a little bit before being transferred to the supplier; therefore, problems and misunderstandings occur. Finally, the requirements are not transferred to the correct person or actual users.

RE 2.6 Time constraints. There is no adequate time to create and analyze the requirements because the project timeline is not supported in daily work and business decisions come very late. Therefore, the time constraints constitute a risk and generate pressure to do everything in the requirement development process. This problem can create errors and be costly not only in the requirement engineering process, but also for the overall project.

Challenges in Group II

RE 1.1 Skill for defining requests/requirements. Requirements are not always clearly defined or detailed enough. Additionally, developers often use a kind of copy-paste requirement; therefore, there is a gap in the level of understanding between the product management team and the person who is defining the products.

KT 1.2 Absorptive capacity of recipient. This is a challenge for both sides: the supplier and the buyer. On one hand, the supplier does not understand what developers from the buyer side are communicating due to a lack of technical knowledge and variations in the capacity level. The buyer, on the other side, does not clearly understand the information, knowledge, or requirements transferred to the supplier.

RE 1.3 Articulating needs/requirements of potential stakeholders. This is a crucial factor. Sometimes stakeholders are uncertain about what they want or what they are doing. This issue leads to difficulty in expressing needs, requirements, or even problems.

RE 1.5 Trust. Trust affects how people work together. It also influences stakeholders' willingness to communicate openly, to transfer any knowledge, and to support one another. Sometimes people do not follow through with their commitment or fail to complete work on a certain schedule. This situation leads to a lack of trust. In addition, in some cases, developers cannot trust outsiders, such as suppliers or their own factories at other sites, because of information leaks. This issue leads to blocking the transfer between two parties.

KT 1.7 Motivation. Motivation is at a low level at the present; therefore, it has a negative impact on the performance of joint development with the supplier.

KT 2.1 Nature of knowledge to be transferred. Knowledge includes everything around the product and evolves all the time. It is very challenging to transfer and some knowledge related to requirements is not easy to express or transfer to other stakeholders. It is necessary to recognize the different types of knowledge and to determine the appropriate channels for transfer.

KT 2.2 Transfer channel and RE 2.3 Communication channels for requirements knowledge to travel between stakeholders and developers. Transferring information and knowledge through an electronic system (email or telephone) or documentation is not enough. Some issues are important and need to be discussed immediately or need to be discussed in more detail, for which the personal interaction is appropriate. Although face-to-face meetings are best for discussing and transferring information and knowledge, there are some limitations, such as travel bans. Another difficulty is that some types of knowledge, for example, approved requirements, modified requirements, full product definitions, or up-to-date information-related requirements are not automatically available to the supplier and the supplier cannot access the database. It is therefore not easy to obtain the latest documents or knowledge-related requirements.

RE 2.1 Ambiguous requirements. Ambiguous requirements cause misunderstandings and different interpretations. Sometimes developers do not realize that the requirements are not completed or even try to make them complete.

RE 2.5 Lack of well-defined or standard process. This issue creates trouble when working with the supplier. There are two main difficulties. First, there is no clear process for transferring the requirements to the supplier. Second, too many processes are either ineffectively or badly implemented; therefore, it is not easy to follow those processes.

RE 3.1 and KT 3.1 Executive support/commitment. Executive support and commitment are important in the sense that a business case is backed up with a realistic project plan. However, the current challenge is the lack of executive support, at least at the practical level, and sometimes the commitment of upper-level management is unclear.

Challenges in Group III

Most of the factors in this group relate to the human-oriented factor, especially different levels of knowledge and relationships between the buyer and the supplier. Different perspectives and knowledge backgrounds can create obstacles to collaborative working. They can lead to misunderstandings among stakeholders and consume much more time in terms of discussing and reaching a common understanding. In addition, relationships are an important factor in joint development. The closer the personal relationship, the smoother the work. A bad relationship can block interactions and destroy trust among stakeholders. However, according to the findings, although the

challenges in this group are very important, they can be handled. Maintaining continuous treatment is necessary for these challenges; otherwise, they can become a problem.

Challenges in Group IV

The factors in this group are cultural and language differences. These factors are not a problem and are even important, since people understand that differences occur between cultures and are willing to learn about another culture. Furthermore, culture diversity sometimes should be a benefit because of the variety of viewpoints.

Additional Challenges

In the last part of the interview, the informants were asked about any additional challenge that seems, in their view, to be crucial in the practices but was ignored in the initial list of challenges. According to the findings, four additional challenges were found. The criterion for summarizing these challenges is that at least five to seven informants mentioned them. Original quotations from the interviewees are written in italics in the following text.

Experience of organization. According to the interviews, most informants stated that their company is not experienced at working with a third party. 'Our management is expecting from our suppliers more efficient product creation than we can do ourselves. That is the main problem at the moment.' The management level made a decision to collaborate with the suppliers, even though they did not have enough knowledge about how to select a supplier and how to manage operations with it. In addition, there was a lack of knowledge concerning the suppliers the company started to work with. There was also a lack of experience on the supplier side. 'Some suppliers are small companies so they don't have the history and they don't have this knowledge built in' and 'There is one project that has been delayed a lot. This project must be completed in 12 months according to the agreement but because of the lack of experience of supplier this project has taken almost two years, and it's not ready yet.' Some suppliers that the case company collaborates with do not have sufficient experience in product development. To conclude, the lack of experience is a challenge on both the buyer and the supplier side.

Experience of management. One of the current challenges in the case company is that there is a lack of people in the middle and top management who have practical working experience with product development projects or who have managed a project from the beginning. 'The management doesn't have the experience of product development. In the middle and top management, we don't have anybody that has done any project from the beginning to the end.' 'There are new managers who don't understand the third party

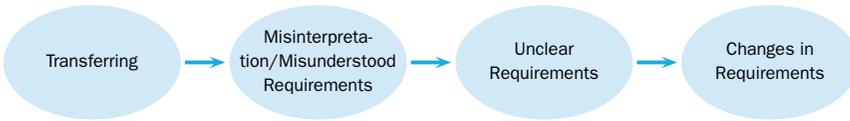


Figure 7 The Engagement of Knowledge Transfer and Requirements Engineering

and the nature of product development.’ Thus, there are managers who are lacking a complete view, and they do not sufficiently understand the supplier and product development process. This impacts their ability to make effective decisions in the present situation. Eventually, this difficulty directly affects the requirement engineering process and product development.

Implementation of processes. Based on the interviewees, it seems that there is a lack of well-standardized processes for requirements engineering. ‘We don’t have a clearly established process of how to deliver the requirements to the third party.’ As a result, the case company may not have a standardised process for requirements engineering. In addition, another challenge arises because the relevant people do not follow the process provided. ‘In the general R&D or requirements engineering process, we don’t follow the process.’ It seems that there are mixed views on whether the case company has a well-standardized process for managing RE with suppliers. Despite the existence of a standard process or not, the implementation of processes poses a challenge.

Company internal process. According to the interviewees, another challenge comes from the case company’s internal processes. The interviewees stated that it is difficult for the suppliers to adapt its processes to the buyer company’s agile development. ‘The way we work with the third party is very challenging and I think it will be very difficult for the third party to adapt to our agile development. An agile system is quite complicated’ To conclude, the complexity of agile development is causing challenges for suppliers to adapt and to collaborate with the case company.

The Engagement of Knowledge Transfer and Requirements Engineering

In the earlier chapters, we explored knowledge transfer and requirements engineering challenges and how they manifest in the practices of a high-tech company. In this chapter, we will offer conclusions about how these challenges interrelate. This analysis was performed based on the findings from both literature and our empirical study. We discovered that the problems with knowledge transfer causes challenges in the interpretation of requirements to be transferred. This leads to unclear requirements and consequent changes in requirements. Figure 7 presents a summation of the causes and effects when there are problems in knowledge transfer.

Transferring. The transfer process is the problem itself in the case company because there is no clear guidance for knowledge and information transfer as well as the proper level of quantity and scope of knowledge to be transferred to the supplier. Moreover, the type of knowledge to be transferred also causes problems in the transfer process. Tacit knowledge is the most difficult type of knowledge to be transferred. It requires a high level of communication between the buyer and the supplier. Though the best way of communicating to transfer tacit information is face to face, this rarely happens. In many cases, the buyer and the supplier are located far away from each other. There can be also limitations in travel budgets. Furthermore, there is the issue of each worker's communication skills and level of knowledge. Hence, as we can see, explicit knowledge is considered much easier to transfer since it can be done through documentation, email, and databases. However, certain types of explicit knowledge are not easy to transfer, such as source code, which is impossible to send via email and, hence, requires another channel. The communication channel is another crucial issue in transferring requirements because each type of knowledge and information needs a different communication channel. Previous studies found that a company facing the problem of transferring information through the existing database faced the difficulty of the supplier being unable to access the information. In addition, the current requirements cannot be updated and thus the supplier has incomplete information. Adjusted requirements cannot be sent to the supplier promptly.

Misinterpretation/misunderstood requirements. This kind of challenge is caused by the requirement transfer process. Without good communication, the knowledge or information obtained can never be complete and causes misunderstanding and misinterpretations among stakeholders. In addition, due to the supplier's lack of skills and technical knowledge, they do not understand what has been sent by the buyer. However, this problem is caused by the buyer: the information they sent is not complete, because the requirements process is not complete. In addition, the buyer who sends the requirement cannot understand the requirements clearly and sends unclear requirements to the supplier-although even when the information was clear, the lack of skills in the requirements process could serve as an obstacle in the transfer process as well.

Unclear requirements. Once a misinterpretation occurs between the buyer and the supplier, the wrong knowledge is obtained, which leads to subsequent development of incomplete requirements. In addition, time limitations, such as when the requirements must be rush transferred, also contribute to incomplete requirements. Finally, when the requirements processor is not the person who implements the requirements, the patterned requirements are not accurate.

Changes in requirements. When the developed requirements are not accurate, they must be changed. Though the point that requires change may be minuscule, it may consume a lot of time, which can affect the entire project development process. In addition, if the business decision to start the project comes late, the requirements that have been developed need to be changed, and people who have joined in that development need some time to recognize what they did before. These difficulties affect the entire project schedule.

Based on the analysis of challenges in the case company, the authors found that the context is not the problem; the problem seems to be in the process and the real understanding of what should be developed. Challenges emerge from the process and the competency or expertise of the people involved in the product's development. However, clearly classifying requirements can improve this situation and mitigate the transfer difficulty.

Discussion and Conclusions

A high-tech company faced significant challenges in transferring requirements during the development process. These challenges may cause the failure of the project. In order to avoid development failure, it is necessary to know what those challenges are, and based on this information, means or solutions can be developed to overcome those challenges. The objective of this research is to understand the knowledge transfer and requirements engineering process and clarify the challenges of knowledge transfer practices in the requirements engineering process. In order to understand and explore these challenges, we have studied them both through literature and empirical research.

Based on literature reviews, the challenges can be classified into three groups: human-oriented, process-oriented, and context-oriented. These initial challenges have led to surprising findings about the similarity of the challenges of knowledge transfer and requirements engineering (see Table 1). By focusing on the initial list of challenges, the majority of challenges in human-oriented group can be clarified as not only relative to the ability to interpret, communicate, and understand the knowledge to be transferred, but also to relationships and trust between people. The majority of challenges in the process-oriented category are related to the mechanism of transferring knowledge between people, including the type of knowledge to be transferred and the transfer channel. The initial lists of challenges in the context-oriented group are related to support from the management level and the culture issue.

Based on the empirical evidence, we can synthesise that the majority of the process-oriented factors are important to improve, since they are critical but poorly performed. Human-oriented factors are critical but the

performance is at a good level, as even these are seen as critical, and the company can manage these as required and/or needed. Context-oriented groups are not seen as critical since the challenges in this group could not create any difficulty and their performance is at a good level. In addition to the importance of the challenges, engagement of these challenges was found. Difficulties in requirements transfer may result from failures in communicating requirements knowledge among stakeholders. These deficiencies in communicating requirements will weaken the common understanding. Nevertheless, the interpretations vary and do not always match the original intentions. At the end, this will cause changes in requirements. This situation will have a negative impact on the time and cost required for the project.

When evaluating this study, it should be noted that the empirical material for this study was collected only from one case company. However, the case company has been developing requirements engineering process for a long time and it can be considered a suitable case to interpret challenges in the requirements engineering process. The performance related to each challenge is probably case-dependent. However, the list challenges and their criticality may be more widely generalizable. The collected data in this research included the views of experienced informants who have been performing collaborative product development for several years and they are experts in this area. The obtained results provide value for the scope of this study. However, future research should study more case companies and more knowledge transfer practices for organizational interfaces. Moreover, the means and solutions for overcoming these challenges, as well as ways to facilitate effective requirements knowledge transfer, should be studied.

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Why Learning by Exporting May Not Be As Common As You Think and What It Means for Policy

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International trade economists are convinced that there is a two-way relationship between productivity and exports – not only the most productive firms self-select into export markets, but also exporters improve their technology due to international expansion. In spite of this optimistic view, empirical studies provide only weak (if any) evidence on learning by exporting. This discrepancy between theory and empirics is usually explained with methodological problems. However, there are also some theoretical reasons why one may think that learning by exporting is a wrong or highly limited hypothesis. The paper presents why learning by exporting may not happen and how policy-makers can stimulate learning from foreign markets (and hence economic growth).

Keywords: learning, exporting, heterogeneous firms

Introduction

Since international economists discovered a positive correlation between firm's productivity and its export status, myriads of theoretical and empirical papers have been written aiming at establishing the causality and providing sound microeconomic mechanisms linking productivity and exports. Two hypotheses have been developed. The first (*self-selection* hypothesis) states that only the most productive firms within an industry engage in international trade. In this view, there is no effect of being an exporter on firm's productivity. The second hypothesis (*learning by exporting* hypothesis) is more optimistic about the consequences of engagement in trade. Firms operating on foreign markets gain access to better technology, organizational techniques, different ideas, and so on. In other words, firms learn from these markets.

It seems that more prominent of both hypotheses is *self-selection*. There are two explanations of this state. Firstly, many empirical articles have proven that more productive firms self-select into export markets. These studies analyzed different countries during different periods of time (see for example, Bernard and Jensen (1999) for the United States, Mayer and Ottaviano (2007) for a sample of Western European countries, and Hagemejer (2006) for Poland). Secondly, modeling *self-selection* mechanism is

quite easy. New models (establishing the so called *New New Trade Theory*) are built upon well-known models (mostly on the *New Trade Theory* from the 1980s). For example, seminal Melitz (2003) paper developed Krugman's (1980) model with the introduction of firm heterogeneity and sunk costs of entry into foreign markets.

One must bear in mind that strict causal relation between productivity and exports has been criticized. Armenter and Koren (2009) showed that while exporters are 4 to 5 times bigger (in terms of sales) than non-exporters, standard *New New Trade Theory* models predict differences of the magnitude of 90–100 to 1. Simply speaking, not only big and very productive firms become exporters, but also smaller ones engage in export activity. Hence, analyzing *self-selection* should not concentrate on one determinant of firm's trade (productivity), but on the whole vector of firm characteristics. Several models explaining exports with more than one factor have been lately developed. This so-called second generation of heterogeneous firms' trade models include Chaney (2005), Hallak and Sivadasan (2009) and Bernard, Redding and Schott (2010) among others. Despite this evolution of theoretical models, productivity is still considered as the main (but not the only) determinant of firm's trade.

At the same time, *learning by exporting* hypothesis has gained popularity. However, evidence of it is not strong. This situation creates a puzzle. Since Adam Smith and David Ricardo economists have claimed that the whole economy can gain from greater openness due to more efficient allocation of resources. It seemed natural to use the same logic in firm-level analysis. Why should we not think that firms learn from foreign markets and hence increase their own productivity? Yet, results of a broad range of studies are confusing.

In this paper, explanations of such a puzzle are presented. It must be strongly stated that the aim of the paper is to describe only theoretical reasons for ambiguous results of studies. In other words, only the theoretical mechanism blocking learning from foreign markets is presented. The author leaves aside methodological reasons for underestimation of *learning by exporting*.

The structure of this paper is as follows. The first part summarizes theoretical explanations of *learning by exporting*. The second part is a review of empirical studies. Next, some mechanisms negating *learning by exporting* are described. Then policy implications are discussed. Conclusions and summary constitute the last part.

Theoretical Rationale for Learning by Exporting

The idea that firms increase their productivity due to engagement in international trade needed sound microfoundations supporting this causality. Many

models have been developed to justify *learning by exporting*. According to Redding (2010) ideas presented in these models fall into three categories:

- adjustments within multi-product firms,
- usage of better skills and technology,
- formation of international production networks.

Typical models of trade in a monopolistic competition setting only assume the existence of single-product firms. Broadening of this assumption brings the opportunity to investigate intra-firm consequences of starting exporting. The popular way to explain *learning by exporting* in a multi-product firm framework is that, due to exports, these firms concentrate on their core competence. Firms specialize in the products in which they are the most productive. This means that less efficient production of many other products is ceased. These adjustments lead to improvement of firm-level productivity.

One of the models of this type was presented by Bernard et al. (2010). They introduced product-specific feature, which affects firm's behaviour. The product attribute reflects consumer taste and can be seen as consumer preference for a particular product. In their working paper (Bernard et al., 2006) firm-specific feature was not given a demand-side explanation, but the supply-side one (efficiency of production a particular product rather than consumer taste). Both specifications lead to similar conclusions. Firms drop less efficient or less demanded products and this *product dropping* generates an opportunity for firms to focus on the core competence.

In growing literature covering multi-product firms, authors analyze the impact of firm organizational abilities (Nocke & Yeaple, 2006) and flexibility of product lines (Eckel & Neary, 2010) on firm's tendency to make adjustments within the product portfolio. One must also stress that, in the above-mentioned models, enterprises produce different products (hence multi-product firms) but each product has only one variety. That is why some authors dig deeper to study interactions between different varieties of the same product. One of the fruitful areas of research touches on the so-called *cannibalization effect* when introducing new variety reduces the sales of existing ones (see, for example, Feenstra & Ma, 2007).

The second mechanism generating *learning by exporting* rests on the influence of trade on skills and firm technology. According to Yeaple (2005), in order to be competitive on foreign markets firm may invest to adopt better technology. When such a technology provides reduction of variable cost, it is worth investing. Because exporting activity is connected with additional variable costs (due to, for example, tariffs and transport) everything that decreases other components of the whole variable cost is of great importance. Other models presenting similar mechanisms include Desmet and

Parente (2006), and Costantini and Melitz (2007). Some authors analyzed how trade tends to affect investment in R&D (see Atkeson & Burstein, 2008). It is worth mentioning that, in some cases, the term *learning to export* is used instead of *learning by exporting*. The motivation behind the introduction of the new term is to highlight the time structure of events and the role of expectations. Firms first invest, only then can they start exporting. However, it cannot be assumed that causality leads simply from productivity (increased due to investment) to exporting. The first step is anticipation of export opportunities, then firms invest and, in the end, they start trading.

Apart from the impact on technology, engagement in exports may enable a firm to hire more skilled workers. Verhoogen (2008) built the model in which firms want to export to advanced and more sophisticated markets. Due to higher incomes, potential consumers are more quality-driven. In order to meet these increased quality requirements, firms must first introduce better technology, which is inevitably connected with hiring skilled workers.

The last reason to consider of *learning by exporting* is the impact of trade on the international production networks. The literature on these networks is growing exponentially. The main focus is on a firm's decision whether to engage in vertical foreign direct investment (FDI) or arm's length relationship. In other words, models typically study whether a firm should outsource or insource certain stages of production. In spite of this focus the literature can help explain *learning by exporting*. Since exporters must be competitive on foreign markets, they may slice the production process into separate stages and locate them in places where each stage would be performed most efficiently. In the *learning by exporting* context, an exporter is usually also an importer. In order to produce exportable goods, firm must import intermediate goods from foreign affiliate (vertical FDI) or independent supplier (arm's length relationship). Models examining firm's supply decisions include Antras (2003), Antras and Helpman (2004), and Costinot, Oldensky and Rauch (2011), among others. Each of them emphasize the impact of contractual frictions on firms' sourcing decisions.

Review of Empirical Studies

Although previously presented explanations of *learning by exporting* seem plausible, the results of empirical studies are far from clear. The results are inconclusive in that they sometimes support the *learning by exporting* hypothesis, but in many cases the impact of exports on firm productivity is statistically insignificant. Table 1 presents the results of various studies taken from the review by Wagner (2005).

All these studies present confusing view of *learning by exporting* hypothesis. Although many analyses investigate the behaviour of firms' productivity

Table 1 Results of empirical studies on learning by exporting

Country	Study	Results
Canada	Baldwin and Gu (2003)	Exporters are more productive than non-exporters. The gap is gradually increasing. New entrants into export markets quickly increase their labour productivity.
Chile	Alvarez and Lopez (2004)	Before exporting firms make conscious efforts to improve their productivity. The discrepancies between new exporters and non-exporters are usually statistically insignificant.
China	Kraay (1999)	Previous export status positively correlated with current labour productivity and TFP. Learning effects among new exporters are usually statistically insignificant or negative.
Colombia	Clerides, Lach, and Tybout (1998)	Improvement of labour productivity after entry into export market.
	Isgut (2001)	In a one-year period, productivity difference between new exporters and non-exporters was not significant. In a five-year period, new exporters experienced faster productivity gains than non-exporters.
Germany	Bernard and Wagner (1997)	Larger increase in labour productivity among new exporters than non-exporters.
	Wagner (2002)	Difference in labour productivity between new exporters and non-exporters was statistically insignificant.
	Arnold and Hussinger (2004)	Difference in TFP between new exporters and non-exporters is stable (non-increasing) after a year following the entry into foreign market.
Indonesia	Blalock and Gertler (2004)	Significant productivity improvements among firms entering foreign markets.
Korea	Aw, Chung, and Roberts (2000)	Similar productivity (TFP) path of exporters and non-exporters.
	Hahn (2004)	Increasing TFP gap between new exporters and non-exporters, decreasing gap between new exporters and old exporters.
Mexico	Bernard (1995)	Similar labour productivity growth of new exporters and non-exporters.

