A Study on the Sense of E-Learning Communities: The European Qualification and Certification Association

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During the last years, scientists and practitioners have attempted to define and implement the feasible models of building and nurturing e-learning communities in order to continuously activate group dynamics, gain highly interactive learning experiences, and significantly enhance their sense of community. The main objective of this paper is to *identify a model for the sense of community behaviour attributes description.* The article's sections are: (1) introduction, (2) description of the conceptual model, (3) brief presentation of ECQA, and (4) research on the sense of e-learning communities of ECQA. In the final sectioner, general conclusions and recommendations for future research are presented.

Keywords: e-learning, communities, sense of community, European Certification and Qualification Association

Introduction

The dynamics of computer-aided systems and associated communities (working, professional, social etc.) have been supported by the evolution of information and communication technologies (ICT). This tendency has the background of human needs for learning and development, for rapid discovery and knowledge acquisition (in synchronous or asynchronous ways of acting, working, and learning, using different resources and sources), and for sharing knowledge and ideas through professional and/or social relations in order to quickly confirm or validate knowledge and information. Human learning behaviour has changed not only due to the technologies available in the field (e.g. blending learning technologies), but also due to the rapid change of social and economic environment (high requirements of professional competencies and expertise are needed by actual employers on the market) (Palloff & Pratt, 1999; Robson, 2013).

Several researches and developments related to e-learning, including the satisfaction of members' needs and how e-learning communities are built

and nurtured, where performed in the recent years. Literature in this field underlines the importance of modern learning technologies and interdisciplinary approaches, including perspectives from the field of computer science, human resources management, and education (Beetham & Sharpe, 2013). Since the 1960's, the researchers and developers of e-learning systems and communities have emphasized the importance of computer assisted instruction in order to gain a more efficient educational system mainly in the tertiary level and vocational education. Furthermore, computer-aided systems and communities have supported the organizational learning itself, when distributed environment opportunities and advantages were used (Goodman & Darr, 1998). This refers not only to the individuals and organizations that use the learning (training) systems (from the beneficiaries perspective), but also to the organizations that develop the systems (from the developers perspective). These actors not only define a community of interest in learning, but also, a social network (Rennie & Morrison, 2012).

In this context, e-learning communities have flourished and are now an important part of the educational system. Increasingly more universities and companies exploit the e-learning systems and support professional e-learning communities' development because of advantages such as: low-cost of human resource development programs, in training/examination programs design, planning, scheduling, and environmentally eco-friendly cyber space for learning, tutoring, and evaluation functionalities, etc. (Palloff & Pratt, 1999).

Learning communities addresses the learning needs of a specific group of people that could be associated with a community of interest regarding particular professional skills development and they explicitly use learning as a way of promoting social cohesion, regeneration, and economic development, which involves all parts of the community (Yarnit, 2000). In addition, learning communities represent any group of people (from the training viewpoint), whether linked by geographic location or some other shared interest, which addresses the learning needs of its members through proactive partnerships (Kearns, McDonald, Candy, Knights, & Papadopoulos, 1999).

Learning communities are supported by *e-learning* systems. The concept came into use in the mid '90s along with the development of the World Wide Web and increased interest in asynchronous discussion groups (Garrison, 2011). The learning facilities created by the Internet and web technologies, delivered via end-user computing, not only create connectivity between people and information but also opportunities for social learning approaches. Furthermore, e-learning systems were developed in order to support instructions delivered via all electronic media including the Internet, Intranet, Extranet, satellite, broadcasts, audio/video, interactive TV, and CD-ROM (Kahiigi, Ekenberg, & Hansson, 2007). Consequently, these types of instructions

are described as Internet-based hybrid learning or distance learning (or education). E-learning is inclusive of and synonymous with multimedia learning, technology-enhanced learning (TEL), computer-based instruction (CBI), computer-based training (CBT), computer-assisted instruction or computer-aided instruction (CAI), internet-based training (IBT), web-based training (WBT), online education, virtual education, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital educational collaboration (http://en.wikipedia.org/wiki/E-learning).