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in different countries on a broad level of development, no clear conclusion can be made. Moreover, in the studies, which covered two-way relationship between export status and productivity, *learning by exporting* was often not found, but *self-selection* hypothesis was supported.

Mechanisms Blocking Learning from Export Markets

The results of empirical studies often do not support the *learning by exporting* hypothesis. Many researchers concluded that this situation was caused mainly due to methodological difficulties. Few economists are of a different

Table 1 *Continued from the previous page*

Country	Study	Results
Morocco	Clerides et al. (1998)	Labour productivity improvements after entry into export market.
Slovenia	Damijan, Polanec, and Prasnikar (2004)	No continuous effect of export on new exporters' productivity. Short-term effect is observed. Increase in productivity depends on the destination (firms learn when to export to advanced markets).
	De Loecker (2004)	New exporters increase their productivity but only in half of the industries learning by exporting was statistically significant.
Spain	Delgado, Farinas, and Ruano (2002)	No evidence on learning by exporting.
	Farinas and Martin-Marcos (2003)	Similar growth of labour productivity and TFP of new exporters and non-exporters.
Sweden	Greenaway, Gullstrand, and Kneller (2003)	No differences between TFP growth of new exporters and non-exporters.
	Hansson and Lundin (2004)	Lack of evidence on learning by exporting when TFP is analyzed. When labour productivity is applied, new exporters improve this productivity faster than non-exporters.
Taiwan	Aw, Chen, and Roberts (1997)	Likely positive impact of export on firms productivity.
	Liu, Tsou, and Hamitt (1999)	Faster labour productivity growth among new exporters than non-exporters.
	Aw et al. (2000)	TFP differences increasing favoring new exporters.
	Liu, Tsou, and Hamitt (2002)	Significantly faster TFP growth in case of new exporters than non-exporters.
Turkey	Yasar, Garcia, Nelson, and Rejesus (2003)	Difference in productivity between new exporters and non-exporters larger than the difference between all exporters and non-exporters.

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opinion – that firms do not learn from export markets due to certain economic mechanisms. However, it would not be wise to lose sight of these mechanisms. Therefore, they are presented below in more detail.

Salomon and Shaver (2005) enumerated three reasons why *learning by exporting* may not occur. These are:

- insufficient flow of information from the host market,
- minor impact of export status on process innovations,
- inability of an exporter to wholly appropriate returns from technological change.

The first one states that multinational activity may enhance productivity

Table 1 *Continued from the previous page*

Country	Study	Results
UK	Girma, Greenaway, and Kneller (2003)	Faster growth of TFP among new exporters than non-exporters – especially in the first year of exporting.
	Greenaway and Kneller (2003)	Faster growth of labour productivity among new exporters than non-exporters.
	Greenaway and Kneller (2004a)	Short-term increase in TFP growth among new exporters.
	Greenaway and Kneller (2004b)	Faster productivity growth among new exporters than non-exporters.
	Greenaway and Yu (2004)	Learning by exporting observed especially among new exporters (chemicals industry analysis).
USA	Jensen and Musick (1996)	Difference in labour productivity growth between new exporters and non-exporters was statistically insignificant.
	Bernard and Jensen (1999)	Sound difference between labour productivity growth of new exporters and non-exporters.
	Bernard and Jensen (2004)	In the first year of exporting, new exporters increase productivity faster than other firms.
Ghana, Cameroon, Kenya, Zimbabwe	Bigsten et al. (2000)	Export in a particular year enables the increase of productivity in the next year. Productivity improvements are especially large in the first year of exporting.
Sample of countries from Sub-Saharan Africa (9 countries)	Van Biesebroeck (2003)	Lack of sound differences in labour productivity between new exporters and continuous exporters. Larger differences between new exporters and non-exporters than prior to entry.

Notes Detailed description of above studies can be found in Wagner (2005).

only when a firm engages in more sophisticated operation than simple export. In order to gain access to foreign knowledge and technology, it would be better to establish physical presence on the host market, for example via FDI. It would provide a firm with a contact with a significant pool of ideas that reside in a particular location. In this view, FDI has an obvious advantage over export. The latter is only supplying foreign market without deep presence on this market, hence it cannot benefit the firm in the form of significant flow of information. Being excluded from the knowledge about better technology, an exporter is unable to increase own productivity.

Although this mechanism seems plausible at first, its power should not be overemphasized. Exporting activity may be productivity-increasing too. Suppose that, to benefit from knowledge diffusion, a firm should make a lot of foreign contacts. The best way to do it is to invest (FDI) and hire foreign workers in the new affiliate, because these workers convey important ideas. However, even simple export may provide an access to such knowledge. For

example, when an exporter develops a distribution chain, creating many overseas contacts, this firm is then able to gain access to foreign ideas. It seems that when trade activity is mature enough it can lead to *learning by exporting* and when an export is caused only by, for instance, a short-term beneficial movement of an exchange rate, then this learning is highly limited. After all, if export could not improve firm's technology, we would expect no study to support *learning by exporting*. As one may recall, some studies support this hypothesis.

The second limitation of *learning by exporting* is connected with minor impact of foreign trade on process innovations. It is stated that the link between an exporter and new ideas is a consumer. Hence, a firm may gain knowledge mainly about the demand-side conditions on foreign market. It may lead to some product innovations, such as launching new product or quality improvements of the existing one. However, a firm still does not have the knowledge about better methods of production even if they are applied by foreign competitors.

Just like previously mentioned criticism of *learning by exporting*, this one is not very challenging. Firstly, it is usually hard to separate product and process innovations. In many cases a firm must improve its equipment and/or hire more skilled workers prior to the introduction of new goods or mastering current products. This obviously leads to process innovations. One may therefore conclude that engagement in export may result directly in product innovations and indirectly in process innovations. Secondly, even if a firm is at first exposed mainly to demand-side knowledge, after some time it can gain access to supply-side ideas; for example, by observing competitors. The longer it stays in foreign markets, the more opportunity to observe it has.

The last reason for non-existence of *learning by exporting* presented by Salomon and Shaver (2005) is associated with the negative consequences of spillover effects. Suppose the firm must decide whether it should invest in better technology anticipating some sales opportunities on foreign market. Suppose next the existence of quick and substantial spillovers among firms within the same country. If an investment is profitable, then other companies will instantly duplicate it thus significantly reducing the ability of the first investor to recoup its investment. In this case, all the benefits will be socialized in the sense that they will not be appropriated by a pioneer. If instead investment is not profitable, then other companies would not copy it and only the initial investor would be left with the losses. These losses will be internalized. It seems that an exporter considering an investment would be exposed to a risk which may discourage this firm from such an activity. That is why exporter may treat foreign markets only as a sales platform and not as a pool of ideas and technology.

This explanation of non-existence of *learning by exporting* is plausible. However, one may raise some caveats against it. Most importantly, there is an asymmetry between the effects of intranational and international spillovers. While diffusion of ideas within the same country is regarded as a factor discouraging firms from productivity-enhancing activities, diffusion between countries is not an obstacle. Putting it differently, using this explanation one only describes the detrimental effects of domestic spillovers. At the same time, nothing is said about why the transmission of knowledge from country A to B does not discourage the firms in country A from innovative activities.

The problem of negative effects of intranational spillovers has been discussed by Hausmann and Rodrik (2003) in the context of entrepreneurship. In their model, a firm has to make some investment to learn its productivity. However, this investment reveals the true costs of some activities within the country (firms learn their country's comparative advantage). It enables other firms to duplicate this activity, making investment hard to recoup. Wagner and Zahler (2011) confirm their predictions that pioneer's success entail the informational externality in the context of international trade. They built a model (confirmed empirically using Chilean data) in which the followers are more likely to enter foreign market when the pioneer survives, and in which the followers are bigger than pioneer firms – it supports the view that the first entrant is a *data producer* (using Wagner's and Zahler's terminology).

Policy Implications

Having stated that *learning by exporting* is blocked mostly by intranational spillovers, it is important to look at the policy implications. It seems that two types of policy arise. Both are inevitably connected with export concentration.

The first one is limiting intranational diffusion of knowledge and technology adopted by the exporters due to international expansion. Theoretically, it would give the exporters some time needed to recoup their investments. However, this policy may be seriously flawed. Firstly, intranational diffusion may be socially desired because it increases the productivity in the country and enhances the economic growth. Secondly, this policy may lead to export concentration. For small open economies the result would be the exposure to firm-level shocks. Last but not least, from a practical point of view, it is almost impossible to limit the transfer of foreign knowledge through exporters to non-exporters.

The second approach is promoting the extensive margin of trade. Because of the flaws of the above-mentioned policy, it seems that enhancing the extensive margin is a better way of stimulating *learning by exporting*.

The problem with appropriability of returns may be seen as a problem of intermediation. *Learning by exporting* is reduced when learning by domestic firms (non-exporters) rests on intermediation provided by the exporters (exporters link non-exporters with foreign knowledge and technology). However, this process reduces the exporters' incentives to invest and adopt foreign technology. By facilitating the entry of domestic firms into export markets, these firms would be able to learn *directly* – not *indirectly* through other exporters – from foreign markets. It can be seen on Figure 1. Panel A graphically presents the standard *learning by exporting* hypothesis. Panel B introduces the impact of non-exporters on exporters' will to learn (*learning by exporting* arrow is crossed). Panel C shows entry into export markets by former non-exporters. Panel D presents the final situation when the intranational diffusion of foreign knowledge is not an important obstacle to firm's learning abilities (and country's growth prospects).

As was previously mentioned, one way to maximize the effect of *learning by exporting* on the growth prospects is to promote the extensive margin of export. In order to make it achievable, policymakers should take sweeping actions. Increasing a firm's tendency to engage in trade requires the use of incentives other than typical trade instruments. Although these incentives are in majority widely known, it is important to enumerate them. Developing an extensive margin of export to promote *learning by exporting* is a very peculiar justification for taking these actions.

Firstly, policymakers should facilitate quality upgrading. Many economists are convinced that only high-quality producers are able to become exporters (see for example Crozet, Head, & Mayer, 2009; Hallak & Sivadasan, 2009). One way to upgrade a firm's quality is to establish some industry-specific bodies responsible for quality control. Another way is to increase competition, for example through FDI inflow (see Harding & Smarzynska-Javorcik, 2011).

Secondly, many potential exporters face a liquidity constraint. This problem has been analyzed by Manova (2010) and Chaney (2005) among others. Many export entry costs are paid up-front, hence the lack of access to credit dampens the extensive margin of exports. Tax rebates or preferential loans to exporters can relax this constraint.

Thirdly, international transactions are connected with higher risk than transactions between parties from the same country. This problem has gained some attention. Crozet, Koenig, and Rebeyrol (2008), as well as Seruga-Cayuela and Villarubia (2008) developed models presenting firms' export behaviour in the presence of uncertainty. One of the obvious ways to reduce trade risk is the establishment of an export insurance company. Another way is promoting the usage of derivatives to reduce exchange rate risk.

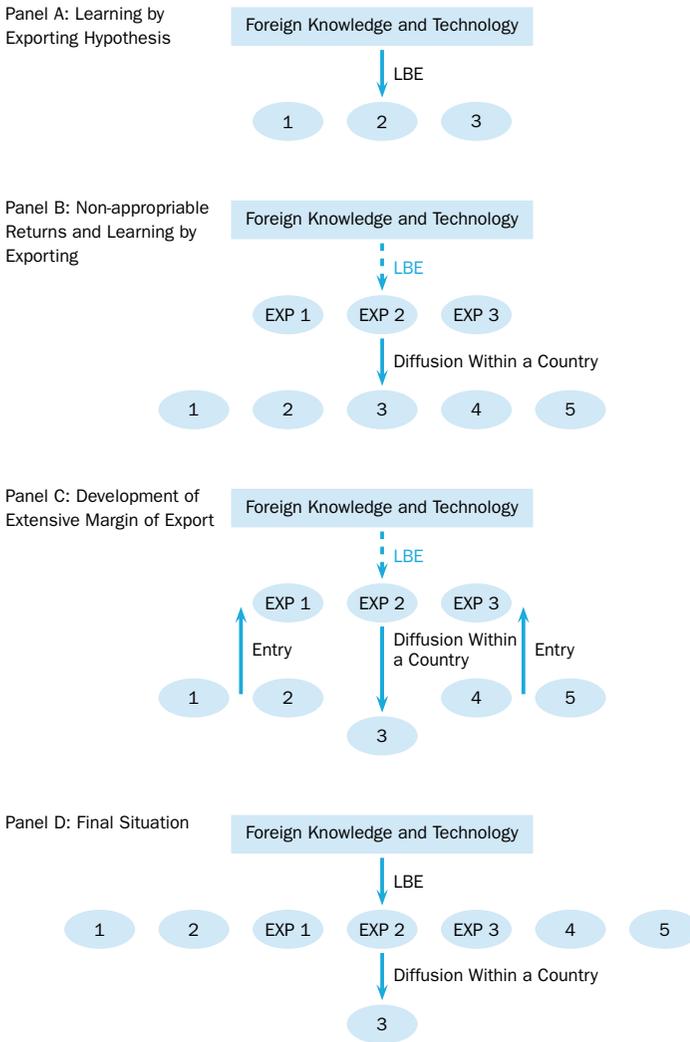


Figure 1 Impact of Extensive Margin of Export on Learning by Exporting Effect

Finally, some authors are of opinion that in order to export, a firm must develop some contacts (see especially Rauch (1996)). Despite the fact that many models treat the correlation between supply and demand on international markets as the *black box*, this process can be extremely time- and cost-consuming and it can discourage firms from exporting. Facilitating trade intermediation would lead to the development of the extensive margin of export. Moreover, as Volpe Martincus, Estevadeordal, Gallo, and Luna (2010) have shown, export promotion agencies can be effective in widen-

ing the international contacts network because they specialize in providing foreign customers with detailed information about differentiated products.

Summary and Conclusions

The correlation between productivity and export status caused many researchers to theoretically and empirically investigate whether international expansion in the form of export improves a firm's technology. Although some mechanisms were proposed in theoretical literature, econometric studies provided weak – if any – support to *learning by exporting*. It is partly caused by methodological problems, but there are also some economic reasons to think that this kind of learning may not occur or may be significantly limited. It seems that the most important one is constituted of intranational spillover effects. Moreover, developing an extensive margin of trade could reconcile a firm's willingness to learn from other markets with the policy-makers' obligation to stimulate the economic growth.

The author did not empirically investigate this hypothesis – it will be the subject of future research. One important suggestion for every future researcher is that endogeneity problem should be controlled. According to the above hypothesis, the extensive margin of export may positively influence the economic growth via *learning by exporting* effect. At the same time, more advanced economies may be constituted of more productive, high-quality firms benefiting from developed financial market. In this environment it would be relatively easy for firms to start with the export. In other words, causality would lead from the level of economic advancement to the extensive margin of export.

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Affective and Social Factors Influencing the Continuance Intention of Using Social Technology for the Case-based Learning

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The proliferation of social technology poses both a threat and an opportunity for the delivery of traditional case method learning in business schools. This paper extends the expectation confirmation model (ECM) to examine the possibility of delivering the case method learning via social technology. Our regression analysis shows that, in addition to affective factors, the social factor of information and knowledge sharing can help improve the accuracy of predicting a student's continuance intention of using social technology in case method learning. The analysis result leads to theoretical and empirical findings for business schools to consider adopting social technology as the next-generation tool for case method teaching.

Keywords: social network, social technology, e-learning

Introduction

Case method teaching is a widely accepted method of instruction in social and natural sciences. Although this instructional method is used extensively in face-to-face classroom environment, its effective application via social technology remains unanswered. As social technology becomes an integral part of most college students' lives, a growing number of faculty members in business schools are facing the challenge of incorporating social technology into case method teaching. In the meantime, learning about using social technology as an effective online teaching tool may have lasting impact on a student's learning performance. To address this possibility, the first and foremost issue is to understand the belief, attitude, and behavior of college students to continue using social technology in classroom learning. These effective factors are a prerequisite to the understanding of new technology adoption and continuance use. Technology acceptance model (TAM) and expectation confirmation model (ECM) are two salient frameworks used

to assess the affective factors of users with respect to information technology adoption decision. TAM is effective at predicting IT adoption behavior of users in a pre-adoption situation (Davis, 1989), whereas ECM is effective in the post-adoption situation (Bhattacharjee, 2001). Since social computing has been integral to the daily life of most college students, ECM is more appropriate than TAM to help us understand college students' continuance intention of using the technology to facilitate their learning. Subjective norm factors, including perceived usefulness (PU), confirmation, user satisfaction, and continuance intention, are key elements in ECM model. A confirmation experience can influence perceived usefulness (PU), thereby affecting user satisfaction and continuance intention. The application of social technology as a business-case learning tool requires that students be formed in groups, as well as encouraged to converse and share divergent ideas. The inclusion of these three factors – grouping, conversing, and sharing – has the potential of improving the accuracy of ECM in predicting intention of college students to continue using social technology as a business case-based learning tool. This research project has one primary goal: to understand the influence of affective factors (e.g. beliefs and values) and social factors (e.g. grouping, conversing and sharing) on the adoption of social media for case method learning.

The remainder of the paper is structured as follows. The next section is a thorough discussion of affective and social factors pertinent to the use of social learning technology for business case-based learning. The literature review will lead to the development of hypotheses on the relationships among these factors. We will then propose a theoretical framework to summarize all hypotheses. Research methodology is presented to help readers understand the nature of our data, as well as assess the reliability and validity of our empirical data. Data analysis will be conducted to report findings on our proposed hypotheses. The paper will be concluded with discussion, implications, limitations, and future research directions.

Theoretical Development

Case Method Learning Effectiveness via Social Technology

Case method learning is a widely accepted practice in business schools. Social networking is essential to case method learning because group members need to converse with each other, share ideas, and solve business problems together (Voigt, 2010). The success of case-based learning depends on how well learners are socially connected, and if social bonds among team members are formed. A well-connected social network can help promote learning in the community of practice (Voigt & MacFarlane, 2010). Social technology is proliferating and transforming the way people interact with each other. Americans are spending an average of 25 per-

cent of their time on social networking technology (The Nielsen Company, 2010). In some countries, the usage rate can be as high as 40 percent (Piskorski & McCall, 2010). College students are one of those groups embracing social networking technology, and using them in every aspect of their life. It is customary to see students 'always staying on' social technology to check news feeds, IM friends, update status, and track upcoming events inside and outside the classroom. The new trend is affecting the learning behaviors and styles of college students (Baird, 2005). An increasing number of administrators and educators find incorporating social technology into the existing curriculum a challenge. On the other hand, social technology may be an effective medium to help deliver effective case method instruction because of its nature to support social interactions. Social learning theory asserts that social interactions are essential to the social learning process because students need to learn from each other via observation, imitation, and modeling (Bandura, 1977). After each social interaction, individuals learn to establish their behavior models by observing and imitating other individuals' behaviors or through the enforcement of the media and the environment. Learning by modeling takes place in four sequential steps: (1) attention, (2) retention, (3) motor reproduction and (4) motivation and reinforcement (Bandura, 1977). Enforcement forces, such as the duration of training, praise, motivation and attention of others, allows learning to move along these four steps against counter forces and lead to better cognitive learning (Yi & Davis, 2001). Social technology has the potential of enforcing each of these four sequential steps. For instance, peer-to-peer pressure on a social site is a great motivation for a student to make visible contribution to his/her team. Divergent ideas about a posted question can stimulate discussion and lead to a higher degree of attention and retention.

The Influence of Confirmation Experience on Perceived Usefulness

A user will experience a positive confirmation experience if his/her post-adoption experiences exceed pre-adopted expectations, according to the cognitive dissonance theory. PU is the degree to which a user believes that a particular information system would enhance his or her job performance (Davis, 1989). A positive confirmation experience can increase the user's PU for the adopted information system (Zviran, Pliskin, & Levin 2005; Amoakogyampah, 2007). Perceived usefulness in the context of using social technology to learn business cases should help users understand main concepts of a business case and solve problems related to the case. After using social technology to learn a business case, college students should have either a positive or a negative confirmation experience. If the confirmation experience is positive, it shall enhance the student's perceived

usefulness of social technology as a learning tool to improve his/her understanding of a business case. We therefore propose the following hypotheses:

Hypothesis 1 Confirmation experience of using social technology to learn business cases has a positive influence on a student's perceived usefulness of social technology to acquire IT concepts and solve business case-related problems.

The Influence of Perceived Usefulness and Confirmation Experience on User Satisfaction

Perceived usefulness is 'the degree to which a person believes that using a particular system would enhance his or her job performance' (Davis, 1989). A positive confirmation experience can increase the satisfaction level of a user (Lee, 2010; Ho, 2010). These two affective factors are positively correlated with user satisfaction because they are the user's perceptions based on the accumulated experiences of using a particular information system. The higher the perceived usefulness or the more positive the confirmation experience, the more likely a user is satisfied with the adopted information system (Roca, Chiu and Martinez, 2006). In addition, the user's perceived usefulness can increase his/her continuance intention of using a particular information system (Ajzen & Fishbein, 1980). Social technology has been primarily used as a tool for networking. To incorporate the social technology into the business case-based learning, it is important to first convince users regarding the possibility of turning social technology into a learning tool. At the experimental stage, it is important to encourage users to assimilate social technology in their business case-based learning by improving their perceived usefulness and confirmation experiences. Doing so can have the potential of increasing user satisfaction. We therefore propose the following hypotheses:

Hypothesis 2 A user's perceived usefulness of using social technology to learn business cases has a positive influence on a student's intention of continuously using social technology to acquire IT concepts and solve business case-related problems.

Hypothesis 3 A user's perceived usefulness of using social technology to learn business cases has a positive influence on a student's satisfaction with the use of social technology to acquire IT concepts and solve business case-related problems.

Hypothesis 4 A positive confirmation experience of using social technology to learn business cases has a positive influence on a student's satisfaction with the use of social technology to acquire IT concepts and solve business case-related problems.

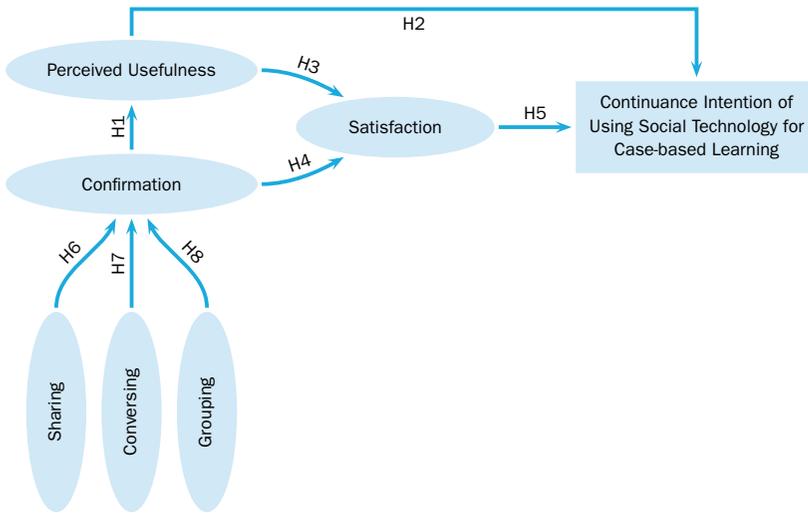


Figure 1 Theoretical Framework

The Influence of Satisfaction on the Continuance Intention of Adopting Social Technology

When users are satisfied with a new technology, they are more likely to continue using the technology. The use of social technology to acquire IT concepts and solve business case-related problems is a new experience for our students. When students are satisfied with the use of social technology for case method learning, they are more likely to continue to use the technology to perform the same task in the future.

Hypothesis 5 A user's satisfaction with the use of social technology to learn business cases has a positive influence on a student's confirmation experience with the use of social technology to acquire IT concepts and solve business case-related problems.

The Influence of Social Factors on the Continuance Intention of Social Technology

As social technology proliferates, many scholars recognize the importance of incorporating social factors (e.g. interpersonal influence, community, intimacy, familiarity, and self-identity) into the ECM model (Kim, 2011). The findings of their studies confirm the importance of social factors to promote the adoption of users for social technology. However, little research has investigated the potential influence of three social factors, including grouping, conversing, and sharing, on the use of social technology for learning purpose. These three social factors are particularly important because these

activities are indispensable to the success of business case-based learning courses. Replicating these factors in the online social sites could be as important as it is in the traditional face-to-face environment. However, the level of influence of each of these three social factors on a learner's confirmation experience has not been explored.

Hypothesis 6 The more frequently a learner uses social technology to share case-related information with other students, the more likely he/she will have a positive confirmation experience.

Hypothesis 7 The more frequently a learner uses social technology to converse with other students on case-related issues, the more likely he/she will have a positive confirmation experience.

Hypothesis 8 The more frequently a learner uses social technology to discuss with other group members on case-related issues, the more likely he/she will have a positive confirmation experience.

Research Methodology

A field experiment methodology was conducted because it has the merits of 'testing theory' and 'obtaining answers to practical questions' (Kerlinger & Lee, 2000). The exploratory nature of the study requires that variables (e.g., interaction modes and usage patterns) under investigation be carefully observed and interpreted. The setting for the field experiment is three information systems classes offered by a public university in Thailand. About 30 students in each class session participated in this study. A total of 90 students in the college of business in this university were invited to spend two weeks to discuss the Harvard business case 'Apple Inc.' on the social site (<http://www.edmodo.com>). Instructor, course materials, learning content, and evaluation criteria were controlled to be the same in all three class sessions. A professional translator was used to translate English materials into Thai to help students in Thailand understand the learning materials. All subjects followed the four learning phases to complete each case discussion: (1) introduction of Edmodo and case-related concepts, (2) student case analysis, (3) output generation and discussions, and (4) follow-up and evaluation. A survey was conducted with subjects to understand the influence of affective and social factors on their intention of using the social technology as a case method learning tool. We also monitored the usage behaviors (e.g. the number of messages posted, comments and responses) on Edmodo and assessed the impact of these behaviors on individual learning performance and team effectiveness.

Development of Measurement Instrument

To improve the validity of our survey instrument, we adopted the instruments used in previous literature and modified them for the purpose of this

study. Questions used to measure affective factors, including perceived usefulness, confirmation experience, satisfaction, and continuance intention, were modified from Bhattacharjee's (2001) study. Questions used to measure social factors, including sharing, conversing, and grouping were modified from Kietzmann, Hermkens, McCarthy, and Silvestre's (2011) study. Since the original questions were in English, we hired a professional translator in Thailand to translate the survey instrument into Thai so that students could comprehend. To achieve a reliable content validity, two information systems experts were asked to review and edit the translated document. Students participating in this study used the revised survey to report their experiences of using Edmodo for case method learning.

The internal reliability of the questionnaire scales was checked using the Cronbach's coefficient (α) for 28 statement items. The alpha values for all constructs, other than the sharing construct, were greater than 0.7, the threshold value for high reliability (Table 1). The alpha value of the sharing construct was 0.42, lower than 0.5, the acceptable reliability. We therefore removed the third item in this construct and recalculated its alpha value. The new alpha value was increased to 0.643, exceeding the minimum acceptable value for reliability test. Therefore, the overall reliability of all constructs was deemed acceptable and all constructs were included in further data analysis.

Demographics

Although 90 students participated in this study, filling out the survey was voluntary. A total of 78 responses were returned as a result. The demographic profiles are presented in Table 2. It is noted that females make up the majority of participants (80.77%). All subjects were freshmen and had not claimed their major. Subjects in this study hold the primary interest of majoring in accounting (43.48%), followed by finance (35.87%), and marketing (16.3%). About 21.79% of subjects had experiences of using social network sites, such as Facebook, Hi5, Twitter, and YouTube. All subjects (100%) had limited experiences of using Edmodo. No one used the application longer than 1 year. Uploading photos (80.77%) makes up the majority of Edmodo experiences, followed by conversation, discussion, and sharing with each other, 1–3 hours each time (57.69%), and learning course materials 4–6 hours per day (38.46%).

Data Analysis Results

The multiple regression analysis was adopted to investigate the relationships among affective factors, social factors, and expectation confirmation experience.

As shown in Table 3, the results indicated that a positive confirmation experience of using social technology to learn business cases has a sig-

Table 1 Reliabilities and Composite Mean for Each Constructs

Factor	(1)	(2)	(3)	(4)
<i>Confirmation Experience</i>	3	3.48	0.65	0.71
Conf. exp. of using Edmodo to learn is better than I expected		3.49	0.72	
Service of Edmodo is better than I expected		3.43	0.64	
Overall, expectation to use Edmodo as expected		3.52	0.60	
<i>Perceived Usefulness</i>	10	3.29	0.69	0.80
Time passes quickly when I used Edmodo		2.99	0.69	
Nothing bothered me when I used Edmodo		2.65	0.64	
I forgot everything when I used Edmodo		2.39	0.78	
Learning to operate Edmodo is easy for me		3.51	0.73	
Edmodo is very easy to understand		3.42	0.75	
I find Edmodo easy to use		3.55	0.75	
Edmodo could enhance my learning		3.66	0.66	
Edmodo could enhance my ability		3.58	0.65	
Edmodo could improve the understanding of each topic		3.51	0.66	
Overall Edmodo could have the potential about the concepts		3.68	0.61	
<i>Satisfaction</i>	3	3.77	0.56	0.82
I am satisfied with Edmodo		3.82	0.55	
Edmodo is a good choice for me		3.82	0.60	
Overall, Edmodo can respond to my needs		3.70	0.54	
<i>Sharing</i>	3	3.67	0.74	0.63
I would like to share with my friends		3.67	0.57	
I would like to post the answer of assignment		3.66	0.90	
<i>Conversing</i>	4	3.14	0.84	0.72
I would like to post the information		2.75	0.86	
I would like to check friend's post		3.09	0.84	
I would like to reply to my friends		2.86	0.82	
I would like to check my grade book		3.87	0.83	
<i>Grouping</i>	2	1.52	0.75	0.75
I would like to use the appointment calendar with my friends		1.38	0.72	
I would like to use supporting community for learning		1.68	0.78	
<i>Continuance Intention</i>	3	3.01	0.71	0.71
I will continue to use Edmodo in the future		3.47	0.65	
I will continue to use Edmodo for learning*		3.32	0.73	
I aim to Edmodo's usefulness		2.26	0.74	

Notes Column headings are as follows: (1) no. of items, (2) composite mean, (3) standard deviation, (4) reliability. * Instead of face-to-face learning.

nificant influence ($\beta = 33.8$; $p = 0.003 < 0.05$) on a student's perceived usefulness of social technology to acquire IT concepts and solve business case-related problems. Thus, Hypothesis 1 was confirmed.

Table 2 Demographic Data Summary Categorized by Students Who Used the Edmodo for Case-Based Learning

Features	Amounts	Percent
<i>Gender</i>		
Male	15	19.23
Female	63	80.77
<i>Expected major (choose more than one)</i>		
Accounting	40	43.48
MIS	0	0.00
Marketing	15	16.30
Finance	33	35.87
IBLT	3	3.26
HO	0	0.00
RE	0	0.00
OM	0	0.00
<i>Experience in using online Social Networking Site such as Facebook, Hi5, Twitter, YouTube</i>		
Less than 1 year	2	2.56
1 to 2 years	13	16.67
2 to 3 years	16	20.51
3 to 4 years	13	16.67
4 to 5 years	17	21.79
More than 5 years	17	21.79
<i>The duration of Edmodo use in hours per week</i>		
Less than hour	31	39.74
1 to 3 hours	40	51.28
4 to 6 hours	6	7.69
7 to 9 hours	1	1.28
More than 10 hours	0	0.00

Continued on the next page

As shown in Table 5, the results indicated that perceived usefulness ($\beta = 33.3$; $p = 0.000 < 0.005$), and satisfaction ($\beta = 39.7$; $p = 0.002 < 0.05$) when using social technology to learn business cases have a positive influence on a student's intention to continue using social technology to acquire IT concepts and solve business case-related problems. Therefore, Hypotheses 2 and 5 were confirmed.

As shown in Table 6, the results indicated that the social factor of sharing ($\beta = 29.0$; $p = 0.015 < 0.05$) information and knowledge with each other has a positive influence on a student's intention to continue using social technology to acquire IT concepts and solve business case-related problems. Therefore, Hypothesis H6 was confirmed. In contrast, the social factors of grouping ($\beta = -10.1$; $p = 0.396 > 0.05$), and conversing ($\beta = 4.4$; $p = 0.715 > 0.05$) have no significant influences on a student's intention to

Table 2 Continued from the previous page

Features	Amounts	Percent
<i>Experiences with Edmodo</i>		
Less than 1 year	78	100.00
1 to 2 years	0	0.00
2 to 3 years	0	0.00
3 to 4 years	0	0.00
4 to 5 years	0	0.00
More than 5 years	0	0.00
<i>How many hours I used Edmodo for learning</i>		
Less than hour	4	5.13
1 to 3 hours	27	34.62
4 to 6 hours	30	38.46
7 to 9 hours	11	14.10
More than 10 hours	6	7.69
<i>Duration of Edmodo use for the knowledge or discussion sharing per times</i>		
Less than hour	6	7.69
1 to 3 hours	45	57.69
4 to 6 hours	24	30.77
7 to 10 hours	2	2.56
More than 10 hours	1	1.28
<i>The Frequency of Edmodo use for education per times</i>		
13 times	18	23.08
46 times	26	33.33
79 times	20	25.64
1012 times	6	7.69
1315 times	4	5.13
More than 15 times	4	5.13
<i>Experienced uploading a photo on Edmodo</i>		
Yes	63	80.77
No	15	19.23

Table 3 The Influence of factor on the Perceived Usefulness of Edmodo

Independent	Standardized Coefficients β	t	Sig.
Constant		71.313	0.000
Confirmation Experience	33.8	3.089	0.003*

Notes * $p < 0.05$. $R^2 = 0.114$. Dependent variable: Perceived Usefulness.

continue using social technology to acquire IT concepts and solve business case-related problems. Therefore, Hypotheses H7 and H8 were rejected. Table 7 summarizes all hypothesis testing results.

Table 4 The Influence of factor on the Satisfaction with Edmodo

Independent	Standardized Coefficients β	<i>t</i>	Sig.
Constant		-5.112	0.000
Perceived Usefulness	0.542	5.163	0.000*
Confirmation Experience	0.009	0.081	0.936

Notes * $p < 0.05$. $R^2 = 0.298$. Dependent variable: Satisfaction.

Table 5 The Influence of factor on the Continuance Intention of Edmodo

Independent	Standardized Coefficients β	<i>t</i>	Sig.
Constant		-2.685	0.009
Perceived Usefulness	0.333	2.724	0.008*
Satisfaction	0.397	3.282	0.002*

Notes * $p < 0.05$. $R^2 = 0.412$. Dependent variable: Continuance Intention.

Table 6 The Influence of Sharing, Grouping, Conversing on Confirmation Experience

Independent	Standardized Coefficients β	<i>t</i>	Sig.
Constant		6.621	0.000
Sharing	0.290	2.457	0.016*
Grouping	-0.101	-0.854	0.396
Conversing	0.044	0.366	0.715

Notes * $p < 0.05$. $R^2 = 0.092$.

Discussion

This study has one primary research objective: to understand the potential contribution of affective and social factors to a student's decision of adopting social technology for case method learning. Since all subjects had prior experiences in using the adopted social technology Edmodo, the emphasis of this study was on post-adoption process. We postulated that a positive confirmation experience could have significant influences on both perceived usefulness and user satisfaction, thereby affecting the continuance intention of users in adopting social technology as a case method learning tool.

The data analysis results indicate that direct influence of confirmation experience on user satisfaction does not exist. Rather, subjects in this study expressed increased perceived usefulness after receiving a confirmation experience. The influence persisted after the user's perceived usefulness toward social technology was formed. A similar magnitude of positive relationship also existed between perceived usefulness and continuance intention. These findings suggested that an instructor, who is interested in using social technology to deliver case method instruction, should focus on increasing the perceived usefulness of social technology rather than learner satisfaction. A case method instructor may want to thoroughly explain the potential usefulness of using social technology to his/her students. Conse-

Table 7 Summary of Hypotheses Test Results

Hypothesis	Result
<i>The Influence of Confirmation Experience on Perceived Usefulness</i>	
Hypothesis 1 <i>Confirmation experience of using social technology to learn business cases has a positive influence on a student's perceived usefulness of social technology to acquire IT concepts and solve business case-related problems.</i>	Confirmed
<i>The Influence of Perceived Usefulness and Confirmation Experience on User Satisfaction</i>	
Hypothesis 3 <i>A user's perceived usefulness of using social technology to learn business cases has a positive influence on a student's satisfaction with the use of social technology to acquire IT concepts and solve business case-related problems.</i>	Confirmed
Hypothesis 4 <i>A positive confirmation experience of using social technology to learn business cases has a positive influence on a student's satisfaction with the use of social technology to acquire IT concepts and solve business case-related problems.</i>	Disproved
<i>The Influence of Social Factors on the Continuance Intention of Social Technology</i>	
Hypothesis 2 <i>A user's perceived usefulness of using social technology to learn business cases has a positive influence on a student's intention of continuously using social technology to acquire IT concepts and solve business case-related problems.</i>	Confirmed
Hypothesis 5 <i>The more satisfied with the use of social technology, the more likely a learner will continue to use social technology in the future.</i>	Confirmed
<i>The Influence of Social Factors on the Continuance Intention of Social Technology</i>	
Hypothesis 6 <i>Information and knowledge sharing using social technology has a positive influence on a student's confirmation experiences of using social technology to acquire IT concepts and solve business case-related problems.</i>	Confirmed
Hypothesis 7 <i>Grouping via social technology has a positive influence on a student's confirmation experiences of using social technology to acquire IT concepts and solve business case-related problems.</i>	Disproved
Hypothesis 8 <i>Conversing with each other via social technology has a positive influence on a student's confirmation experiences of using social technology to acquire IT concepts and solve business case-related problems.</i>	Disproved

quently, a learner will be satisfied with the use of social technology and/or will have higher intention of continuing to use social technology for next case method learning assignment.

Sharing information and knowledge via social technology is the only social factor with an impact on the confirmation experience of subjects in this study. Grouping and conversing features of social technology have little impact on the student's confirmation experiences. These findings indicate that social technology is effective at helping learners share and exchange information and knowledge in the process of learning a business case. The more useful information and knowledge shared on a social site, the higher intention the user has to continue using the social site to learn business cases. A case method instructor may want to encourage team members to disseminate useful information and knowledge to help each other complete

case-related assignments. Although social technology can be also assimilated to facilitate the grouping and conversing activities, they add little values to the user's continuance intention. An instructor may want to consider adopting other communication (e.g. instant messenger or email) and collaboration technologies (e.g. Google Doc. and Windows Live) for conversing and grouping activities, respectively.

Implications

We extended the existing ECM framework by including three social factors – sharing, grouping, and conversing. We used the extended ECM to investigate the contribution of these three social factors and affective factors to the user's satisfaction and continuance intention. Our findings suggest that not all social factors are meaningful in the context of case method learning. Sharing is a much more important social factor than grouping and conversing to increase the learner's intention of continuing the use of social technology to learn business cases. As social technology proliferates, researchers who are interested in social technology adoption may want to investigate other social factors (e.g. trust, reputation, identity, and presence) that may be pertinent to different learning tasks (e.g. skills-based training, situated learning, conceptual acquisition).

The findings of this study further affirm that perceived usefulness has a direct impact on user satisfaction and continuance intention of adopting a new technology. This study makes contribution by substantiating that the logical relationship exists in the context of social technology adoption for case method learning. This study further suggests that, although a user's confirmation experience plays an important role in increasing learner's perceived usefulness, the affective factor does not have a direct impact on user satisfaction. The instructor, who conducts the case method instruction, may want to establish the sequence of developing a positive confirmation experience, as well as increasing perceived usefulness, user satisfaction, and continuance intention.

As social technology continues to evolve, more features (e.g. RSS, cloud computing, video conferencing) will be available for an instructor to add to an online course. An instructor may want to spend efforts in learning not only about the applicability of these features in the case method instruction, but also about the perceived usefulness of a learner. The understanding of learner's perceived usefulness of social technology features can help an instructor to better understand his/her student's intention of continued use for the purpose of case method learning.

Limitations and Research Directions

A small sample size is a major limitation of this study. There are seven variables investigated in this study. A rule of thumb is that a variable needs

at least 10 observations. Since our proposed framework includes seven variables, at least 70 observations are deemed appropriate. There are 78 subjects in our sample. Our sample size barely meets the minimum requirement. A large sample size has the potential of minimizing Type I and II errors.

More than 80% of subjects in this study are females. The findings of this study warrant careful interpretations because gender may have potential influence on the findings of this study. Future research may want to assess the potential influence by controlling the sample size of males and females.

In addition to the evaluation of affective and social factors, future research may want to examine the efficacy of online social media in improving individual and group performance. Individual performance may include conceptual acquisition, analytical skills, and problem solving. Group performance may include conflict resolution, decision-making, and leadership. These performance measurements generally fall into three categories: student behavior, generative activities, and analytical activities (Wasserman, 1994). A correlation analysis of learning performance and continuance intention can provide insights on the perceived usefulness and actual usefulness of social technology for case method learning.

A recent study surveyed 50,000 users of 5 social platforms in 18 countries, including blogging, managing social network profile, sharing photos, sharing videos, and microblogging, and found that not everyone in the world have been using social technology in the same manner (Piskorski & McCall, 2010). For instance, Japanese primarily use social websites to network with their closest friends, whereas Americans do so to extend their social circle virtually. Blogging is a major tool for people in Eastern countries to stay in touch with families and friends. In contrast, the Westerns use blogs to publish their thoughts.

Although Edmodo is a social technology purposely designed to facilitate the online learning, learners from different countries may have different receptivity for the use of this social technology for case method learning. The findings of this study can only suggest how college students in Thailand are susceptible to the influence of affective and social factors in their decision of adopting social technology as an online tool to learn business cases. Future research may want to experiment with Edmodo on other groups of subjects with different cultural backgrounds.

Conclusions

The importance of social technology is growing in campus as college students are embracing it in every aspect of their life. Many instructors in the college of business find integrating social technology in their course to be challenging. This study confronts the pedagogical challenge by conducting

an experiment with 90 subjects in a Thai university to learn about their continuance intention of using social technology to learn business cases. All subjects were divided into teams and had two weeks of learning a Harvard business case before filling out a survey to report their individual learning experiences. Statistical analysis of our collected data shows that perceived usefulness is an important affective factor leading to user satisfaction and user's continuance intention. Case-related information sharing is an important social factor having a direct impact on learner's confirmation experience. An instructor who is interested in assimilating social technology for case method instruction may want to take affective and social factors into consideration.

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Student Teachers' Perceptions of Success: A Tale of Two Universities

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This article is primarily focused on a recent group (tale 2) experiencing a series of embedded and interactive field based experiences (field learning); the discussion is benchmarked to a previous study (tale 1) of student teachers having had a more traditional semester practicum as part of their field-based experience. It is within this context that the authors' show support for rarely noted findings (knowledge) supporting the efficacy of university campus programs: novice teachers linking their success in field-based teaching to their university campus program (campus learning). We contend this is important evidence supporting the link between theory and practice that has the potential to better inform educational management decisions.

Keywords: teacher education, novice teachers, teacher efficacy, affirmative inquiry, reform

This paper is an exploration of prospective teachers' experiences and the impact of teacher training programs. Their responses reveal how student teachers use success experiences to build self-efficacy and provide insight into how student teachers gain confidence in their teaching abilities as part of their university program.