The *e-learning community* concept is a type of individual and/or group education where the medium of instruction is computer based technology or delivery of learning, training or educational programs via electronic means (Garrison, 2011); it is also associated with a group of people that can be assimilated with a community of interest in specific professional skills development. In addition, e-learning community could be seen as a goal of e-learning to create a community of inquiry, independent of time and location through the use of ICT and also as a group of individuals who collaboratively engage in purposeful critical discourse and reflection in order to construct personal meaning and confirm mutual understanding. This perspective reflects a particular educational approach using the possibilities of new and emerging technologies to build collaborative constructivist learning and/or teaching communities (Garrison, 2011).

From the above presented considerations (and the associated terminology analysis of other concepts (Anohina, 2005)) it can be observed that e-learning communities are the next generation of the learning communities (in the process of development and already existing in schools where adequate infrastructure and capacities are developed, implemented, and in intensive use). Methods and tools based on web technologies have recently been developed in order to support not only communication, but also work processes related to e-learning communities.

During the recent years, scientists and practitioners defined and implemented feasible models of building and nurturing e-learning communities by including group dynamics in the learning processes in order to gain highly interactive learning and activate the sense of community (Biggs, 1989), (Nicholson, 2010). It has been demonstrated that the existing information system is not a sufficient condition to create such communities (Robson, 2013; Tsai, Shen, & Chiang, 2013). The intensive use and exploitation of the e-learning system functionalities, together with the associated social media facilities, assure effective and efficient learning experiences (Beetham & Sharpe, 2013; Keengwe et al., 2013).

In this context, the main question behind this developing research is: *What are the behaviour elements or factors that have to be considered to build and nurture an e-learning community (in terms of creating a strong*

sense of community)? The answer is convergent with the research objective *(identify a model for the sense of community behaviour attributes description)* and the article sections display the research approach developed in order to find a solution for the e-learning community creation and to continue the support processes. The article sections are: (1) introduction and brief overview of e-learning community concept definition and evolution; (2) description of the conceptual model used for the research design methodology; (3) brief presentation of the ECQA as the research context; (4) investigation of the sense of e-learning communities' specificity in the case of ECQA community. In the final section, conclusions and recommendations for future research will be presented.

From the 3P Model to the Sense of Community Behaviour: A Conceptual Model
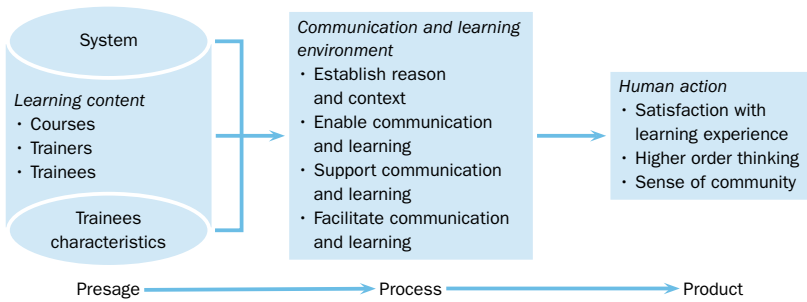
The Presage – Process – Product (3P) model refers to an integrated system of three major phases; each phase begins with a 'P,' hence the so-called – 3P model (Biggs, 1989). The presage phase occurs prior to the learning process. Taking into account the instructional system design, the presage phase relates to the learner's attributes, instructional attributes, and contextual attributes. The process phase facilitates learning by planning and delivering instructional interventions. Furthermore, it highlights the more significant aspects for learning related to collaborative practice (associated to collaborative communities that are created in the e-learning context together with the communication facilities). In the product phase, learning to collaborate is thus vital for professional training and development. In addition, the anticipated products refer to domain-specific knowledge, skills, attitudes, and collaborative competencies of knowledge management. In his approaches to the enhancement of tertiary instruction, Biggs (1989) noted that understanding the learning progress and improvement involves interactive and contextual approaches.

For the purpose of the presented research, the 3P model was integrated in a proposed research methodology. The 3P model description was adapted in order to generate a large overview of the learning community and not only instructional intervention.

Figure 1 describes the proposed 3P model adapted for the proposed research in order to identify (and characterize) the success factors for building, developing and nurturing an e-learning community.

The framework presents an integrated system representing the factors that exists prior to the process of community development, approaches supporting community development, the process of community development, and a myriad of outcomes including a sense of community (similar with the suggested issues described by Brook & Oliver in 2003).