There is a need for this type of research as there appears to be few studies of pre-service teachers focused on student teachers' perceptions of their successful teaching performance (Jones & Vesilind, 1996; Van Zee & Roberts 2001). Further, Beeth and Adadan (2006) state, 'teacher education programs need to know which aspects of their programs contribute to successful teacher practices reported by their students' (p. 107). The literature on any substantive understanding of the relative influence of university and school-based components of teacher education programs on student teacher self-defined success and self-efficacy is in short supply.

In an attempt to address this gap, Anderson, Walker, and Ralph (2009) spoke primarily to the post-practicum experience, reporting on a group of four cohorts of interns over a three-year period. However, this tale did not explicitly focus on the impact of the university component (the on-campus part) of the teacher education program. This study did not include the interpretation of how both the on-campus and field-based experiences related

to students' socially-constructed and cognitive sense of self-efficacy (perceived competence). It is our aim to fill this gap as we compare the results from the post-practicum research from Anderson et al. (2009) with a similar success story, by orienting our study at a newer comprehensive teacher education program, which explicitly links on-campus and field components of the teacher preparation program. We do this by connecting the success story perspectives of student teachers drawn from the university and field-based components of their education programs.

This discussion describes how the first and second case studies are contextually different, primarily in two ways: length of program and position/role of practicum. Tale 1 was situated at a university that offered its students an after-degree education program of two years capped by a semester long internship (in addition to other degree program alternatives). Tale 2 offers an 11-month after-degree program, with an intended reliance on an embedded practicum that runs concurrent to the on-campus components and is punctuated by extended practica periods at the end of each semester (Hirschhorn, Sears, & Rich 2009). It is within this fertile ground of educational program change that we looked to student teacher success experiences as a means to understand how self-efficacy, as a building process, can be linked to both the field and university components of the teacher education program.

Self-Efficacy, Teacher Education, and Seeking Positive Frames

After reviewing the research on self-efficacy and teaching, Vartuli (2005) suggests 'that teachers with high self-efficacy have a positive influence on child outcomes, use effective classroom practices, [...] help children develop greater self-esteem, motivation to learn, improved self-direction, and positive attitudes towards schools' (p. 78). We accept Vartuli's (2005) view of self-efficacy as being 'based on the teachers' perceptions of their competence; [...] the strength of the teachers' self-efficacy helps determine how much effort they will expend [...] and how long they will persevere when confronted with obstacles' (p. 76). Sheldon, Ryan, and Reis (1996) stress a need for research that breaks the tradition of negative reporting and deficit foci as they are 'concentrated on what makes for "bad days,"' arguing 'that in studying the quality of a particular day, it is valuable to consider factors that lift our spirit and keep us going [...] it is worth asking: what makes for a good day?' (p. 1270). Indeed, we also contend that it is worth asking: 'what aspects of your education program did you celebrate as contributing to your most successful experience?' This is a selectively narrow focus, but within the positive frame suggested by the authors above, it is linked to the self-efficacy building process.

In building our understanding of self-efficacy, while contributing to the

development of novice teachers, Self Determination Theory (SDT) can help frame our understanding of the relationship between self-efficacy (perceived confidence), motivation, and successful teaching experiences. Guay, Ratelle, Senecal, Larose, and Dechenes (2006) explain that 'SDT is an approach to human motivation that highlights the importance of three fundamental needs, namely autonomy, competence, and relatedness [...] (p. 237). Ryan and Deci (2000) discuss SDT, drawing attention to intrinsic and extrinsic motivation in the context of success. They argue that *intrinsic motivation* produces action because the agent of the action finds 'it is inherently interesting or enjoyable' (p. 55). Conversely, however, many aspects of teaching for novice teachers will involve *extrinsic motivation* as both novice teachers and their students are expected to be engaged in tasks that 'are not inherently interesting or enjoyable, [therefore] knowing how to promote more active and volitional (versus passive and controlling) forms of extrinsic motivation becomes an essential strategy for successful teaching' (p. 55). Further to this, Sheldon et al. (1996) argue that 'psychological health depends on ongoing feelings of effectance or competence [...] the need to feel competence is a basic organismic propensity that underlies self-esteem and self confidence' (p. 1271). Indeed this element may be an often missed reality of teacher development programs. The importance of building self-efficacy for novice teachers should be more clearly articulated as a key aim of teacher education. Increasing self-efficacy has ramifications for the long term welfare of teachers as noted by Sheldon et al. (1996) who refer to Bandura (1977) suggesting, 'self-efficacy, the feeling that one can bring about desired outcomes, is an important determinant of psychological health' (p. 1271). As part of the efficacy building process, Bandura (1982; 1986) has shown that learners engage in observing and modeling the behaviour of others in mutually interactive relationships, which contributes to the learners' judgments of their self-efficacy. The elements of these relationships are: *personal* (one's beliefs, values, expectations, physical traits, and social skills), *behavioural* (one's outward actions), and *environmental* (one's physical and social surroundings). All of these elements may influence and be influenced by one another as the learner engages in the learning process.

The student teachers' judgments, and thus their self-efficacy, are also affected by other factors, such as the interns' previous success experiences, their existing skills and knowledge levels in performing particular teaching tasks, and the quality of their key mentors' teaching and supervisory style (Ralph 2003). This growth is often credited to the school based experiences under the mentorship of classroom cooperating teacher(s), while college supervisory personnel are seen less favorably (Anderson et al. 2009; Ralph 1998).

Typically, university education programs are offered in concurrent or consecutive formats. In either format, there appears to be a difference in the relative value and positioning of field experiences in relation to the on-campus part of the overall teacher education program. Often the field experiences are treated as distinct from the on-campus components, most commonly positioned at the end of the education program following the completion of the on-campus components (Crocker & Dibbons 2008). It is in the field-based experiences where a perceived gap between the on-campus and field-based components of the program is actually articulated as cited by a student from Beeth and Adadan (2006): 'Field experiences provide opportunities for pre-service teachers to apply knowledge of teaching and learning acquired during university-based coursework' (p. 103). This following quote demonstrates the sometimes stinging critique of the relevance of on-campus components: 'most teacher education programs place substantial emphasis on linking pedagogical preparation with field experiences, prospective teachers [...] are quick to point out the lack of usefulness that university-based courses have in relation to field experiences' (p. 104).

The practicum experience, including the self-judgments of these neophyte teachers, is intended to help influence the ongoing beliefs of student teachers in their instructional and professional capabilities; that is, their sense of self-efficacy. There seems to be scant evidence or support for the efficacy building potential of university courses, indeed typically it reflects Vartuli's argument that 'university faculty must select field placements carefully as [...] student teachers are more influenced by cooperating teachers than the college supervisors or university courses' (p. 81). Supporting this, Anderson et al (2009) found that only 1% of student teachers cited their university supervisors as related to their primary most important success as student teachers. However, while often diminished, the role of the on-campus components in the relative 'success' of student teachers during their field experiences cannot simply be ignored. There seems to be a need to re-focus our research on newer teacher education programs, which aspire to go beyond the traditional concurrent and consecutive program and away from a problem deficit orientation. In this way, we can explore the successful adaptation of the student teacher's experience to better understand the efficacy building aspects of both the field-based and on-campus components of teacher education programs.

Research Design

The design of this study replicates and complements a study reported in an article 'Practicum teachers' perception of success in relation to self-efficacy (perceived competence)' by Anderson et al. (2009) labeled tale 1.

Tale 1 was largely focused on pre-service teachers' perceptions of efficacy building in the practicum. Tale 2 shares a similar methodology, but expands the research focus to include efficacy building in the context of the entire teacher education program, meaning both practicum and on-campus components.

Using the framework from tale 1 in comparison to tale 2, this research contributes to a focus away from a teacher education research program with a deficit orientation, to a focus building on the self-efficacy of pre-service teachers and the use of successful motivation and efficacy enhancing experiences. Unique to tale 2 is our intention to seek this understanding of the efficacy building process in the context of a program, which strives to integrate field and on-campus components. Although formally a consecutive education program, it is a program designed to link the field-based and university components to enhance the professional development of prospective teachers. As student teachers build their sense of self-efficacy, we wondered what they felt had constituted success experiences for them. We wanted to know how student teachers gain confidence in their teaching abilities as part of their complete teacher education program while developing self-efficacy as they enhance their development as teaching professionals?

We postulate that these student teachers find success as they search for exposure to positive events, which support their efficacy building process. While we do not claim to have proven this relationship in the quantitative sense, we feel that we have described the relationship qualitatively. In this sense, we share our findings of the situated and cognitive experiences of these student teachers in linking self-efficacy with their success experiences. Thus, we see a mixture of factors as student teachers respond to their environment, personal factors, goals and related choices that influence their behaviour in a way, which improves effectiveness.

While tale 2 participants were a mixture of student teachers and university representatives, the data reported herein is drawn from the success stories of the student teacher respondents. These novice teachers were at the end of their education program. This is similar to the cohort in tale 1, allowing for a better comparison and relative insight. The data from other respondents, teacher liaisons and cooperating teachers is being used in other reports and writing. In this paper, these non-student teacher sources are only used from time to time to add to the perspective being presented.

After experiencing a mixture of field-based and on-campus experiences over their 11 month after degree program, the student teacher respondents were in the last few weeks of their programs. The researchers had a continued relationship with these students, acting as instructors in the program, as well as working with the majority of the students in another research

Table 1 Tale 1 and 2 in Context

<i>Tale 1</i>	<i>Tale 2</i>
<i>Respondents:</i> 193 students (post practicum) 4 groups over a multiyear period.	<i>Respondents:</i> 30 students drawn from one group in an inaugural year of new program.
<i>Research Focus:</i> How do student teachers build self-efficacy as part of the practicum experience?	<i>Research Focus:</i> How do student teachers build self-efficacy as part of the overall teacher education experience?
<i>Research Question:</i> Relating most successful (story) experience from the <i>practicum</i> .	<i>Research Question:</i> Relating most successful (story) experience from the <i>program</i> .

program designed to solicit the experiences of the students while in the program. The respondents' participation in this study was sought by canvassing volunteers to attend focus group and large group sessions. No demographic data were collected from these teacher candidates from which to identify any particular participant who provided the success story narratives. Overall sixty respondents participated, thirty of these being student teachers. Each of the respondents was asked to write about their most successful experiences related to their education program. Specifically, they were asked to think back over their experiences of the previous several months and 'recall an activity, situation, circumstance, or event that depicts a real success narrative for you. Relate this success by telling a story that energizes and encourages you when you recall it.'

The categories and themes used in tale 2 are the same as those used in tale 1. This framework enables some comparison of an existing data frame within the current round of research, while seeking distinctions between the two distinct contexts (i.e. given as tale 1 and tale 2). In tale 2 we reviewed and classified these ideas (or incidents of experience) and compared them across categories and contexts to discover similarities and differences. The ideas derived from the data were counted for frequency of unique responses. However, in order to enable better comparison between tale 1 and tale 2, the primary approach to reporting the data was as the percentage of responses portraying respondents' ideas.

With a modified question in tale 2, did we expect to get results that are more reflective of the on-campus program than was the case in tale 1? The answer is yes, and that is our point, to take a framework that emerged from a study focused on the practicum and apply it to data collected with a program wide emphasis. In doing this we can see the distinctions between the practicum focused question in relation to the wider university program view and thereby gain a sense of the relative impact of the on-campus and field-based components of the program. This process links the field experience and on-campus program in a way that other research has not.

As a final note, it became apparent that some comments did not fit the data frame for tale 1. These new areas were tale 2 success stories

of students' which seem to be unique experiences attributable to a more interactive and consecutive degree program and context.

The Findings

We have supervised interns in practica, as well as taught university courses with the aim of preparing these students for teaching. For many years, we have witnessed anecdotal examples of efficacy building attributed to success experiences. We felt that students in previous cohorts and programs seemed disengaged when they returned to university coursework after completing their practica. This was noted in tale 1 as many of the post practicum student teachers felt they were students again after having *been* teachers (Anderson et al. 2009). In tale 2, it seems the respondents were actually more engaged. They offered the view that their on-campus *capping* experience allowed them to see the link between the university and field-based components of their program, to share experiences with other prospective teachers who had many of the same concerns and experiences, and to choose courses and synthesize professional projects which complemented what they perceived they needed at that stage in their teacher progression. While we respect and appreciate the insights from the impressions above, we also need to challenge such perceptions and insights by seeking more empirically based clarification and understanding. What we found was particularly helpful for understanding the potential of 'success' to promote growth in the self-efficacy of prospective teachers in teacher education programs.

The findings in both tales are based on the personal success reflections of student teachers. However, unlike the participants in tale 1, who primarily focused on the field-based practicum component, in tale 2 more student teacher respondents reflected on the on-campus elements of their university program.

What Pre-service Teachers Saw as Success in Building Self-Efficacy

The table used to report the findings was originally developed in Anderson, et al. (2009) to present the data categorically. However, Table 2 has been modified to include the present findings of this study, enabling the comparison between these findings and the specific contexts (and thus programs) from which they originate. Each of the categories is explained using examples drawn from the data in the paragraphs following Tables 2 & 3.

The ideas below are organized according to five key themes with nine related sub-categories. Also included are the success stories of students' experiences, which did not fit the previous five categories, hence may be unique experiences attributable to tale 2's study and context. Advancing our understanding of the link between our two research foci (the practicum for tale 1 and the entire program for tale 2), Table 3 is adapted to reveal the

Table 2 Success Factors Categories and Response Rates

Categories	Sub-categories	(1)	(2)
Personal relationships		37	50
	With mentors	19	23
	With students	18	27
First time teaching		22	7
Special event		18	10
Meeting challenges		13	3
	Adversity	5	0
	Control	3	0
	Innovation	3	3
	Intervening	2	0
Earning wings and other things		10	17
	Earning wings	6	10
	Team work	2	7
	Faith/spirituality	1	0
New areas	Tale 2 specific	n/a	13

Column headings are as follows: (1) percentage of responses: tale 1, (2) percentage of responses: tale 2.

distinction made by tale 2 respondents as to the success in their program experience.

Personal Relationships

As was the case in tale 1, in tale 2 the most frequently mentioned dimension of success during the program was personal relationships (50%). This category seemed to favor personal relationships with students (27%) over personal relationships with mentors (23%) as the sources of most significant success for student teachers.

Personal relationships with students: Twenty-seven percent of the responses suggested that success factors were attributable to relationships between the respondent student teachers in the school setting. While this often was a routine matter of developing techniques to better manage the learning experiences of children, some situations were more challenging, yet respondents were able to meet these challenges and produce success narratives. Also distinct in 5 of the 8 success stories are references to the on-campus courses and personnel in relation to this school based student relationship. Two comments in this vein are notable: First, a student teacher discusses the year long engagement of the program and his getting to know the 'kids' throughout a range of activities, attributing this to 'Having been able to be in the school throughout the year was wonderful. I feel I got to know the kids better than had I only been there for one 15 week chunk.' In

Table 3 Success Factors & Response: Tale 2 Distinctions

Categories	Sub-categories	(1)	(2)	(3)
Personal relationships		50	27	23
	With mentors	23	10	13
	With students	27	17	10
First time teaching		7	0	7
Special event		10	3	7
Meeting challenges	Control, adversity, & intervening	3	0	3
Earning wings and other things		17	3.5	13.5
	Earning wings	10	0	10
	Team work	7	3.5	3.5
	Faith/spirituality	0	0	0
New areas	Tale 2 specific	13	13	0

Column headings are as follows: (1) percentage of responses from tale 2, (2) on campus, (3) field-based. Note: tale 1 = 1%.

the second case, the student teacher attributes his successful intervention in the classroom to a university literacy course and his instructor insights. The sense that the student teachers were looking for relationships between the student teacher and the school students as the student teacher negotiated a place in the school is apparent. Also apparent, in the opinions of the student teacher respondents, is a mixture of forces, which support the university and field-based elements as interconnected.

Personal relationship with mentor-exemplar: Twenty-three percent of the responses gave evidence that mentoring-exemplar relationships with other educators were significantly related to the successful aspect of their school-based experiences. Somewhat encouraging in tale 2, is the greater support for the role of the university based mentors than in tale 1. They are better represented in these student teachers success stories. In tale 1, only 1% of student teachers referred to university based personnel, while in tale 2, iteration of this study 3 of the 7 reflecting 10% of the total sample linked their success story to relationships with university personnel.

The 'mentor-exemplars' as identified by respondents were a mixture of key people. These were not always the formal mentors assigned, but included university representatives in the school and other educators whom they also saw as role models for their teaching. Given the emphasis that the literature places on mentor relationships and the literature citing the strong identification between field-based personnel and student teachers (Brown, Collins, & Duguid 1989; McCown et al. 1999), this 'hint' at more success attributed to university based personnel is noteworthy. In one such instance a student teacher extolled that 'He [university source] encouraged us to attempt a project. We learned that taking risks is not negative.' Stress-

ing the importance of the school based relationship and mentoring, another reflected that 'after a hard day at school, I doubted my skill and choice to become a teacher. I turned to [...] for advice and she was supportive and understanding and shared similar moments where she experienced similar feelings. That moment I felt I connected to her and to the schools (a sense of belonging). I am so happy she was there for me.'

The work of the faculty supporting the success of this connection between the school, university, and student teacher can be shown. In speaking of her work in creating a success story, a faculty source commented, 'I enjoyed watching teachers and interns building their relationship. One particular intern struggled to build a relationship [...] after being moved from several teachers she found a compassionate and patient teacher. There I saw her creativity and intelligence emerge. I felt it was a lesson for teachers to realize that interns also need time to grow and flourish like our students.' Each of these instances is indicative of how building student teacher self-efficacy requires the combined efforts of mentors from the school and university as student teachers look to role models and guides during their field and university-based program components.

First Time Teaching Experience

The category of first time teaching experience indicates a success story associated with the first time the student teacher took primary responsibility for a class lesson or related event. As such, tale 2 student teachers encountered a variety of activities related to first time teaching, which was seen as: teaching the first class, taking responsibility for part of a class, or situations that involved respondents in a way that made them realize that they were responsible for an outcome related to their actions. In tale 2, however, only 2 responses (7%) suggested their most successful experience was centered on a first time teaching experience. This is much less than the 22% noted in tale 1. Of the two that did offer 'first time' comments, one respondent celebrated the realization of the connection between their teaching and students learning: 'I was teaching and assigned work to my students and they did it. They got right to work and wanted to do what I had asked them. They were engaged, interested and happy to be learning. It was exhilarating to realize that I was capable of inspiring students to want to learn. I had done something right and I wanted to make sure I repeated it.' The other respondent relates seeking constructive and positive feedback from students during an evaluation of her teaching: 'I felt like I learned something from my students, about my teaching style, and that they respected me for giving them a chance to express their ideas.'

Tale 1 reflects a post practicum group of student teacher respondents in a traditional block semester program. Tale 2 is a more comprehensive

program in which the practicum components are interwoven throughout the 11-month program. It seems a reasonable assumption, and perhaps an important finding, that the link to first time teaching was muted somewhat for the tale 2 student teachers. A more exciting possibility is that perhaps this was due to the tale 2 program easing the first time anxiety while transitioning student teaching more effectively.

Special Events

Special events are an ever present feature in schools. And likewise, respondents were drawn into such events, which they cited as their most significant success. In tale 1, 18% of the respondents discussed sports tournaments, drama, schools concerts, and sometimes community events. In tale 2, only 10% of the student teachers' comments reflected this. Tale 2 student teachers were in the school periodically over a period of 11 months, while tale 1 student teachers were engaged in a semester block, which may have provided more opportunity to get involved with special events. Of note in the tale 2 context, of the three references to special events, one was actually in reference to an art show put on by her university art class. The other two are school based and focus on a drama club and physical education activity which is reflective of the case in tale 1.

In the school based setting, the student teacher celebrates being 'allowed to work with the drama club all year. I really cherish the time I spent with those kids and the professional relationship I built throughout the year.' Such events provided 'avenues of opportunity' for interns to practice their skills in forums that involve students and sometimes the larger community and, in least one instance, act as a part of the university education. For both, tale 1 and 2 such events provided an opportunity for interns to become involved in typical extended school related activities. In tale 2 there was one instance in which this occurred in on-campus setting.

Meeting Challenges

Many experiences involve challenges. People with high degrees of self-efficacy are more likely to persist in meeting these challenges by perceiving them as obstacles to overcome instead of barriers to further progress. Student teachers are challenged with many issues in both the field and on-campus experience. In tale 1, Anderson et al. (2009) saw meeting challenges as being loosely connected to a student teacher's role as: facing adversity (5%), exerting control (3%), innovation (3%), and in some case intervening (2%). As these were relative low frequency instances in tale 1, it was not surprising that the participants in tale 2 also had few references in this category. Indeed, some were nonexistent. But for one sub-category, innovation was raised by a lone tale 2 respondent. Arguably there was in-

novation but it is difficult to attribute significance to a single success event for tale 2 respondents. Nonetheless, one citing that was given reveals an important story as the student teacher explains:

I had the opportunity to work with at risk students. These students had a mixture of behavioural, academic, and learning challenges. The students bought into the idea of making boomerangs and each created their own uniquely designed and painted boomerangs. During the construction of the boomerangs, the students opened up to me about their lives and I felt as though I really connected with this group of special individuals. We have to throw a boomerang pretty hard in order for it to come back to you and we found a parallel between throwing your boomerangs and your actions in your life. If we throw out positives to others they often come back to us, the same is true for the negatives (sometimes multiplied).

With the same special group of students, I was able to have interviews with each one of them for 1 hour. During this time we wrote 3 goals for each one of them to achieve including actions plans and rewards they would receive if they accomplished these goals. During our individual interviews, all of the students opened up to me on a whole new level and showed me part of their world. When the students found out that I really cared about them, we were able to accomplish a lot together. These students had a lot of needs; most of them needed just the basics, like someone to listen to them, someone to encourage them, someone to tell them that they can be successful. This was a special experience for me because I felt as though I made a difference in these kids' lives, I truly believed in them.