Taking into account the final phase specificity and the related socio-

Figure 1 Research Design Model (3P supporting e-learning community development)

psychological and behaviour elements of its description, the references underline that the sense of community should be considered the most valuable aspect in building and nurturing a community (McMillan & Chavis, 1986; Moore & Brooks, 2000; Brook & Oliver, 2003). In this context, research is focused on characterizing a sense of community in a particular case of the e-learning community. In order to do this, the learning community should be characterized by the willingness of its members to share resources, accept and encourage new membership, communicate regularly, solve problems systematically and their preparedness to share success (Moore & Brooks, 2000). These characteristics were considered to be those that support community development (including their peculiarities in the case of e-learning community) and a positivistic view of the community. In addition, a social phenomenon may generate negative influences on the community members. Potentially negative influences include the members' need to conform and subsequent loss of individuality and the potential to hoard knowledge, thus restricting innovation and creativity. In certain cases, the community structure could generate pressure on individuals with nonconforming behaviours that could evolve in the formation of sub-communities (Brook & Oliver, 2003). These behaviour aspects of the community members could affect the community. Furthermore, reference analysis has underlined the inventory of the community sense elements and its attributes, as shown in Table 1.

The characterization of each behavioural element required a deep understanding of the human behaviour in the context of the activities and processes associated with an e-learning community. The *membership* behaviour element is related to: a sense of belonging, personal relatedness, investment of the self, feeling the right to belong, being a part of the community, boundaries including identifying people who belong and people who do not belong, emotional safety (through belonging), feelings of acceptance, willingness to sacrifice for the group, identification with the group, sharing common symbols, and personal investment. The *influence* behaviour element could be explained and understood by the following associated con-

Table 1   Community Sense Elements

Membership	Influence	Fulfilment of needs	Sharing an emotional connection
Boundaries that separate *us* from *them.* Emotional safety. A sense of belonging and identification. A common symbol system.	Individual members matter to the group. The group matters to the individual. Making a difference to the group. Individual members influence the group. The group influences the individual member.	Benefits and rewards. Members meeting their own needs. Members meeting the needs of others. Reinforcement and fulfillment of needs.	Identifying with a shared event, history, time, place or experience. Regular and meaningful contact. Closure to events. Personal investment. Honour. Spiritual connection.

Notes   Adapted from Brook and Oliver (2003).

cepts: mattering, individual members making a difference to the group and the group having an influence on its members, conformity, members having a say in what happens in the group, consensual validation, closeness. The *fulfilment of needs (and their integration)* behaviour element could be described in association with: a feeling that members' needs will be met by the resources of the group and through membership, reinforcement, rewards to members, status of membership, group success, group and individual competence, 'person-environment fit,' serving individual's needs through a sense of belonging, shared values, and the fact that the members are able and willing to help one another and receive help in return. The *sharing an emotional connection* behaviour element refers to: the commitment and belief that the community has (and will continue to share) a history, common places, shared events, time together, and similar experiences, positive experiences among group members, relationships and bonds between members, completed tasks, shared importance of events/tasks, investment (time, money, intimacy), emotional risk between members, honours, rewards and humiliation by the community have an impact on the members, spiritual bonds.

Based on the proposed model (described in Figure 1) and the described aspects of human behaviour that could be associated with the *sense of community* (Table 1), the research focused on identifying and characterizing the relevant aspects that were considered to support the development of successful e-learning communities (building and nurturing). In order to accomplish this objective, a questionnaire was developed and each of the behaviour attributes about the sense of community related to the ECQA members (developers of e-learning communities) was evaluated using a Likert scale (1 – very unimportant, poor perception, disagreement with the affirmation, strong perception and approval of the affirmation; 2 – weak perception; 3 – average perception; 4 – strong perception; 5 – very strong

Table 2 The Questionnaire Overview

Element	Behaviour attributes related to sense of community	Evaluation of the behaviour perception
Membership	1.1 Boundaries that separate us from them 1.2 Emotional safety 1.3 A sense of belonging and identification 1.4 A common symbol system	1 2 3 4 5
Influence	2.1 Individual members matter to the group 2.2 The group matters to the individual 2.3 Making a difference to the group 2.4 Individual members influence the group 2.5 The group influences the individual member	1 2 3 4 5
Fulfilment of needs	3.1 Benefits and rewards 3.2 Members meeting their own needs 3.3 Members meeting the needs of others 3.4 Reinforcement and fulfilment of needs	1 2 3 4 5
Sharing an emotional connection	4.1 Identifying with a shared event, history, time, place or experience 4.2 Regular and meaningful contact 4.3 Closure to events 4.4 Personal investment 4.5 Honour 4.6 Spiritual connection	1 2 3 4 5

perception, very important). Table 2 shows the content of the designed questionnaire.

Based on these considerations, a research scenario was established for identifying the chain of events that lead to e-learning community development (in association with the collaborative knowledge and wisdom base available and well known in the investigated community). The research was developed with the support of the trainers and experts of the ECQA. This community could be defined as a reunion of numerous e-learning communities (that were investigated) that were established in the context of the projects developed with the financial support of the Lifelong Learning Programme (2007–2013). The present research was guided by the contemporary relevant literature, the practices of experienced professionals working in the field, and the experience of trainees (most of them members of the ECQA community).

The Research Context: European Certification and Qualification Association (ECQA)

Past, Present, and Future of the ECQA Organization

The ECQA (www.ecqa.org) idea arose in 1998, while the association was established in 2009 by the members from different European countries that are specialists in the field of education, qualification, training or human re-

sources professional development. It was decided to follow a joint process for the human resources certification that could be useful for the European labour market in order to harmonize the skills and competencies gained for a specific professional qualification. The common interests of these organizations (from more than 24 countries in Europe) was to establish an association (external entity) with the purpose of developing and maintaining a set of *quality criteria and common certification rules,* which would be applied across different European regions/countries. The result of this initiative was a *pool of professions (defined and developed in the context of the Lifelong Learning Programme, LLP),* which resulted in a high level of European comparability via common Europe-wide agreed syllabus and skill set, a European test questions pool and European exam (computer automated by portals) system, a common set of certificate levels, and a common process to issue the certificates.
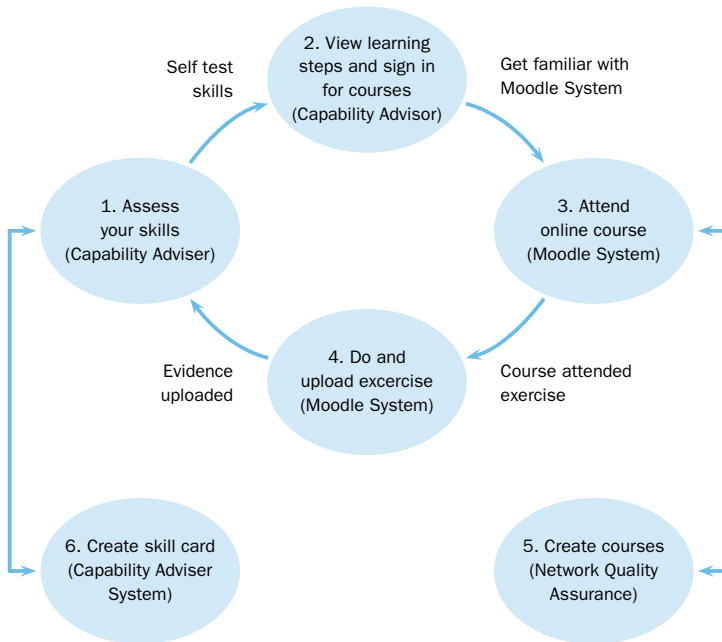
Today, ECQA is a success story due to the impact achieved with the development and support of many e-learning communities, built in the context of LLP projects, that define specific qualifications (training programs are currently developed and updated by specialists on the Job Role Committees) and certification programs dedicated to specific professions.

ECQA has grown to an association, which had more than 60 members from 25 European countries in 2013. Several thousand certificates have been issued in more than 30 different job roles. The ECQA community of interest grows constantly. The impact worldwide is visible as ECQA is increasingly approached by interested people who want to cooperate in order to obtain certification (as trainees or trainers) in specific professions, to cooperate as representatives of training organizations that want to be recognized and certified as ECQA training or exam providers, and above all to develop new certification and qualification programs (Erasmus+ projects with the support of ECQA members in order to establish new Job Role Committees for specific, required competencies on the European labour market).

The next strategic step for ECQA is aligned with the Europe 2020 strategy related to *inclusive growth* by helping people of all ages to anticipate and manage change through investment in skills and training. In the next period, ECQA policies will have a positive impact on the Europe's employment rate by resulting in more and better jobs; furthermore, ECQA policies will enhance employability with Europe-wide recognized certificates and strengthen these certificates in cooperation with international companies (big multinational, global companies, and small and medium size companies that operate internationally).