Earning Wings and Other Things

In tale 1 *earning wings and other things* was a collection of dimensions that relate to the recognition of interns by others (6%), a sense of being part of a team as a member of the staff (3%), and the interns' spirituality (1%). In tale 2, we see the same patterns emerge for this group of student teachers, with the exception of spirituality. Tale 2 student teacher respondents gave success stories, which were attributed to the recognition of them by others (10%) and gaining a sense of being a member of the team (7%).

Earning wings: This category is similar to the first time teaching experience with the exception that there was a unique emphasis given by the respondent in expressing a sense of affiliation; of 'feeling like real teachers' and was defined by Anderson et al. (2009) as 'times when they felt the success of being recognized as what they called "a real teacher" by others' (p. 164). In tale 2, 10% of student teachers commented on 'Earning Wings.' This sense of earning wings was described by one student teacher as, 'a

turning point when I realized that I would teach and get through to students.' Also a member of a focus group session for student teachers from tale 2 explained this as when, 'I actually felt it when I was teaching. [...] I would get up in front of the class and just start going.'

Team work: The experience of starting something as new as a career is characterized with issues of self-identity as well as self-efficacy. As first student teachers are outsiders and may not see themselves as part of any group, let alone the school or university 'team.' With some trepidation, prospective teachers make their first steps into a new context, and at some point will make a socially embedded and cognitive decision to construct relationships in a new social setting. In understanding the team aspect of success stories, 7% of our tale comments from student teachers suggested this was their most successful experience in the program. One cites being part of the university, as being 'surrounded by people who challenged me, encouraged me, and supported me. I was honoured to do the same for them.' The other student teacher respondent spoke of the practicum saying 'by the end of the practicum: when I was opening gifts, eating cookies, and taking photos with my students who truly did not want me to leave, I knew I had made the right choice in becoming a teacher.'

New Areas as Tale 2 Specific

We have tried to compare and contrast tale 1 with tale 2. As outlined earlier, there are differences in the context for tale 1 and tale 2; therefore, one should expect unique findings attributable to these differences. Although this is a qualitative piece with an exploration and comparison of the two case studies with the themes derived by Anderson et al., (2009) definitive claims cannot be made, we can infer and make some reasonable suggestions as to the related findings. In this distinctive section we share the 13% of student teacher responses that did not fit the existing themes which emerged in Anderson et al. (2009). These responses sought other successes in a way not attributed in tale 1. The ideas expressed ranged from identifying with the university as a cohort to valuing their participation in the university courses at the end of their program. As one student teacher noted, 'my mind was opened to critical theory and the possibilities within such a discipline. [...] I felt like a competent, intelligent adult.' Another celebrated being able to influence the program as 'utilizing the power of student directed learning [...] designing a seminar course in educational thought. [...] [a] learning experience from proposal to completion.' While finally one respondent suggests, 'I have had more 'aha' moments in the intersession than in the rest of the year put together. It's here that I've felt for the first time that I can do this, and I might be good at this. Maybe it's the caliber of the courses, the fact that we got to choose, or the culmination of something that was already building.'

Conclusion

One of the contextual differences between the education program in tale 2 and the program in tale 1 is how the practica in tale 2 are embedded within its 11-month collaborative framework of field and on-campus components. For example, faculty representatives from the field had a hand in determining the on-campus topics and also contributed to the assessment of student teachers' professional projects, portfolios, and their end or program interviews. Tale 1 reflects a semester practicum, which is more distinct from the on-campus component of the university program normally followed by another semester of on-campus course work. These contextual differences influenced the conveyed success stories. Indeed, we have endeavored to identify these contextual factors for the role they may have played in building the self-efficacy of the student teachers.

Ryan and Deci (2000) delineate self-efficacy within Self Determination Theory as 'perceived competence.' They argue that 'people must not only experience perceived competence (or self-efficacy), they must also experience their behavior to be self-determined if intrinsic motivation [to act] is to be maintained or enhanced' (p. 58). Our discussion of the findings in relation to both tales 1 and 2, and in relation to self-efficacy suggests that success events reveal a variety of extrinsic and intrinsic motivation, which can increase levels self-efficacy as actual competence. Furthermore, in tale 2, there is more support for the university context as being able to contribute this growth.

Elements of the education program described through tale 1 and tale 2, contribute to our understanding of how student teachers build self-efficacy, but the tale 2 data again is suggestive that the university component can play a significant role in the process. This was a concern in the finding of the tale 1 study as the university personnel were cited by only 1% of student teacher respondents with their most notable success story. Significantly, in the tale 2 context, nearly half the success stories were attributed to the on campus element of the university program. While the literature has scant evidence supporting student teachers as linking their university experience to their success in the field-based teacher or program success, the findings herein are suggestive of how an after degree education program with interwoven practica components can make this connection.

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Active Learning in Online Courses: An Examination of Students' Learning Experience

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This study examines students' perception toward their learning experience in an e-learning environment where active learning through regular and routine graded discussion activities/assignments is expected. Attention was given to the variables of age; gender; increased experience with online courses; and increased proficiency with the course management system. Gender was found to be a significant factor with regard to students' perception toward their learning experience in online courses. Discussion is carried out based on the results of the study. The discussion then shifts to a focus upon strengthening active learning in online courses and common ways in which active learning can be used effectively in online courses. Conclusions and recommendations for future research complete the paper.

Keywords: e-learning, learning, active learning, online education, learning experience

Introduction

The proliferation of technology increases the ability for students to participate in online or distance learning. According to the Allen and Seaman (2011) report for Sloan Consortium titled *Going the distance: Online Education in the United States, 2011* over 6 million students are now taking at least one online course, representing over a 10% growth rate in online enrollment.

Working in an online classroom requires students and teachers to adapt to the environment. The online atmosphere allows greater flexibility in scheduling not only when students learn but also how they learn. Studies have shown that student-centered teaching methods are more effective in the following aspects: 'application of concepts, problem solving, attitude, motivation, group membership and leadership skills' (McKeachie, 1999; Pintrich & De Groot, 1990).

Through a variety of learning management systems and educational software teachers are able to engage online learners. Harper, O'Donoghue, Oliver and Lockyer (2001) suggest that educators must give close attention in using e-learning materials that are connected to pedagogical principals. It is important that the learning environment is designed with learners in mind,

is engaging, and is not 'just glorified PowerPoint presentations' (Feiertag & Berge, 2008, p. 463).

Learning is not achieved by simply listening to teachers, memorizing facts, or regurgitating answers. In order to learn, the students must talk about what they are learning, write about it, and relate the experience to their personal or professional life (Chickering & Gamson, 1987). Student engagement is one of the most important factors that contribute to the student's overall experience in a course (Floyd, Harrington & Santiago, 2009). Students are engaged and active in their learning when they are able to demonstrate extended attention to a mentally thought-provoking task, resulting in genuine learning and the ability to think critically (Corno & Donaldson, 1983).

Active learning means that students are involved in more than passive listening. Students are reading, writing, or discussing a topic. Less emphasis is placed on simple knowledge transfer and greater emphasis on the student developing skills to solve complex problems. Active learning places importance on the exploration of attitudes and values of students which should increase student motivation. Regular immediate feedback from the instructor is a very important aspect of active learning. Receiving immediate feedback enables students to be able to learn skills required to solve problems, thus enabling students to be involved in higher order thinking. Students move beyond simple memorizing of facts to being able to analyze, synthesize, and evaluate complex problems that may have multiple solutions (Bonwell & Eison, 1991).

Johnson (2011) found that good active learning classes: 1) focus on applying content; 2) are active, engaging, and technology friendly; 3) have meaningful learning; 4) use interesting instructional materials; and 5) provide opportunities to collaborate and cooperate. Active learning results in higher-order critical thinking and problem solving skills, and improved communication skills – all necessary skills in today's information age (Johnson, 2011).

Students that are engaged in active learning are able to move along the Active Learning Continuum; beginning with simple tasks and progressing to complex tasks. Simple tasks are usually defined as short and relatively unstructured, while complex tasks are typically longer in duration and involve a higher level of structure. It is important for students to not only complete the tasks involved in learning, but to understand what they are doing, why the task is important, and how the skills can be applied to similar situations or problems (Bonwell & Eison, 1991).

Adler suggests that all genuine learning is active, and the process of discovery works when the student is the main agent, not the teacher (Adler, 1982).

The Study Setting

This study takes place in an e-learning environment where active learning via regular and routine graded discussion activities/assignments for all online courses is expected. We define active learning as activities/assignments that are central to student engagement and learning. The active learning is encouraged and enforced via the activities/assignments in the online courses. The activities/assignments include individual and/or team activities designed to actively involve students in the learning process. Students are required to interact with each other – individually and in small teams – to express their viewpoints, evaluate various viewpoints, and assess each others' progress via continuous feedback.

Purpose of the Study

The purpose of this study was to examine students' perception toward their learning experience in an e-learning environment where active learning was expected and encouraged. Four research questions (RQ) stemmed from the study's purpose:

- RQ1 *Is there a difference between students' age and their perception with learning experience in online courses?*
- RQ2 *Is there a difference between learners' gender and their perception with learning experience in online courses?*
- RQ3 *Is there a difference between learners' increased experience with online courses and their perception with learning experience in online courses?*
- RQ4 *Is there a difference between learners' increased proficiency with the course management system and their perception with learning experience in online courses?*

Age was selected because some studies have shown age gap in online courses in general (Allen & Seaman, 2007; Allen & Seaman, 2010) while others report no age differences in online learning environments (Shultz, Shultz, & Round, 2010; Yukselturk & Bulut, 2007).

Gender was selected because gender gap with technology has been reported in the literature since the 1980s with inconsistent results. Some studies have reported no significant differences between males and females (Shultz, Shultz, & Round, 2010; Yukselturk & Bulut, 2007). In other studies (Koochang, 1987; Hackett, Mirvis, & Sales, 1991), females exhibited a less positive view of technology than males did.

Literature has documented differences in users' increased prior experience with technology and users' increased prior experience with courseware in general. Users' increased prior experience with technology and users' in-

creased prior experience with courseware in general significantly contributed to their positive views about e-learning (Koohang, 2004a; Koohang 2004b).

Study Design

Instrumentation

The instrument (see Appendix A) was designed specifically around active learning associated with weekly activities/assignments in online courses of an IT program. The instrument consisted of 12 items. The instrument used a Likert-type scale that included the following scoring strategy: strongly agree = 5, agree = 4, neither agree nor disagree = 3, disagree = 2, and strongly disagree = 1.

The items of the instrument were specifically related to student active learning within the e-learning environment as described in the setting of this study. The items are as follows:

1. I like the idea that the course includes individual and/or team activities.
2. I like the various individual and/or group assignments/activities.
3. I believe that the assignments/activities in this course enhance my ability to understand and evaluate viewpoints.
4. The assignments/activities in this course encourage me to enhance my skills as a team member.
5. I feel at ease expressing my thoughts.
6. I feel at ease when interacting with other students.
7. I like the various ideas expressed by everyone in the class.
8. I believe that the multiple perspectives expressed by everyone in various assignments/activities contribute to my learning.
9. The timely feedback is very important to my progress.
10. I like interacting with fellow students.
11. I like discussion of different view points on a given subject.
12. I like the idea of being actively involved in the class.

The content validity of the instrument was determined by a panel of experts consisting of three professors. The panel of experts determined that the content of the instrument was appropriate to measure what it intended to measure.

Furthermore, the instrument was tested for reliability using 19 students who were enrolled in an online IT course. This sample was independent of the sample used in the actual study. The calculated Cronbach's alpha ($\alpha = .93$) indicated that the instrument is reliable enough to measure students' perception of their learning experience in online courses.

Sample Population & Procedure

After receiving permission from the IRB, the survey instrument was administered to 121 students who were enrolled in a four-year Information Technology program in a medium-sized higher education institution located in the southeast United States. Subjects were males and females with their age ranging from 18 to over 41. They were taking online courses in the following topics: introduction to information technology; Web design and development, networking essentials; systems analysis and design; database principles; project management; human computer interaction; information security; and senior capstone. These courses were conducted on a popular commercial e-learning content management system.

The subjects were assured that their participation in completing the survey was voluntary and that they must be 18 years of age or older to complete the survey. Furthermore, they were assured protection of their anonymity.

Of the 121 students, 115 completed the survey. Twelve of the completed surveys were not usable, thus eliminated. The final sample population included 103 usable surveys.

Data Analysis

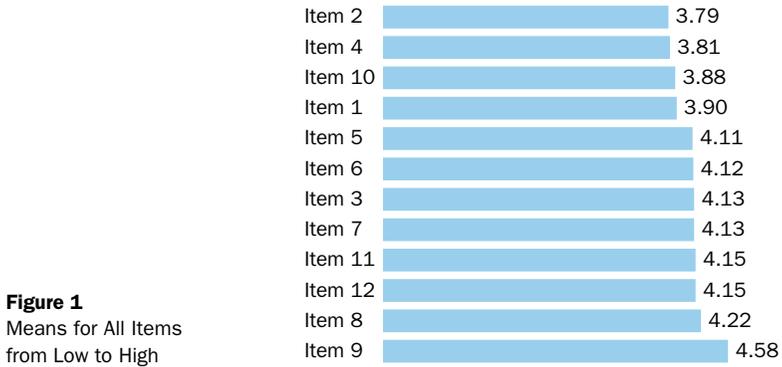
Collected data were analyzed via SPSS, a popular statistical analysis software. In addition to descriptive analyses, four separate one-way analyses of variance (ANOVA) procedures were conducted to answer the research questions. ANOVA procedure tests differences between means of two or more groups and uses the F statistic to test the statistical significance of the differences among the means. The predetermined level of significance was 0.05.

Results

Descriptives Figure 1 depicts descriptive analysis for all the items of the instrument. The results show that students had positive perception toward their learning experience in the e-learning environment where active learning was expected and encouraged.

RQ1 Is there a difference between students' age and their perception with learning experience in online courses? Results of one-way ANOVA (See Table 1) indicate no significant difference for age ($F_{4,98} = .715, p = .715$). There was no significant difference among the levels of age and students' perception with learning experience in online courses. Overall, all students in this category expressed high perception towards their learning experience in online courses. Descriptive results were as follows:

- Level 1 = 18–23 Years (Mean = 4.0215, $N = 31$, $SD = .56723$)



- Level 2 = 24–29 Years (Mean = 4.0402, *N* = 29, *SD* = .55707)
- Level 3 = 30–35 Years (Mean = 4.2000, *N* = 20, *SD* = .46232)
- Level 4 = 36–41 Years (Mean = 4.0093, *N* = 9, *SD* = .43590)
- Level 5 = Over 41 Years (Mean = 4.1607, *N* = 14, *SD* = .46394)

RQ2 Is there a difference between learners’ gender and their perception with learning experience in online courses? Results of one-way ANOVA (See Table 2) revealed a significant difference for gender ($F_{1,101} = 6.539, p = .012$). There was a significant difference between males and females in regard to their perception with learning experience in online courses. Male students significantly scored higher in regard to their perception with learning experience in online courses than female students did. Descriptive results were as follows:

- Level 1 = Male (Mean = 4.1784, *N* = 64, *SD* = .52869)
- Level 2 = Female (Mean = 3.9167, *N* = 39, *SD* = .45963)

RQ3 Is there a difference between learners’ increased experience with online courses and their perception with learning experience in online courses? Results of one-way ANOVA (See Table 3) indicate no significant difference for increased experience with online courses ($F_{3,99} = .937, p = .426$). There was no significant difference among the levels of increased

Table 1 ANOVA for E-Learning and Age

	SS	df	MS	F	Sig.
Between Groups (Combined)	.576	4	.144	.528	.715
Within Groups	26.721	98	.273		
Total	27.297	102			

Notes SS – Sum of Squares, MS – Mean Square.

Table 2 ANOVA for E-Learning and Gender

	SS	df	MS	F	Sig.
Between Groups (Combined)	1.660	1	1.660	6.539	.012
Within Groups	25.637	101	.254		
Total	27.297	102			

Notes SS – Sum of Squares, MS – Mean Square.

Table 3 ANOVA for E-Learning and Experience with Online Courses

	SS	df	MS	F	Sig.
Between Groups (Combined)	.753	3	.251	.937	.426
Within Groups	26.544	99	.268		
Total	27.297	102			

Notes SS – Sum of Squares, MS – Mean Square.

Table 4 ANOVA for E-Learning and Proficiency with CMS

	SS	df	MS	F	Sig.
Between Groups (Combined)	.588	2	.294	1.101	.336
Within Groups	26.709	100	.267		
Total	27.297	102			

Notes SS – Sum of Squares, MS – Mean Square.

experience with online courses and students' perception with learning experience in online courses. Overall, all students in this category expressed roughly equally high perception towards their learning experience in online courses. Descriptive results were as follows:

- Level 1 = 1–2 Online Courses (Mean = 3.9948, $N = 16$, $SD = .73123$)
- Level 2 = 3–5 Online Courses (Mean = 3.9417, $N = 20$, $SD = .49345$)
- Level 3 = 6–10 Online Courses (Mean = 4.1509, $N = 37$, $SD = .47825$)
- Level 4 = More than 10 Online Courses (Mean = 4.1278, $N = 30$, $SD = .44190$)

RQ4 Is there a difference between learners' increased proficiency with the course management system and their perception with learning experience in online courses? Results of one-way ANOVA (See Table 4) indicate no significant difference for increased proficiency with the course management system ($F_{2,100} = 1.101$, $p = .336$). There was no significant difference among the levels of increased proficiency with the course management system and students' perception with learning experience in online courses. Overall, all students in this category expressed roughly equally high perception towards their learning experience in online courses. Descriptive results were as follows:

- Level 1 = Excellent (Mean = 4.1172, $N = 59$, $SD = .49473$)
- Level 2 = Good (Mean = 4.0658, $N = 38$, $SD = .51266$)
- Level 3 = Average (Mean = 3.7917, $N = 6$, $SD = .74675$)
- Level 4 = Weak (no subject reported weak proficiency with the course management system)

Discussion

This study examined students' perception toward their learning experience in online courses where active learning is central to the learning process. Descriptive analyses revealed that students in general have a very high perception toward active learning and that the design of active learning in online courses contributes positively to their learning experience. This study, therefore, recommends that active learning elements be included in the design of online courses. The design of active learning elements in online courses should focus on continuously engaging students in the process of learning by providing activities/assignments that allow students to actively explore and create knowledge together. These activities/assignments should promote discussion that includes exchange of viewpoints, collaborative discourse that will lead students beyond what they already know. In addition, routine feedback and assessment should be designed in the activities/assignments to make sure students are progressing in their learning.

Four research questions were formed to see whether there were significant differences among the levels of independent variables (age; gender; increased experience with online courses; and increased proficiency with the course management system) and the dependent variable of students' learning experience in online courses where active learning is central to the learning process.

Age, increased experience with online courses and increased proficiency with the course management system did not yield significant differences in students' learning experience in online courses. The means were equally high among the levels of all these independent variables and the dependent variable. These findings are consistent with prior studies and reaffirm that age, increased experience with online courses, and increased proficiency with the course management system do not play significant roles in students' experience in online learning.

Gender made a significant difference in regard to students' learning experience in online courses where active learning is central to the learning process. Male students had a significantly higher perception towards their learning experience in online courses than female students did. This finding suggests that the design of active learning in activities/assignments for online courses could be modified to better target the differences in learning

styles of both males and females. Further research is needed to delineate the reason or reasons for this finding.

This study provides insight into the perceptions of students in online classes where educators embrace and create an active learning environment. The findings about age, increased experience with online courses, and increased proficiency with the course management system may be due to increased and growing participation of students in online courses in general. Further studies on gender may help understand the improved design of active learning elements in activities/assignments for both males and females, giving special attention to females and their style of learning in online environments. By offering a learning environment that is attractive to both genders, perceptions of the learning experience may improve. Continued studies of online students can help us better understand what types of learning activities work well and avoid using the ones that do not work well.

This study is not without limitations. It must be noted that this population must be considered a purposeful sample and its members comprise a subset of the online student population. Participants were enrolled in online information technology courses in a medium-sized higher education institution in the southeast United States. The results may not be regarded as generalizable from the sample to the general online student population.

Appendix A: E-Learning Experience Survey

The purpose of this survey is to assess IT students' opinion about their learning experience in online courses.

Notes: Your participation in completing this survey is absolutely voluntary. You must be 18 years or older to complete this survey. All your responses are kept confidential. Do not put your name on this survey.

Section 1: Demographics

Please answer the following questions by circling the appropriate number:

1. Your age:
 - 1 = 18–23 Years
 - 2 = 24–29 Years
 - 3 = 30–35 Years
 - 4 = 36–41 Years
 - 5 = Over 41 Years
2. Your Gender:
 - 1 = Male
 - 2 = Female
3. How many online courses have you taken:
 - 1 = 1–2
 - 2 = 3–5
 - 3 = 6–10

- 4 = More than 10
4. College Status:
- 1 = Freshman
 - 2 = Sophomore
 - 3 = Junior
 - 4 = Senior
5. Rate Your Proficiency with using the MSC Vista:
- 1 = Excellent
 - 2 = Good
 - 3 = Average
 - 4 = Weak

Section 2: Your opinion about the learning experience in online courses

Using the scale below, please indicate your response to each of the items that follow by circling the number that best describes your opinion about your experience with the online course you are taking (5 = strongly agree, 4 = agree, 3 = neither agree nor disagree, 2 = disagree, 1 = strongly disagree).