Overall, the ECQA strategy has to be *quality focus continued,* as this is the key aspect to the ECQA's success. In order to demonstrate the high quality of the ECQA processes and activities, the audit procedures for the

Figure 2   Integrated European Skill Acquisition System: The ECQA IT System

ISO 17024 and ISO 9001 certifications will be initiated in the near future. In the next few years, the ECQA's vision is to become known for its high quality management certificates in Europe, as well as worldwide. This will positively affect the employability of every person having a professional ECQA certificate.

The ECQA Infrastructure for Learning, Examination, and Certification

This section provides an overview of the information technology (IT) system implemented and developed by the ECQA member community in order to support the international partnership projects, training, and certification activities. Based on an e-learning platform developed over years with funding support of the European Commission, the ECQA created an *extensible pool of knowledge for specific professions and competencies.* This pool consists of the following core elements: (1) Self-Assessment Portal, (2) e-Learning Platform with a discussion forum (developed with web-based public domain learning management system Moodle, see www.moodle.com), and (3) online Examination System. Figure 2 provides an overview of the e-learning process supported by the above mentioned systems.

   One of the preliminary research objectives was to examine the role of the information technology infrastructure in sustaining the development of

e-learning communities based on the observed qualification, examination, and certification processes (quantitative and qualitative information was available in the case of certain ECQA professions).

An Inventory of ECQA Projects and E-Learning Communities

In order to create a pool of knowledge for specific professions, ECQA established an international partnership with more than 20 European countries. In 2009, 15 European professions were supported by the system; in 2010, the number increased to 20 European professions; and in 2013, already more than 30 European professions were supported by the system (ECQA, 2011). These Job Roles were targeted by the research questionnaire and the involved researchers (members) of each e-learning community were asked to express their perception and evaluate the sense of community.

According to the information available on ADAM platform (http://www.adam-europe.eu/adam/thematicgroup/MMVII), the project and product portal for the Leonardo da Vinci Programme, all of the ECQA projects can be considered as efficient and effective initiatives that help Europe along the path to meeting its 2020 targets for smart, sustainable, and inclusive growth. These projects are fostering new ideas and innovations that are vital as Europe faces up to the challenges of a competitive global environment.

Investigation of the Sense of ECQA E-Learning Communities

The Research Design Scenario and Sample Characterization

In the context of the new policies and the strategy of the European Union related to Erasmus+ initiative and program, the ECQA started to evaluate its potential for future projects, based on a thorough analysis not only of the knowledge and experiences gained, but also of the e-learning communities success factors from the perception of the members (researchers, developers, tutors, and trainers) that were involved in the building and development process of these communities. The research design methodology was based on the conceptual model described previously. The research method used was a marketing survey based on a questionnaire (with close ended questions). The announcement with a link to the research survey (Google Docs Questionnaire) was distributed via e-mail.

The sample considered for the marketing survey consisted of the ECQA members' community, namely team managers and researchers that have built and developed e-learning communities (in the context of some LLP, Leonardo da Vinci projects during 2005–2013). Initially, more than 200 messages (with the questionnaire link) were sent, but only 97 valid questionnaires were processed. The respond rate was 0.485, which is considered as very good. The research sample included 97 subjects of different ECQA partners with different nationalities: Spanish (4), Polish (2), Austrian

Table 3   The Most Important Challenges to Achieve a Successful E-Learning Community

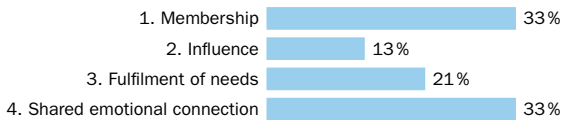| Answer options	1		2		3		4		5	
	#	%	#	%	#	%	#	%	#	%
Education and training	3	6	6	6	18	17	37	36	33	32
Understanding and managing user expectations	6	6	6	6	6	6	29	28	50	49
Data quality	6	3	3	3	18	17	24	23	46	45
Data integration	6	6	6	6	30	29	18	17	37	36
Customer collaboration and support	5	13	13	13	16	16	37	36	26	25
Budget constraints	6	16	16	16	16	16	32	31	27	26
Culture change	3	16	18	17	32	31	22	21	22	21
Time required to implement	2	16	16	16	37	36	16	16	26	25
Tool capability	5	25	27	26	29	28	20	19	16	16

Notes   1 – very unimportant . . . 5 – very important.

(10), Croatian (4), Afghan (2), German (14), Romanian (11), Hungarian (8), Bulgarian (4), Finnish (13), Danish (8), French (8), Greek (6), and Slovenian (3). The age of the participants ranged between 25 and 61.

Research Results and Discussion

Prior to the evaluation of the sense of e-learning community perception (as displayed in Table 1), the most important challenges to achieve successful e-learning community were identified (Table 3 issues were established based on the references and ideas from a focus group with the ECQA Board members; Likert scale was used for the evaluation). The preliminary results indicated the following important challenges: *understanding and managing user expectations (49% very important),* data quality (45% very important), data integration (36% very important), education and training (36% important), customer collaboration and support (36% important), budget constraints (31% important), time required to implement (36% of average importance), culture change (31% of average importance), and tool capability (28% of average importance).

From the preliminary research results it can be concluded that the ECQA members are very attached and devoted to their e-learning community (managing user expectations is the first priority together with data quality and integration related to the training materials, certification process and communication support through the facilities used on the ECQA e-learning platform). Trainees' need satisfaction and their expectations related to training and certification are very important aspects that shape the ECQA researchers, developers, trainers, and/or tutors behaviour inside the e-learning community.

Figure 3   The Global Perception of the Sense of Community Behaviour Elements

The first research question pointed out the global perception of the ECQA members (researchers, developers, trainers, and/or tutors) about the sense of community characterized by the four behaviour elements: membership, influence, fulfilment of needs, and sharing an emotional connection. As shown in Figure 3, the global score displayed an equally high perception of membership and sharing an emotional connection, despite the culture diversity of the investigated sample and of the e-learning communities' members.

At the same time, a relative equilibrium of the behaviour element perception can be observed (two elements are in the same percentage of perception and the other two elements are less perceptible but with a significant percentage). In conclusion, the ECQA members sense their related e-learning communities can be characterized by a behaviour model based on the following four elements: membership (33%), sharing an emotional connection (33%), influence (13%), and fulfilment of needs (21%).

Table 4 shows the research results regarding the ECQA members' sense of community related to each behaviour dimension and attributes that were analysed. This analysis reveals a behaviour profile of the ECQA members related to their developed e-learning communities.

The first element investigated was related to the perception of the membership element. As it can be seen in Table 4, the results of the behaviour attributes are as follows: 1.2 Emotional safety (0.39 strong perception), 1.3 Sense of belonging and identification (0.27 very strong perception), 1.3 Common symbol system (0.39 strong perception); there is a dominant strong and very strong perception of the ECQA members regarding the e-learning communities where they were involved and they are attached with (most of the answers delivered were in the area 4 and 5 of Likert scale). Related to the behaviour dimension, 1.1 Boundaries that separate us from them, the ECQA community members are very attached to the e-learning community activity and do not believe there are any boundaries between them and the users as trainees (weak perception of 0.31).

In the case of the second behaviour element, the perception of influence, the results identified a very strong perception regarding the attribute 2.1 Individual members matter to the group (0.40), a strong perception on 2.2 The group matters to the individual (0.37), a weak perception on 2.3 Making a difference to the group (0.28), an average perception on 2.4 Individual