- 1. I like the idea that the course includes individual and/or team activities
5 4 3 2 1
- 2. I like the various individual and/or group assignments/activities
5 4 3 2 1
- 3. I believe that the assignments/activities in this course enhance my ability to understand and evaluate view-points
5 4 3 2 1
- 4. The assignments/activities in this course encourage me to enhance my skills as a team member
5 4 3 2 1
- 5. I feel at ease expressing my thoughts
5 4 3 2 1
- 6. I feel at ease when interacting with other students
5 4 3 2 1
- 7. I like the various ideas expressed by everyone in the class
5 4 3 2 1
- 8. I believe that the multiple perspectives expressed by everyone in various assignments/activities contribute to my learning
5 4 3 2 1
- 9. The timely feedback is very important to my progress
5 4 3 2 1
- 10. I like interacting with fellow students
5 4 3 2 1
- 11. I like discussion of different view points on a given subject
5 4 3 2 1
- 12. I like the idea of being actively involved in the class
5 4 3 2 1

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Perceptions of Deviant Behaviour in the Workplace

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Employee misconduct in the workplace is relatively common and may be counterproductive in social and material terms. To identify which undesirable behaviours are considered acceptable is the first step to develop ways to reduce deviance in organizational settings. The purpose of this study was to examine the perceived acceptability of deviant behaviour in the workplace, and to analyse the relation between the degree of such acceptance with organizational commitment, job satisfaction, and organizational tenure. Data was obtained from 223 adults employed full-time. Results suggest a positive relationship between the degree of acceptability of certain forms of deviant behaviour and organizational commitment, but not with job satisfaction. They further indicate that tenure was the factor having the most impact on the acceptance of deviant behaviours. Implications of the findings for the management are discussed.

Keywords: management, deviant behaviour, job satisfaction, organizational commitment and tenure

Perceptions of Deviant Behaviour in the Workplace

Deviance in the workplace is fairly prevalent and many employees at some point engage in such behaviours (Bolin & Heatherly, 2001; Kaptein, 2011; Kidwell & Martin, 2005; Treviño, Weaver, & Reynolds, 2006; Vardi & Weitz, 2004). Depending on the offense in question, the consequences can be serious and costly for the organization and its stakeholders. Various terms have been used to refer to employee deviance; namely, deviant behaviour (Robinson & Bennett, 1995), counterproductive behaviour (Fox & Spector, 1999), or organizational misbehaviour (Vardi & Wiener, 1996). All these concepts cover a range of undesirable and ethically questionable forms of behaviour that are considered deviant from an organizational point of view but they differ in their focus (Kidwell & Martin, 2005).

Deviant behaviours have been defined as intentional acts conducted by employees that break significant organizational norms and threaten the well-being of the organization, its members or both (Robinson & Bennett, 1995). The criteria used to define a given behaviour as deviant are the intention underlying the act, the breach of organizational norms or rules, the target and the potential damage inflicted on the organization and/or its members and stakeholders. Deviant behaviours have been classified as interpersonal

and organizational according to whether they are directed toward individuals or the organization, and also according to the degree of gravity, ranging from minor to serious (Robison & Bennett, 1995; Bennett & Robinson, 2000). They have been further divided into extra-organizational and intra-organizational behaviours (Jones, 1990), depending on where they occur, and production deviance, property deviance, political deviance and personal aggression, depending on the target (Bennett & Robinson 2000).

As noted above, deviant behaviours constitute a serious problem for organizations and business owners. To identify which undesirable behaviours are considered acceptable is the first step to develop ways of intervention. However, little information is available regarding what behaviours are acceptable or unacceptable from the employee point of view. Moreover, although it has been recognized that cultural factors influence the acceptance of given workplace behaviours (Power et al., 2011), research on the subject is still scarce in many countries. It is thus important to extend the previous research to different cultural contexts.

Furthermore, as Becker and Bennett (2006) point out, investigating the link between employees' organizational commitment and deviance may be the key to better managing the latter. Nevertheless, few studies to date have scrutinized the possible effects of organizational commitment and job satisfaction upon employee acquiescence in deviant behaviour (Cullen, Parboteeah, & Victor, 2003; Judge, Scott, & Ilies, 2006).

Given the above, the aim of this study was twofold: first, to examine the perceived acceptability of deviant behaviour in the workplace; second, to examine the relation between the degree of such acquiescence with organizational commitment and job satisfaction. It begins with a review of the literature, followed by the empirical study. This is succeeded by the research findings and a discussion.

Theoretical Background and Hypotheses

Deviant behaviours may be attributable to 'bad apples' (Treviño & Youngblood, 1990), that is, to individuals with characteristics such as negative affect and trait anger (Fox & Spector, 1999; Penney & Spector, 2008). They can also be attributable to 'bad barrels,' that is to organizational factors such as cultures that encourage unethical decisions (Kaptein, 2011), reward systems and leaders that encourage deviance (Treviño & Brown, 2004), psycho-sociological context (Biron, 2010) including deviant group influences (Kidwell & Valentine, 2009), and to a combination of all of these (Kish-Gephart, Harrison, & Treviño, 2010; Sims, 2010).

Research on deviant behaviour in organizations has shown that employees may engage in such acts to benefit themselves, to retaliate against the organization or to harm coworkers (Umphress, Bingham, & Mitchell, 2010).

Whatever the cause, emotions have been found to be crucial in triggering deviant behaviours, and the most relevant events that prompt deviant behaviour are those that elicit negative emotions (Penney & Spector, 2008). For example, feelings of anger and frustration were found to be related to sabotage and absenteeism (Fox & Spector, 1999). Negative emotions may be triggered by mistreatment at work, abusive supervision and lack of support (Biron, 2010).

Theft has been found to be associated with pay reduction (Greenberg, 1990; Tomlinson & Greenberg, 2006) and job insecurity was related to tardiness, spending time in idle conversations, and decreasing effort at work (Lim, 1996). Violations of an implicit psychological contract were also found to be associated with the motivation to seek revenge and engage in workplace deviance (Bordia, Restubog, & Tang, 2008). Together this suggests that the desire to reciprocate mistreatment may be more important than following the organizational norms (Biron, 2010).

Furthermore, deviant behaviour has been interpreted as a way of restoring an inequitable relation (Blau, 1964), as a reaction to aversive work conditions, and as an attempt by the employees to regulate negative emotions (Penney & Spector, 2008). Job dissatisfaction has been found to be a significant predictor of different forms of workplace deviance (Hollinger 1986; Lau, Au, & Ho, 2003; Zoghbi-Manrique-de-Lara, 2010) namely withholding effort (Kidwell & Valentine, 2009), chronic lateness, unexcused absence, and internet browsing (Blau & Andersson, 2005; Lau et al., 2003).

Social exchange theory has provided the theoretical framework to explain employee deviance (Biron, 2010). This theory posits that interpersonal relationships are guided by calculations of a subjective cost-benefit analysis in search of a greater balance and fairness in the relationships (Blau, 1964). Employees weigh the benefits provided by the organization with the costs, and the outcomes are determined by the difference between the two. If they believe the relationship is reciprocal and fair, they tend to behave in ways consistent with the organizational norms and will act in ways that protect its interests. Conversely, if they believe the organization fails to reciprocate their efforts, they may be more prone to engage in deviant behaviours.

Employee commitment has also been identified as a determinant of an individual's feeling and behaviour in the workplace. For instance, uncommitted employees tend to take more frequent sick leaves and are late more often (Lau et al., 2003). Organizational commitment is a bond linking employees to organizations and expresses itself as a wish to stay with the organization, a belief in its goals and a willingness to exert effort on its behalf (Meyer & Allen, 1997). To sum up, there is evidence that suggests that the committed and satisfied employee will be less inclined to accept or engage in any kind of deviant behaviour.

Given the aforementioned, it was hypothesised that both organizational commitment and job satisfaction would be positively related to the non-acceptance of deviant behaviours in the work environment. More specifically, the following hypotheses were formulated: The degree of non-acceptance of deviant conduct would be positively associated with organizational commitment (Hypothesis 1); The degree of non-acceptance of deviant conduct would be positively associated with job satisfaction (Hypothesis 2).

The influence of demographic variables on employee deviance has been well studied, and there is evidence that deviant workplace behavior is higher among young male employees with fewer years of tenure, and those with low organizational status (e.g., Appelbaum, Iaconi, & Matousek, 2007; Greenberg & Barling, 1996; Holinger, Slora, & Terris, 1992). Given these differences it was expected that the degree of acceptance of deviant conduct would be positively associated with being young, male and having few years of tenure (Hypothesis 3).

Method

Participants

To obtain the respondents from a variety of functional areas and structures, different companies were approached through personal contact during 2011 in the north of Portugal. The large majority were private (70%) and the rest public; 45% were large (more than 100 employees) and 38% were small (up to 20 employees) and the remaining were medium sized companies. The final sample of the respondents comprised 223 full-time employees. Respondents were all volunteers and were told that their answers would be totally confidential. Mean age was 37.62 ($SD = 10.07$) and 57% were women. Organizational tenure ($M = 9.84$, $SD = 7.84$) ranged between one and 31 years. Approximately 14 per cent were blue-collar workers, 46% were administrative, 18% health professionals and 19% had managing positions. In terms of education, 47% had completed a first degree, 11% post-graduate studies, 32% secondary education, and 9% basic education.

Measures

Deviant behaviours scale. A questionnaire was developed to assess the attitudes towards deviant behaviours, which employees may meet with in a workplace setting. Items were derived from Jones's (1990) Workplace Unethical Behaviours scale, Bennett and Robinson's (2000) Workplace Deviant Behaviour scale, and Spector et al. (2006) Counterproductive Work Behaviours scale.

The basic list of behaviours had already been used with a Portuguese sample (Wilks, 2011) and low base rated behaviour items (high frequency of 'very unacceptable' responses) were later eliminated. Minor alterations

were made according to the organizational settings. The final list covered production deviance, property deviance, political deviance, and personal aggression. Sample items included 'chatting excessively with coworkers during work hours' (production offenses), 'taking home a few office supplies' (property deviance), 'the director/supervisor shows favoritism' (political deviance) and 'blaming coworkers for mistakes' (personal aggression).

The respondents were asked to indicate the extent to which they found each of the 21 behaviours acceptable. Five response options were provided ranging from 1 = very acceptable to 5 = very unacceptable. Higher scores corresponded to greater acceptability. The Cronbach's alpha coefficient of internal reliability for this scale was .90.

Job satisfaction. The degree of job satisfaction was assessed with 6 items from the Warr, Cook, and Wall (1979) measure. The scale covers the key job facets widely used in similar research. Sample items include 'How satisfied are you with the way the company is managed' and 'How satisfied are you with the payment.' Respondents were asked to rate their degree of satisfaction with each item on 5 Likert scale (1 = from very unsatisfied to 5 = extremely satisfied). Cronbach's alpha coefficient of internal reliability of the scale was .92.

Organizational commitment. Commitment to the organization was assessed with 3 items: 'I feel I am part of my work organization,' 'I feel I should do my best for the organization' and 'The organization deserves all my efforts' (from 1 = not all to 5 = very much). Cronbach's alpha coefficient of internal reliability of the scale was .67, which was not considered low because there were only three items.

Finally, respondents were asked to identify their age, sex, educational level, occupation, the length of employment in the organization (in years), and organizational position.

Results

The most unacceptable behaviours were 'purposely doing work incorrectly' ($M = 4.68$, $SD = .69$), followed by 'ignoring safety procedures endangering himself/herself and other people' ($M = 4.63$, $SD = .57$), 'telling other people outside what a lousy place you work for' ($M = 4.64$, $SD = .53$), and 'blaming a colleague' ($M = 4.64$, $SD = .57$). Table 1 displays the mean ratings for the 'uncertain' responses.

Exploratory Factor Analyses were conducted on the 21 items of deviant behaviour. A Varimax rotation extracted three factors with eigenvalues greater than 1, accounting for 52% of the variance. A minimum factor loading of .40 was used as a criterion for assigning a variable to a factor. Three items were found to cross load on two factors and were dropped. The fi-

Table 1 Means and Standard Deviations of 'Uncertain' Responses

Deviant behaviours	<i>M</i>	<i>SD</i>
1 Reading private emails during working hours	3.10	1.15
2 Making a personal copy on the organization photocopier machine	3.31	1.19
3 Browsing the internet for personal benefit	3.42	1.14
4 Using working time for personal benefit	3.58	1.05
5 Using the organization car to make a personal trip	3.69	1.11
6 Taking home a few office supplies	3.79	1.05
7 Showing favouritism	3.81	1.11
8 Making up excuses for coming to work late or leaving earlier	3.90	1.02
9 Staying in the most expensive hotel at the company expenses	3.93	1.03
10 Talking with coworkers instead of working	3.98	0.92

nal list included 18 items. Considering the pattern of loadings, two factors represented organizational production and property deviance. Of these, one consisted of minor forms of deviance and the other of more serious forms. The third factor represented interpersonal interaction and included mainly political and personal aggression deviance. The third factor will be referred to as 'interpersonal deviance.' Factor scores were computed for each of these factors and used as dependent variables in the subsequent analyses. Lower values indicated acceptability.

Exploratory Factor Analyses were also performed on job satisfaction and organizational commitment scales and one factor was extracted for both, accounting respectively for 74.38% and 71.60% of the variance.

Descriptive statistics, internal consistencies (alpha coefficients) and zero-order correlations are presented in Table 2. Means are given based on the 5-point response scales. An analysis of the correlations of responses to the subscales of deviant behaviours with the study variables showed that the three forms of deviance were positively correlated, all above .40; job satisfaction and organizational commitment were also highly correlated. The non-acceptance of minor and serious forms of deviance was significantly positively correlated with both job satisfaction and organizational commitment. However, interpersonal deviance was not correlated with either. Age was correlated with non-acceptance of minor forms of deviance and tenure was positively correlated to the three forms of deviance, but not with job satisfaction and organizational commitment.

A regression analysis was conducted to examine the contribution of demographic and organizational factors and to test the hypotheses. For all the three forms of deviance, more than 20% of the variance was accounted for. However, the contribution of each factor was different for each form of behavior. Tenure and organizational commitment made a significant contribution to the non-acceptance of minor deviance, meaning that committed

Table 2 Means, Standard Deviations, Coefficients Alpha of Internal Consistencies and Intercorrelations of Variables

Variable	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7
1	3.76	.75	.89	–						
2	4.53	.48	.80	.46**	–					
3	4.11	.69	.66	.50**	.42**	–				
4	3.37	.83	.92	.20**	.20**	.00	–			
5	3.94	.69	.67	.24**	.20**	.00	.69**	–		
6	10.09	7.92	–	.25**	.18**	.25**	.00	.06	–	
7	37.62	10.07	–	.14*	.04	.95	.08	.14	.69**	–

Notes * $p < .05$; ** $p < .01$. Higher values indicate non-acceptance. Variables: 1 – minor deviance, 2 – serious deviance, 3 – interpersonal deviance, 4 – job satisfaction, 5 – organizational commitment, 6 – organizational tenure, 7 – age.

employees with longer tenure were more likely to reject minor deviant behaviours. Tenure and organizational commitment positively predicted the non-acceptance of serious deviance and age negatively predicted this form of deviance. Neither job satisfaction nor organizational commitment made significant contributions to the non-acceptance of interpersonal deviance. However, the contribution of tenure for this form of deviance was large ($\beta = .47$, $p < .01$). Lower education and blue collar status negatively predicted the non-acceptance of interpersonal deviance in both small and large organizations. Table 3 displays the regression results.

Discussion

The current study examined the perceived acceptability of deviant forms of behaviour and its relationship with organizational commitment, job satisfaction, and demographic variables. Respondents could not clearly decide if behaviors, such as reading private emails, browsing the internet or using working time for personal benefit, were unacceptable. They were also undecided over taking a few office supplies, using the company car for personal use or staying in the most expensive hotel at the company expenses. On the other hand, ignoring safety procedures and intentionally making mistakes offered no doubts. The findings show therefore that respondents tended to be undecided over the acts that might not adversely affect the organization whereas more severe offenses were generally seen as unacceptable. As noted before, the most common cases occurring in organizational settings fall into the category of minor offenses and 'grey areas' such as chatting with work colleagues during work hours. Nevertheless, this kind of behaviour can affect productivity and is thus undesirable.

Although this study focused on the individual evaluation of deviant behaviour rather than the behaviour itself, there were clear indications that

Table 3 Results of Regression Analysis

Predict.	Minor deviance			Serious deviance			Interpersonal		
	B	SE B	β	B	SE B	β	B	SE B	β
1	-.49	.11	-.12	-.05	.07	-.05	-.12	.10	-.08
2	.50	.20	.20*	.20	.12	.13	.55	.19	.24
3	.17	.19	.11	-.05	.11	-.05	.15	.17	.10
4	-.03	.18	-.02*	-.15	.11	.16	.16	.17	.11
4	-.56	.22	-.27	-.26	.14	-.19	-.68	.21	-.34**
5	-.05	.14	-.03	.00	.08	.00	-.14	.13	-.10
6	-.33	.19	-.12	-.02	.12	-.02	-.32	.18	-.20
7	-.29	.16	-.10	-.13	.09	-.13	-.49	.15	-.34**
8	-.39	.16	-.25*	-.00	.09	-.00	-.36	.15	-.25*
9	.03	.00	.29**	-.01	.00	.29**	.02	.00	.28**
10	-.00	.00	-.03	-.00	-.00	-.19*	-.00	.00	-.06
11	.21	.10	.20*	.18	.06	.27**	-.05	.09	-.05
12	.09	.09	.09	.11	.05	.18	.10	.08	.12

Notes Minor $R^2 = .24$; $\Delta R^2 = .18$; serious $R^2 = .28$; $\Delta R^2 = .23$; interpersonal $R^2 = .21$; $\Delta R^2 = .15$. * $p < .05$; ** $p < .01$. Predictors: 1 – sex, 2 – basic education, 3 – secondary education, 4 – higher education, 5 – blue collar workers, 6 – white collar workers, 7 – high hierarchical position, 8 – small organizations, 9 – large organizations, 10 – tenure, 11 – age, 12 – organizational commitment, 13 – job satisfaction.

some forms of production and property deviance might be considered unacceptable from the organizational point of view but not from the employee point of view. Prior research (Fox & Spector, 1999; Robinson & Bennett, 1995; Bennett & Robinson 2000) did not focus on this topic but on self or other reported deviant behaviours. It was therefore not possible to compare the results with those studies. It was possible however, to compare the responses to the same items as used by Jones (1990). Despite cultural and other differences, respondents in this study showed a similar hierarchy of acceptance to those in Jones's study. In both cases, using the copying machine was considered to be more acceptable than using the telephone, taking office supplies home or using the company car. It was noticeable that, whereas in Fox and Spector (1999) 'telling other people outside what a lousy place you work for' was considered as a minor organizational counterproductive behaviour, in this study the same action was seen as one of the most unacceptable.

Analysing the findings for intention, the most accepted behaviours were not the behaviours directed towards harming the organization and co-workers, but towards gaining a personal benefit. Employee withdrawal, such as calling in 'sick' or leaving early, might be a response to the reduced levels of job satisfaction or engaged in merely for personal benefit and

not intended to harm the organization. The same could be said for misappropriating a few office supplies or staying in the most expensive hotel at company expense.

It was hypothesized that the degree of non-acceptance of deviant conduct would be positively associated with organizational commitment and with job satisfaction (Hypotheses 1 and 2). This was not entirely confirmed. Organizational commitment was found to be associated with the acceptance of deviant behaviours for minor and more serious production and property offenses though not for interpersonal deviance. An explanation for this could be that, although highly associated, the three forms of deviant behaviour were deemed distinct and this was reflected in the degree of acceptance. Being dissatisfied with the job might be associated with the behaviours directed towards the organization but not to the people in it. It should also be noted that the three forms of deviant behaviour found in this study represent the division between interpersonal versus organizational, and minor versus serious, but do not represent entirely the four categories of Robison & Bennett's (1995) workplace deviance typology. Job satisfaction was not associated with any of the three types of deviance, suggesting that there is no relationship between the degree of satisfaction with the job and the degree of acceptance of deviant behaviours.

It was expected that the degree of acceptance of deviant conduct would be positively associated with being young, male and having briefer job tenure (Hypothesis 3). Of these factors, only the organizational tenure was positively correlated with the three forms of deviance and was the factor which contributed to the greater or all the three forms of deviance. As previously mentioned, this is consistent with prior research. For instance, Sims (2002) found that tenure was a significant factor in the likelihood of reported ethical rule breaking.

Since tenure was not associated with either organizational commitment or job satisfaction, it may be inferred that its effects are independent of the other two. Sims argued that long tenure employees might have more to lose in breaking the rules. Tomlinson and Greenberg (2006) also points out that employees with tenure identify more with their organizations and are thus less likely to engage in employee theft and other deviant acts. Another possible explanation is that they may have more fully internalized the organizational norms and expectations. Ultimately, organizational commitment is about behaving according to organizational interests (Wiener, 1982). This being the case, the lower acceptance of deviant behaviours might simply be a corollary of adaptation. This is an interesting point at a juncture when job tenure is being eroded due to the phasing out of jobs for life. Still another possible explanation is that the degree of acceptance of deviant behaviours reflects an attitude towards the organization. However, the relationship may

not be straightforward. The employee's reference and identity group may count more in the shaping of an attitude than the organization in general. If the main source of reference is the professional group, what is regarded as acceptable is likely to be informed more by the deontological principle rather than the organization, though these may well coincide. An employee may have little commitment to the organization, but still be actuated by professional codes.

Findings were in line with the research that found no or minimal differences for sex and age concerning the ethical issues (O'Fallon & Butterfield, 2005). Similarly, no difference was found for the organizational position. In this respect, it is worth noting that Jones's (1990) findings showed that the hierarchical position (president versus employee) had an impact on the perceived acceptability of deviant behaviours, although Murdack (1993) did not find such differences. Literature reviews on ethical decision-making indicate either that education has little or no influence, or that higher education levels are associated with greater ethical sensitivity (Lau et al., 2000). Results here indicated that lower education levels were positively associated with non-acceptance of minor deviance.

Attitudes assessed by the degree to which a person accepts a given behaviour is clearly not tantamount to actually engaging in it, but gives an insight into how employees judge a specific form of conduct. In analyzing the results however, it must be kept in mind that the behaviours assessed excluded those that could cause serious harm to the organization and/or its members. As noted above, it is significant that the behaviours deemed least acceptable could potentially cause greater harm either to the organization or its members, while those most accepted were motivated merely by personal advantage and do not seem to indicate a lack of job satisfaction.