Table 4   Research Results

Behaviour attributes related to sense of community	Likert scale/#					Total	Frequency				
	1	2	3	4	5		1	2	3	4	5
Membership behaviour element											
1.1 Boundaries that separate us from them	24	30	15	15	13	97	025	0.31	0.15	0.15	0.13
1.2 Emotional safety	3	3	18	38	35	97	0.03	0.03	0.19	0.39	0.36
1.3 A sense of belonging and identification	4	17	18	30	28	97	0.04	0.18	0.19	0.31	0.29
1.4 A common symbol system	4	3	22	38	30	97	0.04	0.03	0.23	0.39	0.31
Influence element											
2.1 Individual members matter to the group	4	5	16	33	38	96	0.04	0.05	0.17	0.34	0.40
2.2 The group matters to the individual	2	3	28	36	28	97	0.02	0.03	0.29	0.37	0.29
2.3 Making a difference to the group	24	27	20	14	12	97	0.25	0.28	0.21	0.14	0.12
2.4 Individual members influence the group	10	21	31	20	15	97	0.10	0.22	0.32	0.21	0.15
2.5 The group influences the individual member	9	19	33	21	14	96	0.09	0.20	0.34	0.22	0.15
Fulfilment of needs behaviour element											
3.1 Benefits and rewards	5	5	29	37	21	97	0.05	0.05	0.30	0.38	0.22
3.2 Members meeting their own needs	0	6	21	40	30	97	0.00	0.06	0.22	0.41	0.31
3.3 Members meeting the needs of others	4	7	18	39	29	97	0.04	0.07	0.19	0.40	0.30
3.4 Reinforcement and fulfilment of needs	2	8	21	42	24	97	0.02	0.08	0.22	0.43	0.25
Sharing an emotional connection behaviour element											
4.1 Identifying with a shared event, history, time, place or experience	3	3	24	41	26	97	0.03	0.03	0.25	0.42	0.27
4.2 Regular and meaningful contact	3	4	27	36	27	97	0.03	0.04	0.28	0.37	0.28
4.3 Closure to events	3	4	20	44	26	97	0.03	0.04	0.21	0.45	0.27
4.4 Personal investment	3	3	23	38	30	97	0.03	0.03	0.24	0.39	0.31
4.5 Honour	1	3	4	52	37	97	0.01	0.03	0.04	0.54	0.38
4.6 Spiritual connection	2	3	26	36	30	97	0.02	0.03	0.27	0.37	0.31

members influence the group (0.32), and on 2.5 The group influences the individual member (0.34). In conclusion, he results of the study identified a weak perception regarding the issue of making differences to the e-learning community as a group; however, the ECQA community members displayed a strong relation and dedication to each trainee in the e-learning community, as well as the whole group.

The evaluation of the fulfilment of the needs behaviour element (the third element of the model) identified a strong perception related to all attributes: 3.1 Benefits and rewards (0.38), 3.2 Members meeting their own needs (0.41), 3.3 Members meeting the needs of others (0.40), and 3.4 Reinforcement and fulfilment of needs (0.43). These results identified a strong relation of the ECQA researchers, developers, trainers, and/or tutors to the trainees that belong to the related e-learning community. All these actors are linked together mainly by their behaviour related to their reciprocity of needs satisfaction. The sense of belonging to the e-learning community can assure the benefits and rewards seen as success in accomplished training and certification tasks together with the related projects success.

Evaluation of the last element, sharing an emotional connection, revealed a strong perception of all behaviour attributes: 4.1 Identifying with a shared event, history, time, place or experience (0.42), 4.2 Regular and meaningful contact (0.37), 4.3 Closure to events (0.45), 4.4 Personal investment (0.39), 4.5 Honour (0.54), 4.6 Spiritual connection (0.37).

The investigated ECQA community members recognized a strong emotional connection with the related e-learning communities based on their share actions (on-line and face-to-face) such as training sessions, certification sessions, project meetings etc. The results revealed that the respondents place a high value on integrity with the most important characteristic of the emotional connection being the *honour* behaviour attribute with a frequency level (0.54).

Conclusions and Recommendations for Future Research

This article discussed a research approach and the results that characterize the behaviour elements and attributes that define the sense of e-learning communities of the ECQA.

An overview including the definitions, approaches, and characteristics of concepts such as: learning community, e-learning, and e-learning community preceded the research objective formulation.

In the second section of the article, the proposed conceptual model used for the research methodology and scenario definition was described. The proposed research model is based on the 3P Presage – Process – Product model (Biggs, 1989; Brook & Oliver, 2003) that was adapted and extended in order to detail those aspects relevant to the methodological investiga-