Practical Implications and Limitations

Findings indicate that employees are uncertain regarding behaviours that may be considered deviant from an organizational point of view. To identify which undesirable behaviours are considered acceptable is the first step to develop the ways of intervention. To set up a code of ethics or proper conduct, it is crucial to clarify the boundaries of what is considered unacceptable from the organizational point of view and to implement the procedures that may guide employees. Research has shown that organizational climates with a strong emphasis on ethical behaviour tend to have less deviance. Therefore, management must be attuned to employee attitudes and communicate explicit expectations of what is considered unacceptable from the organizational point of view.

By providing information about employee attitudes on the acceptability of deviant behaviours, this study makes a contribution to the literature on

the subject. It also responds to calls for a greater knowledge of what is considered acceptable by given cultures (Power et al, 2011; Sidle, 2010). However, limitations should be acknowledged. One limitation is that undesirable behaviours are particularly hard to assess due to possible social desirability bias. Although it can be expected that a social desirability bias occur less where respondents are required only to indicate their degree of acceptance than where they are asked to indicate if they engage in such behaviours, the possibility of a bias cannot be ruled out. Future studies should thus include a measure of social desirability. Another potential limitation is that the use of scales provides no insight into the reasons for acceptance or non-acceptance of a given behaviour. Clearly, emotions alone cannot adequately explain the motive (Spector et al., 2006). There are also rational calculations and other reasons that can only be captured by the use of qualitative methodology as noted above. Still, another limitation is the cross-sectional design, which may limit the generalization of results. As a result, future studies should extend the scope by the addition of other samples.

Tenure needs further investigation if its effects are to be fully understood. Future research may gain insights by looking at the number of years worked in the organization in relation to other factors. These latter may exist associated with the acceptance of deviant behaviours, and were not examined in this study. Future studies should add other variables (individual, organizational and extra-organizational) and include alternative forms of assessment.

Conclusion

This study suggests that organizational commitment and tenure are the key parameters in framing the acceptance of undesirable behaviours in organizations. In consequence, these are clearly the factors to be considered in any attempt to minimize such conduct. Furthermore, to devise a code of ethics or proper conduct, it is crucial to clarify the boundaries of what is acceptable and unacceptable and then implement the procedures that may guide the employees.

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Materiality Analysis for CSR Reporting in Spanish SMEs

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Most corporate social responsibility (CSR) standards have not been designed to be implemented in small and medium sized enterprises (SMEs). Given that 99% of Spanish companies are SMEs, this study aims to propose a selection of basic CSR material issues that, because of their usefulness and significance, should be adapted to Spanish SMEs and their stakeholders. This study provides a CSR model for SMEs that includes the most important social, environmental, and corporate governance issues. This model, which is based on expert knowledge, is useful for integrating sustainability in the management of SMEs and enhancing the management of stakeholders.

Keywords: management, corporate social responsibility, small and medium sized enterprises, reporting, materiality, stakeholders

Introduction

Corporate social responsibility reporting in companies has strongly increased within the framework of self-regulation in recent years (Rasche, 2009). This framework has been developed using various tools, such as the international standards GRI Guidelines (Global Reporting Initiative, 2002; 2006), ISO 26000, and SA 8000; as well as specific tools and protocols. However, the majority of these international standards have not paid enough attention to the implementation of these tools in SMEs. More than 99% of the Spanish productive fabric is based on SMEs and these firms suffer certain monetary and information limitations when implementing CSR. This study therefore proposes a selection of basic CSR issues that are useful, significant, and adapted to the Spanish SMEs and their stakeholders. This study contributes to the development of a common framework for CSR reporting that will make the comparison and verification of information provided by the firms easier and more objective. Additionally, firms can use this tool in their internal assessment processes. The selection of issues will also make it possible to ensure that corporate information is more available to stakeholders.

The main aim of this study is to develop a proposal for helping the Spanish SMEs report the basic CSR issues. To this end, a materiality analysis

has been developed. This analysis was based on literature review, expert knowledge, and a survey conducted on a sample of Spanish SMEs.

As a result of the study, we propose a CSR model for SME reporting. This model includes the most important social, environmental, and corporate governance issues for SMEs. The model may be useful to integrate sustainability in the management of SMEs and to improve stakeholder management and relationships. In addition, the results are important for further CSR and sustainability development in SMEs.

The structure of this paper is as follows. The present introduction is followed by a description of the characteristic features in SMEs management, and the way these features influence CSR strategies. The third section defines the research design. The results of the study are analysed in the fourth section. The final part of the paper presents the main conclusions of the study.

CSR Management and Reporting in SMEs

CSR can be defined as an aggregate of the voluntary policies and subsequent management processes arising from corporate decisions aimed at achieving actions in the field of economics, environment, social development, and corporate governance (Muñoz et al., 2009). Consequently, CSR may be considered as an organisational instrument for implementing the concept of business sustainability (European Commission, 2002).

Although there are many academic articles related to the integration of CSR in companies, research on the implementation of CSR in SMEs is still at an early stage (Battaglia et al., 2010; Battisli & Perry, 2011; Rivera-Lirio & Munoz-Torres, 2010). As Morsing and Perrini (2009, p. 1) indicated: 'although it is much more complex to identify, investigate, and communicate CSR in the small business, we believe this area deserves more attention due to its potential impact on the global economy.'

In terms of CSR management, there seems to be a considerable consensus on the existence of significant differences in the way SMEs and large companies approach and integrate CSR strategies (Jenkins, 2006). Table 1 shows the distinguishing elements of CSR in SMEs. Some of the principal issues related to the management of CSR refer to transparency and accountability, frequently associated with CSR reporting. In recent years, the publication of sustainability reports has been established as the main mechanism for CSR reporting, and it is used by companies to communicate with their stakeholders and to explain strategies and outcomes in terms of sustainability and CSR (Etxeberria, 2009).

Given the distinct characteristics of these businesses, new tools, specifically aimed at small businesses, for defining and communicating CSR strategies are being generated. Various studies have emerged with the pur-

Table 1 CSR in SMEs: Some Distinguishing Elements

Definition of CSR	Obstacles/limits and issues to be developed
<ul style="list-style-type: none"> • Difficulty in understanding the concept of CSR • Concept seen as distant, possibly inoperative, or counter-productive • Activities performed seen as positive for the company and for a wide variety of interest groups • Company ethical values • Should be integrated in all elements of the business • Goes further than shareholder interests and creation of employment • Certificates used as a variable proxy for defining CSR • Participation in business organisations or openings to the public • Importance of character and values of company founders • Use of informal CSR policies 	<ul style="list-style-type: none"> • Anxiety that activities undertaken will be seen as efforts to gain publicity and some SMEs prefer not to communicate their activities in these areas • Consider that there is information about CSR, but insufficient practical and financial aid • Consider that public authorities are not doing enough • In general, social practices are not communicated. Some internal diffusion and external diffusion in company's area of influence • Not enough time • Planning horizon is short-term • Fear of making errors during the implementation of social and environmental policies • Lack of human, technical, and organisational resources

Notes Adapted from Battaglia et al. (2010); Jenkins (2006); Muñoz et al. (2009); Murillo and Lozano (2006); Roberts, Lawson, and Nicholls (2006).

pose to adapt the international standards and facilitate the production of sustainability reports by SMEs. Weltzien Hoivik (2011) provided insights into how ISO 26000 can be adopted by SMEs in order to embed a deeper understanding of CSR into the organization using a participatory dialogue process. Perera (2008) carried out a project that maps the materiality of the ISO 26000 Social Responsibility to SMEs through a global survey of 59 SMEs, 37 social responsibility consulting firms, and 16 National Cleaner Production Centres across the world. Global Reporting Initiative (2007) developed a guide for SMEs termed 'Five Steps' with the principal aim to help SMEs improve transparency in sustainability and CSR in the same way as many large companies. Borga et al. (2009), based on literature and case studies in the furniture industry, developed specific guidelines to help SMEs in the production of the sustainability report.

However, as Nielsen and Thomsen (2009) remarked, CSR communication in SMEs is still at an early stage. Interestingly, authors such as Fassin (2008) state that published reports do not reflect 'real' CSR and that this kind of formalisation may even be counter-productive. CSR communication in SMEs is sometimes perceived as informal, while personal relations are seen as very important – yet this vision of CSR communication in SMEs ignores the importance for SMEs of corporate communication, reputation, and stakeholder relations (Nielsen & Thomsenn, 2009). This point is re-

inforced by the fact that SMEs are increasingly dealing with companies that operate worldwide in a competitive and complex business environment (Parsa & Kouhy, 2008).

Therefore, in light of the peculiarities of CSR in small companies, our aim has been to identify a set of key CSR issues that are highly material and relevant for the Spanish SMEs and their stakeholders. We have constructed a CSR model for SMEs that includes the most important social, environmental, and corporate governance issues. This model may be useful for integrating sustainability into SME management and reporting, as well as improving the management of stakeholders.

Research Design

One of the aims of this research was to gain an understanding regarding the issues related to the management of CSR that are of greatest relevance or materiality for the Spanish SMEs. According to GRI (Global Reporting Initiative, 2006, p. 8) *materiality* is a principle which implies that 'the information in a report should cover topics and indicators that reflect the organization's significant economic, environmental, and social impacts, or that would substantively influence the assessments and decisions of stakeholders.' In addition, GRI (Global Reporting Initiative, 2006) defines *relevance* as the degree of importance attached to each issue, indicator, or item of information – the term refers to the threshold at which information becomes sufficiently important to be disclosed.

In this context, this study analysed the materiality of CSR issues for SMEs. The analysis was based on the knowledge extraction process that was divided into the following phases: i) development of the initial draft of the main CSR material issues (based on the review of literature) followed by the expert review; ii) a telephone survey of 500 Spanish SMEs aimed at establishing the consensus on the indicators for the first step; and iii) an analysis of the results of the survey and the preparation of the proposal regarding basic CSR issues for the Spanish SMEs.

The research method used in the first step combines scientific evidence with consensus, i.e. considering the generally accepted opinion among a group of experts. The goal was to make an initial selection of the basic CSR indicators in SMEs. The indicators, for which consensus was not reached, were then evaluated by the SMEs using a survey. The RAND Appropriateness Method methodology – used in knowledge areas such as health sciences (Gonzalez et al., 2009) – was specifically simplified and adapted for the purpose of the study. As indicated by Campbell et al. (2002, p. 360), the RAND method 'is a formal group judgement process which systematically and quantitatively combines expert opinion and scientific (systematic literature review) evidence by asking panellists to rate, discuss, and then re-rate

indicators.' It was considered that the RAND method was an appropriate methodology and adaptable to the study. This decision was made because, as in the case of the process described by Campbell et al. (2002) of developing quality indicators in health care, a definition of material CSR issues for SMEs should take into account a number of points: i) the stakeholder perspectives of the issues; ii) the nature of the issue to be measured; and iii) the available evidence.

Under this premise, the first phase of the study was divided into several sub-phases: i) an analysis of the literature on CSR tools and CSR studies in SMEs in order to create an initial set of social, environmental, and corporate governance issues; ii) a study and evaluation of the initial proposal for CSR material issues by a group of experts; and iii) discussion aimed at reaching a consensus with a group of experts on the results of the initial consultation.

After this first phase of the investigation, an initial proposal regarding the material CSR issues for the Spanish SMEs was obtained. Indicators that were agreed to be important by all of the experts were included in the questionnaire for the telephone survey of 500 Spanish SMEs. The development of this part of the research deepened our understanding of the perception of SME managers regarding CSR management (Fassin, 2008).

The final phase of the investigation focused on the analysis of the results of the telephone survey and the creation of the model for CSR reporting by SMEs. The most important social, environmental, and corporate governance issues for SMEs were included in this model. The model was expected to be useful for integrating sustainability in the management of SMEs and improving the management of stakeholders and relationships.

Analysis of Results

Phase One: Scientific Evidence and Expert Group Consensus

As the first step, a thorough analysis of the various tools used for CSR and sustainability management in SMEs was performed. In parallel, results of the previous research undertaken by the team related to the subject were also used (Escrig, Muñoz, & Fernandes, 2010; León, Muñoz, & Chalmeta, 2010; Muñoz et al., 2009; Rivera-Lirio & Muñoz-Torres, 2010). As a result of the analysis, a group of potentially relevant stakeholders in the field of SME was identified – employees, society, customers, corporate governance, environment, and suppliers – and a set of issues related to the socially responsible management of those stakeholders (Annex 1).

As the next step, a study of the materiality of selected issues was performed in order to determine the subjects to be included in the survey. The analysis was based on the opinion of several experts, who provided expert knowledge that was used to ensure the suitability of the questions included

in the survey. The work with the group of experts took place in late 2010, and it was divided in the following two stages:

Stage 1: Compiling the Expert Opinions

During this stage, a group of qualified experts was selected. The group members completed and returned a previously developed questionnaire. The questionnaire was intended to determine the materiality of a set of general issues regarding corporate social responsibility. The materiality of each issue was determined using five parameters (Lydenberg, Rogers, & Wood, 2010):

- *Financial performance and/or economic-financial risks:* Degree of importance or influence of the issues on economic performance and company risks.
- *Competitive position and strategic expectations:* Degree of strategic importance for the company and/or perceived importance of the competition.
- *Interest groups:* Degree of influence that the management of the issue may have on the decisions of stakeholders.
- *Future regulations:* The likelihood of the issue being regulated in the future, and thus offering the opportunity to obtain a strategic advantage by anticipating such regulation.
- *Opportunity for innovation:* Degree to which knowledge/abilities held by the company may foster innovation as a result of managing this issue.

After collecting the questionnaires completed by the experts, the materiality of the issues was studied with the use of statistical analysis – with averages used as a measure of importance and typical deviation as a measure of consensus. This analysis enabled classifying the issues raised into two groups:

1. Issues that are clearly material:

- Development of products that are beneficial from a social/environmental perspective
- Stable employment
- Pollution, effluents, and waste
- Training and education/professional development
- Investment in environmental R&D + i/clean technology
- Marketing
- Client satisfaction
- Product safety/health and safety of clients
- Health and safety at work/working conditions

2. Issues of doubtful materiality:

- Product cycle management
- Resource use
- Transparency and communication
- Evaluation and monitoring
- Hiring practices/local hiring
- Codes of conduct
- Social action
- Director salaries
- Recycling
- Environmental management systems
- Compliance with regulations
- Cooperation with local industries
- Managing the interests of shareholders
- Customer privacy
- Sustainable behaviour among clients
- Local community/local development
- Reconciling work and family life
- Discrimination/diversity and equal opportunities
- Education and environmental awareness
- Labelling of products and services
- Freedom of association and collective bargaining
- Transparency
- Nature and biodiversity
- Harassment
- Unfair competition
- Corruption and bribery
- Rights for ethnic minorities
- Forced labour and child exploitation

Stage 2: Work Session with the Experts

In the framework of stage 2, an expert panel was held in order to analyse and discuss the results of the previous stage, and to reach a consensus regarding the classification of the issues. During the discussion, special attention was paid to those issues where materiality was not agreed upon by the various experts ('issues of doubtful materiality'). The experts argued the reasons for their classification, discussed the ratings assigned to each of the parameters of evaluation, and compared their values with those of other experts. During the process of reflection, the experts reconsidered

Table 2 Issues That the Expert Panel Believes to Be Clearly Material

Stakeholder	CSR issue
Customers	Development of products that are beneficial from a social/environmental perspective Marketing Client satisfaction Product safety/health and safety of clients
Environment	Pollution, effluents, and waste Investment in environmental R&D + i/clean technology Resource use (energy, water, materials) Recycling
Society	Local community/local development Cooperation with local industries Transparency and communication
Employees	Stable employment Training and education/professional development Health and safety at work/working conditions Reconciling work and family life Discrimination/diversity and equal opportunities

their positions regarding the materiality of various issues considered as doubtful and several issues were consequently reclassified as being clearly material (see Table 2). The results of this discussion enabled the design of the questionnaire that was used in the telephone survey.

Table 2 reveals that corporate governance and supplier management were considered by the experts as not being important issues with respect to CSR management in SMEs. The reasons given in the case of corporate governance focused on the small size of the shareholdings in this type of business and the concentration of ownership and control – as well as the absence of formal mechanisms for structuring control systems.

The reasons for not including supplier management in the analysis of CSR were varied and reflected the bargaining power of small companies. Either the power of a small company to establish conditions is very limited, or small companies face oligopolistic market structures in the supply of raw materials, and these factors prevent them from establishing mechanisms for selecting suppliers.

Phase Two: Development and Implementation of the Telephone Survey of 500 Spanish SMEs

Based on the meeting with the expert panel, it was concluded that it was necessary to translate the issues into practical questions that could be handled in the time available for the telephone survey and would be easily

understood by the respondents. The key aspect in the development of the questionnaire was the wording of the questions: The objective was not to discover to what extent the company has implemented CSR policy, but to discover the importance that the company management attaches to the issue. The survey was, therefore, aimed at managers or directors of small companies.

The survey was conducted during the third quarter of 2010, and 500 SMEs, employing between 10 and 200 people, were contacted. The firms operate in the following sectors: food and agriculture, industry, construction, and services – all the Nielsen areas were taken into account. The survey included a total of 29 questions that were associated with the preparation of annual reports in the widest sense, as well as social and environmental information related to various stakeholders (suppliers, customers, shareholders, the environment, employees, and society).

Phase Three: Analysis of Survey Results and Proposal of Material CSR Issues

Analysis of Survey Results

After conducting the survey and analysing the results, some preliminary conclusions were drawn. Figure 1 illustrates the averages and the standard deviations of responses to survey questions. The labels correspond to the numbering system for the questionnaire. In Tables 3, 4, and 5, the first column refers to the stakeholder involved in the issue and the second column shows the question used for each issue.

1. It is worth noting that none of the evaluated issues was scored as immaterial or irrelevant, since the minimum average score was 3.49 (minimum 1, maximum 5).
2. There was a significant consensus on the issues with highest rating. However, there was little consensus on the issues with lower scores; furthermore, there were major discrepancies between business managers regarding their importance. As a result, no issue could be excluded a priori as immaterial.
3. Three zones of evaluation could be defined for the various issues raised in the survey. These zones were defined by the average deviation values found in the responses received. The following, A, B, and C, zones of analysis were established, which were defined in order of the most-to-least importance as given by the respondents.
4. An analysis of the issues evaluated in Zone A (Table 3) reveals that there was little consensus and a generally low evaluation of the importance of issues linked to corporate governance and supplier relationships. It can also be seen that the issues in Zone A clearly

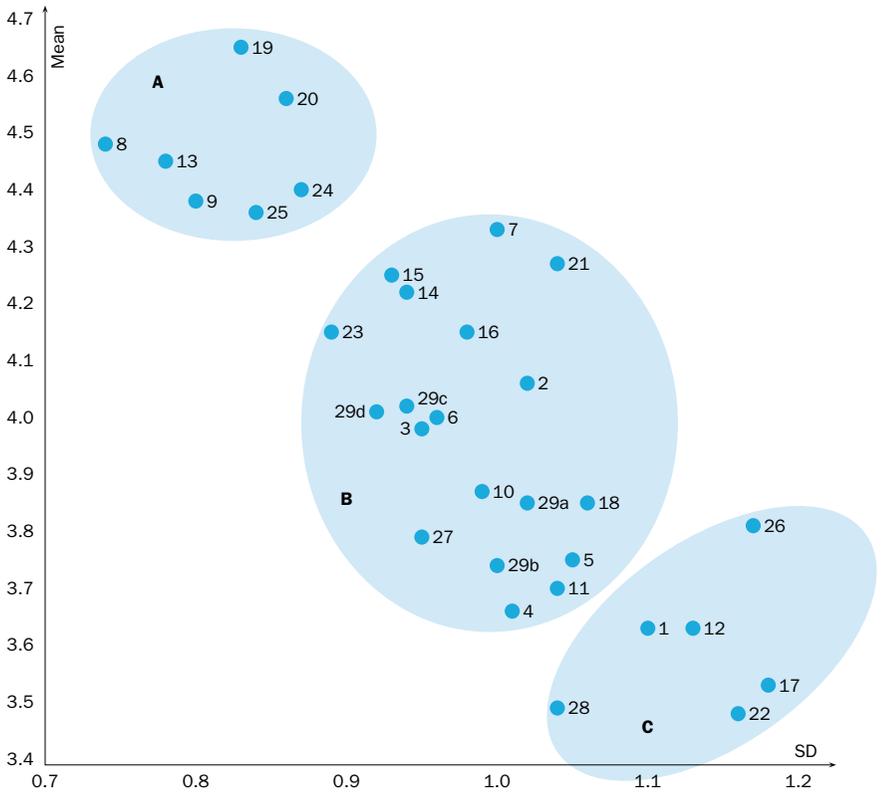


Figure 1 Average Deviation Analysis of the Survey Results

Table 3 Issues in Zone A

Stakeholder	Code	CSR issue
Customers	8	Customer privacy
	9	Compliance with regulations
Environment	13	Nature and biodiversity
Society	25	Unfair competition
	24	Corruption and bribery
Employees	19	Forced labour and child exploitation
	20	Harassment

correspond to CSR issues covered by the national legal framework and international standards. The results are consistent with Gjølberg (2009), who highlighted the fact that many Spanish companies adopt international standards such as GRI, ISO and Global Compact.