tion of the e-learning community members' behaviour in the last phase. Furthermore, the behaviour elements including: membership, influence, fulfilment of needs, and sharing an emotional connection were considered (the detailed model of the sense of community elements inspired by Brook and Oliver (2003). Each element was characterized by specific behaviour attributes.
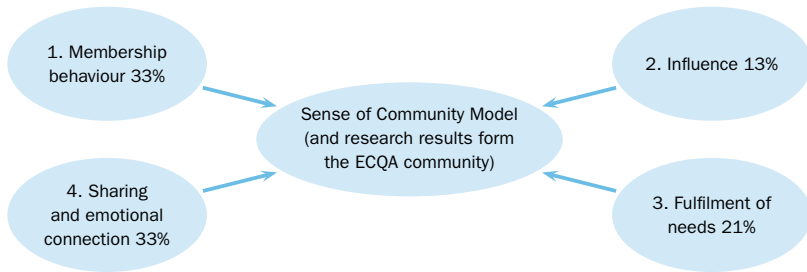
The third section described the particularities of the research context that was the ECQA (www.ecqa.org). ECQA is a non-profit association joining institutions and thousands of professionals from all over Europe and abroad. ECQA developed a set of quality criteria, which are used for the certification of the following types of service providers: trainers, training organizations, exam organizations, and certification organizations. The aim is to ensure the same level of training and certification quality in all participating countries members of the ECQA learning community.

In the fourth section, the adopted research scenario (a marketing survey based on a questionnaire, distributed among the ECQA members in October 2012 using a Google Docs Questionnaire) and the research results with comments and discussion are presented. The research results characterized the behavioural elements and the related behaviour attributes in the case of the ECQA researchers, developers, trainers, and/or tutors that were involved in the process of building and nurturing the e-learning communities (and also, part of the research sample of 32 subjects). Their sense of community was evaluated by considering the conceptual four element model in the following proportion: membership (33% perception from the total sample), sharing an emotional connection (33% perception from the total sample), influence (13% perception from the total sample), and fulfilment of needs (21% perception from the total sample). A detailed analysis of the attributes associated with each behaviour element as characterized by the ECQA researchers, developers, trainers, and/or tutors perception about the e-learning communities. Table 5 summarized the research results in terms of the subjects' dominant opinion.

The research objective was achieved and Figure 4 describes the *model for the sense of community behaviour attributes description* in the case of the ECQA e-learning community (global view).

Through this research and the associated informal discussions with the ECQA members, we confirmed that the investigated behaviour attributes can be considered as important elements in building, developing, and nurturing an e-learning community. The majority of the ECQA community members agreed that the membership and shared emotional connection behaviour elements are the most significant elements for the ECQA e-learning communities' support, followed by the fulfilment of the needs behaviour element.

This research presented an investigation for characterizing the sense

Figure 4 The Model for the Sense of Community Behaviour Attributes Description in the Case of the ECQA E-Learning Community

Table 5 Behaviour Model: Research Results

Behaviour element	Behaviour attributes related to the sense of community	ECQA community members perception
Membership	1.1 Boundaries that separate us from them	Weak 0.31
	1.2 Emotional safety	Strong 0.39
	1.3 A sense of belonging and identification	Very strong 0.29
	1.4 A common symbol system	Strong 0.39
Influence	2.1 Individual members matter to the group	Very strong 0.40
	2.2 The group matters to the individual	Strong 0.37
	2.3 Making a difference to the group	Weak 0.28
	2.4 Individual members influence the group	Average 0.32
	2.5 The group influences the individual member	Average 0.34
Fulfilment of needs	3.1 Benefits and rewards	Strong 0.38
	3.2 Members meeting their own needs	Strong 0.41
	3.3 Members meeting the needs of others	Strong 0.40
	3.4 Reinforcement and fulfilment of needs	Strong 0.43
Sharing an emotional connection	4.1 Identifying with a shared event, history, time, place or experience	Strong 0.42
	4.2 Regular and meaningful contact	Strong 0.37
	4.3 Closure to events	Strong 0.45
	4.4 Personal investment	Strong 0.39
	4.5 Honour	Strong 0.54
	4.6 Spiritual connection	Strong 0.37

of e-learning communities that belong to the ECQA. The research results could be used in nurturing the present e-learning communities, but also to develop new ones (based on honour, spiritual connection, diversity and tolerance, rather than on rigidity).

Furthermore, the results can be considered as *lessons learnt* in order to use the sense of e-learning community as a tool for fostering understanding and cooperation between all actors involved in building and nurturing such

type of communities. Furthermore, the research results can provide a basis for better understanding of the dimensions of desirable behaviour in an e-learning community.

The proposed research methodology can be applied to any e-learning community in order to describe the members' sense of community through relevant behaviour attributes characterization. This will contribute to the e-learning communities' development and nurture. In addition, future recommendations of research include the statistical data process and analysis that will conduct a thorough analysis of the sense of community characterization and the empirical model description in the case of the ECQA e-learning community.

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