5. Within Zone B (Table 4), there are issues relating to all stakeholders with the exception of ‘society.’ The majority of those issues are directly

Table 4 Issues in Zone B

Stakeholder	Code	CSR issues
Customers	10	Sustainable behaviour among clients
	7	Labelling of products and services
	23	Compliance with regulations
Corporate governance	11	Managing the interests of shareholders
Environment	15	Product cycle management
	14	Environmental management systems
	18	Education and environmental awareness
Suppliers	3	Evaluation and supervision
	2	Hiring practices
	4	Codes of conduct; Social and environmental commitments
	6	Codes of conduct: Stable relation with suppliers
	5	Hiring practices/local hiring; Sust. behaviour with clients
Employees	21	Discrimination/diversity and equal opportunities
	16	Freedom of association and collective bargaining

Table 5 Issues in Zone C

Stakeholder	Code	CSR issue
Corporate Governance	12	Director salaries
Suppliers	28	Hiring practices/local hiring
Society	1	CSR information: Transparency and communication
	17	Social action: Corporate voluntary work
	22	Social action: Donations
	26	Minority ethnic rights

related to managing the supply chain. It can be clearly seen that there was consistency in the responses to the questions that are closely related, such as the questions regarding a code of conduct for dealing with suppliers. A possible explanation for this result could be related to the increasing CSR requirements in large companies across their supply chain (Department for Trade and Industry, 2002).

- Most of the issues in Zone C (Table 5) are related to the 'society' stakeholder. Question 1 regarding the importance of reporting on social and environmental issues in either the annual accounting report or other voluntary reports, was rated with an average of 3.64 (minimum 1, maximum 5). This is a relatively low score, and there was also considerable dissent. Possible explanation for this result may be the fact that SME managers consider other uses of this information to be more important in relation with the stakeholders – given that there was less disagreement and evaluations were higher when the information focused on generating specific advantages for the company,

Table 6 Core Material Issues

Stakeholder	CSR issue
Customers	Development of product benefits that are beneficial from a social/environmental perspective Marketing Client satisfaction Product safety/health and safety of clients Client privacy Compliance with regulations
Environment	Pollution, effluents, and waste Investment in environmental R&D+i/clean technology Resource use (energy, water, and materials) Recycling Nature and biodiversity
Society	Local community/local development Cooperation with local industries Transparency and communication Unfair competition Corruption and bribery
Employees	Stable employment Training and education/professional development Health and safety at work/working conditions Reconciling work and family life Discrimination/diversity and equal opportunities Forced labour and child exploitation Harassment

such as improvements in economic performance, market position in comparison with the competition, strategic advantage relative to future regulation, and opportunity for innovation.

Proposal Regarding Material CSR Issues for SMEs

Tables 6 and 7 contain the final proposal of issues considered as material for Spanish SMEs. Table 6 lists the 23 issues considered as ‘key issues’ for proper management and communication of sustainability in SMEs – as identified by their positioning in Zone A of the survey. This selection of major issues excludes the management of the relationship with suppliers and organisational governance. The management of these two stakeholders was considered immaterial by the expert group, and that assessment was confirmed by the results of the survey.

Following the completion of the session with the group of experts and the subsequent survey, an analysis of the results enabled the selection of

Table 7 Complementary/Additional Material Issues

Stakeholder	CSR issue
Customers	Compliance with regulations
Employees	Discrimination/diversity and equal opportunities Freedom of association and collective bargaining
Customers	Sustainable behaviour among clients Labelling of products and services
Corporate Governance	Managing the interests of shareholders Director salaries
Environment	Product cycle management Environmental management systems Education and environmental awareness
Suppliers	Evaluation and supervision Codes of conduct Hiring practices/local hiring
Society	CSR information: Transparency and communication Social action Minority rights

a core subset of the issues proposed in the first phase of the investigation.

The high average values scored for other issues raised in the survey, and the lack of consensus among experts regarding their materiality, are a positive factor when proposing additional information structures to be considered by companies that, because of their specific characteristics, may need to disclose information covering all stakeholders.

Conclusions

The study was conducted following a review of the CSR norms and standards that are most widely accepted by academic and professional experts, as well as a survey of 500 Spanish SMEs.

The results reveal that Spanish SMEs give great importance to the correct management of 23 basic issues relating to customers and employees – as well as the environment and society in general. In addition, some 16 additional issues of lesser materiality for smaller SMEs were also identified. These issues were mostly related to corporate governance and supplier management.

This study contributes to the business practices on CSR reporting in SMEs. It offers a CSR model for reporting that includes the most important social, environmental, and corporate governance issues focused on the specific approach and entrepreneurial character of the small business. This model identifies the basic issues on CSR reporting obtained from a consultation process with key stakeholders, such as academic and professional

experts and employees or owners of SMEs. The consultation process, which has been carried out by means of an expert panel and a survey, has enabled the analysis of materiality of sustainability held by Spanish SMEs. This analysis provides a wealth information on the perception of these companies regarding sustainability and the impact of sustainability on business management, as well as the disclosure of information regarding social, environmental, and corporate governance.

As in any empirical study, the findings presented are conditioned to some limitations. Due to the exploratory and qualitative nature of the study, the sample is limited. This study is focused on Spanish SMEs and other studies might, therefore, replicate this study to other countries with the aim of comparing the findings. As Gjølborg (2009) emphasises, the nationality of a company affects its CSR practices, and the comparison of CSR results across countries needs a complex analysis of structural, institutional and political-economic factors.

Other limitation concerns the stakeholders used in the research. Although this study takes into account the plurality of perspectives, it cannot address all stakeholders such as non-governmental organisations or governments. Future studies could include other stakeholders consequently complementing the results.

The aim of this study, to examine the materiality of CSR issues in SMEs, is a first step to improve voluntary guidelines and legislation of reporting and advance the integration of sustainability into management system in the small business. Future research should address those basic issues and determine key performance indicators for measuring sustainability performance and risks to encourage effective CSR practices in SMEs.

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Annex 1 Description of Areas Initially Identified

	Issue	Description
Employees	Stable employment	Job security in the workplace through permanent employment contracts and activities to promote staff cohesion and a sense of belonging.
	Freedom of association and collective bargaining	Right of employees to join and form groups with legitimate aims, and to be represented by independent trade unions.
	Training and education/ Professional development	Ongoing employee access to training to enable them to improve their job and/or social skills, as well as guarantees personal and professional development in the company.
	Reconciling work and family life	Flexible schedule, telecommuting option, flexible leave of absence, flexibility for family care, aid for child care, school support, health insurance, life and/or accident insurance, risk prevention measures beyond the mandatory, etc.
	Health and safety at work/working conditions	Safe environment and working conditions appropriate to the tasks being performed. Risk prevention plans, as well as resources necessary for the proper management of work accidents.
	Forced labour and child exploitation	Policy against child labour and forced labour, as well as related procedures and programs. Report on monitoring systems and results.
	Harassment	Prevention of workplace bullying with policies and procedures to prevent employee harassment.
	Discrimination/diversity and equal opportunities	Fair pay and equal opportunities for advancement and improvement, regardless of sex, disability, or other criteria.

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Annex 1 *Continued from the previous page*

	Issue	Description
Society	Rights for ethnic minorities	Policies, guidelines, and procedures to manage the needs of ethnic minorities.
	Local community/local development	Measures to encourage the relationship with the community – such as attending meetings for community issues, training for people in the community, transfer of facilities for community use, purchasing of local products, etc.
	Corruption and bribery	Policies and management systems, and compliance mechanisms related to corruption and bribery – aimed at the company and employees.
	Transparency and communication	Published information on policies and outcomes regarding sustainability.
	Cooperation with local industries	Cooperation with local companies to benefit the economic, social, and/or environmental community.
	Unfair competition	Prevention of conduct that is contrary to free competition by implementing policies, procedures, and suitable management systems.
	Social action: donations, philanthropy, voluntary work, sponsorship	Encouragement of volunteering among employees, support for stable economic sponsorship, and support for employment by groups that encounter problems finding jobs, etc.

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Annex 1 Continued from the previous page

	Issue	Description
Clients	Product security/health and client safety (product impacts)	Policies, practices, and procedures to evaluate and analyse the impacts of products on the health and safety of clients.
	Labelling of products and services	Suitable labelling that provides relevant information for the customer and assists their buying decisions.
	Marketing	Honest promotional activities and sponsorship appropriate to the company's strategic objectives – as well as activities promoting sustainability and management of social and environmental issues.
	Client privacy	Suitable treatment of personal data on clients.
	Compliance with regulations	Strict enforcement of the most restrictive legal framework that is applicable to the company according to its activities and location(s).
	Sustainable behaviour among clients	Establishment of policies and practices that encourage clients to behave in a socially responsible manner.
	Client satisfaction	Policies and practices to increase client satisfaction/well-being/quality of life.
	Development of product benefits that are beneficial from a social environmental/perspective	Product development and/or services that encourage sustainable development.
Governance	Transparency	Policies, practices, and procedures to ensure that information provided to governing bodies is useful and accurate.
	Managing the interests of shareholders	Policies and practices to defend the rights of shareholders – such as voting rights and information.
	Director salaries	Pay and reporting policy.
	Review panels	Review panels established in the governing bodies to ensure the proper functioning of various processes, business units (special emphasis on CSR panel), and other elements of the company.

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Annex 1 *Continued from the previous page*

	Issue	Description
Environment	Resource use (energy, water, and materials)	Control procedures and management of resources employed, savings plans, recycling, etc.
	Pollution, effluents, and waste	Control and management of pollution and waste resulting from the business, traceability of origin and destination.
	Product cycle management	Management of main environmental impacts of products and services during life cycle.
	Recycling	Policies for recycling resources consumed.
	Investment in environmental R&D + i/clean technology – Eco-efficiency	New cleaner product design and implementation of clean technologies.
	Environmental management systems	Environmental management systems for the management of environmental impacts, as well as disaster prevention and appropriate response to accidents.
	Education and environmental awareness	Actions to raise employee awareness.
Suppliers	Nature and biodiversity	Corporate action with respect to their impacts on living beings and the environment.
	Codes of conduct	Codes of conduct with suppliers to specify criteria beyond the strictly economic and ensure long-term business relations.
	Evaluation/ supervision	Awareness that suppliers must comply with tax laws and labour contracts and set minimum standards. Mechanism to detect and eliminate abusive practices against suppliers.
	Hiring practices/ local hiring	Selection of suppliers based on commitment to corporate social responsibility; avoidance of dealings with companies that violate the rights of workers according to the ILO (for suppliers from outside the European Union).

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Abstracts in Slovene

Soodvisnost prenosa znanja in oblikovanja zahtev

Anyanitha Distanont, Harri Haapasalo, Mirja Vaananen in Jari Lehto

Oblikovanje zahtev v zgodnjih fazah razvoja produkta je proces, ki predstavlja precejšnje izzive. Najpomembnejši izziv je vprašanje kako učinkovito prenesti zahteve, ki so povezane z znanjem/vedenjem. Članek, preko pregleda literature in analize intervjujev predstavnikov tehnoloških podjetij, osvetli izzive povezane s praksami prenosa znanja ob oblikovanju zahtev ter hkrati razpravlja o najpomembnejših izzivih in njihovih vplivih na prakso. Ugotovili smo, da se bistvo težav pri prenosu zahtev skriva tako v neuspešnem prenosu zahtev povezanih z znanjem, kakor tudi neuspešni komunikaciji med ključnimi deležniki. Omenjene težave vplivajo na enovito razumevanje področja s strani ključnih deležnikov in posledično se interpretacije razlikujejo in niso usklajene s postavljenimi cilji. Končne zahteve in specifikacije so tako nejasne in dvomne kar se odraža v nadaljnjih spremembah in modifikacijah zahtev.

Ključne besede: znanje, prenos znanja, oblikovanje zahtev, izzivi

IJMKL, 1(2), 131–156

Zakaj učenje z izvozom ni tako pogosto kot bi si mislili in kakšna je povezava s politiko poslovanja

Tomasz Serwach

Ekonomisti na področju mednarodne menjave so prepričani, da obstaja dvo-smerno razmerje med produktivnostjo in izvozom – samoselekcija najproduktivnejših podjetij na izvozne trge in hkrati izboljšanje tehnologije izvoznikov zaradi mednarodne širitve. Ne glede na ta optimističen vidik, pa empirične raziskave ponujajo le šibke (če sploh kakšne) dokaze glede učenja z izvozom. Diskrepanca med teorijo in empirijo je običajno utemeljena kot posledica metodoloških težav. Ne glede na to pa obstajajo določeni teoretični razlogi na podlagi katerih bi lahko zaključili, da je učenje z izvozom napačna ali vsaj močno omejena hipoteza. Članek predstavi razloge za neuspeh učenja z izvozom in kako bi lahko oblikovalci politike poslovanja stimulirali učenje na tujih trgih (in posledično ekonomsko rast).

Ključne besede: učenje, izvoz, heterogena podjetja

IJMKL, 1(2), 157–172

Čustveni in družbeni dejavniki, ki vplivajo na namen nadaljnje uporabe socialne tehnologije za učenje na primerih

Peter Ractham, Charlie C. Chen in Siriporn Srisawas

Hitra rast socialnih tehnologij predstavlja tako grožnjo, kot tudi priložnost za izvedbo tradicionalne metode učenja na primerih v poslovnih šolah. Članek

razširi uporabo modela pričakovanja in potrditve (ECM) ter preuči možnost izvedbe učenja na primerih z uporabo socialnih tehnologij. Regresijska analiza je pokazala, da lahko družbeni dejavnik deljenja informacij in znanja, poleg čustvenih dejavnikov, izboljša natančnost verjetnostne ocene študentovega namena nadaljnje uporabe socialne tehnologije pri metodi učenja na primerih. Na podlagi rezultatov analize so oblikovane teoretične in empirične ugotovitve, katere bi morale poslovne šole upoštevati ob implementaciji socialnih tehnologij, kot orodja naslednje generacije, za metodo učenja na primerih.

Ključne besede: socialna omrežja, socialna tehnologija, e-učenje

IJMKL, 1(2), 173–188

Percepcija uspeha študentov kot učiteljev: zgodba o dveh univerzah

Kirk Anderson and Mark Hirschhorn

Članek se primarno osredotoča na nedavno skupino (zgodba 2), ki je doživela serijo vključitvenih in interaktivnih izkušenj na terenu (učenje na terenu); razprava se navezuje na prejšnjo raziskavo (zgodba 1) pri kateri so študentje sodelovali kot učitelji v okviru bolj tradicionalnega semestrskega praktikuma kot dela njihove izkušnje na terenu. V tem kontekstu so avtorji podprli le redko izpostavljene ugotovitve (znanja), ki govorijo v prid učinkovitosti programov univerzitetnih kampusov: mladi učitelji povezujejo svoj uspeh pri učenju na terenu s programom univerzitetnega kampusa (učenje na kampusu). Prepričani smo, da to predstavlja pomemben dokaz, ki podpira povezavo med teorijo in prakso ter potencialno lahko vpliva na boljše odločitve upravljalcev na področju izobraževanja.

Ključne besede: izobraževanje učiteljev, mladi učitelji, učinkovitost učiteljev, afirmativno povpraševanje

IJMKL, 1(2), 189–204

Aktivno učenje v okviru spletnih predmetov: raziskava učnih izkušenj študentov

Alex Koohang, Terry Smith, Johnathan Yerby in Kevin Floyd

Raziskava obravnava, kako študenti dojemajo svoje učne izkušnje v kontekstu e-izobraževanja, kjer se od njih pričakuje aktivno učenje v okviru rednih, rutinskih in ocenjenih razpravljalnih dejavnosti/nalog. Pozornost smo namenili naslednjim spremenljivkam: starosti, spolu, več izkušnjam s spletnimi predmeti in boljšemu poznavanju sistema vodenja predmeta. Ugotovili smo, da spol pomembno vpliva na to, kako študenti dojemajo svoje učne izkušnje v okviru spletnih predmetov. Razprava na podlagi rezultatov raziskave se v nadaljevanju osredotoča na krepitev aktivnega učenja in na njegovo učinkovito uporabo v okviru spletnih predmetov. Prispevek zaključujemo s sklepi in priporočili za nadaljnje raziskave na tem področju.

Ključne besede: e-izobraževanje, učenje, aktivno učenje, spletno izobraževanje, učne izkušnje

IJMKL, 1(2), 205–216

Percepcija deviantnega vedenja na delovnem mestu

Daniela de Carvalho Wilks

Nepriumno vedenje zaposlenih na delovnem mestu je relativno običajno in je lahko kontraproduktivno tako s socialnega kakor tudi materialnega vidika. Opredelitev nezaželenega vedenja, ki je videno kot sprejemljivo, predstavlja prvi korak v smeri oblikovanja načinov zmanjšanja deviantnosti v organizacijskem okolju. Namen raziskave je preučiti percepcijo sprejemanja deviantnega vedenja na delovnem mestu in analizirati povezavo med stopnjo takšnega sprejemanja in predanostjo organizaciji, zadovoljstvom s službo ter dolgoročnostjo zaposlitve v organizaciji. Za namen raziskave je podatke posredovalo 223 oseb zaposlenih za polni delovni čas. Rezultati kažejo na pozitivno povezavo med stopnjo sprejemanja določenih oblik deviantnega vedenja in predanostjo organizaciji, ne pa tudi povezave z zadovoljstvom s službo. Poleg tega je raziskava pokazala, da je na stopnjo sprejemanja deviantnega vedenja najbolj vplival dejavnik dolgoročnosti zaposlitve v organizaciji. Članek razpravlja o implikacijah ugotovitev za upravljavce.

Ključne besede: upravljanje, deviantno vedenje, zadovoljstvo s službo, predanost organizaciji, dolgoročnost zaposlitve v organizaciji

IJMKL, 1(2), 217–230

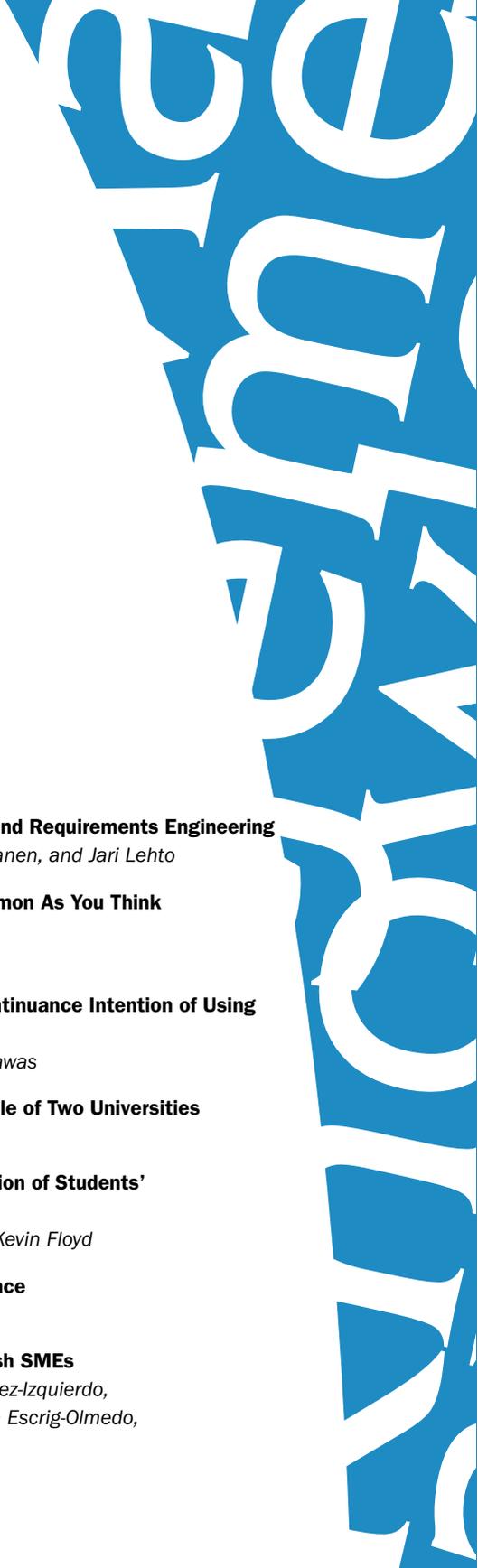
Analiza pomembnosti CSR poročanja v španskih majhnih in srednje velikih podjetjih

Maria Jesus Munoz-Torres, Maria Angeles Fernandez-Izquierdo, Juana Maria Rivera-Lirio, Raul Leon-Soriano, Elena Escrig-Olmedo in Idoya Ferrero-Ferrero

Večina standardov na področju korporativne družbene odgovornosti (CSR) ni bila oblikovanih z namenom implementacije v majhnih in srednje velikih podjetjih. Ob upoštevanju, da kar 99 odstotkov španskih podjetij spada med majhna in srednje velika podjetja, raziskava poskuša predstaviti izbor bistvenih zadev na področju korporativne družbene odgovornosti, ki bi morale biti implementirane v španskih majhnih in srednje velikih podjetjih in njihovih deležnikih. Raziskava tako opredeli CSR model za majhna in srednje velika podjetja, ki vključuje najpomembnejše družbene in okoljske zadeve ter zadeve povezane s korporativnim upravljanjem. Model je osnovan na strokovnem znanju je uporaben za integracijo trajnosti v upravljanju majhnih in srednje velikih podjetij ter izboljšanje upravljanja deležnikov.

Ključne besede: upravljanje, korporativna družbena odgovornost, majhna in srednje velika podjetja, poročanje, analiza pomembnosti, deležniki

IJMKL, 1(2), 231–250



The Engagement between Knowledge Transfer and Requirements Engineering

Anyanitha Distanont, Harri Haapasalo, Mirja Vaananen, and Jari Lehto

**Why Learning by Exporting May Not Be As Common As You Think
and What It Means for Policy**

Tomasz Serwach

**Affective and Social Factors Influencing the Continuance Intention of Using
Social Technology for the Case-based Learning**

Peter Ractham, Charlie C. Chen, and Siriporn Srisawas

Student Teachers' Perceptions of Success: A Tale of Two Universities

Kirk Anderson and Mark Hirschhorn

**Active Learning in Online Courses: An Examination of Students'
Learning Experience**

Alex Koohang, Terry Smith, Johnathan Yerby, and Kevin Floyd

Perceptions of Deviant Behaviour in the Workplace

Daniela de Carvalho Wilks

Materiality Analysis for CSR Reporting in Spanish SMEs

*María Jesús Muñoz-Torres, María Angeles Fernandez-Izquierdo,
Juana María Rivera-Lirio, Raul Leon-Soriano, Elena Escrig-Olmedo,
and Idoia Ferrero-Ferrero*